

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Grid Resilience in Regional Transmission Organizations and Independent System Operators) **Docket No. AD18-7-000**
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COMMENTS OF THE PJM POWER PROVIDERS GROUP

Pursuant to the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) March 20, 2018 Order Extending Time to Comment in this proceeding, the PJM Power Providers Group (“P3”)¹ respectfully submits these comments for the Commission’s consideration.

I. Background

On January 8, 2018, the Commission issued an Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures in this proceeding, terminating the proceedings initiated in Docket No. RM18-1-000 to consider a “Proposed Rule on Grid Reliability and Resilience Pricing,” submitted to the Commission by the Secretary of the U.S. Department of Energy (“DOE”) on September 28, 2017 (“DOE NOPR”), and initiating this proceeding in order to “specifically evaluate the resilience of the bulk power

¹ P3 is a non-profit organization dedicated to advancing federal, state and regional policies that promote properly designed and well-functioning electricity markets in the PJM Interconnection, L.L.C. (“PJM”) region. Combined, P3 members own over 84,000 MWs of generation assets, produce enough power to supply over 20 million homes and employ over 40,000 people in the PJM region covering 13 states and the District of Columbia. For more information on P3, visit www.p3powergroup.com. The comments contained in this filing represent the position of P3 as an organization, but not necessarily the views of any particular member with respect to any issue.

system in the regions operated by [RTOs/ISOs]” (“Grid Resilience Order”).² The Grid Resilience Order directed the RTOs/ISOs to submit information to the Commission on certain identified resilience issues and concerns. On March 9, 2018, all six Commission-jurisdictional RTOs/ISOs, including the PJM Interconnection, L.L.C. (“PJM”), and the Electric Reliability Council of Texas (“ERCOT”) submitted comments in response to the Commission’s directive.

On March 20, 2018, the Commission issued an Order Extending the Time for Comments in this proceeding to May 9, 2018. P3 respectfully submits these comments from the perspective of a long-standing organization that supports and promotes properly designed and well-functioning electricity markets in PJM.

II. Comments

The changing nature of the grid, combined with an evolving identification of various threats to the grid, has been well-established in this proceeding, as well as in the proceeding docket of RM18-1-000.³ In the face of these changing circumstances, PJM, through its filing, has rightly pivoted the conversation to focus on the resilience issues that should be addressed in order to materially improve the ability of the grid to withstand, endure and recover from disruptions. As PJM noted, resilience is fundamentally about physical capabilities— what services are needed and who can most efficiently provide those services. The goal of resilience is not to “save” a specific unit or a specific fuel which PJM has appropriately recognized in its filing.

² Grid Resilience in Regional Transmission Organizations and Independent System Operators, 162 FERC ¶ 61,012 (2018) (“Grid Resilience Order”).

³ P3 incorporates by reference its comments filed in the now terminated docket, Docket No. RM18-1. *See* Comments of the PJM Power Providers Group, Docket No. RM18-1-000, October 23, 2017, and Reply Comments of the PJM Power Providers Group, Docket No. RM18-1-000, November 7, 2017.

P3 has consistently supported the efforts of PJM and the Commission to promote market-based solutions to address identified resilience concerns. It should go without saying that generation-related resilience issues in PJM should be addressed within a market construct with market-based solutions. Out-of-market payments skew market signals and ultimately erode the principles upon which the competitive wholesale power market rests. Resilience is best addressed by identifying the physical generation attributes that promote resilience and developing market-based mechanisms to encourage the provision of such attributes.

Fortunately, PJM has generally put forth a series of thoughtful recommendations to evaluate and address resilience related issues in PJM. As P3 stated in its initial comments to the DOE NOPR, “P3 believes that there are two distinct challenges facing PJM that give rise to some of the concerns identified in the NOPR that should be addressed by the Commission: 1) Antiquated energy price formation structures that do not recognize the evolving resource mix, and 2) Resilience concerns brought about by changing geo-political and operational concerns.”⁴ PJM proposes a reasonable pathway to addressing both of these concerns. It is now incumbent upon the Commission to ensure that the reforms that are suggested come to fruition.

As PJM stated, “The first principle of ensuring reliability and resilience with respect to supply portfolio is ensuring that the wholesale markets are sending the correct price signals. The second principle is compensating suppliers based upon the operational attributes necessary to

⁴ Comments of the PJM Power Providers Group, *Grid Reliability and Resilience Pricing*, Docket No. RM18-1-000, dated October 23, 2017, (“P3 Comments”) at p. 9.

support reliability and resilience.”⁵ P3 agrees with this observation and offers the following specific thoughts on each point.

A. Ensuring wholesale markets are sending the correct price signal.

The changing nature of the PJM grid was well-chronicled in the DOE NOPR (RM18-1-000). As a result of low natural gas prices and other technological innovations, PJM has seen significant development of new natural gas combined cycle generation facilities. Since 2010, new natural gas units have been steadily added into the PJM market and in 2015, gas surpassed coal as the primary source of capacity in PJM. In addition, PJM has approximately 15 GW of natural gas combined cycle units under construction and projected to come on-line in the next several years, as well as over 60 GW of new natural gas capacity in the queue. With the entry of new natural gas units, PJM has seen significant retirements of older generation units (mostly coal), driven in large part by competitive pressures and environmental regulations.

As a result of the changing PJM capacity portfolio, the supply stack has become increasingly flat in PJM.⁶ Consequently, there is a glut of units to meet the needs of the system at virtually the same price. PJM summarized the problem as follows: “The limited LMP variations at the margins coupled with natural gas procurement limitations combine to reduce economic incentives for resources to follow PJM dispatch signals. This phenomenon erodes a critical component in LMP pricing: its ability to create economic incentives for units to follow

⁵ Comments and Responses of PJM Interconnection, L.L.C., *Grid Resilience in Regional Transmission Organizations and Independent System Operators*, Docket No. AD18-7-000, dated March 9, 2018 (“PJM Comments”), p. 79.

⁶ P3 Comments, p. 11.

RTO dispatch instructions in order to ensure efficient dispatch of the system and maintain system reliability.”⁷

As has been previously reported to the Commission and as PJM appropriately observed, “Today we operate under a set of rules, written in a vastly different time, that limit the ability of certain generating units operating at the direction of the system operator to contribute to efficient and transparent prices. These units are still compensated for their costs to operate, but because they are not able to set clearing prices, those clearing prices are artificially lower than they should be. This has a price-suppressive effect on all generating units, including nuclear, coal, natural gas-fired and renewable generation.”⁸ Clearly, reforms are needed in PJM to address these changing market dynamics that have led to the sustained under-compensation of generation units in PJM.

PJM put forth a proposal for consideration in November 2017 in the form of a whitepaper that would reform locational marginal pricing (“LMP”) so that units that are selected for dispatch would be allowed to set price (“PJM Proposal”).⁹ The PJM Proposal is worthy of consideration by the Commission. PJM’s stakeholders have been working on providing additional enhancements to the PJM Proposal. However, the stakeholder deliberations regarding this issue

⁷ Initial Post-Technical Conference Comments of PJM Interconnection, L.L.C., *State Policies and Wholesale Markets Operated by ISO New England Inc., New York Independent System Operator, Inc., and PJM Interconnection, L.L.C.*, Docket No. AD17-11-000, dated June 22, 2017, Attachments, PJM’s Three Initiatives Cover/Context, Initiative 3 at p. 5.

⁸ PJM Comments, pp. 74-75.

⁹ *Proposed Enhancements to Energy Price Formation*, PJM Interconnection, November 15, 2017. <https://www.pjm.com/-/media/library/reports-notices/special-reports/20171115-proposed-enhancements-to-energy-price-formation.ashx> (“PJM Proposal”)

have been unproductive to date. Commission direction may be required for energy price formation goals to come to fruition as a means to support the Commission’s resilience aims.¹⁰

The Department of Energy has called on the Commission to “...expedite its efforts with states, RTO/ISOs, and other stakeholders to improve energy price formation in centrally-organized wholesale electricity markets. After several years of fact finding and technical conferences, the record now supports energy price formation reform, such as the proposals laid out by PJM and others.”¹¹ The Commission has an opportunity in this proceeding, as well as the fast start pricing proceedings,¹² to send a clear message that energy price formation reforms in PJM are a priority and need to be addressed in the name of resilience and sound market design. The Commission has recently reiterated its commitment to markets,¹³ yet many resources in PJM remain precluded from participating in the most fundamental market function – the setting of price. In order for market prices to appropriately reflect market conditions, units that are being called upon by PJM to meet system needs should be able to set price. As PJM’s current rules do not allow for such price setting, the Commission should take action that ensures that these reforms occur as soon as possible.

¹⁰ See April 11, 2018 letter from PJM President and CEO Andy Ott to PJM stakeholders (“PJM April 11 Letter”). <http://www.pjm.com/-/media/committees-groups/task-forces/epfstf/postings/20180412-pjm-board-letter-regarding-energy-market-price-formation.ashx?la=en>

¹¹ Staff Report to the Secretary on Electricity Markets and Reliability, U.S. Department of Energy, August, 2017 (“DOE Staff Report”), p. 126. https://www.energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf

¹² Fast-Start Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators, Docket No. RM17-3-000; Docket Nos. EL18-33-000, EL18-34-000, and EL18-35-000. P3 urges the Commission to issue an Order in the Fast Start proceedings.

¹³ Grid Resilience Order at P 9.

Additionally, as PJM noted in its filing, improvements beyond LMP reforms are necessary to ensure that the grid is providing appropriate price signals and promoting resilience. PJM's proposed energy price reforms will assure that all generation dispatched to serve load is receiving proper compensation. Currently, many resources are artificially restricted from setting the energy market price. Consequently, PJM's market mechanisms are undercompensating units that are needed to serve load and challenging PJM's ability to assure a resilient mix of generation resources. P3 supports PJM's call for a real time, thirty-minute Operating Reserve market and believes that such a market will materially contribute to the resilience of the grid by reducing the risk of load forecast error or unexpectedly high forced outage rates stressing the grid. The ability to have real-time reserves available during times of system stress will allow operators to solve any challenges within a market construct, rather than through operator actions that drive higher uplift charges. Moreover, PJM's desire to add a locational component to reserve procurement will further improve resilience in order to ensure that energy is available where it is most needed.¹⁴

As PJM observes, creating a thirty-minute real time reserve product will have the added benefit of improving shortage pricing in PJM. P3 has consistently called for improvements to shortage pricing rules in PJM. Relative to the current 10-minute reserve procurement, a 30-minute reserve product will provide PJM an earlier signal of potential shortage situations, allowing PJM to make remedial dispatch decisions that avoid putting the transmission grid in jeopardy. Furthermore, PJM's implementation of shortage pricing should be more objective. Operator actions designed to thwart shortage triggering should be avoided. As part of PJM's

¹⁴ PJM has put forth a problem statement and issue charge seeking to implement a 30 minutes real time reserve product and expects to file proposed tariff revisions in the 3rd quarter of 2018. *See* PJM April 11 Letter, *Id.*

efforts to improve its Operating Reserve market, the Commission should ensure that PJM's shortage pricing is more automated and less susceptible to Operator discretion.

P3 greatly appreciates the time and attention that has been paid to reforming the energy markets in PJM. However, as noted above, the conversation needs to continue to move from *whether* to improve the markets to *how best* to make such improvements. PJM, on multiple occasions, has articulated the problem, and DOE supported PJM's conclusion that something needs to get done. The Commission now has an opportunity to place these issues on a path to implementation and should avail itself of the opportunity to do so.

B. Compensating suppliers based upon the physical capabilities necessary to support reliability and resilience.

As stated earlier, P3 supports compensating suppliers for the physical capabilities that support reliability and resilience provided those system needs are analytically established by PJM and all resources are able to compete in a market-based construct to provide those services. Physical capabilities should be procured based on valuable reliability and resilience objectives.

It is important to note, as PJM highlighted in its "Resilience Roadmap,"¹⁵ that grid reliability and resilience are issues that PJM is continually addressing. While the implementation of Capacity Performance rules is frequently and correctly cited as a policy initiative to improve the performance of supply resources in PJM, outcomes from other proceedings have materially improved the resilience of the grid. As an example, PJM has supplemented its long-standing practice of carrying additional reserves during system emergencies to account for additional

¹⁵ See, <http://www.pjm.com/-/media/committees-groups/committees/mic/20171213/20171213-item-11-resilience-roadmap-update.ashx>

contingencies such as pipeline disruptions.¹⁶ However, these common-mode contingencies are not limited to gas units and could include any high-impact, low-frequency events that might impact any technology. These events must also be addressed by PJM.

In addition to common-mode contingencies, PJM is also pursuing other on-going initiatives under consideration by both PJM staff and stakeholders to improve and address various aspects of PJM markets, operations and planning that will benefit PJM's resilience.¹⁷ P3 commends PJM and its stakeholders for these efforts, and PJM should be encouraged to continue these efforts.

Likewise, incorporating resilience into PJM's transmission planning as suggested by PJM, will likely lead to a more resilient grid, provided it is analytically evaluated and not biased towards transmission solutions. By its nature, system planning tends to resolve challenges with transmission solutions (in cases in which solutions involve physical resources). Resilience attributes can be provided by generation and other resources, which should certainly be considered as PJM incorporates resilience concepts into its planning operations.

C. Additional thoughts on other PJM recommendations

Many of PJM's suggestions involve improved communications between fuel suppliers, generators and PJM. As PJM has noted, Order No. 787 has materially improved communications between PJM and pipelines which have proven beneficial during times of

¹⁶ Operationalizing Gas Pipeline Contingencies, PJM Operating Committee, November 7, 2017. <http://www.pjm.com/-/media/committees-groups/committees/oc/20171107-special/20171107-gas-electric-assessments-presentation.ashx>

¹⁷ See PJM Resilience Roadmap Update, Stephanie Monzon, Liaison to the President & CEO, Market Implementation Committee, December 13, 2017. <http://www.pjm.com/-/media/committees-groups/committees/mic/20171213/20171213-item-11-resilience-roadmap-update.ashx>

system stress.¹⁸ However, PJM anecdotally notes that not all pipelines uniformly share information. While P3 is not yet convinced of the existence of such a problem, or that the standards in Order No. 787 should be mandatory or subject to enforcement, P3 is open to further Commission proceedings to evaluate the effectiveness of Order No. 787. P3 further emphasizes that in terms of specific operations or status of a particular plant, the most important communication is directly between PJM and the generator.

P3 also understands that fuel supply issues are not limited to natural gas procurement. As PJM has noted, supply issues affected coal and oil units as well during the cold weather events of 2014, 2015 and 2018. Improving PJM’s understanding of the fuel supply capabilities of generators – regardless of fuel type – only enhances PJM’s ability to manage the grid. While Capacity Performance rules provide incentives to PJM generators to secure fuel supply, PJM would nonetheless benefit from additional insights into generator fuel supplies, provided reporting requirements are not overly burdensome. P3 would invite such a conversation about how to provide PJM additional information on fuel supplies in a manner that does not create undue administrative burdens on fuel suppliers and generators.

Finally, P3 is concerned about PJM’s proposal to “permit non-market operations during emergencies, extended periods of degraded operations, or unanticipated restoration scenarios.”¹⁹

PJM suggests that the Commission require PJM to submit tariff revisions to allow this change.

¹⁸ As PJM reported in response to the Polar Vortex of 2015, “Acting on this newly established protocol, the team conducted regular calls with all the major pipelines to discuss gas conditions and generator impacts. Included in these discussions are any effective critical notices, capacity constraints or operational flow orders, units located in those constrained areas with Day-Ahead Energy Market commitments, and natural gas scheduled quantities by generator by gas pipeline nomination cycle. This information helps determine whether generation, potentially needed for the morning and/or evening peak, has purchased the required fuel to burn for their day-ahead unit commitment, and thus the risk to unit availability.” 2015 Winter Report, PJM Interconnection, May 15, 2015 at p 36 <https://www.pjm.com/-/media/library/reports-notices/weather-related/20150513-2015-winter-report.ashx?la=en>

¹⁹ PJM Comments, p. 6.

However, PJM has not yet established that its current rules regarding such a situation are not just and reasonable. Suspending market operations is a very significant action that should only be undertaken under exigent circumstances. Before taking action on this recommendation, PJM should be required to establish that there is a current gap in the PJM rules that render them not just and reasonable and then, and only then, put forth narrowly tailored rules that only allow for non-market operations under very specific and limited circumstances for as short a duration as possible.

III. Conclusion

Consistent with PJM's approach, the Commission should continue to move the resilience ball forward and transform these policies being discussed into market rules. Significant progress has been made to date, but there is clearly more that needs to be done as PJM's filing identifies many actions that can be taken to further enhance the resilience of the PJM grid. P3 urges the Commission to take those actions to ensure that this progress continues.

Respectfully submitted,

On behalf of the PJM Power Providers Group

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May 9, 2018

CERTIFICATE OF SERVICE

I hereby certify that on this 9th day of May, 2018, I have served the foregoing document on each person designated on the official service list compiled by the Secretary of the Federal Energy Regulatory Commission in this proceeding.

On behalf of the PJM Power Providers Group

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