

155 FERC ¶ 61,281  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Cheryl A. LaFleur, Tony Clark,  
and Colette D. Honorable.

PJM Interconnection, L.L.C.  
PJM Interconnection, L.L.C.

Docket No. EL14-94-001  
Docket No. ER16-1291-000  
Not  
Consolidated

ORDER ON REHEARING AND COMPLIANCE

(Issued June 16, 2016)

1. On March 1, 2016, the Commission issued an order finding, under section 206 of the Federal Power Act (FPA),<sup>1</sup> that PJM Interconnection, L.L.C.'s (PJM) use of the cost-based energy offer cap as the sole measure of short-run marginal cost in calculating capacity market offer caps, as set forth in its Open Access Transmission Tariff (Tariff), was unjust and unreasonable, and unduly discriminatory or preferential.<sup>2</sup> The Commission established the just and reasonable rate and required PJM to submit a compliance filing to place that rate in its Tariff. The Independent Market Monitor for PJM (Market Monitor) has sought clarification or, in the alternative, rehearing of the March 2016 Order.<sup>3</sup> PJM has submitted the requisite compliance filing.

2. In this order, we deny clarification and rehearing, and accept the compliance filing.

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<sup>1</sup> 16 U.S.C. § 824e (2012).

<sup>2</sup> *PJM Interconnection, L.L.C.*, 154 FERC ¶ 61,151 (2016) (March 2016 Order).

<sup>3</sup> By Monitoring Analytics, Inc., in its capacity as the Market Monitor.

## I. Background

3. The background of the filing can be found in the March 2016 Order. As relevant here, Section 6 of Tariff Attachment DD.6 includes the provisions for market power mitigation that apply to PJM's Reliability Pricing Model (RPM).<sup>4</sup> Market power mitigation in the RPM capacity market entails limiting the capacity offers of all existing capacity resources to either the default or unit-specific value to prevent economic withholding that could otherwise result in market clearing capacity prices exceeding a competitive level.

4. Section 6.4(a) of Tariff Attachment DD.6 provides that the Market Seller Offer Cap for an existing generation capacity resource shall be the Avoidable Cost Rate (ACR) less the Projected PJM Market Revenues.<sup>5</sup> The Tariff specifies a formula for calculating the ACR, and provides for determination of the Projected PJM Market Revenues. In determining Projected PJM Market Revenues, the Tariff provides:

Projected PJM Market Revenues for any generation capacity resource to which the avoidable cost rate is applied shall include all actual unit-specific revenues from PJM energy markets, ancillary services, and unit-specific bilateral contracts from such generation capacity resource, net of marginal costs for providing such energy (*i.e., costs allowed under cost-based offers pursuant to Section 6.4 of Schedule 1 of the Operating Agreement*) and ancillary services from such resource.<sup>6</sup>

Projected PJM Market Revenues are calculated by taking a rolling simple average of energy and ancillary services market revenues from the three most recent whole calendar years, net of marginal costs for this time period. Section 6.4 of Schedule 1 provides that

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<sup>4</sup> See PJM Interconnection, L.L.C., Intra-PJM Tariffs, OATT ATTACHMENT DD.6. MARKET POWER MITIGATION (11.0.0) (OATT ATTACHMENT DD.6), <http://etariff.ferc.gov/TariffSectionDetails.aspx?tid=1731&sid=184874>.

<sup>5</sup> ACR is the fixed annual operating costs and incremental investments that allow a generation resource to remain in commercial operation to be available to PJM as a Capacity Resource.

<sup>6</sup> OATT ATTACHMENT DD.6, Section 6.8(d), emphasis added. See PJM Interconnection, L.L.C., Intra-PJM Tariffs, OA Schedule 1 Sec 6.4 Offer Price Caps (8.0.0) (OA Schedule 1 Sec 6.4 Offer Price Caps), <http://etariff.ferc.gov/TariffSectionDetails.aspx?tid=1731&sid=192407>. See also PJM Interconnection, L.L.C., Intra-PJM Tariffs, Schedule 2, OA Schedule 2, 2.1.0, <http://etariff.ferc.gov/TariffSectionDetails.aspx?tid=1731&sid=100696>.

cost-based offers are calculated based on the incremental operating cost of the generation resource plus a 10 percent adder.<sup>7</sup>

5. Under these provisions, an increase in the short-run marginal cost figure results in a lower value for net energy and ancillary services revenues. The lower net energy and ancillary services revenue in turn results in a higher Market Seller Offer Cap for capacity the generator can offer into the RPM auction.

6. On August 25, 2014,<sup>8</sup> the Commission established paper hearing procedures pursuant to section 206 of the FPA to investigate whether the provisions for calculating Projected PJM Market Revenues in the determination of Market Seller Offer Caps had become unjust and unreasonable, and unduly discriminatory or preferential. At the conclusion of the paper hearing, in the March 2016 Order, the Commission found PJM's Tariff to be unjust and unreasonable because it allows the cost-based energy offer cap to be used as the *sole* measure of short-run marginal cost in calculating capacity market offer caps even when the market-based offer was used in the energy market.<sup>9</sup> The Commission found that under conditions where sellers lack market power and a uniform market clearing price is paid to all suppliers, a competitive seller of energy maximizes its profits by offering energy at its short-run marginal cost. Thus, the Commission held that an accepted non-zero energy offer that is less than the cost-based offer indicates that the seller's short-run marginal cost is less than the predetermined cost-based offer cap.<sup>10</sup> The Commission further noted that when the market-based offer is less than fuel and environmental costs, a cost-based offer legitimately can be used to reflect marginal cost, since the generator would be losing money for each MW produced, so a reasonable projection of its energy and ancillary services revenue should reflect such a reduction.<sup>11</sup> Moreover, the Commission found that PJM's existing tariff is unjust and unreasonable insofar as it uses the cost-based offer whenever the market-based offer exceeds the cost-based offer even in the circumstance in which the resource's offer is not mitigated. The

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<sup>7</sup> OA Schedule 1 Sec 6.4 Offer Price Caps, Section 6.4.2, <http://etariff.ferc.gov/TariffSectionDetails.aspx?tid=1731&sid=192407>. The cost-based offer cap is an estimate of a resource's short-run marginal cost and includes a 10 percent adder or more, depending on whether the resource is determined to be a Frequently Mitigated Resource. OATT Att. K-Appendix Sec 6.4 Offer Price Caps (8.0.0) Section 6.4.2, <http://etariff.ferc.gov/TariffSectionDetails.aspx?tid=1731&sid=192408>.

<sup>8</sup> *PJM Interconnection, L.L.C.*, 148 FERC ¶ 61,140 (2014).

<sup>9</sup> March 2016 Order, 154 FERC ¶ 61,151 at P 51.

<sup>10</sup> *Id.* P 53.

<sup>11</sup> *Id.* P 55.

Commission concluded that as long as the resource is not exercising market power, market-based offers above the cost-based offer also represent marginal cost, based on the same economic principles noted above.<sup>12</sup>

7. The Commission concluded that PJM's use of cost-based offers in all circumstances to reflect marginal cost is at odds with the rest of PJM's market design and is unjust and unreasonable. The Commission noted that, in the energy market, when a generation resource fails the three pivotal supplier test and submits a non-zero market-based offer less than its cost-based offer cap, PJM uses the lower, market-based offer, not the cost-based offer, as the basis for determining the resource's commitment and dispatch. When a resource is not subject to market power mitigation, PJM uses its offer as the basis for the resource's commitment and dispatch. In both cases, PJM's energy market relies on the offer, not the cap, as reflecting the resource's short-run marginal cost. The Commission also noted that in a well-functioning market, a market-based offer by a company without market power should represent the company's determination of its marginal cost.<sup>13</sup>

8. Having found the use of the cost-based offer as the sole measure of marginal cost unjust and unreasonable, the Commission in the March 2016 Order required PJM to revise its tariff to use the resource's non-zero market-based offer to reflect marginal costs, except in two circumstances in which the cost-based offer should be used: 1) when the resource is mitigated and its market-based offer is above the cost-based offer cap under PJM's Tariff, as the market-based offer in this circumstance may reflect the exercise of market power; and 2) when the market-based offer is less than the resource's fuel and environmental costs, since the generator is losing money for each MW produced, a reasonable projection of its energy and ancillary services revenue should reflect such a reduction.<sup>14</sup> The Commission directed PJM to submit a compliance filing with Tariff language consistent with the Commission's findings.

## **II. Request for Clarification or Rehearing**

9. While the Market Monitor generally supports the March 2016 Order, the Market Monitor contends that the specific relief is flawed because it requires the use of market-based offers as the measure of short-run marginal costs when they are higher than cost-based offers. The Market Monitor contends that the extent to which a market-based offer exceeds a cost-based offer constitutes markup, and markup is not part of a competitive

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<sup>12</sup> *Id.* P 56.

<sup>13</sup> *Id.* P 58 and n. 75.

<sup>14</sup> *Id.* P 59.

offer. In support of its assertion, the Market Monitor presents three lines of argument: 1) if a “self-scheduled and dispatchable” resource contributes incremental MW to relieve a transmission constraint, and the owner of that resource fails the three pivotal supplier test for local market power, the resource is not offer-capped and the resource’s market-based offer sets price;<sup>15</sup> 2) market-based offers above cost-based offers are not competitive;<sup>16</sup> and 3) some market-based offers can and do include markup over their respective cost-based offers.<sup>17</sup>

10. The Market Monitor contends that units that are self-scheduled at their economic minimum output but are available for economic dispatch up to their economic maximum are not offer capped by PJM when they are dispatched between their economic minimum and economic maximum based on their market-based offers. Thus, the Market Monitor argues that the exception in the March 2016 Order requiring the use of cost-based offers would not apply, even though these units may have the ability and incentive to offer above marginal cost.

11. The Market Monitor states that there is no support in the record or in economic logic for using a market-based offer that exceeds a cost-based offer. The Market Monitor argues that markup should not be included as a short-run marginal cost in the calculation of net revenues, and the lower of the cost-based or market-based offer is the most accurate measure of short-run marginal cost. Accordingly, the Market Monitor requests that the Commission either clarify that markup should be excluded from the definition of short-run marginal costs, or grant rehearing to find that the short-run marginal cost is limited to the lower of the market-based offer or cost-based offer except where the market-based offer is less than fuel and environmental costs.

12. The Market Monitor states that the PJM market is well-functioning and generally produces competitive results, but the data shows that market-based offers do, at times, exceed cost-based offers. As a result, the Market Monitor contends, market discipline does not always result in market-based offers at short-run marginal cost in the PJM market.

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<sup>15</sup> Market Monitor March 28, 2016 Request for Rehearing at 8. According to the Market Monitor, “self scheduled and dispatchable” units, which are units that are self-scheduled at their economic minimum and are available for economic dispatch up to their economic maximum, have been exempt from application of PJM’s market power mitigation rules.

<sup>16</sup> *Id.* at 5.

<sup>17</sup> *Id.* at 10.

### **III. Compliance Filing**

13. On March 30, 2016, PJM submitted a compliance filing in response to the March 2016 Order to apply the revised tariff to the calculation of Projected PJM Market Revenues after the date of that order.<sup>18</sup>

14. Notice of PJM's filing was published in the *Federal Register*, 81 Fed. Reg. 19,600 (2016), with interventions, protests and comments due on or before April 20, 2016. Interventions were timely filed by NRG Power Marketing, LLC (NRG) and GenOn Energy Management, LLC (GenOn), and Exelon Corp (Exelon). No protests were filed.

### **IV. Discussion**

15. We deny the request for clarification or, in the alternative, rehearing. As previously noted in the March 2016 Order, the Commission found that PJM should use the resource's non-zero market-based offer to reflect marginal costs, except in two circumstances in which the cost-based offer should be used: 1) when the resource is mitigated and its market-based offer is above the cost-based offer cap under PJM's Tariff, and 2) when the market-based offer is less than the resource's fuel and environmental costs. The Market Monitor asserts that the specific relief the Commission ordered is flawed because it requires the use of market-based offers as the measure of marginal cost when they are higher than cost-based offers.<sup>19</sup>

16. Under the PJM tariff construct, market-based offers that are not mitigated in the energy market are considered competitive offers and can set the market clearing energy price. In that situation, when a market-based offer is higher than a cost-based cap, that offer is deemed competitive and is included in the bid stack. In the March 2016 Order, the Commission recognized that when a resource is not subject to market power mitigation, PJM uses its offer as the basis for the resource's commitment and dispatch. The Commission noted that in a well-functioning market, a market-based offer by a company without market power should represent the company's determination of its marginal costs. The Market Monitor states that market discipline does not always result in market-based offers at short-run marginal costs in the PJM markets. The Market Monitor acknowledges that the PJM market is well-functioning and generally produces competitive results, but states that it is not perfect, and the data shows that market-based offers do, at times, exceed cost based offers. The Market Monitor contends that the rules

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<sup>18</sup> PJM Interconnection, L.L.C., FERC FPA Electric Tariff, Intra-PJM Tariffs, [OATT ATT DD.6, OATT ATTACHMENT DD.6. MARKET POWER MITIGATION, 12.0.0](#), effective March 1, 2016.

<sup>19</sup> Market Monitor March 28, 2016 Request for Rehearing at 1.

in the March 2016 Order for calculating net revenues weaken the incentives for competitive behavior, and the use of the lower of cost-based or market-based offers in the net revenue calculation would strengthen those incentives.

17. We continue to find that, with limited exceptions, PJM should use, for the purpose of calculating a unit-specific capacity market offer cap, a resource's non-zero market-based offer to reflect its marginal costs.<sup>20</sup> First, we do not find that the Market Monitor has made the necessary connection between market-based offers by a company without market power and the use of lower cost-based offers as incentives to strengthen competitive behavior. Simply because a market-based offer exceeds a cost-based offer does not necessarily establish that the market-based offer fails to reflect a resource's marginal costs. To the contrary, in circumstances where a generator offer passes PJM's market power screens, a market-based offer is deemed to be the accurate reflection of the generator's marginal costs.<sup>21</sup> The Market Monitor has not demonstrated that PJM's market power screens, as a general matter, fail to adequately mitigate market power. As we recognized in the March 2016 Order, market-based offers are deemed a better indicator of marginal cost than cost-based offers when market power does not exist since cost-based offers are based on an administrative determination that may not always reflect true marginal costs.<sup>22</sup> Indeed, the Market Monitor recognizes that cost-based offers may not always be the best approximation of marginal cost, as it supports the use

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<sup>20</sup> We note that the Market Monitor submitted, for the first time on rehearing, substantial new evidence regarding what it considers deficiencies in mitigation in the PJM energy market. Other parties to the proceeding therefore did not have the opportunity to respond to this evidence. While we reject the Market Monitor's rehearing request on the merits, we strongly encourage parties to timely submit evidence to avoid potential due process concerns. See *PJM Interconnection, L.L.C.*, 121 FERC ¶ 61,173, at P 34-36 (2007) (rejecting new evidence presented on rehearing because it denies other parties the due process rights to address the new evidence).

<sup>21</sup> In order to protect against the possibility of the exercise of market power, cost-based offers, of necessity, are used in circumstances in which generators fail market power screens.

<sup>22</sup> See *PJM Interconnection, L.L.C.*, 154 FERC ¶ 61,151 at P 58, fn. 75. PJM's determination of cost-based rates utilizes costs plus 10 percent to reflect that costs may not represent marginal costs. *PJM Interconnection, L.L.C.*, 107 FERC ¶ 61,112, at P 26 (2004) (citing to an affidavit by the Market Monitor). The Commission has found also that even costs plus 10 percent may not be sufficient to enable recovery of its fixed costs over the long term for frequently mitigated units. See *PJM Interconnection, L.L.C.*, 107 FERC ¶ 61,112 at P 37.

of market-based offers when they are lower than cost-based offers and recognizes the need to adjust cost-based offers for fuel and environmental costs. Furthermore, as we pointed out in the March 2016 order, other RTO markets also rely on market-based offers in calculating capacity market mitigation levels.<sup>23</sup>

18. The Market Monitor also argues that the Commission should use the lower of a resource's cost-based and market-based offers by asserting the potential for some self-scheduled units to evade mitigation. The Market Monitor contends that because certain self-scheduled units are not offer-capped, their market-based offers may allow the units to circumvent the PJM market power mitigation rules. The Market Monitor contends that, if market-based offers that are higher than cost-based offers were used as a measure of marginal costs for net revenue calculations, such self-scheduled units would have an incentive to include high markups without the risk of offer capping or not clearing in the energy market. The Market Monitor concedes that the self-scheduled unit would not be eligible to be made whole in the energy market, while characterizing the risk from self-scheduling as limited to the extent revenues in any given hour do not compensate for its actual short run marginal cost. The Market Monitor contends that the results of such a mark-up is less dispatch, at the same time the unit benefits from higher offer caps in the capacity market.

19. We disagree that the Market Monitor's concern regarding a potential bidding behavior by some self-scheduled units warrants the Commission adopting a blanket rule to require the use of lower cost-based offers in place of unmitigated market-based offers for all resources. As the Market Monitor recognizes, there are meaningful risks associated with self-scheduling that serve as a disincentive to use self-scheduling as a means to limit potential mitigation. Notably, a self-scheduled unit risks not being dispatched and losing revenues if its higher offer does not clear, as well as not being made whole for that offer. In any event, the Market Monitor's evidence regarding self-scheduled units is best evaluated in an energy market proceeding in which all parties have an opportunity to address that evidence and the Market Monitor's assumptions.<sup>24</sup>

20. For the reasons stated above, we reject the Market Monitor's request for clarification, or in the alternative, rehearing. In addition, we accept PJM's compliance filing, effective March 1, 2016. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2015), the timely, unopposed motions to

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<sup>23</sup> See, e.g., NYISO Market Administration and Control Area Services Tariff, Attachment H §§ 23.3.1.4.1.1 – 23.3.1.4.1.3.

<sup>24</sup> The Market Monitor has, in fact, raised issues relating to mitigation of self-scheduled units in the energy market in another pending proceeding. Protest of the Independent Market Monitor for PJM, Docket No. ER16-372-000 (filed Dec. 14, 2015).

intervene of NRG, GenOn, and Exelon serve to make them parties to Docket No. ER16-1291-000.

The Commission orders:

(A) The Market Monitor's request for clarification, or in the alternative rehearing, is denied, as discussed in the body of this order.

(B) PJM's compliance filing is accepted effective March 1, 2016, as discussed in the body of this order.

By the Commission.

( S E A L )

Kimberly D. Bose,  
Secretary.