

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

Grid Resilience in Regional)	
Transmission Organizations and)	Docket No. AD18-7-000
Independent System Operators)	

COMMENTS OF THE ELECTRIC POWER SUPPLY ASSOCIATION

Pursuant to Rule 212 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission (the “Commission” or “FERC”), 18 CFR § 385.212 (2017), the Electric Power Supply Association (“EPSA”)¹ hereby submits these comments in response to the Federal Energy Regulatory Commission (the “Commission” or “FERC”) order issued in the above-captioned proceeding on January 8, 2018,² and in reply to the reports submitted by each Regional Transmission Organization (“RTO”) or Independent System Operator (“ISO”) on March 9, 2018, as directed by that order.³ The above-captioned proceeding was initiated by the Commission to evaluate the resilience of the Bulk Power System (“BPS”) in the regions operated by ISOs/RTOs, directing each ISO/RTO to submit information on resilience issues and identified concerns, and allowing interested entities to submit comments on those ISO/RTO Reports as well as offering perspectives and

¹ Launched over 20 years ago, EPSA is the national trade association representing leading independent power producers and marketers. EPSA members provide reliable and competitively priced electricity from environmentally responsible facilities using a diverse mix of fuels and technologies. Power supplied on a competitive basis collectively accounts for 40 percent of the U.S. installed generating capacity. EPSA seeks to bring the benefits of competition to all power customers. This pleading represents the position of EPSA as an organization, but not necessarily the views of any particular member with respect to any issue.

² Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures, Docket Nos. RM18-1-000 and AD18-7-000, (January 8, 2018), 162 FERC ¶ 61,012 (“January 8 Order”).

³ Order Extending Time for Comments, Docket No. AD18-7-000, (March 20, 2018), establishing comment date of May 9, 2018.

recommendations regarding grid resilience. EPSA submits these comments to offer input and recommendations from the competitive power supply industry sector on grid resilience generally, and to highlight issues raised by the ISO/RTO Reports.

I. BACKGROUND

On January 8, 2018, the Commission issued the instant order to terminate the proceeding initiated pursuant to the submission of Notice of Proposed Rulemaking (the “DOE NOPR”) issued by the Secretary of Energy (the “Secretary”) on September 28, 2017,⁴ and noticed by FERC on October 2, 2017.⁵ In the January 8 Order, the Commission initiated the above-captioned proceeding in recognition of the importance of the resilience of the BPS, establishing it as a priority of the Commission, and to further examine the risks faced by the BPS to decide whether additional action is needed to address grid resilience, particularly in light of changes to electric markets which pose a host of new opportunities and challenges that may impact the resilience of the system. Each ISO/RTO was directed to submit specific information regarding the resilience of its respective region to the Commission by March 9, 2018.

II. OVERVIEW AND SUMMARY

EPSA commends the Commission for the approach taken in this and the preceding related dockets, particularly the decision to begin the dialogue and evaluation with the market operators in each region responsible for the reliable, safe, efficient, and resilient operation of the vast interconnected electricity system. In terminating the DOE NOPR proceeding and initiating this new proceeding, the Commission has properly and wisely

⁴ *Grid Resilience Pricing Rule*, Notice of Proposed Rulemaking, Docket RM18-1-000, 82 Fed. Reg. 46,940 (Oct. 10, 2017).

⁵ *Grid Reliability & Resilience Pricing*, Notice Inviting Comments, Docket No. RM18-1-000, 82 Fed. Reg. 48,013 (Oct. 2, 2017).

placed its focus with the ISOs/RTOs, where resilience issues must be identified and where market improvements, if needed, can be developed and implemented to resolve regional risks.

As demonstrated by the ISO/RTO Reports submitted to the Commission, resilience varies greatly by region, and hence should be addressed where necessary on a regional basis. Importantly, the extensive ISO/RTO reports submitted to the Commission did not raise concerns over imminent or emergency resilience threats.⁶ Hence, FERC's instant inquiry appropriately approaches this issue in a methodical and analytical manner.⁷

⁶ "To be clear, the PJM BES is safe and reliable today – it has been designed and is operated to meet all applicable reliability standards. However, improvements can and should be made to make the BES more resilient against known and potential vulnerabilities and threats. In many cases, resilience actions are anchored in, but go beyond what is strictly required for compliance with, the existing reliability standards." Comments and Responses of the PJM Interconnection, L.L.C., Docket AD18-7-000, p. 4. (Filed March 9, 2018) ("PJM Report")

"As described in Part II.A of this response, ISO-NE's work in planning, markets, and operations to help ensure that the region has the power resources and transmission facilities necessary to meet demand and reserve requirements results in a bulk power system that has many attributes of a resilient system, as defined by the Commission." Response of ISO New England, Inc., Docket AD18-7-000, p. 4. (Filed March 9, 2018) ("ISO-NE Report")

"The CAISO System has remained resilient even in the face of significant drought, extreme fires, losing SONGS, a solar eclipse, weather impacts on generation resources, and the limited operability of Aliso Canyon. Among other measures, a robust transmission system, diverse resource mix, targeted tariff provisions and market products, conservation efforts, effective coordination, and proactive planning and identification of needs have supported these results." Comments of the California Independent System Operator Corporation in Response to the Commission's Request for Comments About System Resiliency and Threats to Resilience, Docket AD18-7-000, p. 77. (Filed March 9, 2018) ("CAISO Report")

"In recognition of this success [of the NYISO shared governance process and collaboration among industry participants], the NYISO respectfully requests that the Commission allow the NYISO to continue to work with its stakeholders in assessing and developing the enhancements necessary to ensure that the wholesale markets, in serving the evolving needs of the electric system, continue to provide significant benefits to the State and its electricity consumers." Response of the New York Independent System Operator, Inc., p. 3. (Filed March 9, 2018) ("NYISO Report")

"MISO's core foundation of ensuring regional reliability needs are met at the lowest possible cost has facilitated the creation of robust planning, operations, markets, and security mechanisms that are utilized to not only identify, assess and avoid resilience threats, but also to mitigate any impacts that may occur from high-risk events. Through the collective efforts and investments of MISO, MISO Transmission Owners, Load Serving Entities, States, and other stakeholders, MISO's grid is resilient." Responses of the Midcontinent Independent System Operator, Inc. (Filed March 9, 2018) ("MISO Report")

⁷ "Prior to taking action on such issues, however, RTOs/ISOs and FERC would need an understanding of the plausible threats to each region, as well as the potential improvements that system planners, operators, and markets could provide. Like many other challenges that FERC has faced in the past, these questions can be analyzed methodically." *Evaluation of the DOE's Proposed "Grid Resiliency Pricing Rule,"* The Brattle Group, pp. 18-19 (Oct. 2017) ("Brattle White Paper"), available as Attachment A to

Additionally, the ISO/RTO Reports make it clear that competitive, fuel neutral market-based mechanisms are the correct tools to address any resilience risks or concerns while maintaining the integrity of the market and operation of the system. Certainly, any hasty short term “fixes” invoked based on speculative concerns cannot and should not be supported or approved by the Commission, particularly calls to subsidize specific types of resources at the expense of well-functioning competitive markets and all other market participants. Tipping the scales in this manner is not the way to ensure a reliable, resilient, secure system, and may in fact overturn the cup entirely. Rather, with FERC’s guidance, each ISO/RTO should continue to examine these issues and work with stakeholders to ensure that resilience risks are identified and addressed so that power customers are served reliably and efficiently.

III. COMMENTS

A. Defining Resilience

As was clear from the extensive record developed in response to the DOE NOPR,⁸ “resilience” as a technical concept has not been clearly defined or subject to objective measure to date. The term has in fact been invoked of late to refer to any system reliability or operational concern that can help justify calls for financial support or other unduly discriminatory treatment by either classes of resources or individual resources facing suboptimum market conditions, which affect all market participants. Therefore, EPSA urges the Commission to define resilience narrowly – focusing on maintaining or restoring

Joint Industry Comments Opposing the DOE Proposal, Docket RM18-1-000 (Filed Oct. 23, 2017). See pp 18-21 for basic analytical steps appropriate to evaluate grid resilience.

⁸ EPSA urges the Commission to take administrative notice of the record amassed in Docket No. RM18-1-000, consistent with past practice. See *Demand Response Compensation in Organized Wholesale Energy Mkts.*, Notice of Proposed Rulemaking, FERC Stats. & Regs. ¶ 32,656 at P 23 (2010) (“The Commission will take administrative notice of the record in [a pending] proceeding so that parties in that proceeding need not refile affidavits or other evidence introduced there.”).

service for customers during unexpected events – in order to allow for the clear identification of risks that are related to resilience, the system capabilities that can resolve them, and to delineate resilience from broader tenets of reliability or efficient market operation.

Consistent with this approach, EPSA supports the definition proposed by the Commission and developed by the National Infrastructure Advisory Council: “The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.”⁹

B. ISOs/RTOs Should Rely on Market-Based Approaches and Reforms to Address Resilience Issues

EPSA agrees that the reliability of BPS operations is a paramount concern and, as noted, the Commission *and* industry have taken extensive action “to address reliability and other issues with regard to the bulk power system that have helped with the bulk power system’s resilience, even though we may not have used that particular term.”¹⁰ Many of these market-based improvements are outlined in the January 8 Order,¹¹ and EPSA and its members have participated in the development and implementation of these improvements at all stages and venues.

That noted, the electricity system and externalities affecting that system continue to evolve. The generation resource mix continues to change; new and innovative technologies are coming online in greater numbers; consumers are responding to the

⁹ January 8 Order, ¶ 23

¹⁰ January 8 Order, ¶ 12.

¹¹ “While none of the Commission’s efforts described above were specifically targeted at “resilience” by name, they were directed at elements of resilience, in that they sought to ensure the uninterrupted supply of electricity in the face of fuel disruptions or extreme weather threats.” January 8 Order, ¶ 12.

system in new ways; and market conditions continue to transform. These factors all contribute to the transformation of the electric grid. While these developments offer great advances, they also may create new risks to the most complex, interconnected mechanical system in the world. This landscape is laid out extensively in the record established in response to the DOE NOPR, and highlighted in the Commission’s January 8 Order.¹²

In this dialogue on defining and addressing resilience issues, it’s critical to note that the greatest threat to system and markets which today deliver reliable, efficient, and cost-effective electricity – supplied by a diverse mix of fuels and technologies – is the subversion of these expansive interstate markets by parochial calls for fuel or specific bailouts or preferences. Reliability and resilience depend on financially viable power plants using the full range of fuels and technologies, and FERC has the responsibility and authority to ensure that effective competition will achieve a secure, reliable, and resilient “all of the above” electricity system. As EPSA has stated in numerous venues,

Subsidies are contagious. As the market share subject to competition continues to shrink from fuel-based preferences, both federal and state, there will be woefully insufficient megawatts to compete for by those not subsidized. At that point, everyone will require non-market payments.¹³

Thus, the Commission must ensure that markets remain effectively competitive by protecting against discriminatory fuel-specific “thumbs on the scale” as requested by certain uneconomic resources in the name of resilience.

¹² “As the DOE Grid Study documented, we have seen a variety of economic, environmental, and policy drivers that are changing the way electricity is procured and used.” January 8 Order, ¶ 17, citing *Staff Report to the Secretary on Electricity Markets and Reliability*, United States Department of Energy (Aug. 2017).

¹³ EPSA Letter to Energy Secretary Rick Perry on FirstEnergy Solutions FPA Section 202(c) Application (Submitted April 27, 2018), Available at: <https://epsa.org/wp-content/uploads/2018/04/DOE-EPSA-LETTER-FINAL-042718.pdf>. See Attachment hereto. (“EPSA Letter to Secretary Perry”)

This is not to say that the markets currently in place in the ISOs/RTOs across the nation are perfect, or do not need to be improved and reformed. It is essential that each ISO/RTO continue to examine its energy, capacity, ancillary services and operating reserves price formation mechanisms to ensure that prices reflect actual system conditions and resource capabilities, benefiting *every type of resource*. Such pricing¹⁴ improves performance incentives for all resources during tight system conditions when reliability risk is heightened or resilience concerns may arise. Improving the rules for all resources is of particular importance at this time, in which pressures and challenges in various markets threaten to chip away at the holistic operation of organized regional wholesale electricity markets. In broad terms, well-designed and properly regulated competitive wholesale markets remain the best model to manage the challenges and risks posed by rapid and ongoing change; competitive markets are inherently more flexible, adaptable and place more risks on investors than consumers.

It would be a drastic and irreversible mistake to allow anti- or non-competitive policies or rules to interfere with the FERC-jurisdictional wholesale energy and capacity markets. No progress will have been achieved if actions taken in the name of resilience can undermine the core principles of competitive wholesale markets or diminish the benefits they deliver to the nation. Without decisive action from FERC to protect competitive prices in the wholesale markets, state or regional actions that attempt to establish a separate paradigm for either categories of, or significant individual, resources

¹⁴ “FERC should 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.” (Citations removed.) *Staff Report to the Secretary on Electricity Markets and Reliability*, U.S. Department of Energy (August 2017), p. 126, Policy Recommendations chapter.

will pave the way for the long-term erosion and dissolution of the wholesale markets.¹⁵

Without proper wholesale energy and capacity price formation, market participant incentives are distorted and the investment of private capital – the bedrock advantage of competitive markets – becomes too risky to bear. These are not mere adjunct concerns in the resilience discussion, these are the core tenants and principles that support the expansive, successful regional power markets.¹⁶

C. Resilience is a Long-Term Concern Which Requires Forward Looking Approaches

EPSA remains concerned that many of the proposed solutions from interested entities other than the ISOs/RTOs focus on ways to maintain the status quo, or in truth retreat to the status quo of yesterday. This is not wise, not effective, and not feasible. While the existing components of this complicated electricity system have supported a reliable, efficient system to date, the system of the future is evolving, and it is inevitable. This applies to external factors as well, as weather related incidents now can pose historic, unexpected conditions which notably vary vastly by region. Therefore, the key is to address market issues over the long term so that a path is developed that accommodates this future. This requires the consideration of how to modernize the grid to accommodate the changing system; establishing guiding principles for the definition and approach to system resilience; development of metrics to measure resources that support system resilience; and, identifying services or products that enhance resilience so that they can be valued and procured from all resources that can provide them. The Brattle Group

¹⁵ *ISO New England*, 162 FERC ¶ 61,205 at ¶ 21.

¹⁶ “We think the choice is clear. Removing market distortions and ensuring that the power plant attributes that the system needs are compensated within the market on a competitive basis will allow an all-of-the-above strategy to continue to be successful. Doing so will ensure that it works into the future in a manner that incentivizes and spurs new investment and innovation along the way.” EPSA letter to Secretary Perry, p. 3.

explains,

The rules of the centralized wholesale markets have been established, debated, challenged, and improved by the RTOs/ISOs, their stakeholders, and the FERC over the past fifteen-plus years. The common element of all of these efforts is to define products and services to meet well-defined customer needs and system needs, and to set the quantities needed based on rigorous analysis. If new reliability or resilience requirements were established, they could be incorporated into this wholesale market framework. A well-structured market-based approach would entail the following steps: (a) clearly state the objectives that the system needs to achieve; (b) clearly define the attributes that the system needs to operate; (c) analyze the quantity of the need given the unique features of each ISO (and sub-regions within each system); and (d) set up the market to reward the desired attribute in a resource-neutral manner, with every provider being paid the same price for providing the same unit of service. This framework would continue to support the competitive nature of the wholesale electricity market by retaining the broadest-possible competition from resources that meet the specified objectives.¹⁷

Importantly, the ISO/RTO Reports demonstrate that each market operator is now assessing its system for possible resilience needs, and is working with stakeholders on long-term market-based approaches to define and value those products, services, and capabilities that can be procured from all resources able to provide them on an equitable, competitive basis. The electricity system will not be well served if efforts to ensure resilience are narrowly focused on the very short term, an approach being recommended today by some who are leaning on resilience as the avenue for short term out-of-market fixes that benefit one resource, one class of resource, or even one business. Like ensuring reliability of the system, ensuring resilience is a long-term proposition that must be considered, analyzed and developed with the long-term health of the system and the cost benefit for consumers in mind.

In a similar vein, EPSA is concerned that there have been recent proclamations about emergency resilience risks or vulnerabilities that far overstate the situation.

¹⁷ The Brattle White Paper, p. 36.

Resilience, a new addition to the electricity lexicon, does not pose an imminent emergency, threat or crisis that requires national action by fiat.¹⁸ This characterization is bound to lead to rash or hasty “solutions” which will beget inevitable unintended consequences, including damage and distortion to the markets, thereby creating an array of new reliability and resilience concerns or weaknesses. While the concept of resilience of the electric system may seemingly present new questions, the power industry is well versed in how to assess and address system needs, as attested by the extreme reliability of the BPS.

Over the past several decades the U.S. electricity grid has experienced dramatic shifts in the generation fleet, delivery infrastructure, and even market models, all the while remaining reliable. Concurrently, the same system has withstood extreme weather events, including the 2014 Polar Vortex as a recent example. The Brattle Group explains in the

¹⁸ “PJM Interconnection’s report, released today, on grid performance during the winter’s cold snap shows that the grid and the generation fleet performed well during one of the coldest stretches since the 2014 Polar Vortex....Thanks to the reliable operations from PJM members and operators, the system performed well in the cold snap, evidence that the grid in the PJM region remains strong, diverse and reliable, according to the report, *PJM Cold Snap Performance Dec. 28, 2017 to Jan. 7, 2018.*” PJM News Release, *PJM Report on Cold Weather Performance Shows Grid Performed Well, Need for Pricing Reform*, (Feb. 26, 2018). Available at: <http://www.pjm.com/~media/about-pjm/newsroom/2018-releases/20180226-pjm-report-on-cold-weather-performance.ashx>

“New England has no urgent need to rush to a solution, given that the three-year Forward Capacity Market has ensured resource adequacy until at least 2021, and the region has already taken steps to improve operating procedures and generator incentives to secure firm fuel supplies.” Comments of ISO New England, Inc., Docket RM18-1-000, p. 1 (Filed Oct. 23, 2018).

“The NYISO is not aware of any imminent emergency likely to develop on the wholesale electric system that necessitates drastic and immediate action, particularly in the form proposed in the NOPR.” Comments of the New York Independent System Operator, Inc., Docket RM18-1-000, p. 4. (Filed Oct. 23, 2018).

“Similarly, the 2017 QER Report provides no basis to conclude that there is an imminent resilience emergency that can best be solved by distorting competitive markets through imposition of cost of service rate recovery for coal and nuclear resources....Absent from the 2017 QER Report’s list of resilience recommendations is anything resembling the DOE NOPR’s proposal to subsidize aging and inefficient generation units to the detriment of competitive markets.” Initial Comments of PJM Interconnection, L.L.C. on the United States Department of Energy Proposed Rule, Docket RM18-1-000, p. 11. (Filed Oct. 23, 2018).

initial DOE NOPR proceeding,

In contrast to the emerging understanding of resilience, reliability is a fully developed, operational concept that is actively—and successfully—managed by RTOs/ISOs. These processes also evolve to address emerging challenges such as the changes in the composition of the generation fleet over time. No particular reliability metrics indicate an imminent, unmanageable threat.¹⁹

The issue of resilience, focused on aspects of recovery from and adaption to unexpected events, is most certainly an aspect of reliability.²⁰ RTOs, FERC, and others have vast experience in analyzing threats, assessing system readiness, and examining market conditions and rules to identify the needs of the system to remain reliable and resilient. This can and must include an evaluation of the reasonableness and cost-effectiveness of potential responses and solutions for resilience issues or risks. As MISO states in its Report, the Commission's first and important role here is to open the dialogue for each region to identify risks and consider actions to mitigate those risks in order to support resilience of the grid.

Correctly the ISOs/RTOs in their reports have largely outlined longer term market approaches to address the issues in their regions. There may be very limited cases in

¹⁹ The Brattle White Paper, p. 5.

²⁰ “As defined, resilience appears to be related to reliability and not a wholly distinct concept. Many reliability standards address, in some manner, acceptable bulk electric system performance, and the system's ability to withstand or recover from disruptive events including the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event. Complying with these standards, and any local reliability standards that individual ISOs and RTOs have, achieve many of the general objectives reflected in the proposed definition of resilience....In addressing resilience, the Commission should be clear to avoid any confusion. In addition, if the Commission intends that entities mitigate for specific disruptive events, it must be mindful that although grid operators study, assess, plan, and approve mitigation for disruptive events, they cannot prevent many such events (e.g., earthquakes, hurricanes, fires, and drought) from occurring and cannot limit the scope and duration of the events themselves.” CAISO Report, pp. 9-10.

“In the context of operating the BPS, reliability and resilience are distinct, yet complementary, concepts. Indeed, as reflected by certain portions of SPP's responses to the Commission's questions, a well-thought-out discussion of resilience may often require reference to reliability-centered practices and principles.” Comments of the Southwest Power Pool, Inc. on Grid Resilience Issues, Docket AD18-7-000, p. 43. (Filed March 9, 2018) (“SPP Report”)

which a shorter-term fix is necessary. If so, any such scenario should and must be treated in a manner similar to short term reliability concerns. Each ISO/RTO has a detailed, specific process for determining the impact of an anticipated short-term reliability concern,²¹ and tailored tools to address that issue in the very near term while a longer term solution is implemented. An identified resilience threat should be treated in the same way – if an immediate short-term resilience risk is identified, a short-term fix may be considered and implemented, with a clear sunset date, while a longer term system or market solution is developed, approved by the Commission, and put in place.

D. Resilience Risks Vary by Region and Should be Addressed on a Regional Basis

The ISO/RTO Reports submitted to the Commission clearly demonstrate that resilience challenges differ by region, and require examination to identify specific regional risks or vulnerabilities.²² In each case, there are ongoing stakeholder processes and ISO/RTO activities underway to consider and develop market mechanisms to address identified concerns. Further, each ISO/RTO has found that there is no imminent, critical

²¹ See for example, ISO-NE Reliability Review, Tariff section III.13.2.5.2.5; Compensation for Bids Rejected for Reliability Reasons, Tariff section III.13.2.5.2.5.1. Available at: https://sandbox.iso-ne.com/static-assets/documents/regulatory/tariff/sect_3/mr1_sec_13_14.pdf

See also, PJM Tariff, FERC Electric Tariff, Sixth Revised Volume No. 1, Part V, *Generator Deactivation*. Available at: <http://learn.pjm.com/three-priorities/planning-for-the-future/explaining-power-plant-retirements.aspx>

See also, MISO Tariff Section 38.2.7 Generation Suspension, Generation Retirement, and System Sup MODULES 51.0.0. Available at: <https://cdn.misoenergy.org/Tariff%20-%20As%20Filed%20Version72596.pdf>

²² “There can be significant differences among regions for purposes of assessing and achieving resilience. The needs, circumstances, and conditions that exist in each region are unique and can vary significantly, as regions face different risks, threats, and operational challenges and have vastly different resource mixes and load curves, fuel supply options, and environmental requirements. Resilience must account for regional differences, and entities in each region must have the flexibility to determine what capabilities are needed to maintain reliability and resiliency based on the specific circumstances in their region. The CAISO’s experience highlights the need to consider the unique characteristics of each region in addressing resilience.” CAISO Report, pp. 7-8.

threat which requires immediate action from FERC.²³ Rather, each ISO/RTO has outlined for the Commission a multitude of efforts currently underway to assess and develop enhancements that may be necessary, establishing an extensive and clear record that resilience of the system is being analyzed, addressed and delivered by the market operators tasked with ensuring the reliable, resilient, efficient and safe delivery of electricity to consumers.²⁴ EPSA commends the ISOs/RTOs for the manner in which they have outlined their approach to resilience issues, and the reliance on, and protection of, the integrity of competitive markets and market-based mechanisms.

The New York ISO clearly stated that it “remains confident in the ability to work collaboratively with its stakeholders to develop and implement the necessary market and procedural enhancements to continue to efficiently and reliably serve New York’s energy needs.”²⁵ Its Report describes six specific initiatives underway, including a comprehensive re-evaluation of its current planning and processes, and evaluation of “opportunities to leverage competitive market products and services to bolster the resiliency of New York’s bulk power system, especially in critical locations such as New York City.” NYISO also explains how many of its existing market features (operating reserves, shortage pricing, locational capacity requirements, inclusion of dual fuel and storm hardening costs in capacity payments, emergency operating procedures, etc.) ensure and in fact bolster resilience in New York. Importantly, the NYISO notes specifically that its stakeholder and

²³ ISO-NE has identified fuel security issues as “pressing” in the region; see discussion below.

²⁴ “RTOs and ISOs continue to do important work. Given the differences that exist across markets in terms of the types of vulnerabilities they face, approaches to resilience will likely vary by region. As evidenced from the docket for the FERC NOPR proceeding, regional grid operators on their own have begun to identify and address the most important risks they face.” Bipartisan Policy Center White Paper, *Power System Resilience: A Primer*, p. 5. (February 2018), Available at: <https://bipartisanpolicy.org/library/power-system-resilience-a-primer/>

²⁵ NYISO Report, p 2.

governance process has a proven track record of success, and therefore respectfully requests that the Commission allow it to work with stakeholders to assess and develop enhancements as needed.

Even in New England, which highlights fuel security as a pressing concern, the ISO notes for the Commission, “Because each region is unique, it should be left to the region’s respective RTO/ISO to determine what, if any, assessments are needed in light of the type of resilience threats faced there.” Noting that the most significant concern in New England are issues related to fuel security, the ISO lays out in its Report a clear and extensive process – already underway – to assess the issue and work with stakeholders on the development of market-based solutions to address the risk.²⁶ ISO-NE notes,

ISO-NE’s goal in addressing the fuel-security risk is to develop a long-term market solution that will maximize the likelihood that generators have sufficient fuel to meet the region’s winter electricity needs...If circumstances dictate that the region’s fuel-security challenges become more pressing before a long-term solution can be developed and implemented, ISO-NE will take (with the Commission’s approval, when required) actions that it determines to be necessary to address near-term reliability risks.²⁷

EPSA notes for the Commission, however, that while the PJM Report is comprehensive, and lays out numerous commendable recommendations and processes to analyze and address resilience in its region, there are concerns presented by the PJM Report on the issues generally. PJM correctly notes that, “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.” EPSA fervently supports this concept, and has been a long-time and vocal proponent of getting price formation right; this principle is

²⁶ “Given the complexity of the problem, ISO-NE believes it will be necessary to allow the region sufficient time (through the second quarter of 2019) to develop a solution and test its robustness through New England’s established stakeholder process.” ISO-NE Report, pp. 1-2.

²⁷ ISO-NE Report, p 2.

the lynchpin for successful competitive markets. PJM's efforts on this issue are laudable and important, particularly reforms to reserve procurement and shortage pricing practices, which should be developed and submitted to the Commission for approval *without delay*. Broader reforms to the calculation of LMP should continue through the stakeholder process.²⁸ This is true as well for efforts to evaluate compensation mechanisms for suppliers based on operational attributes which support reliability and resilience. This approach is likely one of the market-based approaches that will develop across markets to address evolving markets.

However, PJM's Report is rife with recommendations, proposed timelines, and calls for FERC to initiate rulemaking proceedings to require tariff revisions on short timetables from every ISO/RTO.²⁹ In its zeal to address resilience in its own market, PJM has inappropriately laid out directives and requirements for every other market to follow, according to PJM's proposed timeframes. These broadly applicable directives are not appropriate for every region, and should not be considered for any ISO/RTO beyond PJM unless justified by the findings and analysis of another market. As discussed above, the seven ISO/RTO reports clearly demonstrate the extent to which resilience risks vary by region, that a one-size-fits-all approach is not appropriate or useful, and that each market has undertaken an array of actions to address concerns in its region. For instance, CAISO does not experience extreme cold weather similar to the regions in the Eastern Interconnection, and does not have any baseload coal in its resource mix, resulting in resilience issues and factors in California that differ greatly from those in PJM. MISO

²⁸ See April 11, 2018 Letter from PJM President and CEO Andy Ott to PJM stakeholders. Available at: <http://www.pjm.com/-/media/committees-groups/task-forces/epfstf/postings/20180412-pjm-board-letter-regarding-energy-market-price-formation.ashx?la=en>

²⁹ PJM Report, pp 5-8.

reports that its region is resilient, having incorporated lessons learned from the 2014 Polar Vortex into its market, resulting in “a sufficient amount of excess resources (on a regional basis) to support grid resilience.”³⁰ SPP highlights its very diverse fuel mix for generation and high installed capacity reserve margins as factors that help ensure resilience in its region.

E. Areas for Commission Guidance or Action

While analysis and market reforms are undertaken at the regional level, it is incumbent on the Commission to address certain issues or develop guiding principles for the regional markets to ensure that baseline understandings and goals are shared, even while the methods to achieve those goals may differ by market.

a. Electric-Gas Coordination

With fuel security for generation resources an issue raised by several ISOs/RTOs, EPSA notes that improving coordination between electricity system operators and interdependent infrastructure systems should remain a priority as to emergency or scarcity period operations as well as the loss of third-party fuel delivery systems. While additional transparency may be necessary during these critical times, it must be coordinated not only between the ISO/RTO and third-party system, but most importantly between the ISO/RTO and its market participant, the generator. As the ISO/RTO member providing the power to the system for delivery, it is incumbent on the resource dispatch center to provide accurate, specific information. As an example, while an interstate natural gas pipeline may be able to notify an RTO about delivery constraints or operational conditions, this view may not indicate a specific generator’s access to fuel or other fueling options at that moment in time. Certainly, improvements should be considered where necessary, but EPSA urges

³⁰ MISO Report, p. 42.

caution in overcompensating and thereby directing the provision of information that may not be accurate or assist in emergency operations or system recovery at a specific point in time.

b. Non-Market or Out of Market Operations During Emergencies

In its Report, PJM requests that the Commission direct PJM to develop market rules as follows,

[T]o permit PJM to direct resources to commence non-market operations during emergencies, extended period of degraded operations, or unanticipated restoration scenarios, including provisions for cost-based compensation when the markets are not operational or when a wholesale supplier is directed to take certain emergency actions by PJM for which there is not an existing compensation mechanism.³¹

This request is extremely broad, ill defined, and seems to request new or expanded authority from the Commission to allow the suspension of competitive market operations. In a similar vein, other ISOs/RTOs similarly seek expanded authority to take out of market or “non-market” actions.³² Any such requests must be met with the highest level of scrutiny and caution from the Commission, as approving any level of unilateral out-of-market authority to the market operators can chip away at both the operational integrity and the market participant confidence in the ISO/RTO. Certainly, there are narrow, locationally specific and time-limited tools to address imminent reliability or, going forward, resilience risks. This focused approach must be maintained until there is a demonstration that the current rules are not just and reasonable, and some additional authority is required to maintain reliability of the system. It cannot be overstated that the new authorities requested are extensive and disruptive; therefore, the bar for demonstrating a need to

³¹ PJM Report, p. 40.

³² ISO-NE Report, p. 11.

reform or revise current practices must remain high. Should revisions be needed, they should be as narrowly tailored as possible in order to address specific, limited, short term system circumstances.

c. Jurisdictional Transmission Providers Outside ISOs/RTOs

While resilience has emerged as a principal issue for the Bulk Power System only recently, it has been afforded a great deal of attention, importance, and discussion. In its January 8 Order, the Commission declared that resilience is an agency priority going forward, as the “affordable and reliable electricity is vital to the country’s economic and national security.” Certainly, then, resilience must be a priority in all regions of the country, not only those served by Independent System Operators or Regional Transmission Organizations. Therefore, it is important for the Commission to extend its inquiry on the holistic examination of resilience to all jurisdictional entities, particularly transmission owners and systems outside of ISOs/RTOs. As noted by MISO, “[T]he Commission’s evaluation of resilience issues, and any processes that may be developed, should not be limited to just RTOs and ISOs. Rather, grid resilience is a national issue that broadly impacts the bulk power system.”³³ Additionally, SPP highlighted that information, perspectives and practices of non-RTO entities is important to the dialogue and can provide valuable insight. Similarly, CAISO explained,

The Commission should also recognize that any risks to the resilience of the electric system are not limited to Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs); they can affect all jurisdictional entities and all regions. Further, although ISOs and RTOs have a functional role in addressing resiliency, other entities, too, have roles. Ensuring resilience potentially requires the involvement and actions of a host of entities other than ISO’s and RTOs -- transmission and generation owners, fuel suppliers and transporters, federal agencies, reliability organizations,

³³ MISO Report, p. 2.

states, consumer groups, environmental groups, and other stakeholders.³⁴

EPSA believes it is critical that all parts of the BPS analyze resilience risks, and take all necessary steps to ensure that the system is resilient in the same manner as the ISOs/RTOs responding to FERC's inquiry in the instant proceeding.

d. Attention to Distribution Level Threats and Impacts

As highlighted by several ISOs/RTOs in the reports submitted in this proceeding, and as detailed in numerous responses to the 2017 DOE NOPR,³⁵ the vast majority of outages occurring under the rubric of resilience take place on or are caused by the transmission and distribution system.³⁶ The distribution system, in particular, is extremely vulnerable to weather events.³⁷ This must inform the degree of action that should be required of ISOs/RTOs to address resilience concerns, noting that many demonstrable threats occur in parts of the system out of the reach or visibility of the market operators or wholesale market participants. This jurisdictional divide poses numerous challenges for the Commission and ISOs/RTOs. Guidance from the Commission, as well as ongoing

³⁴ CAISO Report, p. 8.

³⁵ "Electricity outages disproportionately stem from disruptions on the distribution system (over 90 percent of electric power interruptions), both in terms of the duration and frequency of outages, which are largely due to weather-related events. Damage to the transmission system, while infrequent, can result in more widespread major power outages that affect large numbers of customers with significant economic consequences." U.S. Department of Energy. *Transforming the Nation's Electricity System: The Second Installment of the Quadrennial Energy Review*. 2017, p. S-12. Available at: <https://energy.gov/policy/initiatives/quadrennial-energy-review-qer/quadrennial-energy-review-second-installment>

³⁶ "Consistent with the Rhodium Group's analysis, Brattle Group analyses have found that 99% of customers' loss of power in typical utility service territories is due to distribution system disruptions. Only about 1% is associated with outages at generation stations and the transmission System." The Brattle White Paper, p. 16.

³⁷ "Based on historic events, however, the vast majority of outage events arise at the distribution and transmission levels from weather events. The Rhodium Group finds that the bulk of outage events are due to routine causes (local storms, vegetation, squirrels, equipment problems), and the Department of Energy reported that 90% of electric power interruptions arise on the distribution system, mostly weather-related." *A Customer-focused Framework for Electric System Resilience*, Report by Grid Strategies, LLC, Docket AD18-7-000 (Filed May 8, 2018), p. 3. Available at: <https://gridprogress.files.wordpress.com/2018/05/customer-focused-resilience-final-050118.pdf>

consideration of this layer of the discussion, will be necessary as industry works through its analysis of resilience issues, threats, and mitigation tools or actions.

IV. CONCLUSION

WHEREFORE, EPSA urges the Commission to oversee the analysis and identification of resilience issues and risks on a regional basis, including jurisdictional entities operating outside of competitive organized markets. Where resilience concerns demonstrably exist, system operators should develop market reforms and improvements that ensure continued reliability and resilience of the system in each market. Market reforms should include improvements to price formation in all of the ISO's/RTO's markets, and the identification of those services, products, and capabilities which are needed to support resilience, such that a value may be assigned to that attribute and procured on a competitive basis from all eligible resources.

Respectfully submitted,

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Date: May 9, 2018

Attachment A

EPSA Letter to Energy Secretary Rick
Perry on FirstEnergy Solutions FPA
Section 202(c) Application



1401 New York Avenue, NW, Suite 950
Washington, DC 20005-2100
(202) 628-8200

April 27, 2018

The Honorable James Richard Perry
Secretary of Energy
United States Department of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

Dear Secretary Perry:

This letter builds on the joint filing dated March 30, 2018, that the Electric Power Supply Association (EPSA) co-signed with ten other entities in response to the application filed by FirstEnergy Solutions for an emergency order under section 202(c) of the Federal Power Act, and EPSA's subsequent letter to President Trump dated April 12, 2018.

More recently, press reports indicate that the Administration is also reviewing potential statutory authorities under the Defense Production Act to subsidize certain existing coal and nuclear plants with which EPSA members compete in the PJM Interconnection regional grid that operates federally regulated wholesale power markets. Furthermore, EPSA understands that the Department also may be considering Section 215A of the Federal Power Act as added by the FAST Act which provides new authorities intended to be used to address cyber security emergencies.

Reliability and resilience in PJM and other regions with organized wholesale markets depend on financially viable power plants using the full range of fuels and technologies. The power plants that together comprise the bulk power system in these regions are operated by several different types of owners, including independent power producers that EPSA represents, not just those utility-affiliated generators seeking one-off, narrow subsidies for themselves.

Viewing the complex, inter-related power grid solely through the narrow and parochial lens of subsidy requests from individual market participants, such as FirstEnergy Solutions, or categories of fuels, such as coal and nuclear, will make wholesale markets worse off, not better. This is especially so given that all power suppliers face a range of challenges. The policy choices facing the Administration should not be limited to either the status quo or even more subsidies. Subsidies are contagious. As the market share subject to competition continues to shrink from fuel-based preferences, both federal and state, there will be woefully insufficient megawatts to compete for by those not subsidized. At that point, everyone will require non-market payments. Thus, the policy choices the Administration is examining should also include the best choice, which is eliminating discriminatory and fuel-specific "thumbs on the scale" for electricity.

The Department's policy review should not be based on statutes such as FPA Section 202(c), the Defense Production Act, and Section 215A of the Federal Power Act (FAST Act) that were never intended to be used to establish economic support arrangements for entire sub-categories of generating facilities. By limiting its review in this fashion, the Department is unnecessarily confining itself to adding yet another thumb on the scale by creating a new broad federal subsidy program. While some may view this as rebalancing what was done by the prior Administration, that simply invites others to engage in further rebalancing in the future. Such uncertainty is inherently inconsistent with making substantial investments at market risk in long-lived assets to achieve your goal of improving electricity infrastructure for the future.

The Department should not miss this historic opportunity to promote competition and open markets. Effective competition will achieve the type of secure, reliable and resilient "all-of-the-above" mix of generating facilities the Administration seeks. To this end, EPSA suggests a bold and courageous approach that reduces and then removes subsidized forms of generation from distorting competitive generation markets. This can be achieved on parallel paths:

- The Department of Energy should lead an effort to review all existing subsidies related to power generation and, to the extent it is determined that such subsidies are no longer needed or effective, work with Congress and other relevant federal agencies to eliminate those that distort markets; and,
- The Federal Energy Regulatory Commission should swiftly conclude several pending dockets through which the Commission must develop and implement effective rules to protect competitive wholesale power markets from the parasitic and distorting effects of material discriminatory subsidies, both federal and state, whether supply-side or on the demand side of the electric meter.

The focus among many federal and state energy regulators over the last several decades has been to work to transition an industry once focused almost exclusively on extensive regulation and cost-of-service reimbursement to an industry that values competition over regulation and depends on market forces to incentivize both new investment and market participant behaviors that maximize system reliability.

We have learned a lot from these efforts. First and foremost, **markets work** and, when impediments and distortions are removed from markets, **they work better**. The second thing we have learned is that, when there are concerns that the markets are not creating adequate incentives to build or retain generating units that have the attributes that the power system needs to be reliable and resilient, the best way to address those needs is through new market-based initiatives that are **fuel neutral**. For example, new products and a full suite of attributes can be introduced into the existing markets (like PJM's capacity performance product) and generating facilities can then compete to provide these products and **all** required attributes in cost-effective and innovative ways.

The approach EPSA is recommending does not prevent States from making their own resource decisions, one way or the other. If a State wishes to incentivize or provide cost support for a specific type of generation, it will continue to be completely free to do so. But, it is essential to also respect the choices made by those States that elect not to subsidize specific resource types. Thus, regardless of the State in which they are located, those generating facilities that have not been subsidized must be protected from the market distortions that occur when subsidized resources are permitted to participate in the wholesale markets without limits. Absent adoption of effective countermeasures to protect the integrity of the wholesale power markets that FERC regulates, the subsidized subset of competitors will have an unfair artificial advantage competing with unsubsidized resources to clear wholesale energy and capacity markets on which the unsubsidized resources totally rely for revenues to remain viable.

Similarly, if in the future the Department determines that specific energy assets need emergency support for identified national security reasons, any temporary cost reimbursement that is provided to the relevant asset owners needs to occur outside of these markets, so that un-subsidized resources and their customers do not bear the brunt of providing funding for what will be an emergency or national security issue.

We think the choice is clear. Removing market distortions and ensuring that the power plant attributes that the system needs are compensated within the market on a competitive basis will allow an all-of-the-above strategy to continue to be successful. Doing so will ensure that it works into the future in a manner that incentivizes and spurs new investment and innovation along the way.

We look forward to working with you in addressing the Department's very important goals for the nation's energy systems including its organized wholesale power markets.

Sincerely,

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John E. Shelk
President & CEO
Electric Power Supply Association (EPSA)