

**BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Offer Caps in Markets Operated by)
Regional Transmission Organizations and)
Independent System Operators)

Docket No. RM16-5-000

**COMMENTS OF THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

The Pennsylvania Public Utility Commission (PAPUC) herein files Comments in response to the Notice of Proposed Rulemaking (NOPR) issued January 21, 2016, by the Federal Energy Regulatory Commission (FERC or the Commission) and published in the Federal Register on March 4, 2016.

I. INTRODUCTION

In its NOPR, FERC is proposing to revise its regulations to require that each regional transmission organization (RTO) and independent system operator (ISO) cap each resource's incremental energy offer¹ to the higher of \$1,000/MWh or that resource's verified cost-based incremental energy offer. Under this proposal, verified cost-based incremental energy offers above \$1,000/MWh would be used for purposes of calculating Locational Marginal Prices (LMPs). FERC's NOPR arises from an earlier investigation into price formation.

¹ The incremental energy offer is the portion of a resource's energy supply offer that varies with the output of the generator.

On June 19, 2014, FERC initiated the price formation proceeding.² In initiating that proceeding, the Commission stated that there may be opportunities for the RTOs/ISOs to improve the energy and ancillary service price formation process. FERC Staff convened technical workshops on the following four issues: (1) use of uplift payments; (2) offer price mitigation and offer caps; (3) scarcity and shortage pricing; and (4) operator actions that affect prices.³ At the October 28, 2014 technical workshop, Commission Staff explored the \$1,000/MWh offer cap, including the purpose of the offer cap and the role it plays in market power mitigation.⁴ Based on the results of those technical workshops and additional FERC Staff review, the Commission initiated the instant rulemaking.

In the NOPR, the Commission preliminarily finds that the offer cap⁵ on incremental energy offers may no longer be just and reasonable for several reasons. The offer cap may unjustly prevent a resource from recouping its costs by not permitting that resource to include all of its short-run marginal costs within its energy supply offer. FERC states that the offer cap may result in unjust and unreasonable rates because it can suppress LMPs to a level below the marginal cost of production. Further, because of the offer cap, a resource with short-run marginal costs above that cap may choose not to offer its supply to the RTO/ISO, even though the market may be willing to purchase that

² *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice, Docket No. AD14-14-000 (June 19, 2014).

³ *Id.* at 1, 3-4.

⁴ See *Supplemental Notice of Workshop on Price Formation: Scarcity and Shortage Pricing, Offer Mitigation, and Offer Caps in RTO and ISO Markets*, Docket No. AD14-14-000 (Oct. 10, 2014).

⁵ The offer cap for purposes of this NOPR refers to the \$/MWh limit on day-ahead and real-time incremental energy offers, and not any limits or penalty rates that may apply in the capacity or ancillary services markets.

supply.⁶ FERC also found that, when several resources have short-run marginal costs above the offer cap but are unable to reflect those costs within their incremental energy offers due to the offer cap, the RTO/ISO is not able to dispatch the most efficient set of resources because it will not have access to the underlying costs associated with the multiple incremental energy offers above the offer cap.⁷

To remedy these potential problems, the Commission proposes to require that each RTO/ISO cap each resource's incremental energy offer to the higher of \$1,000/MWh or an incremental energy offer based on that resource's short-run marginal cost (cost-based incremental energy offer). Under the proposal: (i) the costs underlying each cost-based incremental energy offer above \$1,000/MWh must be verified before that offer could be used for purposes of calculating LMPs; (ii) the Market Monitoring Unit or the RTO/ISO, as prescribed in the RTO/ISO tariff and consistent with Order No. 719,⁸ must verify the costs within a cost-based incremental energy offer; and (iii) the proposed offer cap would be resource neutral, that is, any resource, regardless of fuel-type, would be eligible to submit a cost-based incremental energy offer above \$1,000/MWh.

⁶*Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. RM16-5, at PP 1-3 (2016). Resources that are subject to must-offer requirements, such as resources with a capacity supply obligation, are required to submit a supply offer to the energy market. Many resources are subject to must-offer requirements in either the day-ahead or real-time markets. The proposed reform would ensure that such a resource has an economic incentive that matches its tariff obligation. It would also provide an economic incentive to those resources that are not subject to a must-offer requirement.

⁷ *Id.* at 2.

⁸ *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281, at PP 370-375 (2008), order on reh'g, Order No. 719-A, FERC Stats. & Regs., ¶ 31,292 (2009), order on reh'g, Order No. 719-B, 129 FERC ¶ 61,252 (2009). See also 18 CFR 35.28(g)(3)(iii)(B) (2015).

FERC proposes to make a generic change to the offer cap applicable to all RTOs/ISOs through a rulemaking to avoid exacerbating seams issues. Seams issues could arise if one RTO/ISO has an offer cap that materially differed from a neighboring RTO/ISO's offer cap. Different offer caps in neighboring RTOs/ISOs could result in flows that depend on the level of the two offer caps as opposed to economics or reliability needs.⁹

The FERC NOPR requests comments on several topics, including, but not limited to:

- (1) Whether a hard cap on cost-based incremental energy offers used for purposes of calculating LMPs should be included in any final rule in this proceeding and, if so, whether the hard cap should equal \$2,000/MWh or another value;
- (2) The ability to timely verify the costs within incremental energy offers above \$1,000/MWh prior to the day-ahead or real-time market clearing process, including whether the verification of physical offer components is also necessary; and
- (3) Whether the Market Monitoring Unit or RTO/ISO may need additional information to ensure that all short-run marginal cost components that are difficult to quantify, such as certain opportunity costs, are accurately reflected in a resource's cost-based incremental energy offer and to the extent that RTOs/ISOs currently include an adder above cost in cost-based incremental energy offers, whether such an adder is appropriate for incremental energy offers above \$1,000/MWh.

II. SUMMARY OF PAPUC COMMENTS

The PAPUC's comments and associated recommendations to the NOPR emphasize the PJM RTO because that is the planning authority which most significantly

⁹ *Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. RM16-5, at P 3-4 (2016).

impacts the Pennsylvania retail market. However, at times and where appropriate, the comments provide recommendations that are applicable to all RTOs and ISOs subject to this NOPR. Further, the PAPUC's comments are also limited to the issues listed above and FERC's resource neutrality proposal, insofar as those matters have the greatest impact on Pennsylvania's retail markets.

The PAPUC comments may be summarized as follows:

- FERC should direct PJM stakeholders to develop a "circuit breaker" provision with an energy market revenue cap that would provide the necessary protections during uncontrollable and sustained outage events.
- The PAPUC agrees with FERC's proposal to require the Market Monitoring Unit or the RTO to verify the costs within a cost-based incremental energy offer above \$1,000/MWh before that offer is used to calculate LMPs. To do so effectively, FERC should also require that generator fuel policies be pre-approved in PJM by its Market Monitor.
- The PAPUC recommends that in considering what short-run marginal cost components are accurately reflected in a resource's cost-based incremental energy offers, FERC direct PJM to exclude unauthorized gas costs and penalties as approved costs. In addition, the Commission should consider more thoroughly the proper threshold value for incremental energy offer caps which trigger the attendant requirements for cost verification and that the offer be equal to the short-run marginal cost of the associated resource.
- The PAPUC urges the Commission to treat demand response (DR) resources as price takers that are not eligible to set LMP.

III. COMMENTS

A. Issue 1 - Whether a hard cap on cost-based incremental energy offers used for purposes of calculating LMPs should be included in any final rule in this proceeding and, if so, whether the hard cap should equal \$2,000/MWh or another value.

In December 2015, FERC approved PJM's proposed revisions to its tariff and Operating Agreement that increased PJM's cap on cost-based incremental energy offers used for purposes of calculating LMPs to \$2,000/MWh.¹⁰ The PJM filing was the product of a compromise stakeholder consensus that was intended to apply to the 2015-2016 Winter while FERC completed its current technical review and rulemaking of offer caps. In response, the PAPUC noted that "it does not oppose PJM's proposal to allow market-based bids equal to or less than cost-based bids to set LMP up to \$2,000/MWh, as it represents a compromise achieved through the stakeholder process."¹¹ However, the PAPUC expressed a concern about the lack of contingency provisions that would limit the application of the LMP cap during sustained outage events.¹² This concern was not alleviated in the approval of the PJM filing, and the PAPUC recommends that FERC address this issue in the instant rulemaking.

Specifically, FERC should direct PJM to institute a stop gap or a contingency plan should the PJM grid be subject to a sustained supply/demand imbalance as a result of a cyber-attack, physical attack, or an act of nature which could cause a sustained scarcity or

¹⁰ *Order Accepting Proposed Tariff and Operating Agreement Revisions*, Docket No. ER16-76-000 (2015).

¹¹ *Motion for Leave to Answer and Answer of the Pennsylvania Public Utility Commission in Support of Comments of the Independent Market Monitor*, Docket No. ER-16-76-000, at P 5 (hereinafter *PAPUC Answer*).

¹² *Id.* at 7.

precipitous increase in LMP markets that would last weeks or longer. Such a sustained market imbalance could result in market prices far in excess of actual production costs and cause permanent economic damage to homeowners and businesses throughout the affected regions. FERC should direct RTO stakeholders to develop a “circuit breaker” provision with an energy market revenue cap that would provide the necessary protections during uncontrollable and sustained outage events. As an example, under these circumstances, generators would be compensated based on their cost-based bids, which would not be used for purposes of calculating LMPs. Compensating generators at their cost-based bids without allowing them to set LMPs would be appropriate, because in situations of extraordinary, sustained outages, consumers would be protected from disproportionately bearing all risks of unforeseen events reflected in potential record-setting LMP prices, while generators would be fully compensated for performing.

One such example of a “circuit breaker,” for the protection of generators in capacity markets, is the stop-loss provisions of Capacity Performance. In 2015, PJM filed and FERC approved an annual Non-Performance Charge stop-loss limit equal to 1.5 times annual Net CONE.¹³ In proposing this cap on non-performance penalties, PJM asserted that such a provision was necessary given that the combination of an unusually high number of Emergency Actions and/or poor performance could lead to a total net charge liability that would be disproportionate to the risks that a resource reasonably

¹³ *Order on Proposed Tariff Revisions*, Docket Nos. ER15-623-000, EL15-41-000, at PP 164-166 (June 9, 2015).

should undertake in committing capacity.¹⁴ Similar to generation resources, it is vital that such protections be extended to end users. Failure to do so could seriously undermine the hard work achieved to date in fostering competitive market constructs by all parties engaged in this process. Additionally, such provisions are critical to “black sky” planning that should be in place should certain events occur.

Finally, in considering the implementation of a circuit breaker provision, FERC should be mindful that under conditions of sustained outages, energy market pricing signals become largely irrelevant. In such dire scenarios, transmission constraints and/or generation damage do not respond to price signals. Instead, the main consideration becomes the time required to repair the affected infrastructure. In such a situation, economic theory in energy markets breaks down, and only economic damage results from prolonged periods of extremely high LMPs. For these reasons, FERC should direct PJM to institute a contingency plan that addresses the above concerns.

B. Issue 2 - The ability to timely verify the costs within incremental energy offers above \$1,000/MWh prior to the day-ahead or real-time market clearing process, including whether the verification of physical offer components is also necessary.

The PAPUC agrees with FERC’s proposal to require the Market Monitoring Unit or the RTO to verify the costs within a cost-based incremental energy offer above \$1,000/MWh before that offer is used to calculate LMPs. In PJM, generators develop cost-based offers pursuant to PJM Manual 15: Cost Development Guidelines. If cost-based offers exceed \$1,000/MWh, they must be consistent with 1) Schedule 2 of the PJM

¹⁴ *Id.* at P 114.

Operating Agreement, 2) Manual 15, and 3) the market seller's fuel cost policy.¹⁵

Manual 15 does not require pre-approval of these policies by PJM or the Market Monitor before the generator offer is used to calculate LMPs, and, instead, cost verification occurs after the fact. FERC's proposal to require verification of the cost-based offers before they set LMP would be an improvement over the status quo, but to do so effectively, FERC should also require that generators' fuel policies be pre-approved. Such requirement would speed up the cost verification process, foster stability in the markets, and provide certainty to generators prior to submitting their offers.

Additionally, the PAPUC recommends that the PJM Market Monitor be responsible for the review, pre-approval, or rejection of fuel policies.¹⁶ This authority currently rests with PJM, while the role of the Market Monitor is to advise the generator and PJM.¹⁷ Such advisory role is counter to the charge of the Market Monitor to guard against market power and to mitigate market distortions. Furthermore, the Market Monitor is in the best position to assume this role, because it is the party best able to detect market manipulation and assess whether a generator is complying with its fuel policy. By contrast, PJM's role should be to ensure that markets function in accordance with its tariff.¹⁸

¹⁵ *Order Accepting Proposed Tariff and Operating Agreement Revisions*, Docket No. ER16-76-000, at P 41 (December 11, 2015).

¹⁶ The PAPUC notes that the ultimate authority to approve or reject fuel policies rests with FERC where a dispute has been brought for resolution by the Market Monitor, PJM, or a generator.

¹⁷ *Order Accepting Proposed Tariff and Operating Agreement Revisions*, Docket No. ER16-76-000, at P 47 (December 11, 2015).

¹⁸ The PAPUC adopts OPSI's specific recommendations in its comments submitted to this NOPR, as they relate to the division of labor between PJM and the Market Monitor in reviewing and verifying cost energy offers, as well as the proposed dispute resolution process for unverified cost energy offers.

Therefore, the PAPUC recommends that FERC direct PJM to make the tariff revisions necessary to require that fuel cost policies be preapproved by the Market Monitor.

- C. Issue 3 - Whether the Market Monitoring Unit or RTO/ISO may need additional information to ensure that all short-run marginal cost components that are difficult to quantify, such as certain opportunity costs, are accurately reflected in a resource's cost-based incremental energy offer and, to the extent that RTOs/ISOs currently include an adder above cost in cost-based incremental energy offers, whether such an adder is appropriate for incremental energy offers above \$1,000/MWh;**

The PAPUC recommends that in considering what short-run marginal cost components are accurately reflected in a resource's cost-based incremental energy offers, FERC direct PJM to exclude unauthorized gas costs and penalties as approved costs. Recent FERC precedent for such action exists, as just two months ago in its NYISO Order,¹⁹ the Commission approved NYISO's proposal to prohibit generators from including unauthorized natural gas costs and penalties in reference levels and to reject ex-post requests to recover costs associated with unauthorized natural gas use. The Commission reasoned as follows:

Allowing generators to recover costs and penalties associated with unauthorized natural gas consumption could jeopardize the reliability of natural gas pipeline and transmission systems and is therefore at odds with the reliability and costs benefits otherwise associated with allowing generators to recover actual fuel costs in reference levels.⁶⁰ Market Parties taking unauthorized natural gas will decrease pipeline

¹⁹ *Order Accepting Proposed Tariff Revisions Subject to Condition*, Docket No. ER16-168-000 (2016) (NYISO Order).

pressure and could lead to a loss of natural gas service for some customers, including other generators. Costs and penalties associated with unauthorized natural gas consumption are designed to “provide an economic disincentive to shippers that might take actions which could threaten the operational integrity of the pipeline.”⁶¹ Allowing the recovery of the cost of the penalties would neutralize the economic incentive for generators to adhere to interstate natural gas pipeline and LDC tariff requirements, contrary to the purpose of the penalties. The proposed revisions will help ensure Market Parties in NYISO cannot work an end-run around penalties assessed by interstate natural gas pipelines and LDCs, which are intended to ensure reliability.²⁰

Furthermore, inclusion and reliance on unauthorized gas is contrary to the goals of capacity performance. Capacity resources should be contracting for firm sources of supply and not relying on unauthorized supplies of energy.

In addition, the PAPUC urges the Commission to consider more thoroughly the proper threshold value for incremental energy offer caps which trigger the attendant requirements for cost verification and that the offer be equal to the short-run marginal cost of the associated resource. FERC’s proposal sets that value at \$1,000/MWh based on a few instances where that value has been insufficient to cover a resource’s short-run marginal costs, mostly during the polar vortex period. In order to determine the proper inflection point based on a properly developed evidentiary record, the Commission should require RTOs to provide aggregate information on resources’ bid behavior at different price points, along with the corresponding supply/demand data. Based on this information, FERC can determine the inflection point at which market participants are

²⁰ *Id.* at P 39 (footnotes omitted).

most likely to submit price offers well in excess of cost based offers and, therefore, exert market power.

The *State of the Market Report for PJM*, prepared by the Market Monitor, already provides some analysis on what price markers are most likely to foster the exercise of market power. For instance, the average real time markup²¹ component for 2014 and 2015 was less than \$1/MWh for offers below \$150/MWh.²² Stated differently,

In the PJM Real-Time Energy Market, when using unadjusted cost offers, in 2015, 85.9 percent of marginal units had average dollar markups less than zero and had an average markup index less than zero. Using adjusted cost offers, in 2015, 47.1 percent of marginal units had average dollar markups less than zero and average markup index less than or equal to zero.²³

However, during the same period, when the real time offers reached above \$400/MWh, offers had an average dollar markup of \$56.87/MWh.²⁴ This signifies a substantial change from the observed market behavior for offers below \$150/MWh, but it also indicates that the inflection point at which market behavior may need mitigation should perhaps be at a much lower price point. In any event, the Commission should base its determination on current market data and provide the necessary justification as to how it reached its conclusion.

²¹ The markup index is a summary measure of participant offer behavior for individual marginal units.

²² *State of the Market Report for PJM*, Volume 2, Table 3-53 at 123 (March 10, 2016), available at: http://monitoringanalytics.com/reports/PJM_State_of_the_Market/2015/2015-som-pjm-volume2.pdf.

²³ *State of the Market Report for PJM*, Volume 1 at 16 (March 10, 2016), available at: http://monitoringanalytics.com/reports/PJM_State_of_the_Market/2015/2015-som-pjm-volume1.pdf. The unadjusted markup is calculated as the difference between the price offer and the cost offer, including the 10 percent adder in the cost offer. The adjusted markup is calculated as the difference between the price offer and the cost offer, excluding the 10 percent adder from the cost offer.

²⁴ *Id.*

As the Commission deliberates on the proper inflection point for the incremental energy offer cap, it should also consider the PJM Market Monitor's recommendation on market power mitigation. As stated in the *State of the Market Report for PJM*:

When basic elements of those rules are modified, e.g. the raising of the overall \$1,000 per MWh offer cap and the introduction of hourly offers in place of daily offers, it is essential that effective market power mitigation be maintained. While the three pivotal supplier test addresses local market power associated with transmission constrained markets, it does not address aggregate market power. Aggregate market power exists when generation owners have the ability to raise market prices above competitive levels in the absence of transmission constraints, for example when demand is high and market conditions are tight. ... The failure to maintain limits on aggregate market power will lead to the exercise of market power and the associated negative impacts on the competitiveness of PJM markets.²⁵

The Market Monitor's solution is to require that (1) markup be constant across price and cost offers; (2) there be at least one cost-based offer using the same fuel as the available price-based offer; (3) the price-MW pairs in the price based parameter limited schedule (PLS) offer be exactly equal to the price based non PLS offer; and (4) cost-based and price-based PLS offers must be at least as flexible as price-based non-PLS offers.²⁶

In the event the Commission decides not to proceed with an evidentiary, fact-based determination on the proper inflection point, the PAPUC recommends that FERC direct PJM to implement the above Market Monitor's proposed solutions that seek to introduce some level of aggregate market power mitigation. Alternatively, PJM should

²⁵ *State of the Market Report for PJM*, Volume 1 at 1 (March 10, 2016).

²⁶ *Id.* at 2.

impose a testing screen, such as a three pivotal supplier²⁷ (TPS) test on both DA and RT aggregate energy markets. The TPS, and not an arbitrary number, such as \$1000/MWh, could be used to determine when cost-based bids should be required in energy markets.

D. Demand Response Should Not Set LMP

The Commission has proposed a resource neutrality rule whereby all resources, regardless of type, will be eligible to submit cost-based incremental energy offers in excess of \$1,000/MWh. The PAPUC urges the Commission to treat DR resources as price takers that are not eligible to set LMP. DR capacity resources generally do not exhibit competitive behavior in energy markets and prefer not to be called on, except when they must perform or be penalized. For this reason, their strike price offers are essentially at the maximum allowable bid price.²⁸ Furthermore, their incremental energy costs are largely unknown, with the limited exception of the on-site back up generation costs, where applicable. Additionally, the DR energy revenue streams are de minimis relative to the capacity revenues received and, as such, provide little incentive for competitive bidding.²⁹ For these reasons, FERC should not treat DR capacity resources as eligible to set LMP.

²⁷ TPS test is applied by PJM on an ongoing basis for local energy markets in order to determine whether offer capping is required for transmission constraints.

²⁸ PJM's 2016 Demand Response Operations Market's Activity Report: February 2016, Figures 9 and 18, available at <http://wired.pjm.com/~media/markets-ops/dsr/2016-demand-response-activity-report.ashx>.

²⁹ *Id.*, Figure 23; see also *State of the Market Report for PJM*, Volume 1, Figure 10 (March 10, 2016).

IV. CONCLUSION

For all the foregoing reasons, the PAPUC respectfully requests that its Comments be considered by FERC in this proceeding. We urge the Commission to adopt our recommendations in the proposed NOPR and direct PJM to implement them.

Respectfully submitted,

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