

Rob Gramlich, Grid Strategies LLC

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I. Introduction

Chair Hastings, Senator Rezin, and Members of the Committee, thank you for the opportunity to testify before you today. My name is Rob Gramlich and I am Founder and President of Grid Strategies, an electricity economics and policy consulting firm based in the Washington, DC area. My clients are clean energy companies and associations, environmental groups, and electricity consumers and associations. I have previously served as Economic Advisor to a FERC Chairman, Senior Economist in the PJM Interconnection Market Monitoring Unit, and Senior VP for Public Policy and Interim CEO of the American Wind Energy Association. My [bio](#) and [publications](#) can be found on my web site.¹

The Minimum Offer Price Rule (MOPR) imposed by PJM Interconnection and the Federal Energy Regulatory Commission (FERC) inflicts unnecessary damage on consumers in states with clean energy policies and hinders progress towards those goals. States should consider taking some action to avoid the damage caused by the MOPR.

II. MOPR is costly and harms progress towards clean energy goals

Concerns about the cost of MOPR have been consistently and strongly expressed by policy makers, consumers, renewable and environmental groups, and interests across the political spectrum. Conservative think tank R Street Instituted stated, “The FERC’s new proclivity to raise prices to levels above where the market would otherwise clear could eventually have massive precedential effects across all products and all regions.”² Ten U.S. Senators including Senator Dick Durbin wrote a [letter](#) to FERC citing my study that the costs to consumers could be as high as \$5.7 billion per year across the region.³ Industrial customer group ELCON argued before FERC: “[e]xpanding MOPR will elevate offers above competitive levels, resulting in inflated market prices that elevate costs to load above competitive levels.”⁴ The Independent Market

¹ www.gridstrategiesllc.com

² Devin Hartman, <https://www.rstreet.org/2020/01/23/fercs-unbearable-ultimatum-to-states-the-minimum-offer-price-rule/>

³ <https://www.democrats.senate.gov/newsroom/press-releases/senate-democrats-urge-republican-controlled-federal-energy-regulatory-commission-to-oppose-proposal-that-could-raise-electricity-prices-for-millions-of-americans-jeopardize-thousands-of-jobs-and-dramatically-increase-carbon-emissions->

⁴ Comments of ELCON in Docket No. EL18-178, Oct. 2, 2018, at p. 4.

Monitor for PJM, while a proponent of broad MOPR application, has stated, “If only half the units at risk of retirement were subsidized, the increase would be \$1.6 billion (17.4 percent).”⁵ FERC rejected the IMM’s much less costly version of MOPR and issued an order December 19, 2019 with even broader application of MOPR than the IMM, PJM, or fossil generators requested.

The cost impacts of the version of MOPR imposed by FERC are potentially lower than prior estimates. FERC made one change that will tend to reduce cost impacts—exempting more existing renewable resources, adding supply and tending to decrease market-clearing prices. We estimate that up to 9,237 GW (on a nameplate basis, or 3.3 GW of unforced capacity) of new renewables with signed interconnection agreements were exempted by FERC. This 3.3 GW is a small percentage of the approximately 180 GW capacity market.

There will still be a lot of resources subject to MOPR over the next decade. Many states have renewable standards that increase over time. The near-term cost of MOPR could be significant if renewable deployment is front-loaded into the next several years to take advantage of federal tax credits before they phase out. The following capacity could be subject to MOPR:

- Renewable capacity: About 33 GW of renewable capacity is needed to meet state Renewable Portfolio Standards across PJM by the year 2030. The total “capacity value” (the credit for being available at peak to be able to sell into the capacity market) of those renewable resources is approximately 12 GW. That leaves approximately 9 GW of renewables potentially subject to MOPR.
- Coal capacity: There are approximately 2 GW of OVEC coal plants potentially subject to MOPR.
- Nuclear capacity: The additional unforced capacity of 2,201 MW in Ohio, 3,573 MW in New Jersey, and 1,986 MW in Illinois from those states’ nuclear plants totals 7,760 MW potentially subject to MOPR. There are approximately 3.5 GW of single-units and approximately 4.3 more GW⁶ of multi-unit plants that may not clear depending on final bid levels and estimated energy and ancillary service revenue.

The sum of the resources above, leaving out demand response and energy efficiency, would bring the total PJM unforced capacity subject to the MOPR to nearly 19 GW. Our previous estimate of the cost impact of MOPR was based on a higher amount, 24 GW. Holding other factors constant, the total cost could be less than what we analyzed before. However this is still potentially a large amount of the market, likely to impact prices and cause cost impacts that are in the billions of dollars per year.

⁵ Monitoring Analytics, http://www.monitoringanalytics.com/reports/Market_Messages/Messages/IMM_Response_to_Grid_Strategies_Report_201909217.pdf.

⁶ <https://www.eia.gov/nuclear/generation/xls/usreact19.xlsx>

Bid levels for each of these resource types will determine the exact MOPR impacts, but the fundamental purpose of the MOPR is to increase prices by restricting the bids of such resources.

Other estimates suggest MOPR will drive increases in capacity market prices. ICF stated that the FERC order “sends a positive signal for PJM capacity prices.”⁷ They estimate that prices would increase by \$25 to \$35/MW-day for the upcoming 2022-2023 auction and \$50 to \$70/MW-day in the long term, relative to a price of \$140/MW-day in the last PJM auction.⁸

Similarly, Charles River Associates found “Resulting market rules are likely to drive up capacity prices in upcoming Base Residual Auctions (BRA), though potentially duplicative capacity procurement and the resulting high reserve margins may drive down prices in the energy and ancillary services markets.”⁹

FERC Commissioner Glick estimated that the cost of MOPR in FERC’s order would be \$2.4 billion per year.¹⁰ His estimate is based on removing 9,300 MW of nuclear and demand response from the market. He does not include any impacts on renewable energy in this estimate.

FERC has decided to apply MOPR to voluntary (not for state policy compliance) Renewable Energy Credits, which adds further costs. For example, if a data center owner wants to purchase energy from a solar plant, the contract price will likely need to be one-third higher because of lost capacity revenues due to the FERC order.¹¹ That issue may be addressed by FERC on rehearing, but we do not know at this point what they will do.

There is legal and regulatory risk with every aspect of MOPR because there is no economic policy or legal basis for it. That is why fossil generators, the IMM, PJM, and FERC all supported very different versions of it. There is no coherent theory on which any of them rely. The policy tool was developed to mitigate buyer-side (“monopsony”) market power, yet there was no finding of such a problem in the FERC proceeding.¹² I am not a lawyer and thus not qualified to comment on the legality of MOPR. However, I can say that in the years I spent in the FERC Chairman’s office working with lawyers every day creating, designing, and expanding RTOs, it was always my understanding that setting the value of environmental attributes was a job

⁷ <https://www.linkedin.com/feed/update/urn:li:activity:6620335473082585088/>

⁸ <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/analysis-finds-mopr-could-cause-collapse-in-pjm-capacity-market-pricing-56962056>

⁹ [http://www.crai.com/sites/default/files/publications/FERC directs PJM capacity market%20reforms %20December 2019 CRA.pdf](http://www.crai.com/sites/default/files/publications/FERC%20directs%20PJM%20capacity%20market%20reforms%20December%202019%20CRA.pdf)

¹⁰ FERC December 19, 2019 order in Docket EL16-49, Dissenting opinion of Richard Glick, p. 23.

¹¹ Estimate based on \$140/MW-day capacity price, 50% capacity value, 20% capacity factor, and PPA prices \$40 to \$50/MWh.

¹² Michael Goggin and Rob Gramlich, “Consumer Impacts of FERC Interference with State Policies: An Analysis of the PJM Region,” August 2019. <https://gridprogress.files.wordpress.com/2019/08/consumer-impacts-of-ferc-interference-with-state-policies-an-analysis-of-the-pjm-region.pdf>

reserved for states under the Federal Power Act, and that FERC had no authority to second guess those values.

Pre-existing Problems with Capacity Markets

Capacity markets are already driving investment in too much of the wrong thing. PJM markets are consistently attracting new fossil generation that is not needed, with the current capacity surplus nearly double the target reserve margin.¹³ Over the years, stakeholders, PJM, and FERC have adjusted many aspects of supply and demand, such that there is no recognizable “market” left in the capacity construct. MOPR is the most significant but only the latest in a series of unfortunate design changes in capacity markets. This is an important context for states considering their participation in capacity markets.

PJM can solve most of the problem

PJM is in a difficult position vis-a-vis the states in its region. PJM has stated that the FERC order went much further than it wished, and that MOPR is not a sustainable solution over the long term. In the near-term there are many aspects of setting bid levels in the compliance process that could minimize the damage from broad MOPR. In the longer run, PJM can find a whole new approach.

Carbon pricing through PJM’s tariff is one way that PJM may be willing to give up on MOPR. A number of stakeholders and states support this approach.

PJM could also undertake a fundamental review of capacity markets. One option is to give states more say in resource adequacy policies.¹⁴ Another is to devolve the capacity market and rely more on bilateral contracts and energy spot markets.

States should consider all of their options

Given the large cost impact of MOPR and significant uncertainty, states are evaluating their options. One option is the Fixed Resource Requirement (FRR), in which a utility can opt out of the central Base Residual Auction (BRA) and handle resource adequacy on its own. FRR could save consumers money by paying only once for the capacity that the state desires, and at a lower reserve margin than PJM’s current level. This could also provide more flexibility for storage resources and seasonal renewable and demand response resources to be utilized, since they are not given full value in the current PJM capacity construct.

There are many important and complicated details with FRR design. It would be particularly important to provide full access for independent power producers, both local and remote, to

¹³ Rob Gramlich and Michael Goggin, “Too Much of the Wrong Thing: The Need for Capacity Market Replacement or Reform,” November 2019. <https://gridprogress.files.wordpress.com/2019/11/too-much-of-the-wrong-thing-the-need-for-capacity-market-replacement-or-reform.pdf>

¹⁴ See McCabe, Svanda, and Kane, Making Markets Work for PJM States: State Engagement Possibilities with PJM <https://opsi.us/wp-content/uploads/2019/10/Making-Markets-Work-for-PJM-States-10-14-19-1.pdf> .

sell into the procurement. PJM's capacity market only includes 2 GW of imports out of a 180 GW market, illustrating the likely bias against external resources that needs to be addressed in the capacity construct and could potentially be addressed in an FRR design.¹⁵

It is important for states and utilities to remain in RTOs for their energy markets and transmission planning functions. As renewable energy penetration grows, a large operating footprint and a robust regional transmission network are critical to reliable and efficient operation. Notwithstanding its support for broad MOPR and problems with its capacity construct, PJM is otherwise a very well-run RTO with talented staff.

I hope this testimony assists the legislature with its deliberations about how to respond to the FERC and PJM MOPR policy. Thank you for the opportunity to testify.

¹⁵ http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2018/2018-som-pjm-sec5.pdf p. 271.