# 189 FERC ¶ 61,060 UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Chairman; Mark C. Christie, David Rosner, Lindsay S. See and Judy W. Chang.

PJM Interconnection, L.L.C.

Docket No. ER24-2905-000

#### ORDER ACCEPTING TARIFF AND OPERATING AGREEMENT REVISIONS

(Issued October 25, 2024)

1. On August 28, 2024, pursuant to section 205 of the Federal Power Act (FPA)<sup>1</sup> and Part 35 of the Commission's Rules of Practice and Procedure,<sup>2</sup> PJM Interconnection, L.L.C. (PJM) submitted proposed revisions to its Open Access Transmission Tariff (Tariff) and Operating Agreement (OA) to modify the energy market offer selection process to accommodate the anticipated addition of enhanced combined cycle, energy storage, and hybrid resource models in PJM's Next Generation Markets (nGEM) clearing software.<sup>3</sup> We accept PJM's tariff records to become effective October 28, 2024, and December 31, 9998, as discussed below. We direct PJM to make an informational filing notifying the Commission of the actual effective date of the proposed Tariff and OA revisions no less than 30 days prior to the date PJM implements the proposed Tariff and OA revisions.<sup>4</sup> If, however, PJM makes subsequent filings that revise any of these tariff

<sup>&</sup>lt;sup>1</sup> 16 U.S.C. § 824d.

<sup>&</sup>lt;sup>2</sup> 18 C.F.R. pt. 35 (2024).

<sup>&</sup>lt;sup>3</sup> PJM proposed an effective date of October 28, 2024 for Tariff, Attachment K-Appendix, section 4, but proposed an indeterminate effective date of December 31, 9998 for the remaining tariff records submitted. *See Electronic Tariff Filings*, Notice of Procedures for Making Statutory Filings when Authorization for New or Revised Tariff Provisions is not Required, Docket No. RM01-5-000, at 4 (June 3, 2020).

<sup>&</sup>lt;sup>4</sup> Commission staff will update the tariff records in eTariff to reflect the date chosen by PJM.

provisions prior to the implementation date, PJM must make a compliance filing that reflects the effective tariff record.<sup>5</sup>

# I. Background

2. Sellers in PJM's energy market are allowed to submit multiple energy supply offers for each resource in advance of the market clearing process: (1) market-based offers, which have no limitations on price or parameter flexibility, other than the \$1,000/MWh cap on offers that are not cost-based; (2) cost-based offers, which are limited to the resource's cost plus 10% and which require operating parameters that are at least as flexible as the unit-specific set of operating parameters (parameter-limited offers); and (3) market-based, parameter-limited offers that allow price flexibility (up to \$1,000/MWh). Based on the results of the three pivotal supplier (TPS) test for each market seller and the presence or absence of certain emergency conditions, PJM selects which of a seller's three offers are eligible for use in its market clearing optimization software, which then clears resources based on the offer that results in the lowest overall system production cost in the day-ahead energy market. PJM's current market clearing optimization software models each eligible offer (or "schedule") —which PJM refers to as a "logical resource"—for that resource for commitment and dispatch purposes.

<sup>&</sup>lt;sup>5</sup> See PJM Interconnection, L.L.C., 186 FERC ¶ 61,148 (2024) ("We further remind PJM that whenever it has two or more filings of the same tariff record pending at the Commission, PJM is required to make a timely clean up filing after issuance of the Commission orders on both filings to ensure the rates on file are accurate.").

<sup>&</sup>lt;sup>6</sup> Cost-based offers must conform with the requirements in PJM Manual 15, Cost Development Guidelines. PJM also maintains a unit-specific set of parameter-limited operating parameters for each resource that serves as a reference for market power mitigation. Parameter-limited offers 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. OA, Schedule 1, § 6.6 (Minimum Generator Operating Parameters) (10.0.0).

<sup>&</sup>lt;sup>7</sup> 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 seller under consideration, all evaluated relative to a given constraint) is required to relieve a specific constraint in a given hour. OA, Schedule 1, § 6.4 (Offer Price Caps) (16.0.0), *Id.* § 6.4.1.

<sup>&</sup>lt;sup>8</sup> See OA, Schedule 1, § 6.4 (Offer Price Caps) (16.0.0).

<sup>&</sup>lt;sup>9</sup> A combined cycle resource, for example, could be modeled in its combustion turbine or in its combined cycle configuration(s).

- 3. Currently, PJM's day-ahead energy market clearing process selects among a resource's eligible offers by minimizing overall system production cost over the 24-hour optimization window of the day-ahead energy market. In contrast to its day-ahead energy market, PJM's market clearing optimization software for the real-time energy market clears resources based on the offer that results in the lowest total dispatch cost. While the cost evaluation differs, in the real-time energy market PJM employs the same offer selection process to determine which offers to consider in its market clearing optimization software as in the day-ahead energy market.
- On April 30, 2024, the Commission rejected a proposal by PJM to modify its offer 4. selection process for its day-ahead energy market to accommodate the anticipated addition of enhanced combined cycle, energy storage, and hybrid resource models in PJM's Next Generation Markets (nGEM) clearing software. 11 The Commission found that PJM did not explain how its proposal would sufficiently protect against the ability to exercise market power in the day-ahead energy market. Specifically, the Commission found that, under PJM's proposal, market sellers might be able to shift the clearing price away from a competitive level by submitting a market-based offer that includes a lower offer price and dispatch cost at the resource's economic minimum (EcoMin) than its cost-based offer but much higher offer prices at MW output levels above its EcoMin than its cost-based offer (i.e., the "crossing offer curves" scenario). 12 Under this crossing offer curves scenario market sellers would know which offer PJM would select when the resource fails the TPS test and is subject to an offer cap because the selection would be determined by a standalone calculation of dispatch cost at the resource's EcoMin. Therefore, the Commission found that PJM's proposal would create the ability for market sellers to exercise market power.

### II. Filing

5. PJM states that it plans to transition to new market clearing engine software as part of its nGEM project, <sup>13</sup> which is being developed in collaboration with Midcontinent

<sup>&</sup>lt;sup>10</sup> OA, Schedule 1, § 6.4 (Offer Price Caps) (16.0.0), 6.4.1(g)(i). Total Dispatch cost = Sum of hourly dispatch cost over a resource's minimum run time [\$] + Start-Up Cost [\$]; where dispatch cost per 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].

<sup>&</sup>lt;sup>11</sup> *PJM Interconnection, L.L.C.*, 187 FERC ¶ 61,051 (2024) (April 30 Order).

<sup>&</sup>lt;sup>12</sup> Id. P 25.

<sup>&</sup>lt;sup>13</sup> nGEM refers to PJM's anticipated Next Generation Markets clearing software. PJM Transmittal Letter at 1-2.

Independent System Operator, Inc. (MISO) and ISO New England Inc. (ISO-NE). The new market clearing engine will use multi-configuration-based models for resources to accommodate the unique characteristics of combined cycle, energy storage, and hybrid resources. PJM explains that these models "will best capture these resources' parameters and operational characteristics, allowing the market software to maximize the benefits these resources can provide—and do so in the most economical manner and so as to minimize the cost to load." PJM states that this new multi-configuration model—when combined with the existing multi-offer schedule framework and the need to evaluate each offer of each configuration as a distinct, logical resource—increases the size of the software's optimization problem such that the day-ahead energy market clearing process cannot be completed within the typical two-and-a-half-hour window after the close of the day-ahead bid submission period. 16

- 6. PJM proposes to resolve this timing issue by changing its offer selection process for the day-ahead and real-time energy markets. Specifically, PJM proposes to reduce the number of offer schedules per resource evaluated by the market-clearing engine as a result of market power mitigation or emergency conditions. Under PJM's proposal, PJM would evaluate resources on their cost-based offer if the market seller fails the TPS test, regardless of the emergency or non-emergency conditions. <sup>17</sup> In addition, for resources that pass the TPS test under emergency conditions, <sup>18</sup> PJM proposes to evaluate them on their market-based parameter-limited offer.
- 7. For resources that have multiple cost-based offers in the day-ahead energy market, typically dual fuel capable resources, PJM proposes to select the resource's cost-based offer that results in the lowest dispatch cost, based on the existing formula currently used in the real-time energy market (dispatch cost formula).<sup>19</sup>

<sup>&</sup>lt;sup>14</sup> *Id.* at 6.

<sup>&</sup>lt;sup>15</sup> *Id*.

<sup>&</sup>lt;sup>16</sup> See OA, Schedule 1, § 1.10 (Scheduling) (46.0.0).

<sup>&</sup>lt;sup>17</sup> PJM Transmittal Letter at 10.

<sup>&</sup>lt;sup>18</sup> Emergency conditions include the following conditions when PJM: (i) declares a Maximum Generation Emergency; (ii) issues a Maximum Generation Emergency Alert, Hot Weather Alert, Cold Weather Alert; or (iii) schedules units based on the anticipation of a Maximum Generation Emergency, Maximum Generation Emergency Alert, Hot Weather Alert, or Cold Weather Alert for all, or any part, of an Operating Day. *Id.* at 10.

<sup>&</sup>lt;sup>19</sup> *Id*. at 14.

- 8. PJM states that the proposed revisions address nGEM's computational time issues by effectively allowing the clearing optimization engine to consider only one offer schedule per resource for the purposes of market power mitigation. PJM states that, with the proposed revisions, the nGEM clearing engine will be able to incorporate various operating characteristics of combined cycle, energy storage, and hybrid resources in the future. PJM also states that the crossing offer curves scenario no longer exists under this proposal because PJM would only consider the cost-based offer for resources that fail the TPS test, precluding the potential market power issues the Commission raised in the April 30 Order. Finally, PJM notes that the current structure of submitting offers—market-based, market-based parameter limited, and cost-based offers—by Market Participants will remain intact. <sup>21</sup>
- 9. PJM states in its transmittal that it expects Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM, (Market Monitor) to protest the filing on the basis that, under extremely limited circumstances when sellers have multiple cost-based offers, the proposed dispatch cost formula may not result in the lowest cost-based offer because it chooses an offer based on the lowest total dispatch cost at EcoMin.<sup>22</sup> PJM states the Market Monitor had an alternative proposal that would allow the market seller to designate which cost-based offer should be used in the day-ahead energy market commitment, rather than PJM using the dispatch cost formula.
- 10. PJM argues that the Market Monitor incorrectly presumes that the market seller has control over the economics of fuel prices and can choose which cost-based offer to submit. PJM maintains that market sellers cannot exercise market power over the selection process given that PJM would only be selecting among cost-based offers, which PJM argues are submitted in accordance with Fuel Cost Policies that are reviewed by the Market Monitor and approved by PJM.<sup>23</sup>

<sup>&</sup>lt;sup>20</sup> *Id.* at 11-12.

<sup>&</sup>lt;sup>21</sup> *Id*. at 15.

<sup>&</sup>lt;sup>22</sup> According to PJM, during the stakeholder discussions, the Market Monitor argued that in rare circumstances where a resource's oil schedule may be cheaper than the gas schedule for certain hours in an Operating Day, PJM's cost-based offer selection could commit a resource on its gas schedule. *Id.* at 17-18.

<sup>&</sup>lt;sup>23</sup> Each resource is required to have a Fuel Cost Policy, developed in accordance with OA, Schedule 2. PJM and the Market Monitor both review a resource's Fuel Cost Policy, and PJM consults with the Market Monitor and considers its input in determining whether to approve a given policy. *Id.* at 17 n.39 (citing OA, Schedule 2, § 2.2 (Fuel Cost Policy Approval Process), § 2.2(c)).

11. PJM requests that the Commission grant waiver of prior notice requirements and accept the revisions with an indefinite effective date of December 31, 9998.<sup>24</sup> PJM states that, at least 30 days in advance of implementing nGEM, it would submit a filing to notify the Commission of when these revisions will be in effect. PJM states that good cause exists to grant waiver of the notice requirements because nGEM is a major technology initiative to replace PJM's existing market clearing platform and will be the product of a multi-year partnership between PJM, ISO-NE, MISO, and software developer GE to develop a core platform common to each entity that will be customized to each's market rules. PJM states that, given the time and effort required to develop the nGEM software, PJM is proposing these revisions and seeking Commission approval now to allow these revisions to be coded into the initial nGEM software and avoid unnecessary duplication that would occur if PJM proposed these revisions later in the nGEM development process or after it goes live.<sup>25</sup>

# III. Notice and Responsive Pleadings

- 12. Notice of PJM's August 28, 2024 filing was published in the *Federal Register*, 89 Fed. Reg. 72,391 (Sept. 5, 2024), with interventions and comments due on or before September 18, 2024.
- 13. The Market Monitor filed a timely motion to intervene and protest, and timely motions to intervene also were submitted by: LS Power Development, LLC; New Jersey Board of Public Utilities; Rockland Electric Company; American Electric Power Service Corporation; Old Dominion Electric Cooperative; Public Citizens, Inc.; Vistra Corp. (Vistra); Calpine Corporation; FirstEnergy Service Company; <sup>26</sup> and Constellation Energy Generation, LLC. PJM filed an answer to the Market Monitor's protest. The Market Monitor filed an answer to PJM's answer.

### A. Comments and Protests

14. Vistra urges the Commission to accept the filing, while the Market Monitor requests that the Commission accept the filing subject to conditions.<sup>27</sup> Both Vistra and

<sup>&</sup>lt;sup>24</sup> *Id*. at 19.

<sup>&</sup>lt;sup>25</sup> *Id.* at 20.

<sup>&</sup>lt;sup>26</sup> FirstEnergy Service Company moves to intervene as agent for its franchised public utility affiliates Ohio Edison Company, FirstEnergy Pennsylvania Electric Company, Jersey Central Power & Light Company, Monongahela Power Company, and The Potomac Edison Company.

<sup>&</sup>lt;sup>27</sup> Market Monitor Protest at 6.

the Market Monitor agree with PJM that PJM's proposal corrects the market power mitigation problem the Commission identified in PJM's previous filing.<sup>28</sup> The Market Monitor states that PJM's proposal will ensure PJM's fleet is available and flexible to the maximum extent possible during extreme conditions should the identified issues be corrected.<sup>29</sup>

While largely supporting the filing, the Market Monitor requests that, for market 15. sellers submitting multiple cost-based offers, the Commission require PJM to modify the proposal such that the market seller selects the cost-based offer that is the most economic for the operating day, rather than PJM selecting an offer based on the dispatch cost formula.<sup>30</sup> The Market Monitor contends that the Commission rejected PJM's proposal to use a formula based on the cost of operating a unit at EcoMin to choose among offers in the April 30 Order, and PJM's instant proposal relies on this same dispatch cost formula for cases where units that fail the TPS test have multiple cost-based offers.<sup>31</sup> The Market Monitor argues that there are certain circumstances, which have occurred in the past, under which the dispatch cost formula will not select the true least cost offer (specifically, when gas is more economic during part of the day and oil is more economic during the remainder).<sup>32</sup> The Market Monitor argues PJM's proposal could therefore result in such resources being committed based on an uneconomic fuel.<sup>33</sup> The Market Monitor explains that 10% of resources in PJM's day-ahead energy market use multiple cost-based offers, which the Market Monitor argues is not an insignificant number. The Market Monitor clarifies that, historically, days when gas is more economic during part of the operating day, and oil more economic during the remainder, tend to occur on days surrounding winter storms and days with Cold Weather Alerts, when significant generation is needed.<sup>34</sup> The Market Monitor explains that, under PJM's proposal, the only way a generator can avoid commitment on the uneconomic fuel type when it has a lower dispatch cost is to make one of the fuel types unavailable during the time of day

<sup>&</sup>lt;sup>28</sup> Market Monitor Protest at 1; Vistra Comments at 6-7.

<sup>&</sup>lt;sup>29</sup> Market Monitor Protest at 3.

<sup>&</sup>lt;sup>30</sup> *Id.* at 6.

<sup>&</sup>lt;sup>31</sup> *Id*.

<sup>&</sup>lt;sup>32</sup> *Id.* at 3-4 (referencing PJM Transmittal Letter at 18-19).

 $<sup>^{33}</sup>$  *Id.* at 5.

<sup>&</sup>lt;sup>34</sup> *Id.* at 4.

when it is uneconomic.<sup>35</sup> However, the Market Monitor argues that this would deprive PJM of important fuel availability information. The Market Monitor disagrees with PJM that allowing market sellers to indicate the more economic offer to PJM would allow the exercise of market power, arguing the market rules protect against market manipulation by dual fuel units.<sup>36</sup>

- 16. The Market Monitor argues the Commission should accept PJM's filing subject to PJM proposing to implement its revised offer schedule selection process by a date certain.<sup>37</sup> The Market Monitor argues that PJM's proposal will correct a flaw in the existing Tariff that allows the exercise of market power and should be implemented as soon as feasible.<sup>38</sup> The Market Monitor further states that the indefinite effective date is based on the future implementation of nGEM, which may not come to pass.<sup>39</sup>
- 17. Vistra states that the Market Monitor raises a hypothetical scenario that only occurs under a very limited set of circumstances and that the Market Monitor's proposed solution could result in the same outcome as PJM's proposal. Vistra agrees with PJM that market sellers do not have control over fuel prices or the ability to choose which offer they will submit. Finally, Vistra states that the Market Monitor's proposed solution is inferior to PJM's, and adds that the Commission's just and reasonable standard does not require PJM's proposal to be "the most just and reasonable among all possible alternatives."

## B. PJM's Answer

18. In its answer, PJM reiterates that the Market Monitor's concerns are limited to resources that submit multiple cost-based offer schedules and that, in these

<sup>&</sup>lt;sup>35</sup> *Id.* at 5.

<sup>&</sup>lt;sup>36</sup> *Id.* at 6 (citing OA, Schedule 2, § 1.3 (Application of Cost Components to Three-Part Cost-based Offers)), § 1.3(d)).

<sup>&</sup>lt;sup>37</sup> *Id.* at 6-7.

<sup>&</sup>lt;sup>38</sup> *Id.* at 2-3, 6-7.

<sup>&</sup>lt;sup>39</sup> *Id.* at 7.

<sup>&</sup>lt;sup>40</sup> Vistra Comments at 6-8.

<sup>&</sup>lt;sup>41</sup> *Id.* at 8 (citing PJM Transmittal Letter at 18).

<sup>&</sup>lt;sup>42</sup> Id. (citing PJM Interconnection, L.L.C., 147 FERC ¶ 61,103, at P 59 (2014); see Cities of Bethany v. FERC, 727 F.2d 1131, 1136 (D.C. Cir. 1984)).

circumstances, a market seller could not exercise market power because cost-based offers already reflect the resources' actual cost of producing energy. Specifically, PJM explains that cost-based offers must be submitted in accordance with the rules pertaining to cost-offer development provided in the OA, Schedule 2, with market sellers subject to penalties if their cost-based offers do not align with the requirements specified in the relevant governing documents or the approved Fuel Cost Policy pursuant to OA, Schedule 2, section 6.1.<sup>43</sup>

- 19. PJM also states that market sellers may not know with certainty which cost-based offer schedule will actually be the least cost schedule for the entire Operating Day before commitments are made in the day-ahead energy market. PJM states that, as a result, under the Market Monitor's proposal it would still be possible for market sellers to select a cost-based offer that is not actually the least cost schedule throughout the Operating Day. PJM states that, rather than subjecting market sellers to potential enforcement referrals for incorrectly guessing which fuel schedule may actually result in the cheapest schedule, a systematic approach of always selecting a cost-based offer based on the lowest total dispatch cost is a better solution. 45
- 20. PJM also explains that its proposal effectively allows for the Market Monitor's alternative proposal because market sellers can already choose to make only one cost-based schedule available under the current rules, and that PJM's proposal simply adds another safeguard in the event multiple cost-based offers are made available to PJM. In such cases, PJM's proposal would select the cost-based schedule that represents the lowest total dispatch cost in an effort to achieve the most cost-effective commitment.
- 21. PJM reiterates that it exercised its exclusive section 205 filing rights granted under the PJM Tariff in submitting this filing and that, under section 205 of the FPA, the inquiry need not demonstrate whether one proposal is more just and reasonable than the other.<sup>47</sup> PJM states that the Market Monitor has not provided, and cannot provide, any evidence that the selection of cost-based offers using the lowest total dispatch cost will

<sup>&</sup>lt;sup>43</sup> PJM Answer at 2.

<sup>&</sup>lt;sup>44</sup> *Id*. at 2-3.

<sup>&</sup>lt;sup>45</sup> *Id*. at 3.

<sup>&</sup>lt;sup>46</sup> *Id*.

<sup>&</sup>lt;sup>47</sup> *Id*. at 4.

result in the exercise of market power, which was the underlying concern that the Commission had with PJM's proposal in the April 30 Order. 48

PJM answers that its proposed December 31, 9998 effective date is appropriate 22. and necessary. PJM maintains that requesting an undefined effective date is appropriate for this proposal because PJM expects to implement the proposed changes when nGEM is placed into production for both the day-ahead and real-time energy markets and that, at this time, the exact implementation date for nGEM is not known.<sup>49</sup> PJM states that it would be inappropriate to implement the proposed changes through the existing market clearing engine because it would require focusing limited resources on updating the current system, which is already scheduled to be retired once nGEM is placed in service.<sup>50</sup> PJM states that it intends to implement the proposed changes as soon as nGEM is placed into production for both the day-ahead and real-time energy markets regardless of the status of the multi-configuration based model.<sup>51</sup> PJM states that the Commission recently reviewed PJM's existing market power mitigation rules in the energy market and did not find the existing Tariff to be unjust or unreasonable, and there is no reason PJM should be required to hastily implement the proposed changes prior to implementing nGEM.52

### C. Market Monitor's Answer

23. In its answer to PJM's answer, the Market Monitor reiterates that there is no reason to delay implementation of PJM's filing because it will increase the efficiency of the day-ahead energy market solution, increase the efficiency of the energy market, and protect the market from exercises of market power.<sup>53</sup> The Market Monitor states that PJM acknowledges that its filing will improve its current process and fails to support its claim that immediate implementation would require significant resources.<sup>54</sup>

<sup>&</sup>lt;sup>48</sup> *Id.* (citing April 30 Order, 187 FERC ¶ 61,051 at P 26).

<sup>&</sup>lt;sup>49</sup> *Id.* at 5.

<sup>&</sup>lt;sup>50</sup> *Id*.

<sup>&</sup>lt;sup>51</sup> *Id*.

<sup>&</sup>lt;sup>52</sup> *Id.* at 5-6.

<sup>&</sup>lt;sup>53</sup> Market Monitor Answer at 2.

<sup>&</sup>lt;sup>54</sup> *Id.* at 3 (citing PJM Transmittal Letter at 17 and PJM Answer at 5).

24. The Market Monitor reiterates that PJM's proposed use of the dispatch cost formula to choose offers will result in errors and should be removed from the proposed Tariff revisions.<sup>55</sup> The Market Monitor argues that market sellers can perform the same calculation as PJM to determine which cost-based offer is lower cost because it does not require proprietary information.<sup>56</sup> The Market Monitor disputes PJM's assertion that the Market Monitor's proposal is no better than PJM's proposal for handling cases of multiple cost-based offers because the Market Monitor argues that its proposal allows for sellers to use the dispatch cost formula if it chooses, and it allows for other methods that would be more accurate for choosing among multiple cost-based offers.<sup>57</sup> The Market Monitor reiterates that the Commission should require PJM to eliminate its proposed provision that requires PJM, rather than generation owners, to choose the appropriate cost-based offer.<sup>58</sup>

### IV. Discussion

### A. Procedural Matters

- 25. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2024), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.
- 26. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2024), prohibits an answer to a protest or an answer unless otherwise ordered by the decisional authority. We accept PJM's and the Market Monitor's answers because they provided information that assisted us in our decision-making process.

### **B.** Substantive Matters

27. We find that PJM's proposed revisions to its Tariff and OA are just and reasonable. We grant PJM's request for waiver of the Commission's 120-day notice requirement for good cause shown<sup>59</sup> and accept the proposed Tariff and OA revisions with effective dates of October 28, 2024 and December 31, 9998, as requested.

<sup>&</sup>lt;sup>55</sup> *Id.* at 5.

<sup>&</sup>lt;sup>56</sup> *Id.* at 5

<sup>&</sup>lt;sup>57</sup> *Id.* at 5-6 (citing PJM Answer at 3).

<sup>&</sup>lt;sup>58</sup> *Id.* at 6.

<sup>&</sup>lt;sup>59</sup> 18 C.F.R. § 35.3(a)(1) (2024).

- 28. PJM's proposal to revise its offer selection process will allow for implementation and use of the nGEM clearing engine, while providing protection against the potential exercise of market power. Specifically, we find that PJM's proposal to limit market sellers' offer schedules under various operating conditions would significantly reduce the computational time needed for the nGEM software to consider the various parameters and operating characteristics of combined cycle, energy storage, and hybrid resources that are not currently considered in PJM's market clearing engine. Further, we find that PJM's proposal addresses the Commission's market power concerns in the April 30 Order because PJM would use only the cost-based offer when a resource fails the TPS test, which would avoid the crossing offer curves scenario and the ability for market sellers to exercise market power.
- 29. The Market Monitor contends that in some circumstances, where a generator can operate on multiple fuels and thus may submit multiple cost-based offers, PJM's proposed dispatch cost formula may not select the actual least cost offer that results in the lowest overall system production cost over the 24-hour optimization window of the day-ahead energy market or over the operating day as the real-time energy market is conducted (specifically when gas is more economic during part of the day and oil is more economic during the remainder). However, we find that because the cost-based offers must be determined in advance of the market seller knowing actual fuel prices and fuel availability, PJM may be unable to determine the actual least cost cost-based offer for purposes of clearing its day-ahead energy market and real-time energy market. Given this uncertainty, we find that it is reasonable for PJM to use the dispatch cost formula to determine which cost-based offer to consider from a resource with multiple cost-based offers in its market clearing optimization software for the day-ahead energy market and the real-time energy market. Therefore, we conclude that PJM's proposal addresses the Commission's market power concerns articulated in April 30 Order and is just and reasonable. Having found PJM's proposal to be just and reasonable, we need not address the Market Monitor's proposed alternative. 60
- 30. Contrary to the Market Monitor's contention, we find that PJM's proposal is not inconsistent with the Commission's rejection in the April 30 Order of PJM's previous proposal to use a formula based on the cost of operating a unit at EcoMin to choose

<sup>60</sup> N.Y. State Pub. Serv. Comm'n v. FERC, 104 F.4th 886 (D.C. Cir. 2024) ("FERC must accept any proposed rates that are just and reasonable—even if the current rates might already be reasonable or if other optional rate designs might be 'more or less reasonable' than the utility's selected rate schedule.") (citing City of Bethany v. FERC, 727 F.2d at 1136 (when determining whether a rate was just and reasonable, the Commission properly did not consider "whether a proposed rate structure is more or less reasonable than alternative rate designs"); City of Winnfield v. FERC, 744 F.2d 871, 874-75 (D.C. Cir. 1984)).

among offers in the day-ahead energy market and real-time energy market. The Commission rejected that filing because the proposal could have resulted in the crossing offer curves scenario—that is, the proposal could have selected a market seller's market-based offer when that offer is less than its cost-based offer at EcoMin even though the market-based offer would exceed the cost-based offer at later points on the curve, thus giving market sellers the ability to exercise market power. PJM's instant proposal eliminates the possibility of the crossing offer curves scenario because it no longer considers market-based offers when a market seller fails the TPS test.

31. The Market Monitor contends that the Commission should require PJM to specify a date certain at which these revisions will become effective. However, as PJM explains, these revisions are dependent on PJM's ability to implement its nGEM software, which has an unknown implementation date. Therefore, we find that PJM has demonstrated good cause for waiver of the Commission's prior notice requirements. We believe an undefined effective date is reasonable and recognize PJM's commitment to implement the proposed changes as soon as nGEM is placed into production for both the real-time energy market and day-ahead energy market regardless of the status of the multiconfiguration based model. Accordingly, we direct PJM to make an informational filing notifying the Commission of the actual effective date of the proposed Tariff and OA revisions no less than 30 days prior to the date PJM implements the proposed Tariff and OA revisions.

## The Commission orders:

(A) PJM's proposed Tariff and OA revisions are hereby accepted, to become effective October 28, 2024 and December 31, 9998, as discussed in the body of this order.

<sup>&</sup>lt;sup>61</sup> April 30 Order, 187 FERC ¶ 61,051 at PP 24-25 (rejecting PJM's filing because "PJM has not explained how its proposal would sufficiently protect against the ability to exercise market power in the Day-ahead Energy Market," and finding that "[w]e agree with the IMM and OPSI that, under PJM's proposal, Market Sellers may be able to shift the clearing price away from a competitive level by submitting a market-based offer that includes a lower offer price and dispatch cost at EcoMin than its cost-based offer but much higher offer prices at MW output levels above EcoMin than its cost-based offer (i.e., the 'crossing offer curves' scenario).").

<sup>&</sup>lt;sup>62</sup> PJM Answer at 5. Until these changes are implemented, PJM will continue to operate under its currently-effective tariff records on file.

(B) We direct PJM to make an informational filing notifying the Commission of the actual effective date of the proposed Tariff and OA revisions no less than 30 days prior to the date PJM implements the proposed Tariff and OA revisions. PJM should use the eTariff Type of Filing Code 150 - Data Response/Supplement the Record.

By the Commission.

(SEAL)

Carlos D. Clay, Acting Deputy Secretary.