UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing : Docket No. RM18-1-000

COMMENTS OF THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

I. INTRODUCTION

On September 28, 2017, pursuant to Section 403 of the Department of Energy Organization Act,[1] the Secretary of Energy Proposed Rule for Final Action by the Federal Energy Regulatory Commission (FERC).[2] The proposed rule was noticed by the Commission on October 2, 2017, notifying all interested parties that initial comments are due on or before October 23, 2017 and reply comments are due on or before November 7, 2017.

II. SUMMARY OF COMMENTS

The Pennsylvania Public Utility Commission (PAPUC) submits the following Comments on the U. S. Department of Energy's (DOE's) Proposed Rule. These Comments are summarized as follows:

(1) DOE's Proposed Rule threatens the efficient functioning of organized competitive wholesale electricity markets by providing *de facto* cost of service treatment to coal and nuclear generation without adequate justification.

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[1] 42 U.S.C. § 7173 (2012).
[2] 18 CFR §35.28.

(2) The PAPUC has historically been supportive of competitive wholesale markets and has actively advocated in favor of policy and regulatory proposals at FERC that promote the success of competitive markets.

(3) The success of competitive electric markets at the wholesale level, ably administered by PJM within it footprint, has translated into equally vibrant retail choice markets in PA. The DOE Proposed Rule could put PA retail choice programs at risk.

(4) Resilience and reliability are complex topics that are currently being examined within the PJM stakeholder process. These processes should be permitted to go forward.

(5) The 2014 Polar Vortex is an inadequate and inappropriate justification for the Proposed Rule.

(6) The accelerated timeline for promulgation of the Proposed Rule is unrealistic.

(7) The Proposed Rule may conflict with state jurisdiction over retail ratemaking.

III. COMMENTS

The PAPUC herein files general Comments in response to the Proposed Rule coupled with specific responses appended to the Comments. The PAPUC responds to those questions for which it possesses adequate knowledge and/or expertise.

The PAPUC contends the Proposed Rule represents a hastily drafted effort to institute cost of service rate treatment of specific generation resources, namely coal and nuclear[3], on an unreasonable short timeframe throughout competitive wholesale electric

[3] There is an issue as to whether nuclear generation should qualify for cost of service treatment given that nuclear generation facilities do not have operating reserves. This is an issue that the PAPUC believes FERC should examine with closer scrutiny.

markets on a "one size fits all basis" without giving due consideration to the potential negative impacts of this proposal on the organized markets and consumers of electricity.

While the PAPUC finds the Proposed Rule to be unwieldy, untimely and impractical, the PAPUC does not dispute that there is a role for the federal government in intervening in energy policy and, even to some extent, wholesale ratemaking. However, such federal intervention must be carried out in a measured and careful manner in order to minimize potentially negative consequences to the competitive markets upon which restructured states like Pennsylvania depend.

The PAPUC believes that there are particular aspects of the Proposed Rule which are beyond the PAPUC's expertise or jurisdiction. These issues include, but are not limited to, environmental protection, national security and economic development. These are issues which are of potential importance to other stakeholders and, indeed other branches of state government. Therefore, the PAPUC's comments must be read and interpreted narrowly and not construed to be the policy of the Commonwealth of Pennsylvania unless and until the Governor and/or the General Assembly weigh in on these and other broad policy considerations. The PAPUC opposes the adoption of the Proposed Rule in its current form for the reasons which follow.

A. The Hasty Implementation of the Proposed Rule Threatens to Disrupt the Organized Wholesale Electric Markets

1. The PAPUC Has Been a Supporter of Organized Wholesale Electric Markets

The PAPUC has been and continues to be a strong supporter of organized wholesale electricity markets. The PA PUC was an early and active proponent of the regulatory shift to wholesale and retail electric competition. In 1996, the Pennsylvania General Assembly and Governor Tom Ridge signed into law The Electricity Generation Customer Choice and Competition Act (Electric Competition Act) that laid the framework for electric retail competition in Pennsylvania.[4] To date, the Pennsylvania General Assembly has neither backed away from its support for retail competition and the deregulated market platform which supports it, nor has it moved to enact legislation to subsidize baseload generation. Shortly after enactment of the Electric Competition Act, FERC issued its landmark decision establishing the regional transmission organization (RTO) as the entity responsible for administering the centralized capacity market.[5] The PAPUC was an active participant in those proceedings in which the earliest phases of PJM centralized capacity markets were proposed and implemented.[6] PJM's current centralized capacity market dates to FERC's initial approval of the Reliability Pricing Model (RPM) in 2006.

[4] Act of Dec. 3, 1997, P. L. 802, No. 138, § 4, effective Jan. 1, 1997 (codified at 66 Pa. C. S. §§ 2801-2812).
[5] *Regional Transmission Organizations*, Order No. 2000 (Dec. 20, 2000), 89 FERC ¶ 61, 285 (2000).
[6] *PJM Interconnection, LLC,* 117 FERC ¶61,331 (2006).

The first PJM RPM Base Residual Auction (BRA) was held in 2005. Since that time, there have been fourteen BRAs utilizing the RPM as the economic model for procuring capacity.[7] During those years, the PAPUC has actively participated in proceedings at FERC wherein PJM's centralized capacity market model, RPM, has evolved to its current form. Throughout this period, the PAPUC has been supportive and filed comments in many FERC initiatives to strengthen the functioning and competitiveness of wholesale markets.[8] The PAPUC has also advocated for competitive markets in landmark decisions such as *FERC v. EPSA* and *PPL EnergyPlus v. Solomon*.[9]

Pennsylvania is centrally located within the PJM footprint with significant amounts of generation located within its borders. Pennsylvania is a significant consumer of electricity for its industrial, commercial and residential load. The state is ranked second in the nation for production of natural gas primarily due to the development of unconventional gas resources over the last decade. This fuel source has greatly accelerated the shift away from coal-fired generation that has resulted in the increased rate of retirements of these facilities in the PJM region coupled with a marked increase in construction of gas-fired generation facilities. In 2015, Pennsylvania generated approximately 64 million megawatt hours (MWh) from coal-fired generation and 80

[7] PJM 2020/2021 Base Residual Auction Results Table 1 at 6.
[8] *PJM Interconnection, LLC*, Docket No. ER13-535-000 (MOPR revisions); Centralized Capacity Markets in *Regional Transmission Organizations and Independent System Operators* Dkt. No. AD13-7 (status of organized capacity markets in eastern RTOs) ; PJM Interconnection LLC, Dkt. No. ER14-503 (establishment of capacity import limits); *PJM Interconnection LLC*, Dkt. No. ER14-504 (amendments to the PJM Reliability Assurance Agreement); *PJM Interconnection LLC*, Dkt. No. ER13-198 (Order 1000 implementation); *Price Formation in Energy and Ancillary Markets*, Dkt. No. AD14-14 (examining current RTO/ISO practices in price formation);
[9] 136 S. Ct. 760 (2016); 766 F.3rd 241 (3rd Cir. 2014).

million MWh from nuclear generation annually.[10] Pennsylvania is the fourth largest generator of electricity in the nation.[11] Pennsylvania is also a major route for backbone transmission facilities for movement of electricity within PJM and to neighboring planning authorities such as the Midcontinent Independent System Operator (MISO) and the New York ISO (NYISO). Consequently, Pennsylvania has an ongoing interest in the successful functioning of wholesale electricity markets.

The PAPUC has a grave concern that adoption of the Proposed Rule, by requiring cost of service recovery for coal and nuclear facilities, could undo much of the progress achieved in continuing to move in the direction of efficient and fully functioning wholesale capacity and energy markets at a time when FERC and PJM are grappling with a number of significant issues facing these markets including maintaining grid reliability and resilience (FERC), price formation including capacity repricing, energy price reform and the impact of state zero emission credit legislation (PJM).[12] The PAPUC would be remiss in its duty to represent the Commonwealth's five million residential and 700,000 non-residential electric consumers if it did not raise concerns regarding the potentially disruptive impacts of the Proposed Rule.

[10] EIA Net Generation By State (2016 Report based on 2015 data).
[11] https://www.eia.gov/state/rankings/?sid=PA#series/51
[12] To date, the Pennsylvania General Assembly has neither backed away from its support for retail competition and the deregulated market platform which supports it, nor has it moved to enact legislation to subsidize baseload generation; however, a Nuclear Caucus has been formed in the General Assembly to consider the issue of retaining nuclear power in the state. On October 19, 2017, a Concurrent Resolution was introduced into the PA Senate urging FERC to "swiftly consider the Proposed Rule and implement policies to ensure fuel—secure baseload electric generation receive proper compensation for the positive attributes they provide our national and the Commonwealth's electric system." (Senate Res. No. 227, October 19, 2017, House of Representatives No. XXX, October XX, 2017).

2. The Success of Wholesale Capacity and Energy Capacity Markets Has Created a Vibrant Retail Choice Market for PA Customers. The Proposed Could Put PA's Retail Market at Risk

The introduction of retail choice under the Electric Competition Act has resulted in over 2 million Pennsylvania retail customers participating in the selection of their alternative electric generation suppliers and not their electric distribution company as their default supplier. This phenomenon would not have occurred were it not for the continuing success of competitive wholesale electric markets. To date, 36% of all PA retail customers (2,090,997 of 5,763,623) are served by competitive suppliers including 1.7 million of 5.0 million residential accounts and 334,949 out of 702,373 non-residential accounts. On a MWh basis, 79 million or 68% of 116 million total MWhs are currently served by competitive suppliers.[13] The PAPUC currently has more than 100 licensed electric generation suppliers operating within the state. PA ranks second in the nation in the number of retail choice customers. Further, the PAPUC has conducted default service auctions for its major electric distribution companies (FirstEnergy, PPL Electric Utilities, PECO Energy, Duquesne Light) that have resulted in stable and competitive generation costs for those customers that choose to remain with their incumbent utility.

The Proposed Rule specifically favors market participants by *assuring* cost of service recovery while leaving other participants fully exposed to the *risks* of the marketplace. This disparity in treatment will impose distortions in the proper functioning

[13] http://www.puc.state.pa.us/Electric/pdf/Electric_Choice_Report-2016.pdf at 2.

of the wholesale electric markets making it more difficult for economically efficient gas and renewable-based generation to successfully compete in PJM's wholesale capacity, energy and ancillary services markets. Disruption in wholesale electric prices will translate directly into disruption in the retail markets which put the continuing viability of retail choice programs at risk at a time when customers generally have become comfortable with choosing electric suppliers. In fact, all retail electric choice states within PJM may see their competitive retail market put at risk if this rule is adopted.[14]

3. PJM Has Successfully Encouraged the Development of Reliable Wholesale Electric Markets

PJM has been in the forefront efficient and functional wholesale capacity and energy markets. While this process has not always been smooth and harmonious, the results speak for themselves. The 2017 State of the Market (SOM) Report 2nd Quarter (issued August 10, 2017 by the PJM Market Monitor) determined that all of the following markets were competitive:[15] capacity, energy, synchronized reserve, regulation, ancillary services and financial transmission rights (FTR).[16] Likewise, the 2016 SOM Report reported similar competitive results for specific markets.[17] Both of these reports noted a number of positive results as continuing improvements in fuel diversity index, lower spot

[14] Other retail choice states in PJM include Illinois, Ohio, Maryland, New Jersey, Delaware and District of Columbia.

[15] While not all markets were structurally competitive, participant behavior and market performance was found to be competitive by the Market Monitor.

[16] http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2017/2017q2-som-pjm.pdf Some components of certain markets (specifically market structure) received ratings of not competitive or mixed which indicates some improvement is needed.

[17] http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2016/2016-som-pjm-volume1.pdf at 7-10.

average fuel prices and lower short run costs of generation and increased installed capacity by fuel source. Capacity prices have remained generally stable while new and diverse generation resources have entered the market.[18]

PJM has, through its stakeholder process and working with the state commissions. successfully navigated through numerous potentially disruptive regulatory obstacles while maintaining relative market stability. These obstacles include the FERC Order 1000 requirement that organized markets accommodate state public policy transmission projects, increased natural gas generation, revisions to the Minimum Offer Price Rule (MOPR) to address the impacts of state-subsidized generation, treatment of demand response resources, the issues highlighted by the 2014 Polar Vortex including energy market uplift and the development and implementation of the Capacity Performance protocols.[19] PJM also has in place a detailed and binding Reliability Assurance Agreement that establishes the obligations and responsibilities of generators participating in the PJM markets.[20] The Capacity Performance Plan was in fact implemented to ensure reliability. Currently, PJM, its stakeholders and state commissions are grappling with the potential market impacts of retiring nuclear generation, state renewable portfolio policies and developing a capacity construct to accommodate state-sponsored generation resources.

[18] *Id*. at Figure 8 at 33; Figure 9 at 35.
[19] In all these proceedings, PJM initiated examination of the issue by way of a stakeholder process, committee debate and discussion, presentation to the PJM Members Committee concluding with a filing at FERC. The PAPUC was an active participant in all these proceedings.
[20] PJM LLC Rate Schedule FERC No. 44.

The Proposed Rule could upend the steadily evolving, carefully calibrated processes in place since the inception of organized markets without the normal regulatory and stakeholder opportunities normally associated with significant changes to the electric market. More specifically, the Proposed Rule guarantees full cost of service recovery of capacity and energy costs for coal and nuclear generation at the expense of other non-cost of service resources which must continue to operate in a competitive environment. This seismic shift in how generation resources are to be priced puts current PJM methodologies for RPM (for setting capacity market prices) and the Locational Marginal Pricing (LMP) mechanism for (setting energy market prices) at risk while moving the rule promulgation on a fast-track that eliminates any meaningful stakeholder input or FERC staff consideration.

4. Resilience and Reliability Are Complex Concepts Which Need Careful Examination Not Rapid Reform

The subject of resilience, its relationship to reliability and the proper valuation of each concept is still a matter of debate and discussion within PJM. FERC should not seek to define either resilience or reliability (or any combination of both) based on a single, narrow factor – a 90-day fuel supply.

The PAPUC defines reliability as the ability of the power system to deliver electricity in the quantity and with the quality demanded by users. The North American Electric Reliability Corporation (NERC) defines operating reliability as "the ability of the electric system to withstand sudden disturbances to system stability or unanticipated loss

of system components."[21] PJM has defined resilience as the ability to prepare for a low probability but high impact event, the ability to mitigate the risk of presented by this event, to effectively operate through the event and the ability to recover from that event.[22] Resilience has also been defined as the ability to reduce the magnitude and/or duration of disruptive events. The effectiveness of a resilient infrastructure depends upon its ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event.[23] Resilience emphasizes the idea that disruptive events occur regularly and that systems should be designed to bounce back quicker and stronger because the impact was anticipated. Resilience should be risk-based, with focus on high consequence but low probability threats. DOE itself has defined the concept as "the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents."[24] The relationship between resilience and reliability was best expressed in a recent publication by the DOE's Sandia Laboratories:

> *The concept of reliability must be augmented with a resiliency approach*—one that looks at the grid not strictly as a flow of electrons but as a grid that *services*, interfaces with, and impacts people and societies.[25]

The PAPUC is currently monitoring and engaging with PJM as part of its examination of the relationship between resiliency and reliability. PJM issued a report

[21] *DOE Staff Report on Electricity Markets and Reliability* (August 2017) at 61
[22] PJM Stakeholder MRC Webinar on DOE NOPR (October 19, 2017).
[23] The National Infrastructure Advisory Council (2009).
[24] Presidential Policy Directive No. 21 (2017).
[25] http://energy.sandia.gov/energy/ssrei/gridmod/resilient-electric-infrastructures/

entitled "*PJM's Evolving Resource Mix and System Reliability*"[26] on March 30, 2017 which represented the first comprehensive analysis of the relationship between resilience, reliability and the changing fuel mix. One of the significant findings of this Report was that fuel diversity has and continues to be a major contributing factor to the reliability of PJM from both a generation and transmission perspective.[27] Further, reliability attributes differ by fuel source and the future reliability of PJM as a grid operator depends on the continuing recognition and valuing of the unique reliability attributes of diverse fuel sources.[28] The Report identified a number of reliability attributes such as frequency response, voltage control, ramping capability, flexibility, black start capability, environmental restrictions, equipment availability, demand response and fuel assurance. The Report does not identify fuel assurance as worthy of any more value in evaluating reliability and resilience than any other factor.[29] In fact, the Report, in analyzing fuel assurance and resilience focuses far more on the importance of maintaining secure natural gas supplies as well as highlighting the continuing progress in the implementation of capacity performance to address future "polar vortex" events.[30]

On April 19, 2017, PJM conducted a conference entitled: *Grid 20/20: Focus on Resilience (Fuel Mix Diversity & Security)*[31] to facilitate a discussion that explored fuel

[26] http://www.pjm.com/~/media/library/reports-notices/special-reports/20170330-pjms-evolving-resource-mix-and-system-reliability.ashx
[27] *Id.* at 8-14.
[28] *Id.* at 14-17.
[29] *Id.* at 17-24.
[30] *Id.* at 33-38.
[31] http://www.pjm.com/-/media/committees-groups/stakeholder-meetings/grid-2020-focus-on-resilience-part-one-20170419/20170420-pjm-perspective-mike-bryson.ashx?la=en

mix diversity and security issues and their intersection with resilience. PJM conducted an analysis to evaluate resource diversity through a reliability lens and to identify a range of resource fuel mixes that effectively manages reliability risks. On July 26, 2017, PJM sponsored a second *Grid 20/20: Focus on Security & Resilience*[32] which was intended to facilitate a discussion to explore the concept of resilience in planning, operations & markets, as well as cyber and physical security. Earlier this summer, PJM released a Resilience Roadmap[33] charting a high-level course for broadly evaluating and considering resilience across operations, planning, markets, and security.

One of the basic foundations to any analysis of resiliency and its relationship to reliability is the need to consider the interplay of many complex factors. For example, PJM's Roadmap to Resilience projects integration of and valuation of resilience attributes into the energy market, planning and operations, the regional transmission and expansion plans (RTEP) and physical/cybersecurity by the end of 2018. PJM's own analysis thus far makes clear that a resilient infrastructure depends on many inter-related factors not just a single metric like a 90-day fuel supply. PJM's roadmap envisions consideration of operations (reserves, threat identification, contingency analysis, frequency response); energy markets (price setting resources, load following support); planning (infrastructure innovation, enhanced dispatch and switching, resilience metrics for generation and transmission, supply chain security), transmission (incorporate resilience into the RTEP)

[32] http://www.pjm.com/committees-and-groups/stakeholder-meetings/symposiums-forums/grid-2020-focus-on-security-and-resilience.aspx
[33] http://www.pjm.com/~/media/committees-groups/committees/mc/20170619-webinar/20170619-item-02-resilience-roadmap.ashx

and physical/cybersecurity (insider threat analysis, electromagnetic pulse (EMP) and geomagnetic disturbance (GMD) analyses, black start exercises). Many of the concepts are also addressed in DOE's Staff Report.

From the PAPUC's perspective, the proper measure and valuation of resilience and reliability and the evaluation of resources that can best address resilience and reliability are subjects currently being evaluated by PJM and its stakeholders.

The PAPUC also noted that PJM reserve margins in recent years are consistently above the levels necessary to ensure reliability. The PJM reserve margin was calculated at 19.8 % above peak load for the 2018/2019 delivery year, 22.4% for the 2019/2020 delivery year and 23.3% for 2020/2021 or 6.7% higher than the target reserve margin.[34] Consistently higher than needed reserve margins undercuts any DOE-inspired urgency to rapidly reform reliability and resilience in the PJM footprint.

The PAPUC believes the evolving concept of resilience and its relationship to reliability and a proper recognition and valuation of both *are critically important considerations* needed to address the multiplicity of threats from the both natural and man-made disruptive events. This examination within PJM should be permitted to take its own course as laid out in PJM's current processes. It would be counterproductive to overlay emphasis on one limited and, ultimately, short-sighted factor – a 90-day fuel supply - prior to PJM concluding its internal analysis and stakeholder process.

[34] PJM 2020/2021 RPM Base Residual Auction Results at 1.

5. The 2014 Polar Vortex Is an Inadequate Justification for the Proposed Rule

Both the DOE NOPR and the FERC Request for Comments suggest that the occurrence of the 2014 Polar Vortex (January 6-8 2014) partly justifies the need to promulgate the Proposed Rule.[35] This event occurred during a time when PJM set a record for wintertime peak demand of 141,846 MW while dealing with higher than normal scheduled outages. During peak demand hours, 22% of generation capacity including coal, gas and nuclear units, were out of service.[36] The breakdown of generation failures by generation type reveals that 13,700 MW of coal generation was affected by the cold weather events. However, coal-fired plant outages were not due to inadequate fuel supply but other causes such as boiler internal failures, tube leaks, electrical failures, staffing shortages and coal pile freeze-up.[37] As detailed in the report, PJM employed a number of pre-defined steps to maintain the stability of the grid including calling on all available resources, issuing public appeals for conservation, request for load management resources and extensive advance communications to stakeholder, state and federal officials.[38] As the situation intensified, PJM employed standard emergency procedures including max emergency alert procedures, voltage reduction warnings, primary reserve

[35] DOE NOPR at 11; FERC Request for Comment at 2. The DOE NOPR additionally references the occurrences of extreme weather events such as Superstorm Sandy and Hurricanes Harvey, Irma and Maria.

[36] file:///C:/Users/jmelia/Documents/Polar%20Vortex/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.pdf at 4.

[37] *Id*. at 26.

[38] *Id*. at 5.

(including synchronized reserve) utilization and imports of power from neighboring regions.[39]

NERC issued a comprehensive report entitled the Polar Vortex Review (September 2014) that encompassed all RTO/ISO/organized markets. NERC's review of the ReliabilityFirst region (encompassing the PJM footprint) echoed the findings of PJM's analysis assigning most of the outage causation to the number of units that were unavailable or de-rated due to lack of availability. The situation was exacerbated by the loss of a Texas Eastern natural gas compressor station rated at 575,000 dekatherms (Dth) per day located at Delmont, Pennsylvania.[40] NERC's review of outage causation across all centralized markets attributed the majority of outages to the effect of cold weather on equipment especially older units not inadequate coal supplies.[41]

PJM proactively responded to NERC's and its own findings by instituting a number of internal cold weather procedures for generators which established guidelines for pre-winter testing, personnel training, staffing, equipment preparation and fuel/environmental preparation.[42] PJM's 2015 Winter Report demonstrated improved generator performance based on implementation of winter preparation procedures reflecting lessons learned from the Polar Vortex event.[43] The breadth of PJM's responses to the 2014 cold weather events is also exemplified by their improved winter preparation

[39] *Id*. at 5.
[40] file:///C:/Users/jmelia/Documents/Polar%20Vortex/Polar_Vortex_Review_29_Sept_2014_Final.pdf at 9.
[41] *Id*. at 13-18.
[42] PJM 2015 Winter Report
[43] *Id.* at 5-6.

interface with gas pipeline suppliers and coordination with other organized providers in the NERC ReliabilityFirst region.[44] Unquestionably, PJM has taken strong measures at the operational level (including the gas/electric interface) to ensure no repeat of the winter 2014 outage events.

Subsequent to the January 2014 cold weather event, PJM also initiated stakeholder action to address obvious generator performance shortcomings through its Capacity Performance proposal.[45] The objectives for PJM's Capacity Performance Product were designed to: (i) enhance fuel security through a dependable fuel source; (ii) enhance operational performance during peak periods; (iii) incent higher availability of generation resources; (iv) increase flexible unit operational parameters; and (v) strengthen operational diversity.[46] PJM's proposal also established standards for generator performance including penalties for non-performance. Generators that exceed performance requirements are entitled to funds collected from generators that underperform. Generators assume virtually all financial risks if they do not meet their power supply obligations. Under capacity performance, generators must meet their commitments to deliver electricity whenever PJM determines their resources are needed to meet power system requirements. As a "pay for performance" requirement, generators may receive higher capacity payments, and in return, are expected to invest in modernizing equipment, firm up fuel supplies and adapt to using different fuels.[47]

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[44] *Id.* at 6-7.
[45] http://www.pjm.com/-/media/library/reports-notices/capacity-performance/20140820-pjm-capacity-performance-proposal.ashx?la=en
[46] *Id.* at 4,7.
[47] *Id.* at 26-28.

Capacity performance was also designed to incent investment in new capacity that is highly reliable and available to meet system demand during peak system conditions. Capacity performance was also designed to incentivize investment in low cost, flexible resources thus reducing costs in the energy markets.

FERC ultimately approved PJM's Capacity Performance Product by Order issued May 10, 2016.[48] The Capacity Performance Product was phased-in over several BRA periods, gradually replacing PJM's Base Residual Product. Full transition to Capacity Performance Product was achieved in the 2020/2021 BRA.[49] PJM's Capacity Performance proposal has also withstood appellate challenge.[50] PJM's most recent draft assessment of Capacity Performance during its first full year of operation found positive indicators such improvements in generator responsiveness, increased investments in generator units and decreases in the use of restrictive generator operating parameters.[51]

Additionally, FERC has issued rules in conjunction with the RTO/ISO, interstate gas pipelines and stakeholder community to improve the gas/electric coordination procedures.[52]

Based on the foregoing, the PAPUC concludes that DOE's undue reliance on the Polar Vortex of January 2014 as a precipitating factor for the Proposed Rule is not supported by the operational and after-action reviews conducted by both PJM and NERC.

[48] *PJM Interconnection, L.L.C.*, Docket Nos. ER15-623-002,004,005.
[49] PJM Base Residual Auction Report for 2020/2021 at 1.
[50] *Advanced Energy Management Alliance v. FERC* , 860 F.3d 656 (D.C. Cir. 2017) .
[51] PJM Capacity Performance: An Analysis of Year 1 (Draft) (October 2, 2017) at 11.
[52] *Coordination of the Scheduling Processes of Interstate Natural Gas Pipelines and Public Utilities* Dkt No. RM14-2-000 (Order 809) (April 16, 2015).

On the contrary, PJM appears to have, at least from a preliminary analysis, satisfactorily addressed the root causes of the 2014 cold weather event to the extent that DOE's proposed rule appears unnecessary.

6. The Proposed Rule Contradicts the Findings of the DOE Staff Report

The Proposed Rule requires any "eligible grid reliability and resiliency resource" to be entitled to just and reasonable as well as full cost of service recovery and return on equity for each resource that is dispatched during grid operations.[53] To be an eligible resource, generation facilities must be: (i) an electric generation resource physically located within a FERC-approved RTO/ISO; (ii) must be able to provide essential energy and ancillary services; (iii) have a 90-day fuel supply that enables the resource to operate during extreme natural and man-made emergency conditions; (iv) is compliant with all applicable environmental laws; and (v) is not subject to cost of service regulation.[54]

The preamble to the DOE Proposed Rule references concerns over the retirement of coal and nuclear facilities and threats such retirements present to the electric grid. The Proposed Rule is accordingly narrowly tailored to provide economic subsidies to coal and nuclear facilities without consideration of other factors that are normally considered in a business decision regarding whether to retain or retire such facilities. With regard to coal-fired generation, the advanced age (over 40 years), lessened economic efficiency,

[53] 18 C.F. R. Part 35 § 35.28.
[54] *Id.*

low capacity factors and environmental compliance costs may simply outweigh any putative reliability and resilience benefits associated with the coal facility.

DOE's Staff Report, in addressing fuel assurance, placed greater emphasis on gas pipeline fuel supply and mitigating delivery vulnerabilities than on-site fuel which, it conceded, could be subject to freezing.[55] Also, DOE Staff noted that the decline in coal plants due to retirements was largely a function of advanced age and poor capacity performance, factors which are not affected by the presence of an adequate fuel supply.[56] For example, the majority of coal plants retired in 2014 averaged a plant capacity factors of 22% while those remaining operational averaged 63%. The DOE Staff Report identified other factors that impacted retirement decisions such as low natural gas prices coupled with increased gas generation, the cost of environmental regulatory compliance and the benefits of other more flexible resources such as demand response and load management tools.[57]

Not only is the presence or absence of a 90-day onsite fuel supply *not* identified as a reliability concern by PJM, NERC or the FERC (independent of this NOPR), there is no parallel requirement for nuclear facilities that are also the ostensible beneficiaries of this rule.

As the DOE Report mentions, the average capacity factor of recently retired coal units was only 22%, which indicates poor economic efficiency. Under such

[55]DOE Staff Report at 12.
[56] *Id.* at 43-46; Figure 3.23.
[57] *Id.* at 43-46; Figure 3.23.

circumstances, the onsite availability of a 90-day fuel supply will have little significance. A contributing factor to the retirement of coal and nuclear resources is the low cost of natural gas, the relatively low cost to construct gas-fired facilities relative to coal/nuclear and the "onsite" availability of firm gas pipeline supplies coupled with very low forced outage rates (which are indicative of highly reliable performance). All of these factors were amply considered in DOE's Staff Report at pp. 35-46.

The DOE Staff Report also examined the contributing factors behind nuclear retirements. The Report observes that 28 nuclear plants are now merchant facilities that were spun off or sold to utility affiliates or during electric restructuring in order to exploit high locational marginal costs (LMPs) in these centrally organized markets.[58] However, a number of economic and financial challenges such has changes in market structure, a decline in wholesale market prices, increased penetration of natural gas and the costs of life-extension have all contributed to a gap between nuclear operating revenues and operating costs in the range of $5-$15 per MWh.[59] The Report concluded that these trends are not likely to change in the near term. The Report also tellingly notes that even those nuclear facilities that operate in vertically integrated cost of service jurisdictions may not be immune from competitive pressures and increased costs of Nuclear Regulatory Commission (NRC) mandated life-extension regulatory requirements.

The increased cost of the Proposed Rule based just on Pennsylvania based nuclear generation would be staggering. Assuming 2016 electric generation of 80 million MWh

[58] *DOE Staff Report* at 29.
[59] *Id.*

multiplied by the midrange of gap in nuclear revenues or $10/MWh results in an annual cost increase to customers within the PJM footprint of $800 million.

The Proposed Rule also contradicts conclusions contained in the DOE Staff Report regarding the contributions of variable renewable resources (VREs) especially wind, hydroelectric and solar and the burgeoning contributions of these resources to generation diversity with total renewable generation now exceeding 14% of the U.S. total. The Report identified renewable generation as benefitting from both beneficial technology and policy drivers. The technology contribution references innovative developments and dramatically lower production costs (especially for solar). The public policy component is reflected in the growth of state renewable portfolio standards (RPS) as a further impetus for VRE growth.[60] The PAPUC contends that fuel supply availability (whether 90 days or otherwise) constitutes an unreasonably narrow basis on which to justify cost of service compensation.

7. The Proposed Rule Will Be Difficult to Implement

The PAPUC does not support the Proposed Rule. However, assuming DOE's Proposed Rule is adopted, effective implementation will prove difficult if not impossible to implement in the near term. PJM has been grappling with the development of the wholesale capacity and energy markets since its inception in 2007. The process has never been pristine or elegant and is often contentious at the stakeholder phase and litigious at the FERC and appellate stage. Moreover, the number of issues have not

[60] *Id* at 47-51.

diminished. For some months, PJM's Capacity Construct Public Policy Senior Task Force (CCPPSTF) has been wrestling with the difficulties of capacity repricing to accommodate state-sponsored generation. This debate coupled with finalization of a proposal, a tariff filing and FERC review and approval could take several months if not a year to complete. This proposal is but one of many moving parts in the complex mechanism of the organized wholesale electric markets.

Implementation of the Proposed Rule under the current market construct will make the capacity repricing proposal and other equally complex market issues simplistic by comparison. The PAPUC recommends that each RTO/ISO be permitted to make their own determinations regarding the many complex and market-influencing issues that will need to be addressed during the implementation process. These decisions should not be determined on a "one-size, fits all" basis. To date, FERC has proven to be flexible in respecting each RTO/ISO's ability to design market solutions that best fit the needs of the footprint. On this basis, the PAPUC, while not having specific responses to many of the FERC questions does advocate for the ability of RTO/ISOs to develop specific solutions to the following: (i) which coal/nuclear units should be eligible for compensation; (ii) how eligibility and amount of compensation should be computed; (iii) the appropriate technical criteria for eligibility for compensation; (iv) whether eligible resources should be required to provide energy and ancillary services; and (iv) whether other types of resources should be considered as eligible for compensation.

Additionally, the PAPUC asserts that solutions that are RTO/ISO specific would be most appropriate for determining the following issues raised in the FERC questions:

(i) the commitment and dispatch of eligible resources to the market; (ii) accommodation of cost of service based resources in determining the clearing prices in capacity markets; (iii) determination of performance requirements for eligible resources; (iv) determining the compensable cost to be included in the cost of service rate; (v) creating a mechanism wherein cost of service revenues offset wholesale market revenues so as to avoid overcompensation of eligible resources; and (vi) determination of a reasonable cost allocation mechanism for the costs of eligible resources that are consistent with existing FERC-approved, PJM-adopted cost allocation mechanisms. The difficulty with the foregoing recommendations is that the expedited timeframe set by DOE will not permit the RTO/ISO community enough time to examine the market implications of the Proposed Rule through the normal stakeholder committee process. Market modifications made too quickly could have severe consequences to the viability and competitiveness of the wholesale electric markets.

8. The Time Frame for The Promulgation of the Proposed Rule Is Inadequate

DOE's directive to FERC establishes an unrealistically constrained time line for the filing of comments and the formulation of either a Final Rule or an Interim Final Rule.[61] DOE requires FERC action within 60 days of publication of its Notice with public comments due 45 days from publication of the DOE Notice.[62]

[61] FERC denied a Motion for Extension of Time to File Comments filed by numerous parties at this docket on October 4, 2017.
[62] *DOE Notice on Grid Resiliency Pricing Rule* at RM17-3-000 at 1.

At a minimum, any consideration of this Proposed Rule should permit a reasonable opportunity for comments and reply comments consistent with recent rulemakings undertaken by the FERC. Most FERC rulemaking proceedings permit comment periods of at least 60-days after Federal Register Publication.[63] FERC's recent NOPRs addressing changes to frequency response regulations and the participation of electric storage in RTO/ISO markets were both rulemakings that were technically complex but not disruptive to the electric market yet FERC provided for the standard 60-day comment period. Imposition of an unrealistically short comment period undermines the purpose of a rulemaking process under the Federal Administrative Procedures Act and may result in a defective regulatory result.

B. The Proposed Rule May Conflict with State Jurisdiction Over Retail Ratemaking

The Federal Power Act expressly gives the states jurisdiction over "facilities used for the generation of electric energy." [64] *See also Hughes v. Talen Energy Marketing*, 136 S.Ct. 1288, 1292 (2016). For purposes of determining electric generation pricing and assuring resource adequacy, some states have chosen to deregulate the generation function and rely on generation resources subject to competitive market forces. Other states have chosen cost-of-service regulation retaining the traditional vertically integrated

[63] See *Essential Reliability Services and the Evolving Bulk Power System-Primary Frequency Response*, Dkt. No. RM16-6-000 (issued November 17, 2016) at 2; *Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Dkt. No. RM16-23-000 at 2 (issued November 16, 2017).

[64] 16 U.S.C. § 824(b)(1) ("The Commission … shall not have jurisdiction, except as specifically provided in this subchapter and subchapter III of this chapter … over facilities used for the generation of electric energy").

model. The DOE Proposed Rule purports to impact a state's ability to choose between these two regulatory paradigms by re-imposing cost-of-service compensation for generation services that are selected and compensated under a market-based regulatory model.

This ultimately shifts the authority from the states to the federal government when deciding the type of regulation that applies to each state's generation. If a restructured state decides that a competitive market construct is no longer consistent with a state's need to incent enough generation at reasonable prices (as some states have), states have the opportunity through the legislative process to return to a more traditional regulatory model. The Proposed Rule treads close to and possibly crosses the traditional bright line between state and federal regulation.[65] FERC's consideration of this rule should focus on both the legality as well as the practicality and need for this unprecedented intervention into competitive markets.

[65] *See Nantahala Power & Light v. Thornburgh*, 476 U.S. 953, 966 (noting "plenary" FERC jurisdiction over interstate wholesale rates but preserving some state role in evaluating the prudency of purchased power decisions); *FPC v. Southern California Edison*, 376 U.S. 205, 215-216 (Congress meant to draw a bright line easily ascertained between federal and state jurisdiction…).

IV. CONCLUSION

For all the foregoing reasons, the PAPUC respectfully requests its Comments be considered in the final formulation of any rule this proceeding.

Respectfully submitted,

/s/ James P. Melia
James P. Melia
Counsel for the Pennsylvania Public Utility Commission
PO Box 3265
Harrisburg, PA 17105-3265
Tel: 717-787-1859
jmelia@pa.gov

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APPENDIX A

PAPUC RESPONSES TO FERC QUESTIONS

Need for Reform

1. What is resilience, how is it measured, and how is it different from reliability? What levels of resilience and reliability are appropriate? How are reliability and resilience valued, or not valued, inside RTOs/ISOs? Do RTO/ISO energy and/or capacity markets properly value reliability and resilience? What resources can address reliability and resilience, and in what ways?

Answer:

See PAPUC Comments previously at pp. 10-14.

2. The proposed rule references the events of the 2014 Polar Vortex, citing the event as an example of the need for the proposed reform. Do commenters agree? Were the changes both operationally and to the RTO/ISO markets in response to these events effective in addressing issues identified during the 2014 Polar Vortex?

Answer:

See PAPUC Comments previously at pp. 15-19.

3. The proposed rule also references the impacts of other extreme weather events, specifically hurricanes Irma, Harvey, Maria, and superstorm Sandy. Do commenters agree with the proposed rule's characterization of these events? For extreme events like hurricanes, earthquakes, terrorist attacks, or geomagnetic disturbances, what impact would the proposed rule have on the time required for system restoration, particularly if there is associated severe damage to the transmission or distribution system?

Answer:

The PAPUC does not have enough information or background on the impacts of specific events such as hurricanes, earthquakes, terrorist attacks or geomagnetic disturbances on the electric grid to offer comments. However, from PA-specific experience, generator fuel supply is not a principle factor related to outages cause by severe weather events. More frequently, outages are more the result of distribution and transmission related factors.

4. The proposed rule references the retirement of coal and nuclear resources and a concern from Congress about the potential further loss of valuable generation resources as a basis for action. What impact has the retirement of these resources had on reliability and resilience in RTOs/ISOs to date? What impact on reliability and resilience in RTOs/ISOs can be anticipated under current market constructs?

Answer:

See PJM Report *PJM's Evolving Resource Mix and System Reliability* discussed extensively in the PAPUC's previous Comments. That Report highlighted PJM's historical and continuing fuel diversity as a factor contributing to the reliability of the PJM grid operation. The PAPUC is not aware of any noticeable impact on reliability or resilience from retirement of coal and nuclear resources.

5. Is fuel diversity within a region or market itself important for resilience? If so, has the changing resource mix had a measurable impact on fuel diversity, or on resilience and reliability?

Answer:

See the PAPUC's previous Comments at pp. 10-14. Also, see response to previous question.

Eligibility

General Eligibility Questions

1. In determining eligibility for compensation under the proposed rule, should there be a demonstration of a specific need for particular services? What should be the appropriate triggering and termination provisions for compensation under the proposed rule?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain the eligibility of specific generation resources for compensation or when the triggering or termination of compensation is appropriate.

2. As the proposed rule focuses on preventing premature retirements, should a final rule be limited to existing units or should new resources also be eligible for cost

recovery? Should it also include repowering of previously retired units? Alternatively, should there be a minimum number of MW or a maximum number of MW for resources receiving cost-of service payments for resilience services? If so, how should RTOs/ISOs determine this MW amount? Should this also include locational and seasonal requirements for eligible resources?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain whether there should be a minimum or maximum number of MW for resources receiving cost of service payments, whether repowered units should qualify for compensation, the determination of proper amounts of compensation and whether seasonal or locational requirements should be considered in determining compensation.

3. Are there other technical characteristics that should be required for an eligible unit besides on-site fuel capability? If so, what are those technical characteristics and what benefits do they provide? What types of resources can meet the proposed eligibility criteria of the proposed rule? What proportion of total current generating capacity does this represent?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain what types of resources can meet the proposed eligibility criteria of the proposed rule nor the proportion of total current generating capacity this amount of generation would represent.

4. If technically capable of sustaining output for a sufficient duration (and meeting other relevant requirements), should resources such as hydroelectric, geothermal, dual-fuel with adequate on-site storage, generating units with firm natural gas contracts, or energy storage (each of which might have a demonstrable store of energy to draw upon to sustain an electrical output, if not necessarily fuel) also be eligible? Why or why not? If technical capability is the appropriate criterion for eligibility, what specific technical capability should be required to be eligible?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain what types of resources (be they hydro, geothermal, etc.) can meet the proposed technical capability of sustaining output for a sufficient duration under the proposed rule.

5. The proposed rule would require that eligible resources provide essential energy and ancillary reliability services and includes a non-exhaustive list of services. What specific services should a resource be required to provide to be eligible?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain what types of specific services resources should be able to provide to bee eligible.

6. The proposed rule would limit eligibility to resources that are not subject to cost of service rate regulation by any state of local regulatory authority. How should the Commission and/or RTOs/ISOs determine which resources satisfy this eligibility requirement?

Answer:

The PAPUC has no response to this question. Pennsylvania is a retail choice state.

90-day Requirement

1. The proposed rule defines eligible resources as having a 90-day fuel supply. How should the quantity of a given resource's 90 days of fuel be determined? For example, should each resource be required to have sufficient fuel for 24 hours/day and sustained output at its upper operating limit for the entire 90-day period? Would there be any need for regional differences in this requirement?

Answer:

See the PAPUC's previous Comments at pp. 19-20. Beyond those comments, the PAPUC does not have enough information nor the requisite expertise to answer this question.

2. Is there a direct correlation between the quantity of on-site fuel and a given level of resilience or reliability? Please provide any pertinent analyses or studies. If there is such a correlation, is 90 days of on-site fuel necessary and sufficient to address outages and adverse events? Or is some other duration more appropriate?

Answer:

The PAPUC does not have enough information nor the requisite expertise to ascertain the relationship between on-site fuel and levels of resiliency or reliability. However, from PA-specific experience, generator fuel supply is not a principle factor related to outages cause by severe weather events. More frequently, outages are more the result of distribution and transmission related factors.

Fuel Supply Requirement

1. The proposed rule requires that resources must be in compliance with all applicable environmental regulations. How should environmental regulations be considered when determining eligibility? For example, if a unit that was capable of keeping 90-days of fuel on-site was subject to emission limits that would prevent it from running at its upper operating limit for 90 days, should that unit be eligible under this proposed rule?

Answer:

The PAPUC does not have enough information nor the requisite expertise or jurisdiction to determine whether environmental regulations should be considered when determining eligibility for cost of service treatment.

2. As the proposed rule references the need for resilience due to extreme weather events, including hurricanes, should there be any other eligibility criteria for the resource or fuel supply (e.g., storm hardening)? What considerations should be given to the vulnerability of 90-day fuel supplies to natural or man-made disasters such as extreme cold temperatures, icing, flooding conditions, etc. that may impact the on-site fuel supply?

Answer:

The PAPUC does not have enough information nor the requisite expertise in the impacts of natural or man-made disasters on onsite fuel supplies to answer this

question. However, from PA-specific experience, generator fuel supply is not a principle factor related to outages cause by severe weather events. More frequently, outages are more the result of distribution and transmission related factors.

3. Does the vulnerability or non-availability of on-site fuel supplies vary depending upon fuel type, location, region, or other factors?

Answer:

The PAPUC does not have enough information nor the requisite expertise in the area of on-site fuel supplies to answer to this question.

Implementation

1. How would eligible resources receiving cost of service compensation under the proposed rule be committed and dispatched in the energy market?

Answer:

The PAPUC does not have enough information nor the requisite expertise in the commitment or dispatch of eligible resources in the energy market to answer this question.

2. How would eligible resources receiving cost-based compensation under the proposed rule be considered in the clearing and pricing of centralized capacity markets?

Answer:

The PAPUC does not have enough information nor the requisite expertise to determine how eligible resources receiving cost-based compensation under the proposed rule should be considered in the clearing and pricing of centralized capacity markets.

3. What is the expected impact of this proposed rule on entry of new generation, reserve margins, retirement of existing resources, and on resource mix over time?

Answer:

The PAPUC, based on its interface with PJM markets, would expect that the proposed rule will result in retention of coal and nuclear resources which may limit entry of newer and more cost effective and/or market responsive resources such as gas and renewables. It may be expected that reserve margins will increase in the short term due to retention of otherwise uneconomic units. Further, retention of uneconomic, fully compensated units may result in the premature retirement of other non-compensated units. The resource mix may be expected to reflect these dynamics with higher percentages of coal and nuclear than would be economically justified coupled with lower percentages of gas generation, renewables and demand response products that would exist in a fully competitive market.

4. Should there be performance requirements for resources receiving compensation under the proposed rule? If so, what should the performance requirement be, and how should it be measured, or tested? What should be the consequence of not meeting the performance requirement?

Answer:

See PAPUC previous Comments at p. 9. PJM's preliminary analysis of Capacity Performance reveals improved generator responsiveness and overall performance although it may be too early to draw definitive conclusions. As such, inclusion of performance requirements for eligible resources may be appropriate.

5. Should there be any restrictions on alternating between market-based and cost-based compensation?

Answer:

The PAPUC does not have enough information nor the requisite expertise to determine whether there should be any restrictions on alternating between market-based and cost-based compensation.

Rates

1. The proposed rule lists compensable costs that should be included in the rate as operating and fuel expenses, costs of capital and debt, and a fair return on equity

and investment. Are there other costs that would be appropriate to be included in the rate? Would any of the listed costs be inappropriate for inclusion?

Answer:

Pennsylvania is a retail choice state and does not regulate costs associated with generation facilities. As such, the PAPUC is not able to comment on what would be the appropriate compensable costs that should be included in the rate for eligible generation resources.

2. Should wholesale market revenues offset any cost of service payments stemming from the proposed rule?

Answer:

The PAPUC is not able comment with specificity regarding whether wholesale market revenues should offset any cost of service payments stemming from the proposed rule. However, the PAPUC would not support an application of the rule that would result in a qualifying generator double-recovering both cost of service payments (including return on equity) plus wholesale market revenues to which it would be entitled under the current PJM RPM mechanism.

3. How should RTOs/ISOs allocate the cost of the proposed rule to market participants?

Answer:

The PAPUC is not able to comment upon the allocation of cost of the proposed rule to market participants. Further analysis by PJM will need to be conducted once the proposed rule has been adopted to determine a fair and equitable cost-allocation methodology for associated costs of eligible resources.

4. How would the requirement that eligible resources receive full cost recovery be reconciled with the requirement, as stated in the regulatory text, that resources be dispatched during grid operations?

Answer:

The PAPUC is not able to comment on the reconciliation of full cost of service recovery and grid dispatch. Further analysis by PJM will need to be conducted once the proposed rule has been adopted to reconcile these two concepts in a manner that is not unduly disruptive to wholesale electric markets.

Other

1. The proposed requirement for submitting a compliance filing is 15 days after the effective date of any Final Rule in this proceeding, with the tariff changes to take effect 15 days after the compliance filings are due. Please comment on the proposed timing, both to develop a mechanism for implementing the required changes and to implement those changes, including whether or not such changes could be developed and implemented within that timeframe.

Answer:

See PAPUC Comments previously at p. 24-5.

2. Please comment on the proposed rule's estimated burden of $291,042 per respondent RTO/ISO, to develop and implement new market rules as proposed, including the potential software upgrades required to do so.

Answer:

The PAPUC has no comments regarding the proposed rule's estimated regulatory burden.

3. Please describe any alternative approaches that could be taken to accomplish the stated goals of the proposed rule.

Answer:

The PAPUC has no specific recommendations regarding alternative approaches to accomplish the stated goals of the proposed rule. However, given the potential disruptive impacts the proposed rule may have on organized wholesale electric capacity and energy markets, FERC should carefully analyze any appropriate alternative put forth by stakeholders in this proceeding.

4. What impact would the proposed rule have on consumers?

Answer:

The PAPUC cannot predict the impacts of the proposed rule on retail consumers at this early stage of the rulemaking. The proposed rule does create the potential for disruption and resultant increased costs to the organized wholesale electric capacity and energy markets in the short term without a demonstration of

countervailing benefits. As with all prior FERC policy proposals affecting wholesale markets, the effects on consumers are region-wide and RTO/ISO specific.

5. The Commission may take notice of relevant public information, including information in other Commission proceedings. If a commenter views information in another Commission proceeding as relevant to the proposed rule, please identify that information and explain how it is relevant to the proposed rule. Such information may include a filing previously submitted by the commenter.

Answer:

The PAPUC cannot identify any other relevant public information beyond what is referenced in its comments herein.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I am on this date serving a copy of the foregoing document upon each person designated on the official service list compiled by the Federal Energy Regulatory Commission in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure.

Dated at Harrisburg, PA this 23rd day of October, 2017.

Respectfully submitted,

/s/ James P. Melia
James P. Melia

Counsel for the Pennsylvania
Public Utility Commission

P.O. Box 3265
Harrisburg, PA 17105-3265
Tel: (717) 787-5000

Dated: October 23, 2017.

Document Content(s)