FirstEnergy's Perspective on PJM's Wholesale Electricity Markets: 2018

ADDENDUM: Q2 2018 ISSUES

This section will be updated on a quarterly basis (December 1, March 1, June 1, and September 1), whereas the main body of the report will be updated annually on September 1. The purpose of this section is to provide an overview of key FERC and PJM initiatives active in each quarter.

Executive Summary

The industry continues to remain focused on measures needed to ensure a resilient grid and the interaction between markets and state actions addressing public policy issues.

In this reporting period, PJM CEO Andy Ott has sent two letters to stakeholders, indicating that certain issues will be fast-tracked and, other than asking stakeholders for limited input, PJM will largely bypass the stakeholder process. In an April 11 letter, Ott indicated that PJM's Board supports PJM and the IMM's proposals to implement a 30-minute reserve product and to enhance the Operating Reserve Demand Curves used to price reserves during shortage conditions, among other issues. The second letter, sent April 30, indicated that fuel security is a resilience risk that needs to be addressed.

There has also been significant activity in the FERC resilience docket this quarter. On March 9, RTOs and ISOs filed their responses to FERC's questions, with mixed views. MISO and NYISO do not believe they have any resilience issues, as their markets inherently value resilience. ISO-NE and CAISO note that their regions do face significant resilience issues, but that these issues are being addressed via their respective stakeholder processes. SPP took a neutral approach in which they were open to FERC guidance, whereas PJM provided a detailed list of actions FERC should take. Over 100 parties filed reply comments, with responses ranging from a "no action is needed" position to "there is a critical need for FERC to take action in a timely manner". A majority of the parties indicated preference for a regional approach, with the other RTOs and ISOs jointly filing a request that PJM's proposals and deadlines only apply to PJM.

FirstEnergy continues to believe that baseload generation should be compensated for resilience benefits to ensure that critical, fuel-secure nuclear and coal-fired generators are not lost. FERC should evaluate resilience and other market activities from a holistic perspective, with a focus on the long term impact to customers.

Capacity Market Initiatives

<u>Fuel Security</u>: On April 30, PJM CEO Andy Ott announced that PJM will launch a fuel security initiative that could, among other things, establish fuel security criteria. A draft workplan was sent to stakeholders that outlined a plan to add fuel security analysis to capacity market modeling. The workplan consists of a 3-4 month initial analysis, followed by several months of modeling, and includes time for input from federal agencies, such as FERC, the Department of Energy, and the Department of

Homeland Security. If determined necessary, PJM hopes to have changes in place by the May 2019 capacity auction.

Capacity Repricing and Extended Minimum Offer Price Rule (MOPR-Ex): On April 9, PJM filed two alternate proposals at FERC because the current rules do not address impacts of certain state subsidies on PJM markets. The capacity repricing proposal would accommodate state subsidies in a way that avoids impacts on wholesale prices by repricing a subsidized offer after it has cleared at its subsidized level, so that all offers that clear are paid a competitive price. Alternately, under the MOPR-Ex proposal, offers from subsidized resources would be subject to extension of the MOPR to mitigate the impacts of state subsidies on wholesale prices. Comments filed May 7 largely requested FERC to reject or dismiss the proposal, retain status quo, and have stakeholders work towards consensus.

Quadrennial Review: On April 20, The Brattle Group, a consultant hired by PJM, released its review of PJM's Cost of New Entry (CONE) and Variable Resource Requirement (VRR) Curve. The analysis, required by PJM's tariff, updates cost components used in estimating CONE and suggests changes to the VRR Curve. In the report, Brattle suggests switching the reference unit from a combustion turbine (CT) to a combined cycle (CC) unit, which would dramatically decrease the Net CONE value used by PJM and consequently lower the VRR curve. PJM has begun a stakeholder review, and has noted its opposition to the change from a CT to a CC. The stakeholder process will continue through August, and PJM will ultimately file any proposed changes with FERC in the fall.

<u>Seasonal Resources:</u> On April 24, FERC held a technical conference to explore issues raised in two complaints against PJM regarding the transition to a 100% "capacity performance" product in its capacity market, the methodology for calculating capacity procurement targets, and PJM's resource aggregation rules. Stakeholders discussed the seasonal nature of peak shaving, the justification for PJM maintaining a Loss of Load Expectation (LOLE) risk allocation that emphasizes summer-period outages, and possibilities for shifting capacity procurement to a seasonal-based construct.

Energy Market Issues

Energy Market Price Formation: On April 11, PJM's Andy Ott sent a letter to stakeholders describing the Board's support of the PJM and IMM proposals to implement a 30-minute reserve product in real time to comport with the current Day-Ahead Scheduling Reserve product, address issues with the current implementation of the synchronized reserve market, implement a more dynamic establishment of reserve requirements so as to better capture operator actions to maintain reliability, and to enhance the Operating Reserve Demand Curves used to price reserves during shortage conditions. The Board requests that stakeholders develop and gain consensus on near-term market rule changes by third quarter 2018, so that changes can be implemented in time for winter 2018/19. PJM and stakeholders should work on longer-term issues by first quarter 2019 for implementation summer 2019.

<u>Uplift</u>: On April 19, FERC issued a final rule that requires regional market operators to add reports that break out uplift charges by day, category, resource and commitment size, reason, start time and transmission zone. FERC withdrew from the final rule a proposal that each market operator that allocates the costs of real-time uplift to deviations allocate such costs only to those market participants whose transactions are reasonably expected to have caused the costs. Compliance filings are due 60 days after publication of the final rule, and tariff changes are effective 120 days after the compliance filing.

Ancillary Services Market Initiatives

No major activity this reporting period.

Emerging Technologies

Electric Storage Participation and Distributed Energy Resource (DER) Aggregation: On February 15, FERC issued a final rule to remove barriers to participation of electric storage resources in RTO/ISO markets by requiring each grid operator to revise its tariff to establish a participation model for these resources that takes their physical and operating characteristics into account. A technical conference was held April 10-11 to help gather additional information. Topics included RTO dispatch, pricing and settlement, operational implications on state and local regulators, participation of DER in wholesale markets, data availability, and coordination of DER aggregations. Post-technical conference comments are due June 26.

Other

FERC Resilience Proceeding: On January 8, FERC issued an order rejecting the proposed Grid Reliability and Resilience Pricing Rulemaking (RM18-1) and initiating a new proceeding (AD18-7) to holistically examine the resilience of the bulk power system. Comments were filed on March 9 at FERC for PJM and the other RTO/ISOs. Generally, NYISO and MISO believe that their markets are inherently designed to consider resilience, and that there are no major resilience issues in their regions. CAISO and ISO-NE do have regional issues that affect resilience, but have processes in place to handle these issues and do not believe that further actions from FERC is warranted. SPP is open to receiving more guidance from FERC on the topic, and PJM provided a detailed list of actions that it would like FERC to take, including requesting that FERC issue an order clearly articulating the RTOs have a role in planning for resilience and requiring the RTO/ISOs to file tariff changes to implement resilience planning criteria. Reply comments were filed May 9, and largely were supportive of FERC looking into this issue, but requested a regional approach utilizing stakeholder processes rather than one-size-fits-all reforms.

Resilience Report: On March 27, the Department of Energy's (DOE) National Energy Technology Laboratory (NETL) released a report, Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units. In the report, NETL analyzed the performance of generation in the five RTOs in the Eastern Interconnection (PJM, ISO-NE, NYISO, MISO, SPP) and ERCOT during the early 2017 cold snap. The report concluded that without the resilience of coal and oil/dual-fuel units, the eastern United States would have suffered severe electricity shortages that likely would have led to widespread blackouts. NETL also found that wholesale markets do not compensate for resilience, and thus resilience is steadily diminishing as baseload plants retire prematurely.

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Summary: Notice of Quarterly Update Pursuant to Section V.C.2. of the Third Supplemental Stipulation and Recommendation electronically filed by Mr. Scott J Casto on behalf of The Cleveland Electric Illuminating Company and The Toledo Edison Company and The Ohio Edison Company