U.S. House of Representatives
Committee on Energy and Commerce
Subcommittee on Energy

Powering America: A Review of the Operation and Effectiveness of the Nation's Wholesale Electricity Markets

Response to Additional Questions for the Record of Jackson E. Reasor

The Honorable Fred Upton

1. As a Load Serving Entity (LSE), what obstacles do you face from wholesale power markets in planning your own self-supplied capacity procurements?

Old Dominion Electric Cooperative is a not-for-profit power-supply electric cooperative, which provides capacity and energy to its members, eleven electric distribution cooperatives in Virginia, Maryland, and Delaware. These eleven distribution cooperatives provide retail electric service to their members, end-use consumers. As the question recognizes, Old Dominion is a Load Serving Entity (LSE).

Old Dominion's members are interconnected to the transmission grid operated by the PJM Interconnection, a Regional Transmission Organization (RTO) regulated by the Federal Energy Regulatory Commission (FERC). Old Dominion welcomed PJM's conversion twenty years ago into an RTO with a single control area and a single transmission tariff, and PJM's later expansion into Virginia, because this would provide more economical, non-discriminatory transmission service to Old Dominion's members and more wholesale power-supply alternatives to Old Dominion.

I believe that public policy should encourage long-term investments in capacity resources by LSEs. This is of particular concern for electric cooperative and municipal electric utilities. Cooperative utility LSEs like Old Dominion operate under long-standing business models as not-for-profit entities responsible for meeting their rural electric cooperative customers' power supply needs in a safe, reliable and economic manner. Electric power generation assets are costly and have long operating lives. Consequently, LSEs have long planning horizons. Old Dominion invests in or procures capacity resources with a view to meet its long-term service obligations to its consumer-owners in a reliable and economic manner. Old Dominion develops a diverse portfolio of capacity resources (including generation and other technologies) that it determines best meets its members' needs, based on economic and non-economic criteria.

In my view, Old Dominion's members and the consumers they serve will fare better if competitive wholesale power markets allow LSEs to meet their capacity obligations first by building generation resources or procuring them through voluntary long-term bilateral contracts, and then by turning to RTO-administered capacity markets for residual needs.

That is how PJM originally operated its centralized capacity procurement mechanism, the "Reliability Pricing Model" or "RPM." In 2006, FERC approved RPM as a residual capacity procurement mechanism for PJM to ensure resource adequacy at the least cost: "[W]e conclude that, after LSEs have had the opportunity to procure capacity on their own, it is reasonable for

PJM to procure capacity in an open auction at a time when further delay in procurement could jeopardize reliability. This, however, should be a last resort."[1] In fact, RPM's annual capacity auction was called—and still is called—the "Base Residual Auction."[2]

But over time, repeated and significant design changes have made RPM more complex and costly. In the ten years since RPM was put in place, it has undergone nearly continuous revisions. According to PJM, from 2010 to 2016, there were 24 significant filings at FERC to revise RPM, and the 2016 Base Residual Auction was the first such auction with no rule changes from the prior year.[3] These frequent changes have created obstacles for Old Dominion and other LSEs to plan and use their self-supplied resources to meet their capacity obligations. While Old Dominion is building its Wildcat Point Natural Gas Plant in Cecil County, Maryland, as a self-supplied generating resource under PJM's current tariff rules, those tariff rules have needlessly complicated Old Dominion's resource planning and added to its regulatory risks. In addition, a recent court decision requires FERC to reconsider the very rule that Old Dominion relied on in constructing this plant.

An important obstacle that RPM creates for LSEs planning to use self-supplied capacity arises from RPM's "Minimum Offer Price Rule." This rule imposes a floor on the prices that most new gas-fired generators can offer in PJM's capacity auctions. FERC approved this rule in 2006 because of a theoretical risk that net buyers of capacity could exercise monopsony power to lower PJM's capacity auction prices below PJM-determined competitive levels.[4]

As originally written, this tariff rule guaranteed that an LSEs' self-supplied capacity resource would "clear" in RPM's auctions—i.e., would be accepted as a capacity resource by PJM regardless of the LSE's offer price—even if the Minimum Offer Price Rule prevented the resource's offer price from lowering the auction-clearing price. But in 2011, FERC approved a PJM tariff change that eliminated this "guaranteed clearing" language.[5] The guaranteed clearing of self-supply is critical for LSEs. If self-supplied capacity does not clear RPM's auction, the LSE pays for capacity twice—once for the investment in its own capacity, then a second time to pay PJM's costs of procuring the same amount of capacity. But if its self-supplied capacity clears the auction, the LSE receives auction revenues from PJM for its self-supplied capacity that offset the (identical) costs the LSE must pay PJM for that amount of capacity procured in PJM's auction. Guaranteed clearing enables an LSE's self-supplied capacity to be a price hedge against volatile PJM capacity auction prices and allows LSEs to use their investments as intended.

After guaranteed clearing was eliminated, in 2012, PJM stakeholders, including public power and rural electric cooperatives, agreed to a limited "Self-Supply Exemption" from the Minimum Offer Price Rule, which FERC approved along with other changes to RPM in a 2013

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[1] *PJM Interconnection, LLC*, 115 FERC ¶ 61,079 at P 71, *order on reh'g,* 117 FERC ¶ 61,331 (2006).

[2] http://www.pjm.com/-/media/markets-ops/rpm/rpm-auction-info/rpm-base-residual-auction-faqs.ashx?la=en

[3] http://www.pjm.com/~/media/committees-groups/committees/mrc/20160825/20160825-item-07-pjm-capacity-problem-statement.ashx

[4] *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331, at P 104 (2006).

[5] *PJM Interconnection, LLC*, 135 FERC ¶ 61,022 at PP 183–184, 191–197, *reh'g denied*, 137 FERC ¶ 61,145 (2011), *reh'g denied*, 138 FERC ¶ 61,194 (2012), *pet. for review dismissed as moot in pertinent part sub nom. N.J. Bd. of Pub. Utils. v. FERC*, 744 F.3d 74 (3d Cir. 2014).

order.[6] The Self-Supply Exemption requires that the LSE meet "net-short/net-long" thresholds, meaning the exemption is available only to LSEs that have neither too much nor too little supply of capacity relative to their customers' load. However, the Self-Supply Exemption does not guarantee the clearing of such self-supplied capacity; it merely allows the qualifying self-supply to be offered at a price below the otherwise applicable floor on offer prices.

The Self-Supply Exemption became available in PJM's 2013 capacity auction. Old Dominion was able to use this Self-Supply Exemption when it offered its planned Wildcat Point Natural Gas Plant in PJM's Base Residual Auction in May 2014 for the delivery year 2017-2018. As a direct consequence of the Self-Supply Exemption, the Wildcat Point plant cleared the auction reducing Old Dominion's capacity purchases from the PJM market by approximately $50 million

However, on July 7, 2017, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated several of FERC's 2013 changes to RPM rules, including the addition of the Self-Supply Exemption, and remanded them to FERC for reconsideration.[7] The court's ruling puts a cloud over RPM results since the 2013 auction, including the 2014 auction in which Old Dominion's capacity from the Wildcat Point plant had cleared, thereby avoiding an incremental capacity purchase expense of approximately $50 million. The ruling also casts doubt on the continued viability of the current Self-Supply Exemption. Old Dominion does not know what FERC will do on remand with respect to the Self-Supply Exemption or other remanded provisions of RPM.

At the Subcommittee on Energy's July 26, 2017, hearing on "Powering America: A Review of the Operation and Effectiveness of the Nation's Wholesale Electricity Markets," the prepared written statement of PJM's witness Craig Glazer, Vice President for Government Policy, attempted to assuage concern over self-supply. The statement maintains that "public power entities have been availing themselves of their ability to self-supply and have been building new generation in PJM as a result." The statement then lists "recent" generation additions as apparent examples.

However, of the 21 generation units listed by PJM, Old Dominion's Wildcat Point Natural Gas Plant is the only unit that benefited from PJM's current Self-Supply Exemption—and a court has now directed FERC to reconsider that exemption. One unit was built before PJM removed the guaranteed-clearing language in 2011.[8] Three other units used a "unit-specific exemption" in 2011 and 2012 before PJM added the Self-Supply Exemption in 2013.[9] The other listed units were not subject to the Minimum Offer Price Rule, either because they were placed in service before PJM instituted RPM in 2007 or because they use a technology, such as hydropower, that does not subject them to the Minimum Offer Price Rule.

In particular, the other Old Dominion plants that PJM lists in its written statement were not built "as a result" of RPM's self-supply rules. Old Dominion built its Rock Springs Natural

[6] *PJM Interconnection, LLC,* 143 FERC ¶ 61,090 (2013), *reh'g denied*, 153 FERC ¶ 61,066 (2015), *vacated and remanded sub nom. NRG Power Mktg. LLC v. FERC*, No. 15-1452 (D.C. Cir. July 7, 2017).

[7] *NRG Power Mktg., LLC, v. FERC,* No. 15-1452 (D.C. Cir. July 7, 2017).

[8] Down Natural Gas Power Plant (Vineland [NJ] Municipal Electric Utility).

[9] Beasley Power Station Units 1 and 2 (Delaware Municipal Electric Cooperative) [referred to as "Smyrna Natural Gas 1–2" in PJM's written statement]; Clayville Natural Gas Unit 1 (Vineland Municipal Electric Utility).

Gas Units 1 and 2, and its Louisa Natural Gas Units 1 through 5 in 2003—before PJM instituted RPM in 2007. In addition, the Louisa plants are in Virginia and were built before the utilities in Virginia were in PJM. Thus, PJM's implicit suggestion that these plants were built "as a result" of PJM's self-supply rules is simply wrong.

Furthermore, PJM's written statement asserts that the D.C. Circuit "did not overturn the specific agreed-to arrangement that PJM and its stakeholders worked out with public power utilities." It is not clear what PJM means by this claim. In fact, the court's opinion clearly states:

> We grant the petitions for review and vacate FERC's Orders with respect to unit-specific review, the competitive entry exemption, *the self-supply exemption*, and the mitigation period. We remand the matter to FERC.[10]

Given the constant churn of revisions to RPM, LSEs like Old Dominion face continued threats to their long-standing business models to adopt long-term procurement plans and integrate them with RPM. The current RPM rules, with a Self-Supply Exemption that is now uncertain, needlessly interfere with LSE resource planning and decisions and increase costs to consumers. As FERC itself has acknowledged, the "purpose and function" of the Minimum Offer Price Rule "is not to unreasonably impede the efforts" of utilities like Old Dominion that are "choosing to procure or build capacity under long-standing business models."[11]

a. Are there any potential alterations to PJM's Reliability Pricing Model that would ensure LSEs are able to self-supply their capacity obligations while balancing PJM's need to ensure regional grid reliability?

To ensure LSEs are able to self-supply their capacity obligations, while still balancing PJM's need to ensure regional grid reliability, RPM's Base Residual Auction should be restored to its proper and original role as a residual procurement mechanism—one that is subordinate to LSEs' long-term investment or procurement of resources to self-supply their share of PJM's capacity obligations.

As stated above, in my view, Old Dominion's members and the consumers they serve would fare better if competitive wholesale power markets were to allow LSEs to meet their capacity obligations by first building generation resources or procuring them through voluntary long-term bilateral contracts, and then turning to RTO-administered capacity markets for any residual capacity needs. Among other things, this approach would enable LSEs to develop the diverse portfolio of capacity resources (including generation and other technologies) that they believe best meets their needs, based on economic and non-economic criteria. Centralized capacity auctions like RPM cannot effectively replace LSE resource planning, which involves many considerations beyond the lowest cost for a single year three years in the future.

This would require, at a minimum, that PJM return to its pre-2011 approach of guaranteed clearing of LSE self-supplied capacity in RPM's auctions. In other words, RPM rules should guarantee that LSE self-supplied capacity clears the auction and the LSE receives auction revenues at the clearing price—even if PJM keeps a Minimum Offer Price Rule that prevents this

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[10] *Id.*, slip opinion at 16 (emphasis added).

[11] *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,145 (2011) at P 208.

self-supplied capacity from setting an auction-clearing price below the price floor. Returning to the guaranteed-clearing provisions which were included in RPM's initial rules would be clearly superior to retaining the current, limited Self-Supply Exemption.

2. As both a transmission owner and transmission customer in the PJM market, how effective are existing cost allocation methodologies when planning transmission infrastructure?

Transmission planning and cost allocation for transmission facilities are an important issue in PJM. Old Dominion believes that several principles should govern transmission planning and cost allocation.

First, transmission planning for high-voltage transmission facilities for all forms of affordable generation should focus on the needs of LSEs and should result from an open, coordinated and transparent transmission planning process, as required by FERC.[12] Section 217(b)(4) of the Federal Power Act, which Congress added in 2005, requires that LSEs' needs drive the planning process:

> The Commission shall exercise the authority of the Commission under this chapter in a manner that facilitates the planning and expansion of transmission facilities to meet the reasonable needs of load-serving entities to satisfy the service obligations of the load-serving entities, and enables load-serving entities to secure firm transmission rights (or equivalent tradable or financial rights) on a long-term basis for long-term power supply arrangements made, or planned, to meet such needs.[13]

Transmission planning should focus on the needs of the system in order to ensure that LSEs can serve their load in a reliable, safe and cost-effective manner. Such planning should take into account current needs as well as a reasonable forecast (e.g., 20+ years), since transmission assets can have useful lives of several decades, if planned correctly. Transmission planning should not be dictated by cost allocation. Instead, once the transmission solution is identified, then the costs should be allocated in a manner that is at least roughly commensurate with the benefits received.

I note that in PJM, Old Dominion and others have concerns that not all transmission planning is conducted in an open, coordinated and transparent manner. In some instances, individual Transmission Owners determine the need for transmission facilities based on their own unpublished guidelines as opposed to PJM criteria or the reliability criteria of the Electric Reliability Organization. These projects, referred to as "Supplemental Projects", are not subject to the same level of PJM Board or PJM Staff scrutiny or evaluation as are other projects included in PJM's Regional Transmission Expansion Plan. Therefore, customers are subject to paying for costly transmission facilities that may or may not be needed at the scope or the time they are constructed.

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[12] *See Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

[13] 16 U.S.C. § 824*q*(b)(4).

There are other concerns regarding Supplemental Projects. Local planning for Supplemental Projects in the various subregions in PJM has sometimes fallen short of the open, transparent and coordinated process required by FERC. In addition, PJM has failed to provide necessary consistency in planning for Supplemental Projects in the subregions. FERC has initiated an outstanding inquiry into PJM's local planning practices, and ODEC has recommended specific revisions to improve local transmission planning in PJM.[14] Consistency in all transmission planning in the PJM region should help to facilitate needed transmission while at the same time protecting customers from costs for which they do not derive sufficient benefit.

Planning regions should determine the benefits to be considered in allocating costs of high-voltage transmission facilities. Absent regional agreement, costs should be allocated among those entities that benefit both initially and over time and take transmission service from the transmission providers imposing the charge. Benefits should be tangible and non-trivial and related to the reliability and economic delivery of power. Benefits should also be at least roughly commensurate with allocated costs.

For the most part, the existing cost allocation methodologies in PJM are effective from the perspectives of allocating costs to the beneficiaries and not impeding development of necessary transmission facilities. In PJM, the costs of high voltage transmission facilities included in PJM's Regional Transmission Expansion Plan, characterized as Required Transmission Enhancements, and the lower voltage facilities needed to support them, are allocated 50 percent on a region-wide "postage stamp" basis according to load-ratio shares. The remaining 50 percent of costs are allocated based on a solution-based distribution factor method.[15] These cost allocations are updated each year by PJM on behalf of the PJM Transmission Owners. Lower voltage facilities, which are deemed Required Transmission Enhancements, are cost allocated 100 percent based on the solution-based distribution factor cost allocation method.[16]

There are two problems with the PJM transmission cost allocation methodology, from the perspective of a transmission customer paying the costs. First, the PJM beneficiary analysis is a snapshot in time. Transmission facilities are long-lived assets and their costs are recovered over many years. PJM's economic cost allocation methodology does not take into account changes which may occur over time in factors which might change the beneficiaries of a project, such as the physical characteristics of the system or the profile of the loads being served. This can result in a cost-beneficiary allocation which becomes unjust and unreasonable over time.

Second, while the solution-based distribution factor analysis produces just and reasonable cost allocation for the vast majority of projects approved through PJM's regional planning process, it is not well suited for allocating costs of transmission system upgrades that are not required to address thermal or voltage-based criteria violations. For such projects, PJM should consider alternative cost allocation methodologies in order to ensure that those entities that pay

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[14] *Monongahela Power Company, et al.*, 156 FERC ¶ 61,134 (2016), *reh'g dismissed*, 157 FERC ¶ 61,178 (2016); *see also* Response of Old Dominion Electric Cooperative to Order to Show Cause, FERC Docket No. EL16-71-000 (filed Oct. 25, 2016).

[15] PJM Open Access Transmission Tariff, Schedule 12.

[16] *Id.*

for the facilities receive benefits that are roughly commensurate with the costs paid. In addition, these allocations should be updated on a regular basis.

An example of the transmission system upgrade situation is a project in the PJM region referred to as "Artificial Island." The Artificial Island project involves construction of a new 230-kV transmission line under the Delaware River and certain other facilities in order to address a specific system stability issue and related generation operation issues in an area in Southern New Jersey where certain nuclear generating units are located.[17] After Old Dominion and others complained over the unreasonable cost allocation for the project, the PJM Board of Directors decided to re-study the project and analyze project beneficiaries from alternate perspectives to find a reasonable cost allocation.[18] The proceeding before FERC has not yet been resolved, but PJM has developed alternative analyses based on the stability benefits provided by the transmission solution. There should be flexibility in cost allocation so that unique circumstances such as the Artificial Island project can be accommodated to ensure that costs are allocated roughly commensurate with benefits received.

[17] *See Order Denying Complaint and Accepting Cost Allocation Report*, 155 FERC ¶ 61,090 (2016); *reh'g pending*.

[18] *See* PJM's Informational Filing submitted in FERC Docket Nos. ER15-2563-000, *et al.*, on April 12, 2017.