185 FERC ¶ 61,158
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
Allison Clements, and Mark C. Christie.

PJM Interconnection, L.L.C. Docket No. EL21-78-000

ORDER ON SECTION 206 PROCEEDING

(Issued November 30, 2023)

1. On June 17, 2021, the Commission issued an order pursuant to section 206 of the Federal Power Act (FPA)[1] and Rule 209(a) of the Commission's Rules of Practice and Procedure,[2] directing PJM Interconnection, L.L.C. (PJM) within 90 days of the date of the order to either: (1) show cause as to why its Open Access Transmission Tariff and the Amended and Restated Operating Agreement (collectively, Tariff) remain just and reasonable; or (2) explain what changes to its Tariff it believes would remedy the identified concerns, if the Commission were to determine that the Tariff has in fact become unjust and unreasonable or unduly discriminatory or preferential and, therefore, proceed to establish a replacement rate.[3]

2. The Show Cause Order raised two issues. First, the order stated that PJM's Tariff may be unjust and unreasonable by allowing sellers to avoid being subject to parameter-limited offers when it is appropriate for those sellers to be subject to mitigation.[4] In this order, we find that there is insufficient evidence in the record to find under FPA section 206 that PJM's Tariff is unjust, unreasonable, or unduly discriminatory or preferential with respect to this issue. Accordingly, we terminate the FPA section 206 proceeding with respect to the first prong of the Show Cause Order. Second, the Show Cause Order stated that the PJM Tariff may be unjust and unreasonable because it fails to contain provisions governing what happens if a seller is

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[1] 16 U.S.C. § 824e.

[2] 18 C.F.R. § 385.209(a) (2022).

[3] *PJM Interconnection, L.L.C.*, 175 FERC ¶ 61,231 (2021) (Show Cause Order).

[4] Show Cause Order, 175 FERC ¶ 61,231 at P 16.

unable to meet its unit-specific parameters in real time.[5] As discussed below, we find that PJM's Tariff is unjust and unreasonable in this respect, and we find that PJM's proposed Tariff revisions are a just and reasonable replacement rate. We require PJM to submit those changes in a compliance filing within 30 days of the date of this order.

I. Background

A. Parameter-Limited Schedules

3. Offers in PJM's energy market consist of economic components, which include the price-megawatt pairs, start-up costs, and no-load costs; and operating parameters, which include notification time, startup time, and minimum run time. Sellers submit multiple offers for each resource in advance of the market clearing process: (1) market-based offers, which have no limitations on price or operating parameter flexibility other than the $1,000/MWh cap on incremental energy offers that are not cost-based; (2) cost-based offers, which are limited to the resource's cost plus 10% and require that operating parameters are at least as flexible as the unit-specific set of operating parameters (parameter-limited);[6] and (3) market-based parameter-limited offers that allow incremental energy offer flexibility (up to $1,000/MWh), but require operating parameters to be at least as flexible as the parameter-limited operating parameters.[7]

4. PJM's Tariff requires sellers to "submit and be subject to pre-determined limits" on cost- and market-based offers under three specific circumstances.[8] When a seller fails the Three Pivotal Supplier (TPS) test[9] under non-emergency conditions, PJM considers

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[5] Requests for temporary exceptions of 30 days or less must be filed at least one business day prior to the commencement of the exception. PJM, Intra-PJM Tariffs, Operating Agreement, Schedule 1, § 6.6(i)(i) (8.0.0) (hereinafter cited as Operating Agreement).

[6] Operating Agreement, Schedule 1, § 6.6(a) (8.0.0). PJM maintains a unit-specific set of operating parameters for each resource that serve as a reference for market power mitigation. *See id.* § 6.6 (c) (8.0.0). Parameter-limited schedules must specify parameter values equal to or less limiting, i.e., more flexible, than the defined parameter limits unless the generator is granted an exception. *Id.* § 6.6 (i) (8.0.0).

[7] *Id.* § 6.6 (8.0.0).

[8] *Id.*

[9] *Id.* § 6.6(a) (8.0.0). The TPS test is a structural market power test that measures the degree to which the supply from three suppliers (the two largest suppliers and the

the seller's cost-based parameter-limited offer and market-based offer in making commitment and dispatch decisions. When a seller fails the TPS test under emergency conditions (including a Maximum Generation Emergency, Maximum Generation Emergency Alert, Hot Weather Alert, or Cold Weather Alert),[10] PJM will evaluate a seller's market-based parameter-limited offer in addition to its market-based offer and cost-based parameter-limited offer.[11] When a seller passes the TPS test under emergency conditions, PJM considers the seller's market-based offers and market-based parameter-limited offers.

5. PJM explains that under any of these three circumstances, PJM mitigates the seller's offer to the lowest-cost option, which may not necessarily be the parameter-limited offer.[12] In the day-ahead market, PJM determines the lowest-cost offer by evaluating the overall system production cost of each offer.[13] In the real-time market, PJM determines the lowest-cost offer by evaluating the dispatch cost of each offer.[14] Under all other circumstances, PJM makes commitment and dispatch decisions based on the seller's market-based offer.

B. Real Time Values

6. PJM states that unit-specific parameters are associated with the underlying resource's physical capability and are determined by PJM.[15] However, the Tariff also allows sellers to deviate from their resource's unit-specific parameters in certain circumstances, due to "actual operating constraints affecting the unit," by submitting exceptions to PJM for review and approval. Specifically, the Tariff provides for

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seller under consideration, all selected relative to a given constraint) is required in order to relieve a specific constraint in a given hour. *See* id. § 6.4.1 (16.0.0).

[10] *Id.* § 6.6 (b) (8.0.0).

[11] *Id.*

[12] *Id.* § 6.4.1 (a) (16.0.0); *id.* § 6.6 (a) (8.0.0). In a cost-based offer, the price parameters must adhere to PJM's Fuel Cost Policy guidelines while the operating parameters must be parameter-limited.

[13] *Id.* § 6.4.1 (a) (16.0.0).

[14] *Id.* Dispatch cost for the applicable hour = ((Incremental Energy Offer @ Economic Minimum for the hour [$/MWh] * Economic Minimum for the hour [MW]) + No-load Cost for the hour [$/H]). *Id.* § 6.4.1(g) (16.0.0).

[15] PJM April 1, 2021 Filing, Docket No. ER21-1591-000 at 2-3.

temporary exceptions of less than 30 days, period exceptions lasting between 31 days and one year, and persistent exceptions lasting beyond one year.[16]

7. PJM explains that its Tariff, however, does not contain an explicit provision allowing sellers to change their unit-specific parameter limits in real time. PJM states that it has relied on its Manual to permit sellers to do so, a process they refer to as Real Time Values. Generally, PJM states that such communications are made to PJM operators in the real-time market when a seller determines that a resource is unable to operate in accordance with its approved parameters due to an unanticipated operational challenge with the unit.[17]

C. Show Cause Order

8. As noted above, on June 17, 2021, the Commission issued an order directing PJM within 90 days of the date of the order to either: (1) show cause as to why its Tariff remains just and reasonable or (2) explain what changes to its Tariff it believes would remedy the identified concerns, if the Commission were to determine that the Tariff has in fact become unjust and unreasonable or unduly discriminatory or preferential and, therefore, proceeds to establish a replacement rate.[18] The order first stated that PJM's Tariff may be unjust and unreasonable based on the ability of sellers to avoid being subject to parameter-limited offers when it is appropriate for those sellers to be subject to mitigation. The Commission next stated the PJM Tariff may be unjust and unreasonable because it fails to contain provisions governing what happens if a seller is unable to meet its unit-specific parameters in real time.

II. Notice

9. Notice of the Show Cause Order was published in the *Federal Register*, 86 Fed. Reg. 33,699 (June 25, 2021), with notices of intervention or motions to intervene due within 21 days. The Independent Market Monitor for PJM (Market Monitor), PJM Industrial Customer Coalition, Calpine Corporation, Electric Power Supply Association, LS Power Development, LLC, Vistra Energy Corp. and Dynegy Marketing and Trade, LLC (Vistra), Old Dominion Electric Cooperative, Dominion Energy Services, Inc., PJM Power Providers Group (P3), New Jersey Board of Public Utilities, Public Citizen, Inc., NRG Power Marketing LLC and Midwest Generation, LLC, American Electric Power Service Corporation, Talen Energy Corporation, Solar Energy Industries Association, Buckeye Power, Inc., Southern Maryland Electric Cooperative, Inc., American Municipal

[16] Operating Agreement, Schedule 1, § 6.6 (i) (8.0.0).

[17] PJM Transmittal, Docket No. ER21-1591-000 at 4.

[18] Show Cause Order, 175 FERC ¶ 61,231 at P 18.

Power, Inc., Ohio Consumers' Counsel, North Carolina Electric Membership Corporation, Ohio Federal Energy Advocate, Exelon Corporation, and Rockland Electric Company filed interventions.

10. On September 15, 2021, PJM filed an answer to the Show Cause Order (PJM Response). Notice of the PJM Response was published in the *Federal Register*, 86 Fed. Reg. 52,894 (Sept. 23, 2021), with comments due October 6, 2021. Comments were filed by Vistra, the Market Monitor, and P3. Answers to the comments were filed by PJM, the Market Monitor, and Vistra. The Market Monitor filed an answer to Vistra's answer (Market Monitor Reply).

11. On September 11, 2023, PJM and the Market Monitor filed a joint motion (Joint Motion) requesting that the Commission expedite the issuance of an "order as soon as practicable accepting PJM's proposal with respect to the expanded use of temporary exceptions in place of real time values."[19] The motion argues that the acceptance of this portion of PJM's filing would permit the reporting of up-to-date and accurate parameters to PJM prior to the winter season.[20]

III. Discussion

A. Procedural Matters

12. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2022), the timely, unopposed interventions serve to make the entities that filed them parties to this proceeding.

13. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2022), prohibits an answer to a protest or answer, unless otherwise ordered. We accept the answers filed in this docket because they provided information that assisted us in our decision-making process.

B. Substantive Matters

1. Offer Cap Rules for Parameter-Limited Offers

a. Show Cause Order

14. In the Show Cause Order, the Commission stated that the PJM Tariff appears to be unjust and unreasonable because sellers may be able to avoid being subject to

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[19] Joint Motion at 1.

[20] *Id.* at 4.

parameter-limited offers when it is appropriate for those sellers to be subject to mitigation.[21] The Commission based its inquiry on statements from the Market Monitor in the 2020 PJM State of the Market Report, protests to PJM's filing to incorporate rules for Real Time Values, and protests to various Market Based Rate filings. The Commission stated that, because the Tariff requires PJM to commit and dispatch resources that PJM determines to possess market power based on a lowest cost offer, sellers may be able to structure their market-based parameter-limited offer strategically to ensure that PJM chooses the market-based offer, which is not subject to parameter limits.[22]

b. <u>PJM Response</u>

15. In its response to the Show Cause Order, PJM states that there is no evidence in the record that demonstrates that actual market power has been exercised by sellers under the existing Tariff provisions.[23] In its response, PJM argues that there are numerous legitimate reasons why a seller may need to structure its offers in a manner that results in a non-parameter-limited schedule being lower cost than a cost-based or market-based parameter-limited schedule. PJM explains these reasons include the potential for deviation charges if a unit does not meet the specified operating parameters, desire to reduce the amount of wear and tear on a unit as a result of frequent cycling, and the possibility of violating emission permits if units are constantly cycled.[24] PJM states that its current approach of dispatching and committing generation capacity resources based on lowest overall system production cost maximizes the social benefits of competitive markets by serving expected loads at the least cost.[25] PJM argues that changing the system for dispatch would lead to increased costs because PJM would no longer be able to call on less expensive non-parameter-limited schedules.

16. Though PJM argues the Tariff is just and reasonable, PJM states that in the event the Commission finds its current Tariff provisions to be unjust and unreasonable, the solution should be to require PJM to exclude consideration of market-based offers on a temporary basis.[26] Under this solution, units that fail the TPS test would always be

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[21] Show Cause Order, 175 FERC ¶ 61,231 at P 16.

[22] *Id.*

[23] PJM Response at 4-5.

[24] *Id*. at 12-13.

[25] *Id.* at 13.

[26] *Id.* at 14-15.

dispatched using their cost-based offers. For those units that pass the TPS test, only parameter-limited market-based offers would be used during emergency conditions. PJM states that this solution would diminish the benefits of a competitive market, and so it asks the Commission to only implement it on a temporary basis to allow it to consider a more comprehensive and durable solution with stakeholders.

c. Comments

17. In its comments, the Market Monitor refutes PJM's argument that its Tariff remains just and reasonable. The Market Monitor asserts that PJM ignores evidence of market power and renews its argument that sellers can structure their market-based offer curve with inflexible operating parameters so that it appears, under the PJM algorithm, to be lower cost than the cost-based offer with flexible parameters (i.e., parameter-limited).[27] The Market Monitor argues that these rules are unjust and unreasonable because they allow market sellers to evade market power mitigation.[28]

18. In addition, the Market Monitor argues that PJM's approaches to determining the least cost offer in day ahead and real time both neglect to consider offers with incremental energy offers that cross, or "crossing curves." The Market Monitor states that, if the market-based offer is less than the cost-based offer for most MW levels, but has a high markup for a tail block, selection of the market-based offer will minimize PJM's production cost calculation (area under the offer curve plus start up and no-load costs) but permit the exercise of market power, which can actually increase customer payments.[29] The Market Monitor further contends that PJM ignores situations in which the lowest production cost and the lowest load payments (based on lowest marginal cost) are not consistent.[30] The Market Monitor continues to state that because the test for the lower cost offer in real time compares the offer levels only at the lowest MW level, economic minimum, it ignores any markup at the end of the offer curve.

19. The Market Monitor contends that PJM's response does not address the real-time process or the uplift paid to generators committed on their market-based offers, which the Market Monitor characterizes as "inflexible market-based schedules."[31] The Market Monitor provides a table showing that uplift credits paid to generators in the real-time

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[27] Market Monitor Comments at 6.

[28] *Id.* at 7.

[29] *Id.* at 8.

[30] *Id.* at 9.

[31] *Id.* at 12.

market are nine times higher than uplift credits paid to generators in the day-ahead market for the defined time period.[32] The Market Monitor also states that it presents evidence in the State of the Market Reports about resources whose owners fail the TPS test in the real-time energy market but are used to set prices in the real time with a positive markup. The Market Monitor states that 3.2% of total day-ahead "marginal unit intervals" and 6.4% of total real-time "marginal unit intervals" include a positive mark-up by units that failed the TPS test.[33] The Market Monitor states that generators committed on their inflexible market-based offers after failing the TPS test received 87.0% of day-ahead uplift in 2020, and the share of uplift to generators that were committed on their inflexible market-based offers when hot weather alerts and cold weather alerts were declared in the day-ahead energy market was 79.2% in 2020.[34] The Market Monitor argues that inflexible units that failed the TPS test should not receive such high shares of uplift.

20. The Market Monitor also argues that resources use inflexible time-based parameters in market-based schedules, such as start time, notification time, and minimum down time, to withhold. In support, the Market Monitor contends that PJM's evaluation of the least-cost schedule only considers the parameters that affect the cost of running the resource; it does not account for the effect of withholding the resource on prices or uplift. For example, the Market Monitor asserts that some resources with market power submit long minimum down times in their market-based schedules along with a negative offer markup. The Market Monitor argues that this forces PJM to choose to either leave the resource offline when it may be needed or to extend its commitment to avoid turning it off and incurring the long minimum down time because the resource may be needed again. System production costs, according to the Market Monitor, are not minimized in either case because PJM must use a more expensive resource (if the unit with the long minimum down time is decommitted) or pay unnecessary higher uplift (if the unit with the long minimum down time is allowed to run continuously) – effectively allowing resources to exercise market power through the use of inflexible parameters. As a result, the Market Monitor avers that the least cost option for addressing market power in this case is to enforce the parameter limits on the resource, and to use the lowest cost offer

[32] *Id*. at 13.

[33] *Id.*

[34] *Id.*

curve.[35] Under the Market Monitor's preferred approach, parameter-limited schedules would be enforced at all times.[36]

21. Vistra Corp. and Dynegy (Vistra) and the PJM Power Providers Group (P3) filed comments arguing that the current PJM provisions requiring PJM to dispatch resources that fail the TPS test based on minimizing total system production cost are just and reasonable and do not need to be changed. Vistra argues that no evidence has been presented showing actual gaming or anti-competitive behavior from market participants resulting therefrom, and the existing Tariff provisions ensure the most efficient outcome.[37] Vistra states that the Market Monitor has not demonstrated how having a lower market-based non-parameter limited offer actually results in an exercise of market power when PJM is selecting the market outcome with the lowest total system cost.[38] Vistra argues that there are several economically rational and competitive reasons that a seller's market-based offer can be lower than its cost-based offer, such as the seller not wishing to include the 10% adder permitted in cost-based offers in all periods in the market-based offer.[39] Vistra further contends that it is not possible for resource owners to structure their offers strategically to ensure that PJM commits them using market-based offers because PJM evaluates offers in the day-ahead market at the level of output that cleared the day-ahead market.[40]

22. Vistra also points to the Commission's approval of PJM's Tariff provisions on parameter limits in spite of virtually identical arguments from the Market Monitor with similar evidence as that the Market Monitor presents here, most recently in April 2020.[41] Vistra argues that the fact that PJM may commit a resource based on an offer that is relatively less flexible than another simply demonstrates that the Tariff is working as

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[35] *Id.* at 14-15.

[36] *Id*. at 18.

[37] Vistra Comments at 1-2.

[38] *Id.* at 9.

[39] *Id.* at 17.

[40] *Id.* at 9.

[41] *Id.* at 5-7 (citing *PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,010, at P 5 (2020)).

intended and highlights that there is often a cost associated with a resource operating more flexibly.[42]

23. Vistra also argues that the Market Monitor's proposal is not a just and reasonable replacement rate and should not be accepted if the Commission finds that the Tariff is unjust and unreasonable, for several reasons. First, Vistra argues that the Market Monitor's proposal would require PJM to unilaterally reconstruct energy offer schedules submitted by market participants, such that PJM would use the price component from one offer and the operating parameters from another. Vistra argues this may prevent sellers from recovering their costs. Vistra also argues that the Market Monitor's proposal would increase costs to consumers, reduce the useful life of resources on the grid by requiring flexible operating parameters for long periods of time, and increase emissions by requiring additional cycling of combined cycle resources.[43]

24. P3 similarly argues that the data provided by the Market Monitor does not demonstrate a market power problem. Citing the Market Monitor's comments, P3 notes that mitigated offers include a markup greater than five dollars/MWh only in one percent of day-ahead intervals and two percent of real-time intervals, and only eight percent of mitigated intervals show a "meaningful" markup.[44] P3 observes that, placed in context, the data on uplift to units committed on non-parameter-limited offers shows that uplift payments are very small on a total basis (less than five million dollars in a market worth tens of billions of dollars) and also on a per-MWh basis.[45]

25. In its Answer to the Market Monitor's comments, PJM argues that imposing the Market Monitor's proposed revisions to require parameter-limited schedules in all periods would result in increased consumer costs, since sellers would likely increase their capacity and energy market offers to be able to meet the more flexible parameter-limited offers.[46] PJM states that the Commission is already investigating means to incentivize operational flexibility in Docket No. AD21-10 and should not transform this case into a

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[42] Vistra Comments at 13.

[43] *Id*. at 23-25.

[44] P3 Comments at 3 (citing Market Monitor Comments at 13-14, tbl. 4). We note that no party has raised arguments or presented counter evidence regarding these statistics.

[45] *Id.* at 3-4.

[46] PJM Answer at 2. Despite the questions raised in the dissent, we note that no parties have successfully rebutted this point.

wholesale market redesign.[47] PJM also reiterates that the mere fact that PJM committed cheaper non-parameter-limited market-based schedules instead of more expensive parameter-limited schedules is not evidence that market sellers exercised market power or engaged in other anti-competitive behavior. Rather, PJM argues, this data simply shows that the Tariff provisions are working as intended – resources are committed based on the lowest overall system production cost.[48] PJM also argues that while it is possible that a unit may be committed in the real-time market in a way that does not result in the lowest total system production cost, such an outcome is rare. PJM notes that since January 9, 2021, there have only been nine units (12 total hours) committed on non-parameter-limited market-based offers when other schedules were cheaper than the actual dispatch in the real-time market.[49]

26. The Market Monitor submitted an answer in response to PJM's answer and comments by P3 and Vistra. The Market Monitor argues that the central question posed by the Commission is whether the PJM Tariff may be unjust and unreasonable based on the ability of sellers to avoid mitigation, not the just and reasonableness of its Tariff that commits and dispatches resources based on the lowest total cost.[50] The Market Monitor reiterates that both the Commission, in its order to show cause, and the Market Monitor provided ample evidence of the exercise of market power.[51] The Market Monitor rebuts arguments by P3 and Vistra, arguing that many generators offer combined cycle plants competitively and flexibly.[52] In addition, the Market Monitor contends that its data shows, for combined cycle resources, a large difference between average minimum run time plus minimum downtime in market-based offers (16 hours) versus parameter-limited offers (eight hours).[53] The Market Monitor argues that PJM's claim that revising the mitigation rules would increase offer prices just shows there is market power and the lack of effective rules to protect against it.[54]

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[47] *Id.* at 4.

[48] *Id.* at 5-9.

[49] *Id.* at 9.

[50] Market Monitor Answer at 2.

[51] *Id.* at 2, 6.

[52] *Id*. at 6-7.

[53] *Id.* at 3.

[54] *Id.* at 7.

27. In reply, Vistra argues that the Market Monitor has failed to address or rebut evidence presented as to the valid reasons for submission of offers with less flexible operating parameters.[55] Vistra states that the Market Monitor's data presented in its Answer is limited, conclusory, and unpersuasive.[56] The Market Monitor filed a reply to Vistra arguing that the "valid" considerations that Vistra points to actually show the existence of market power, as they are only available to those sellers that possess market power.[57]

d. **Commission Determination**

28. We find insufficient evidence in the record to conclude under FPA section 206 that PJM's Tariff is unjust, unreasonable, or unduly discriminatory or preferential with respect to this issue. Therefore, we terminate the section 206 proceeding in Docket No. EL21-78-000 with respect to this issue.

29. We discuss below the Market Monitor's arguments for finding the existing construct unjust and unreasonable.

30. First, the Market Monitor argues that resources that failed the TPS test in the day-ahead market were mitigated to market-based offers that were less flexible than their cost-based offers in 30.3% of hours in 2020 during non-emergency conditions and less flexible than their parameter-limited market-based offers in 34.5% of hours in 2020 during emergency conditions.[58] However, on review of the record, we find this evidence is not sufficient to demonstrate that the Tariff is unjust and unreasonable. Specifically, the Tariff requires that PJM mitigate sellers with market power[59] to the lowest-cost

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[55] Vistra Answer at 2-5.

[56] *Id.* at 6.

[57] Market Monitor Reply at 2.

[58] *Id.* at 8 (citing Monitoring Analytics, *State of the Market Report for PJM,* at 139 (2020), https://monitoringanalytics.com/reports/PJM_State_of_the_Market/2020.shtml).

[59] The Show Cause Order specifically pertained to mitigation. Though the order did discuss PJM's approach to committing and dispatching sellers during emergency conditions, even when those sellers have not failed the TPS test, the order was limited to sellers who should "be subject to mitigation" and whether PJM's Tariff is "adequately mitigating against the potential exercise of market power." Show Cause Order, 175 FERC ¶ 61,231 at PP 1, 16. Therefore, we do not address any issues raised in the record regarding sellers which PJM has determined do not have market power (i.e., those that pass the TPS test) because they are outside the scope of the Show Cause proceeding.

option, which may not necessarily be the parameter-limited offer.[60] The fact that a third of resources with market power were committed based on non-parameter-limited offers merely reflects the outcome of the Tariff requirements; that fact alone does not provide any evidence that the Tariff is not just and reasonable or that it is not working as intended.

31. Second, the Market Monitor alleges that, because the Tariff requires PJM to commit and dispatch resources based on their lowest cost schedule, sellers can strategically offer higher markups on their market-based parameter-limited offer to ensure that PJM chooses the market-based offer, without parameter limits, and thus avoid mitigation.[61] However, we agree with PJM that the fact that a particular seller's market-based offer, without parameter limits, is lower cost than its cost-based offer does not in and of itself demonstrate that a seller is attempting to exercise market power.[62] The cost-based offer, which as P3 notes can include a 10% adder,[63] functions as a cap and does not preclude sellers from submitting offers below that cap.[64] Furthermore, PJM explained that changing its current commitment and dispatch practices would likely *increase* costs to consumers without an associated benefit.[65]

32. We agree with commenters that there are legitimate reasons that market-based offers with relatively less flexible operating parameters may be lower cost than cost-based offers with more flexible parameters (i.e., parameter-limits). For example, as PJM and Vistra note, there may be costs to operating more flexibly, such as additional wear and tear.[66]

33. In addition, the Market Monitor argues that some sellers that fail the TPS test are able to collect uplift payments with operating parameters that are less flexible than their

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[60] Operating Agreement, Schedule 1 §§ 6.4.1 (a) (16.0.0); *id.* § 6.6 (a) (8.0.0).

[61] *Id.*

[62] PJM Response at 5.

[63] P3 Comments at 3.

[64] *See, e.g.*, PJM Response at 12; PJM Answer at 6; *see also* Operating Agreement, Schedule 1 § 6.4.1 (a) (16.0.0).

[65] *See* PJM Answer at 2.

[66] Vistra Comments at 13, 16-17; PJM Response at 12-13.

unit-specific parameter limits.[67] The Market Monitor states that generators committed on their inflexible market-based offers after failing the TPS test received the majority of day-ahead uplift in 2020.[68] PJM explained that its day-ahead market software considers uplift payments when selecting among offers to minimize overall system production cost.[69] As such, we are not persuaded that the collection of uplift, in and of itself, demonstrates that mitigation after the failure of a TPS test is ineffective.

34. Finally, the Market Monitor argues that PJM's response does not address real-time uplift or the process for selecting the least cost offer in the real-time market. Tariff provisions regarding the TPS test also require PJM to select the least cost offer in real-time, as measured by the resource's dispatch cost, among several schedules, including the real-time cost-based offer.[70] PJM's least-cost algorithm for real-time dispatch does not take into account the full cost of dispatching a resource, which is unknowable at the time of unit commitment given the uncertainties inherent in real-time.[71] However, PJM's current real-time commitment and dispatch process appears to use all of the information available to select offers that minimize total expected costs in real-time.[72] We find that there is insufficient evidence in the record to show that PJM's current method of addressing mitigation in the real-time market is unjust and unreasonable.[73]

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[67] Show Cause Order, 175 FERC ¶ 61,231 at P 9 (citing Market Monitor Protest, Docket No. ER21-573-000 at 5).

[68] Market Monitor Comments at 16-18.

[69] *Id.* at 5.

[70] Operating Agreement, Schedule 1, § 6.4.1 (16.0.0).

[71] PJM Answer at 9-10.

[72] *Id.*

[73] When the Commission opened this proceeding, it did so to answer specific questions about PJM's mitigation. As noted, the parties presented insufficient evidence for us to find the PJM Tariff unjust and unreasonable. While the dissent expresses a desire for additional hearing procedures, we note we are not foreclosing the Market Monitor or other parties from presenting additional evidence in a new complaint that the Tariff is unjust and unreasonable.

2. Real Time Values

a. Show Cause Order

35. In the Show Cause Order, the Commission noted that, although the Tariff outlines specific processes for exceptions requested in advance of the real-time market, the Tariff is not clear as to how to treat sellers who are unable to meet their resource's unit-specific parameters in real time. The Show Cause Order pointed to the Commission's prior rejection of PJM's filing to incorporate rules for Real Time Values that would allow sellers to change their unit-specific parameter limits in real time.[74]

36. In rejecting PJM's proposal to add the Real Time Values process to the Tariff, the Commission found that the changes did not contain sufficient protections against sellers using Real Time Values to avoid market power mitigation by inappropriately increasing their notification time on parameter-limited schedules.[75] Specifically, the Commission found that, when an emergency condition is not in effect, the proposal would have allowed sellers that fail the TPS test to avoid providing justification for changing their parameter limits.[76] The Commission noted that the proposed limited documentation requirements for Real Time Values stood in stark contrast to the existing exemption process, which requires sellers to provide documentation for all requests demonstrating that an actual physical or operational condition exists.[77]

37. The Show Cause Order noted that, in that filing, PJM indicated that a real-time exception process was necessary to avoid reliability problems. While PJM needs accurate, timely information on resources' operating capabilities, the Commission found that, without a clear process for assessing changes to parameter-limited schedules in real time, PJM's Tariff may not adequately mitigate the potential for sellers to submit Real Time Values to exercise market power. Therefore, the Show Cause Order found that PJM's Tariff may be unjust and unreasonable because it omits discussion of a real-time process that should be outlined in the Tariff.[78]

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[74] Show Cause Order, 175 FERC ¶ 61,231 at P 15 (citing *PJM Interconnection, L.L.C.*, 175 FERC ¶ 61,171, at P 37 (2021)).

[75] *PJM Interconnection, L.L.C.*, 175 FERC ¶ 61,171 at P 34.

[76] *Id.* P 36.

[77] *Id.* P 37.

[78] Show Cause Order, 175 FERC ¶ 61,231 at P 17.

b. PJM Response

38. In its Response to the Show Cause Order, PJM agrees that the existing Tariff does not contain a clear process for changes to parameter-limited schedules in real time. Accordingly, PJM included *pro forma* Tariff changes to provide specific provisions governing what happens when a seller is unable to meet its unit-specific parameters in real time.[79]

39. PJM notes that, in response to the Commission rejecting its Real Time Values filing, PJM implemented interim changes to its parameter limits exceptions to address the potential exercise of market power. Specifically, PJM now requires that: (1) exceptions to parameter limits sought for an Operating Day[80] at any time before the close of the day-ahead energy market for that Operating Day may be obtained solely through the temporary exception procedure specified in Operating Agreement, Schedule 1, section 6.6(i); (2) when the generation owner first becomes aware, after the close of the day-ahead energy market, of a physical unit limitation or constraint outside management control that will render the unit incapable of satisfying previously established parameter limits, the generation owner must promptly notify PJM of the constraint and its impact on Operating Day plant capabilities via Real Time Values; and (3) no later than three business days after the generation owner's notification of a physical unit limitation or constraint outside of management control, the generation owner must provide documentation supporting the claimed constraint and how it justified the specific departure from previously established parameter limits.[81]

40. PJM argues that these interim steps mirror the existing temporary exception procedures in the Tariff and resolve the concerns expressed by the Commission in the Show Cause Order because economic reasons for operating a unit, such as staffing concerns, are no longer acceptable reasons to override unit-specific parameters.[82] PJM states that it proposes to sunset the use of Real Time Values and expand the existing temporary exception procedures in the Tariff so that sellers are not limited to submitting

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[79] PJM Response at 15.

[80] PJM's Tariff defines Operating Day as the daily 24-hour period beginning at midnight for which transactions on the PJM Interchange Energy Market are scheduled. PJM, Intra-PJM Tariffs, Open Access Transmission Tariff, I.1 Definitions – O – P – Q (29.0.0).

[81] *Id.* at 17.

[82] *Id.* at 17-18.

temporary exceptions at least one business day before the operating day.[83] PJM also proposes to strengthen the rules governing temporary exceptions to require supporting documentation and updates on the physical limitation during the period of the temporary exception.[84] Finally, PJM also proposes to clarify that a temporary exception may only be requested one time for the same constraint per occurrence.[85]

c. Comments

41. In its Comments, the Market Monitor stated that it agrees with PJM's proposed revisions to allow real-time submissions of temporary exceptions but argues that additional safeguards are necessary.[86] PJM argued in response that the additional revisions are unnecessary.[87]

42. In their Joint Motion, PJM and the Market Monitor both now state that the Commission should accept PJM's proposal to allow real-time submissions of temporary exceptions. The Joint Motion argues that PJM's proposal is consistent with the Market Monitor's position that "[t]he temporary exception process balances the need to require flexible parameters with the ability to reflect changes to the capability of a unit due to unforeseen issues."[88] The Joint Motion states that the Commission should expeditiously act, before the upcoming winter season, to allow for the submission of temporary exceptions after the close of the day-ahead market.[89]

d. Commission Determination

43. We find that PJM's Tariff is unjust and unreasonable because it fails to contain provisions governing what happens if a seller is unable to meet its unit-specific parameters in real time, as explained in the Show Cause Order and affirmed by PJM in its Response. We find just and reasonable PJM's proposal to resolve this issue by revising

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[83] *Id* at 19.

[84] *Id.* at 20.

[85] *Id.*

[86] Market Monitor Comments at 20.

[87] PJM Answer at 12.

[88] Joint Motion at 3 (quoting Market Monitor, Comments, Docket No. ER21-1591-000, at 7 (filed April 22, 2021)).

[89] *Id.* at 4.

its Tariff to: (1) expand the existing temporary exception procedures so that sellers are not limited to submitting temporary exceptions at least one business day before the Operating Day; (2) require supporting documentation and updates on the physical limitation during the period of the temporary exception; and (3) clarify that a temporary exception may only be requested one time for the same constraint per occurrence.[90] We note that both PJM and the Market Monitor now support this proposal and we accept their Joint Motion.[91]

44. PJM's proposed Tariff language limits the allowable exceptions to "physical and actual" limitations. These limitations will prevent sellers from requesting temporary exceptions for an economic reason such as staffing. As PJM notes, sellers are required to submit justifications for any temporary exception, which PJM will be able to review for compliance with the Tariff.[92] Further, as PJM notes, sellers that violate the Tariff rules will be referred to the Commission's Office of Enforcement, which has the authority to impose penalties or other remedies, as appropriate.

45. We note that PJM's proposal would eliminate the separate process for Real Time Values and instead incorporate a real-time option into the pre-existing Tariff process for temporary exceptions. We find that this would ensure sellers are able to reflect necessary changes in their operating parameters in real time, so that PJM has accurate dispatch information, using rules which the Commission has already found just and reasonable for longer term exceptions. Therefore, sellers will not be able to evade the normal Tariff review and approval process required for longer-term parameter-limited exception requests by simply waiting until the Operating Day to submit the request as a Real Time Value. PJM's Tariff revision would also clarify that exceptions can only be requested as a result of a "physical and actual constraint."[93]

46. Because we adopt as the just and reasonable replacement rate PJM's proposed revisions attached to its response to the Order to Show Cause, those changes must be reflected in PJM's Tariff on file. Accordingly, we require PJM to submit a compliance filing through eTariff, within 30 days of the date of this order, to include its proposed

[90] PJM Response at 19-20.

[91] Joint Motion at 2.

[92] *Id*. at 3-4.

[93] *See* PJM Answer, Ex. 1, Operating Agreement, Schedule 1, section 6.6 Tariff, Attachment K-Appendix, section 6.6 (*Pro Forma* Tariff Record) ("A temporary exception may only be requested one-time for the same physical and actual constraint per occurrence…").

revisions in its Tariff. Because we adopt PJM's proposed Tariff changes exactly as submitted, we make them effective as of the date of this order.[94]

The Commission orders:

(A) The section 206 proceeding in Docket No. EL21-78-000 with respect to the offer cap rules for parameter-limited offers is hereby terminated, as discussed in the body of this order.

(B) PJM is hereby directed to submit, within 30 days of the date of this order, a compliance filing to include its proposed Tariff language to be effective the date of this order, as discussed in the body of this order.

By the Commission. Commissioner Danly is not participating.
Commissioner Clements is dissenting in part with a separate statement attached.

(S E A L)

Kimberly D. Bose,
Secretary.

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[94] *See PJM Interconnection, L.L.C.*, 180 FERC ¶ 61,120 (2022) (setting effective date for mandated tariff revisions as of the date of the order).

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C. Docket No. EL21-78-000

(Issued November 30, 2023)

CLEMENTS, Commissioner, *dissenting in part*:

1. I dissent in part on today's order because I disagree with the majority's decision to terminate the portion of this Federal Power Act section 206 proceeding that pertains to PJM Interconnection, L.L.C.'s (PJM) offer cap rules for parameter-limited offers. I believe the Independent Market Monitor for PJM (Market Monitor) has presented evidence that these rules may not be working as intended and may be permitting the exercise of market power in PJM's day-ahead and real-time energy markets. The evidence that served as the basis for initiating this section 206 investigation is largely unrebutted by PJM in the existing record, and key factual questions remain unanswered. Instead of prematurely closing the investigation, I would have set this element of the proceeding for evidentiary hearing to further develop the record to answer these questions. Only then would the Commission be equipped to determine if this element of PJM's tariff is producing unjust and unreasonable energy rates.

I. <u>Mitigating market power is a necessary element of ensuring just and reasonable rates in PJM's energy market</u>

2. While the tariff rules at issue here are complex, the central question is straightforward: Are the market power mitigation rules in PJM's energy market, particularly those limiting generators' operating parameters, preventing the exercise of market power when sellers are found to possess it? The Commission relies upon effective market power mitigation in RTO markets to ensure the resulting rates are just and reasonable.[1] The Market Monitor has, for years, found that the local market structure in PJM's energy market is "not competitive due to the highly concentrated ownership of

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[1] *See, e.g., Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, Order No. 697, 119 FERC ¶ 61,295, at P 4 (2007); *Indep. Mkt. Monitor for PJM v. PJM Interconnection, L.L.C.*, 178 FERC ¶ 61,121, at PP 96, 106, 112-13 (2022) ("In RTO/ISO markets, the Commission has long held that these market rules must be paired with an effective framework for monitoring and mitigating market power to ensure that the markets produce just and reasonable rates.").

supply in local markets created by transmission constraints and local reliability issues."[2] The Market Monitor has stated that "[w]hile overall offer capping levels have been low, there are a significant number of units with persistent structural local market power that would have a significant impact on prices in the absence of local market power mitigation."[3] However, while stressing the importance of that mitigation, the Market Monitor has repeatedly identified flaws under existing tariff rules "because unit owners can exercise market power even when they fail the [Three Pivotal Supplier] test."[4] The Commission initiated the present investigation in response to those claims.[5]

3. It is worth noting, as a starting point, that PJM and the Market Monitor agree on the *purpose* of limitations on operating parameters within PJM's broader energy market mitigation rules—to prevent the exercise of market power through a seller's submission of inflexible operating parameters.[6] Where they disagree is whether PJM's existing rules are satisfying that objective.

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[2] Monitoring Analytics, *State of the Market Report for PJM*, at 117 (2023), https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2023.shtml (2023 State of the Market); Monitoring Analytics, *State of the Market Report for PJM*, at 121 (2022), https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2022.shtml (2022 State of the Market); Monitoring Analytics, *State of the Market Report for PJM*, at 113 (2021), https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2021.shtml (2021 State of the Market); Monitoring Analytics, *State of the Market Report for PJM*, at 109 (2020), https://monitoringanalytics.com/reports/PJM_State_of_the_Market/2020.shtml (2020 State of the Market).

[3] 2020 State of the Market at 112.

[4] 2023 State of the Market at 117; 2022 State of the Market at 121; 2021 State of the Market at 113; 2020 State of the Market at 109.

[5] *PJM Interconnection, L.L.C.*, 175 FERC ¶ 61,231, at P 16 (2021) (2021 Order to Show Cause) ("We make this preliminary finding in light of the Market Monitor's 2020 PJM State of the Market Report, Real Time Values Filing, and the Market Monitor's MBR protests, which suggest that PJM's Tariff is not adequately mitigating against the potential exercise of market power[.]").

[6] PJM September 15, 2021 Answer at 3 (PJM Sep. 15 Answer) ("The purpose of the limitations on operating parameters is to address concerns that market power may be exerted through the submission of inflexible operating parameters to increase a unit's operating reserve credits."); Market Monitor October 18, 2021 Comments at 3 (Market

4. PJM employs an approach to market power mitigation unique among the RTOs. When other RTOs identify a seller as possessing market power that could inefficiently affect market prices, an energy market offer from that seller is limited to a pre-determined offer price and set of key operating parameters.[7] The objective is to ensure

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Monitor Oct. 18 Comments) ("[T] he goal of having parameter limited schedules . . . is to prevent the use of inflexible operating parameters to exercise market power[.]").

[7] RTOs employ different methods to identify market power (e.g., use of a three pivotal supplier test versus use of conduct and impact tests) and limit offer prices and operating parameters, but the results are similar. *See, e.g.,* Midcontinent ISO, FERC Electric Tariff, § III (Market Mitigation Measures), § 65.2.2 (Implementation) (47.0.0) ("If the criteria [for bid mitigation] are met, the Transmission Provider shall prospectively substitute a Default Offer for an Offer submitted for a Generation Resource or Planning Resource."), § 64.1.4(b)(i) (69.0.0) (physical offer parameters); Southwest Power Pool, OATT Sixth Revised, att. AF (Market Power Mitigation Plan), § 3.2(B) (0.0.0) ("[T]he Transmission Provider shall apply mitigation measures by replacing the Energy Offer Curve with the mitigated Energy Offer Curve if [mitigation conditions are met]."); Southwest Power Pool, Market Protocols Revision 100, § 8.2.2.8 (Additional Mitigation Measures for Resource Offer Parameters); New York ISO, Market Administration and Control Area Services Tariff, att. H (ISO Market Power Mitigation Measures), § 23.4.1 (Purpose) (53.0.0) ("If [mitigation conditions are met], the appropriate mitigation measure described in this Section shall be applied by the ISO. The conduct specified in Sections 23.3.1.1 to 23.3.1.3 shall be remedied by . . . the prospective application of a default bid measure."), § 23.3.1.4.2.1 (29.0.0) (physical parameter reference levels); ISO New England, Transmission, Markets & Services Tariff, § III, app. A, § III.A.5.5.1.4 (Consequences of Failing Both Conduct and Impact Test) (60.0.0) ("If a Supply Offer fails the general threshold conduct and impact tests, then the financial parameters of the Supply Offer shall be set to their Reference Levels."); California ISO, Fifth Replacement FERC Electric Tariff, § 31.2.3 (Bid Mitigation) (2.0.0) ("If [mitigation conditions in the day-ahead market are met], then any resource at that Location that is dispatched in that [market power mitigation] process is subject to Local Market Power Mitigation. Bids on behalf of any such resource . . . will be mitigated to the higher of the resource's Default Energy Bid . . . or the Competitive LMP plus the Competitive LMP Parameter at the resource's Location for the [Day-Ahead Market] and [Real-Time Market] process interval for which the [market power mitigation] process applies."); California ISO, Business Practice Manual for Market Instruments, § 5 (Energy Bids) (physical operating parameters constrained by a resource's Master File).

that, when market power is present, a seller cannot use that market power to raise market prices above competitive levels or accrue undue revenue through other means.[8]

5. By contrast, when PJM identifies a seller with market power, it considers, *but does not necessarily use*, the fully mitigated cost-based offer in deciding how to commit and dispatch the generator. Rather, it assesses both the cost-based offer and one or more seller-determined "market," or "price-based," offers and seeks to choose the one that minimizes total production costs (in the day-ahead market) or dispatch costs (in the real-time market).[9] Those market offers are unmitigated either in terms of their offer price or in terms of their offer price and operating parameters. The result is that PJM may commit or dispatch a generator that possesses market power on an offer that is partially or fully unmitigated. This is not an uncommon occurrence when market power is found: day-ahead sellers which failed the Three Pivotal Supplier test were committed on market offers less flexible than their cost-based, parameter-limited offers in at least 28% of unit hours in each of the last four years.[10]

6. In other words, PJM layers a second objective into its mitigation rules: curb the exercise of market power *but also* minimize costs by selecting among mitigated and unmitigated offers. While this sounds good in theory—two birds, one stone—the Market Monitor presents evidence that in trying to do both things, PJM may at times be failing to do either.[11] That is, the Market Monitor asserts that PJM's tariff rules for selecting among

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[8] *See, e.g., California Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,150, at P 71 (2009) ("[T]he purpose of market power mitigation is to guard against the potential exercise of market power."); *California Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1052 (2006) ("[M]arket power involves the ability to influence market prices.").

[9] *See* PJM Operating Agreement, Schedule 1 (PJM Interchange Energy Market), § 6.4.1 (Offer Price Caps Applicability). As PJM explains, pursuant to this provision, PJM commits generators with market power in the day-ahead market using the market offer or cost-based offer which results in the lowest overall system production cost, and dispatches generators with market power in the real-time market using the market offer or cost-based offer that results in the lowest dispatch cost, as that last term is defined in Section 6.4.1(g) of Schedule 1. PJM Sep. 15 Answer at 4. For simplicity, hereafter I will refer to this process as PJM's offer-selection formula(s).

[10] 2023 State of the Market at 152; 2022 State of the Market at 151; 2021 State of the Market at 140; 2020 State of the Market at 139.

[11] Without belaboring the details, I note that the Market Monitor identifies both local and aggregate as types of structural market power that PJM may be failing to mitigate: "In the PJM energy market, the TPS test results provide evidence of structural market power in the local markets created by transmission constraints. In the aggregate

mitigated and unmitigated offers fail to account for all relevant costs and therefore may commit and dispatch resources on offers that reflect the exercise of market power on the part of the seller.[12] That claim calls into question the very basis on which the Commission has found that energy market rates in an RTO like PJM are just and reasonable.[13] While I am not certain based on the existing record that the Market Monitor's claims are correct, PJM has done little in its answer to persuade us they are not. While it is dissatisfying that the record remains inconclusive after several back and forth pleadings, we owe it to customers to investigate until we have the record we need to render a confident decision, and we have the procedural tools to do so.

II. <u>The Market Monitor presents claims and evidence that warrant further investigation</u>

7. With respect to the day-ahead market, the Market Monitor claims that PJM's offer-selection formula is susceptible to a seller's structuring its market offer such that it appears lower cost than the mitigated cost-based offer despite including less flexible operating parameters.[14] The Market Monitor asserts this can result in the seller's receiving more uplift than under a competitive outcome[15] and possibly raising total

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PJM energy market, the days with hot weather and cold weather alerts have high load, and the aggregate demand in PJM reaches levels where the residual supply available is reduced and structural market power may exist." Market Monitor November 17, 2021 Answer at 6 (Market Monitor Nov. 17 Answer).

[12] The Market Monitor describes the resulting harm as potentially taking multiple forms: "Market harm occurs when the use of unmitigated offers results in an inefficient and noncompetitive outcome. The inefficient outcomes can have multiple forms including higher levels of uplift than the competitive outcome, or prices (LMPs) greater than the competitive outcome, or the system production cost greater than the competitive outcome." Market Monitor Nov. 17 Answer at 7.

[13] Order No. 697, 119 FERC ¶ 61,295 at P 4 ("[F]or wholesale sellers that have market-based rate authority and sell into day ahead or real-time organized markets administered by Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs), they do so subject to specific RTO/ISO market rules approved by the Commission and applicable to all market participants. These rules are designed to help ensure that market power cannot be exercised in those organized markets and include additional protections (*e.g.,* mitigation measures) where appropriate to ensure that prices in those markets are just and reasonable.").

[14] Market Monitor Oct. 18 Comments at 11.

[15] *Id.* at 16-18. One related factual question that appears unresolved in the record is whether PJM's offer-selection formula fully and accurately considers uplift payments

production costs above what PJM's offer-selection formula calculates for the commitment.[16]

8. The Market Monitor presents aggregated market data to support its claims,[17] including data showing that in 2019, 2020, and most of 2021, generators found to have market power and offering operating parameter limits less flexible than those in their cost-based offers accrued 88.8%, 87.0%, and 66.1% of total day-ahead uplift.[18] It also presents data for the same time periods showing that, on days with hot or cold weather alerts (that indicate aggregate structural market power), generators offering operating parameter limits less flexible than those in their cost-based offers accrued 60.5%, 79.2%, and 32.2% of total day-ahead uplift.[19] This data is not dispositive—it is conceivable that such uplift allocation reflects an efficient market outcome—but it does suggest a deeper analysis is warranted given the large percentages of day-ahead uplift being collected by this subset of generators.

9. With respect to the real-time market, the Market Monitor argues PJM's offer-selection formula is flawed because it takes a myopic view of offer prices across the seller's offers. A seller's offer includes not a single offer price but a curve of prices at varying quantities of output. But PJM's real-time offer-selection formula looks only at a

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when making commitment decisions. PJM states that "uplift payments are fully considered by PJM's commitment software when committing resources based on the lowest overall system production cost," PJM October 29, 2021 Answer at 5 , whereas the Market Monitor asserts that "[r]esources with market power can [] use long minimum run times, minimum down times, start times, and notification times to create inflexibility over multiday periods over which the day-ahead market cannot minimize production costs." Market Monitor Oct. 18 Comments at 11.

[16] Market Monitor Oct. 18 Comments at 11 ("[PJM's answer] provides no evidence that, even in the day-ahead market, its results are the ones with lowest system production cost when other parameters that affect unit behavior over more than one day are accounted for . . . Resources with market power can also use long minimum run times, minimum down times, start times, and notification times to create inflexibility over multiday periods over which the day-ahead market cannot minimize production costs. In these cases, the day-ahead market chooses the schedule with the lower costs over only the immediate 24 hour period even if that schedule requires the resource to run for several days instead of only one.").

[17] *See id.* at 16-18.

[18] *Id.* at 17.

[19] *Id.* at 18.

single point on each offer curve: the economic minimum quantity, or EcoMin. Should a seller wish to make its non-parameter-limited market offer more attractive under the formula in order to have PJM select it, the seller need only submit a low offer price at EcoMin while potentially submitting much higher prices at quantities above EcoMin. The Market Monitor argues that when PJM selects this offer based on the EcoMin offer price but dispatches the resource above EcoMin, a seller found to possess market power can set the market price based on an unmitigated offer.[20] In addition, the Market Monitor asserts a seller can earn uplift due to inflexible operating parameters in its market offer that it would not have earned had PJM dispatched it on its cost-based (parameter-limited) offer.[21] This is why the Market Monitor states that "the offer with the lowest dispatch cost as defined by PJM is not necessarily the least cost offer at output levels greater than the economic minimum MW."[22]

10. In response to the Market Monitor's claims, PJM focuses on the day-ahead market and offers several hypothetical examples in which its existing rules commit resources to achieve the lowest total system production cost.[23] These examples demonstrate that these rules *can* produce the desired least-cost commitment decisions, but they do not demonstrate whether this happens reliably in practice. In fact, the Market Monitor states that PJM's examples are not reflective of actual offer behavior observed in the market.[24]

11. PJM, the PJM Power Providers Group, and Vistra also vigorously defend why a seller may legitimately offer a generator at different prices with more or less flexible

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[20] *Id.* at 12 ("If the price-based offer includes a negative markup at the economic minimum MW level and a positive markup at higher output levels (crossing curves), with all else being constant (no load cost, startup cost, and minimum run time), then this resource could avoid parameter mitigation and set prices with market-based offers that include a positive markup even when the offer has been subject to market power mitigation.").

[21] *Id.* ("PJM also ignores the real-time uplift paid to generators that are committed on their inflexible price-based schedules.").

[22] *Id.*

[23] PJM Sep. 15 Answer at 6-12.

[24] Market Monitor Oct. 18 Comments at 8-9 ("This is an example engineered to demonstrate a desired outcome. This is a form of a crossing curve offer, but it is unrealistic offer behavior and PJM does not assert that it is common. Units in the PJM market that offer with crossing curves typically offer price below cost at lower outputs and offer price above cost for higher outputs.").

operating parameters.[25] But this appears to be a red herring. I accept that a seller's offer price and offered operating parameters may not be independent—I have no reason to doubt these parties' assertions as to increased wear and tear on a generator of operating more flexibly rather than less flexibly. And in the vast majority of intervals, sellers can reflect those preferences in their offers. According to the Market Monitor's 2020 State of the Markets Report, mitigation due to sellers' failing the Three Pivotal Supplier test is infrequent: for the period 2018-2020, between 0.3%-1.3% of total MWh were subject to mitigation in the day-ahead market,[26] and between 0.8%-1.3% of MWh were subject to mitigation in the real-time market.[27] Even if these MWh are concentrated among certain resources due to, for example, recurring local transmission constraints, it is difficult to see how sellers' being mitigated on their operating parameters during such a small percentage of intervals represents an undue burden. More importantly, it bears reminding that the question raised here is how sellers are permitted to offer *when they possess market power*. As the Market Monitor states plainly, "generation owners with market power do not have an incentive to submit the most competitive offer."[28]

III. <u>It is premature to terminate the section 206 investigation with key questions unresolved</u>

12. In June 2021, the Commission initiated this investigation and made a preliminary finding that PJM's tariff was unjust and unreasonable. The Commission stated that PJM's mitigation rules may permit sellers to structure their market offers strategically to ensure PJM chooses the market offer without parameter limits, thereby "undermin[ing] the purpose of parameter-limited offers, which is to ensure sellers are not able to exercise market power through the use of inflexible operating parameters."[29] The Commission based that concern on the Market Monitor's 2020 State of the Markets Report, PJM's 2021 filing to revise its "Real Time Values" rules, and the Market Monitor's protests in certain market-based rate application proceedings.[30]

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[25] PJM Sep. 15 Answer at 12-13; PJM Power Providers Group October 29, 2021 Comments at 2-3; Vistra October 15, 2021 Comments at 16-22.

[26] 2020 State of the Market at 207.

[27] *Id.*

[28] Market Monitor Nov. 17 Answer at 5.

[29] 2021 Order to Show Cause, 175 FERC ¶ 61,231 at P 16.

[30] *Id.*

13. PJM has not provided evidence to dispel the Commission's stated concern, and today's order provides no explanation of whether and why the majority believes the concern is allayed. Instead, the majority states only that the existing record is lacking. Are PJM's mitigation rules reliably curbing market power, contrary to the Commission's preliminary finding? Are the offer-selection formulas meeting their cost-minimization objectives in practice? More specifically, based on historical data of intervals when market power is found, how do market prices, uplift costs and allocation, and total production costs compare when sellers with market power are committed or dispatched on (1) non-parameter-limited offers versus (2) parameter-limited offers? Have market sellers benefitted, on a portfolio basis or through the collection of additional uplift, from PJM's selection of non-parameter-limited offers when market power is present rather than the selection of parameter-limited offers? We still do not know.

14. That is because the existing record provides neither a basis to conclude the Commission's preliminary finding was without merit nor definitive answers to these critical questions. The answers likely lie in examination of the historical market data that only PJM and the Market Monitor possess, but which has not been fully presented to date in this proceeding. But the Commission has authority to direct evidentiary hearings[31] to resolve factual questions like these. And given the relative infrequency with which energy market mitigation is triggered in PJM,[32] examining the necessary data through a hearing should be a manageable exercise.[33]

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[31] 16 U.S.C. § 824e(a). To the extent this necessitates examination of confidential market data, the Commission has procedures for parties to seek privileged treatment of it. *See* 18 C.F.R. §§ 385.410, 388.112 (2020).

[32] *See supra* P 12.

[33] In this statement I do not discuss potential replacement rates—the setting of which is step two in any Commission section 206 action—because I do not find the existing record adequate to determine PJM's tariff is unjust and unreasonable. However, I note the following: In their comments PJM and Vistra criticize the Market Monitor's proposal to merge components of a seller's cost-based offer and market offer when applying mitigation. PJM October 29, 2021 Answer at 3-4; Vistra October 15, 2021 Comments at 9, 20-21, 23. My read of the record suggests the simpler and more appropriate fix is to mitigate a resource to its cost-based offer when the seller has market power. This would bring PJM generally into alignment with the other RTOs' approaches, *see supra* P 4 n.8, and in the record both PJM and the Market Monitor identify it as an option. *See* PJM Sep. 15 Answer at 14; Market Monitor Oct. 18 Comments at 18.

15. By closing out this section 206 investigation rather than seeking out the necessary information to confidently determine whether a market power problem exists, we are potentially leaving in place mitigation rules that are flawed and lead to unjust and unreasonable energy market rates. I cannot support that decision.

For these reasons, I respectfully dissent in part.

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Allison Clements
Commissioner