

NO QUICK FIX

Why 'Fixed Resource Requirement' is Not the Best Way for States to Protect their Energy Choices

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INTRODUCTION

The Federal Energy Regulatory Commission's (FERC) December 2019 ruling imposing a broad Minimum Offer Price Rule (MOPR) on state-supported resources in the PJM Interconnection, L.L.C. (PJM) capacity market continues to have ripple effects on clean energy policies throughout the region. Application of the MOPR (an artificial floor price placed on offers to sell capacity) to state-supported resources risks excluding those resources from the capacity market, a result that would raise consumer costs and preserve market share for traditional fossil fuel generation resources, working against the objectives of state policymakers. States, concerned about these impacts of MOPR and understandably threatened by a federal policy that labels their energy policies a "distortion" of wholesale markets, are actively considering options for continuing to pursue these policies while avoiding the negative impacts of MOPR.

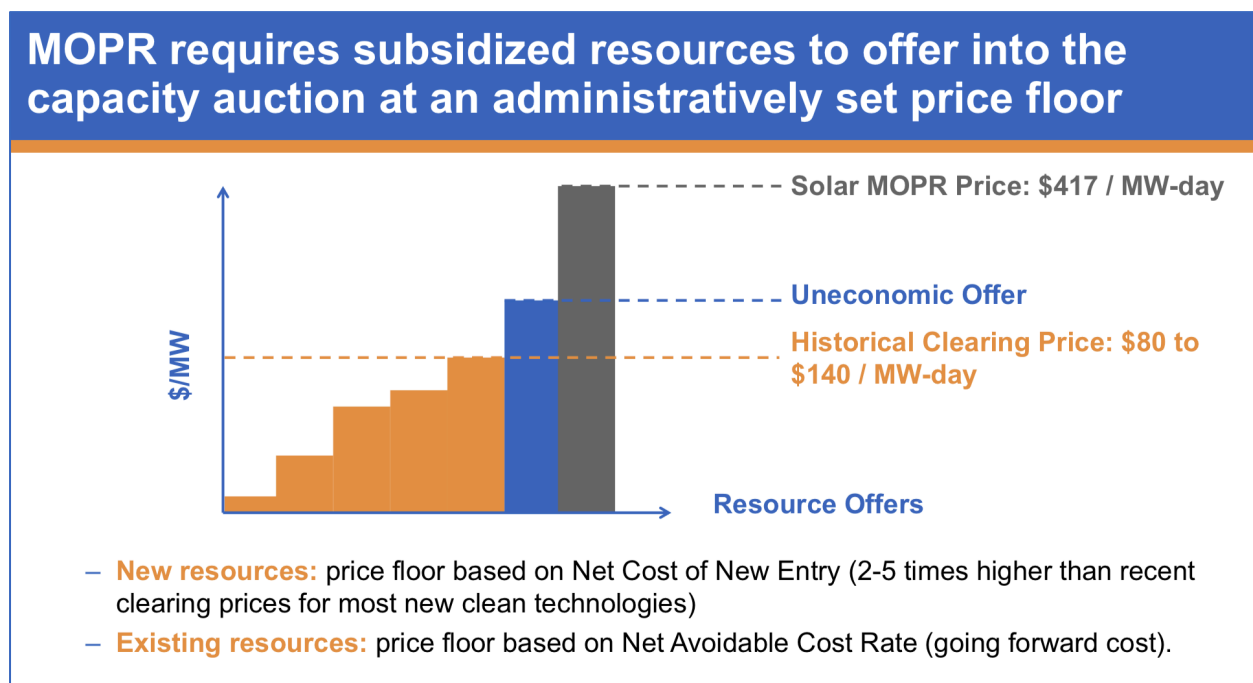
The option that has garnered the most attention to date is for states to effectively leave the PJM capacity market through a mechanism called the Fixed Resource Requirement (FRR) alternative. Some stakeholders urge that FRR, which is an existing mechanism in PJM's FERC-filed tariff, offers states the best and fastest option to resolve conflicts between the MOPR and their state policies, and would reduce costs. The option of leaving the capacity market is also under consideration in ISO New England (ISO-NE) and New York Independent System Operator (NYISO), two other competitive wholesale markets with a similar centralized capacity market construct where FERC has imposed the functional equivalent of the MOPR.

Advanced energy companies, however, are approaching FRR (and exit from regional capacity markets in general) with caution. While they agree that states must consider all of their options as long as FERC continues to view state clean energy and environmental policies as a threat to wholesale markets that must be "mitigated" rather than accommodated or facilitated, they are concerned that FRR could have unintended consequences on competition, access to the most cost-effective advanced energy resources across the region, and ultimately their ability to finance and develop new clean energy resources needed to meet state goals. Likewise, large buyers of advanced energy resources, such as commercial and industrial customers with ambitious sustainability goals, are concerned that FRR will undermine their ability to access cost-effective renewable energy projects across the PJM region, and increase costs to consumers generally. As a result, advanced energy companies and clean energy buyers are urging states to consider a broad range of options to respond to MOPR, with a focus on reforming energy, capacity, and ancillary services markets in PJM and elsewhere from the inside to set them on a path to support the clean energy transition in the long-term.



THE CAPACITY MARKET AND WHY MOPR IS A PROBLEM

PJM's capacity market relies on a centralized procurement structure. The market is designed to procure all of the capacity needed to meet resource adequacy requirements through centralized auctions, and load-serving entities in the region (e.g., distribution utilities) are required to participate. If a resource does not "clear" (i.e., is not selected) in the centralized auction, it does not count toward meeting PJM's total resource adequacy requirements, and other resources are procured in its place. Application of the MOPR to state-supported resources (e.g., renewable resources selling renewable energy credits used to comply with a Renewable Portfolio Standard or RPS) increases the risk that they will not clear the market and be counted toward resource adequacy requirements, and that customers will be forced to buy additional capacity in its place even though it's not needed.



Graph from Advanced Energy Economy Webinar, "MOPR Gets Real: How PJM Plans to Apply the Minimum Offer Price Rule" (2020)



WHAT IS FIXED RESOURCE REQUIREMENT?

FRR is a mechanism in PJM's tariff that allows a load-serving entity (e.g., a distribution utility) to completely remove itself from the centralized capacity market structure, and instead supply its own portfolio of capacity resources to meet its share of the region's resource adequacy requirements.¹ A load-serving entity using FRR must submit to PJM a plan that identifies the capacity resources that it has acquired in sufficient amount to meet the capacity needs of load in its service territory (or another geographic area that is separately metered). If there are transmission constraints that limit the deliverability of energy from generators outside the load-serving entity's service territory, PJM may require that a certain percentage of the capacity resources in its plan be located inside that territory. In addition, an FRR plan must meet the capacity needs of all loads in the territory, including loads served by competitive retailers in restructured retail markets. Finally, if the load-serving entity wants to sell excess capacity into PJM's capacity market (also called the Reliability Pricing Model or RPM), it must include an additional amount of capacity beyond its normal obligation within the FRR plan.

Once a load-serving entity chooses to exercise the FRR option, it is required to remain in FRR status and removed from the PJM capacity market for five years. An FRR election can only be terminated early in the event of a change in state regulatory structure, which PJM defines to include only regulatory changes that alter the ability of consumers to choose their retail supplier.

¹ The FRR alternative is described in detail in Schedule 8.1 of PJM's [Reliability Assurance Agreement](#).



THE UNCERTAINTIES OF FRR FOR STATES AND ADVANCED ENERGY DEVELOPMENT

It is important to note that FRR was included in the original RPM design to provide a pathway for vertically integrated utilities that own or control their own capacity resources to enter PJM. It has not been widely used even for that purpose and has never been used by states as a tool to achieve their policy objectives.

The FRR option has naturally received significant attention from states and clean energy advocates because, at bottom, it provides a blunt solution to the immediate problem created by FERC's MOPR. Leaving the capacity market could give states greater control over the resources used to meet resource adequacy requirements and would eliminate the possibility that resources supported by their policies will be excluded from RPM through the MOPR and thus not be counted toward resource adequacy requirements. Some analysts and commenters have suggested that the FRR option could also help states reduce their overall capacity costs because they may be able to purchase less overall capacity under an FRR plan than they are required to purchase within the RPM auction structure (which has notoriously procured capacity well in excess of reliability requirements).^{2,3,4} They also suggest that capacity procurements under FRR can be designed to further lower capacity procurement costs through greater flexibility in portfolio design, longer-term price lock-ins for new capacity, or other features.

² Miles Farmer, Rob Gramlich, "Whether to Frexit: Information States Need on the Costs and Benefits of Departing the PJM Capacity Construct," May 2020, <https://gridprogress.files.wordpress.com/2020/05/whether-to-frexit-paper7.pdf>

³Initial Comments of Public Interest Organizations Regarding Resource Adequacy Alternatives, State of New Jersey Board of Public Utilities, Docket No. EO20030203, May 2020, [https://www.bpu.state.nj.us/bpu/pdf/ofrp/Comments/Natural%20Resources%20Defense%20Council-Sierra%20Club%20Initial%20Comments%20\[May%202020,%202020\].pdf](https://www.bpu.state.nj.us/bpu/pdf/ofrp/Comments/Natural%20Resources%20Defense%20Council-Sierra%20Club%20Initial%20Comments%20[May%202020,%202020].pdf)

⁴ James F Wilson, Over-Procurement of Generating Capacity in PJM: Causes and Consequences, Wilson Energy Economics, February 2020, <https://www.sierraclub.org/sites/www.sierraclub.org/files/blog/Wilson%20Overprocurement%20of%20Capacity%20in%20PJ.M.PDF>



Balanced against these uncertain benefits, however, are a broad set of risks that have led advanced energy companies to urge states to pursue all other potential options first, and to consider FRR only as a last resort. Many of these risks stem from the fact that, by design, the FRR option is focused on procuring capacity resources on a load-serving entity by load-serving entity basis, instead of the broader regional focus of PJM's market. While load-serving entities or states could theoretically band together to develop competitive procurements across multiple service territories or states, it is not clear how they would come together, and how PJM's FRR rules would be applied to such an effort. As a result, it is more likely than not that states directing their utilities to exercise the FRR option will balkanize the regional market into smaller submarkets.

Additionally, abandoning the existing independently administered regionwide capacity market structure will require states and utilities to create entirely new capacity procurement mechanisms to meet their resource adequacy obligations. What those new procurement structures look like, and whether a wide variety of advanced energy developers and technologies (including demand response, energy efficiency, and other demand-side technologies) will be able to participate in them, will require significant time to develop and could present barriers to the ability of non-utility competitive advanced energy developers to participate.

States could design competitive procurement structures that are operated by utilities or administered through auctions, but they would likely need to start from scratch, since few have any kind of structure in place today, particularly one that is designed to meet state clean energy goals while providing robust access to all developers and technology types. Many of these states, in fact, withdrew from such resource planning and procurement efforts decades ago when they restructured their retail markets and required formerly vertically integrated utilities to divest their generation ownership. As a result, states could be expected to default to returning capacity procurement responsibilities to their regulated utilities, a structure where non-utility developers and new and emerging technologies have historically been at a disadvantage or outright excluded from participation.⁵

These factors — balkanization of the regional market, unanswered questions about how state or utility-led procurements will be conducted, and the risk that regulated utilities will be put back in control of generation development — leave advanced energy companies with concerns that FRR-based responses to MOPR will erode the benefits of regional competition, limit access to a diverse array of advanced energy technologies on a regional basis, create new barriers to market participation, and

⁵ Some utilities and utility affiliates have advocated for a return to these approaches through election of FRR. See, e.g., Joint Comments of PSEG and Exelon Generation, New Jersey Board of Public Utilities Investigation of Resource Adequacy Alternatives, Docket No. EO 20030203, May 20, 2020, [https://www.bpu.state.nj.us/bpu/pdf/ofrp/Comments/PSEG-Exelon%20\[May%202020,%202020\].pdf](https://www.bpu.state.nj.us/bpu/pdf/ofrp/Comments/PSEG-Exelon%20[May%202020,%202020].pdf)



increase the costs of meeting clean energy goals. Simply put, bigger independently administered markets mean more opportunity for advanced energy developers and lower prices for customers.

In addition, smaller markets raise concerns that utilities or capacity suppliers could have market power that allows them to raise their capacity prices or exert control over new investment opportunities. Where internal resource requirements are applied under PJM's rules, insufficient available capacity supplies could also cause capacity prices to rise. In addition, returning capacity procurement to utility control could result in procurement structures that favor certain technologies, like existing conventional nuclear plants or specific types of renewables, to the exclusion of other advanced energy technologies that can form a diverse and cost-effective clean energy portfolio.

These risks of FRR, the uncertainties of how states or utilities would implement procurements, combined with the requirement that load-serving entities remain in FRR status for at least five years, all threaten to drive up financing costs for advanced energy developers in PJM.

Finally, if states with strong clean energy policies all leave PJM's capacity market through FRR, existing traditional generation resources in PJM would face less competition, allowing them to stay in the market and potentially driving up carbon emissions in the rest of the region. That would work against the climate and environmental goals underlying these states' clean energy commitments.

IF NOT FRR, THEN WHAT?

Make no mistake: FERC's imposition of the MOPR in PJM (along with similar measures in NYISO and ISO-NE) creates significant barriers to advanced energy participation in wholesale markets and risks imposing increased costs on consumers. Pointing out the risks that must be balanced against the uncertain benefits of FRR is not to suggest that the status quo is acceptable. As a result, it's fair for states to ask: "If we stay in regional capacity markets, how do we pursue our legitimate policy goals in the face of MOPR?"

The answer is that states have a broad suite of options they can explore. These options are neither exhaustive nor mutually exclusive, and in fact may complement each other. All require careful examination and will take time to sort through, but each also aims to leverage the benefits of broad regional market structures to maximize opportunities to deploy a diverse array of advanced energy technologies and meet state clean energy and environmental objectives at least cost. In particular, advanced energy companies encourage states to consider:



Engaging with RTOs/ISOs to Reform Their Markets and Align Them with State Policy Goals:

Advanced energy companies have urged states to first direct their efforts toward working with stakeholders inside PJM and other RTOs/ISOs to pursue new market design options that align more closely with state policy objectives, and that avoid the ills of FERC policies like MOPR. To be sure, working inside RTO/ISO processes to pursue new market rules and designs is not easy, and getting to outcomes that support advanced energy development and achievement of state policy objectives requires gaining support from RTO/ISO boards and management by building a coalition of supporting stakeholders. Doing so is not out of the question. PJM management has acknowledged publicly that its current RPM structure with a broad MOPR is not sustainable and has started the process of discussing alternatives for ensuring resource adequacy in the region with stakeholders.^{6,7} In New England, stakeholders are considering potential market design reforms alongside a study of future grid needs. Even incumbent generators that are not subject to FERC’s MOPR expansions, and benefit from them, have acknowledged the need to discuss alternatives.⁸

While there are a myriad of potential market design and market rule changes that could be pursued to address the challenges created by existing capacity market designs and the MOPR, a few specific options have garnered discussion to date. For example, proposals to realign energy markets to send improved price signals in times of scarcity, or to design them to specifically procure clean energy attributes, could enhance revenue opportunities for advanced energy resources and other resources in the energy markets, diminishing the importance of capacity revenues and increasing the energy and ancillary services revenue component of MOPR price floors, lowering those floors and allowing more resources subject to MOPR to clear. Enhancements to Operating Reserve Demand Curves (ORDC) to improve energy market pricing, and a proposed Forward Clean Energy Market (FCEM), are all options

⁶ Statement of F. Stuart Bresler III on Behalf of PJM Interconnection, L.L.C., The Illinois House of Representatives, Public Utilities Commission, February 21, 2020, <https://www.pjm.com/-/media/library/reports-notice/testimony/20200221-pjm-bresler-statement-to-the-il-house-public-utilities-committee.ashx?la=en>

⁷ PJM Interconnection, L.L.C., General Session, <https://www.pjm.com/committees-and-groups/stakeholder-meetings/general-session.aspx>

⁸ See memo from New England Power Pool (NEPOOL) Participants Committee Chair Nancy Chafetz, “Transition to the Future Grid: Discussions on Potential Future Pathways/Market Frameworks” (July 23, 2020), available at https://www.iso-ne.com/static-assets/documents/2020/08/npc_20200806_composite4.pdf at 276.



that have been raised for consideration (or in the case of ORDC changes, under development and implementation).^{9,10}

In addition, changes to the capacity market structure and auction parameters should be considered. For example, capacity markets could be redesigned to incorporate the attributes sought by state clean energy and environmental policies directly in the centralized auction process (similar to FCEM), allowing a wide variety of market participants to compete on a regional, technology-neutral basis to provide them. This could be accomplished by adding constraints into the market clearing process to reflect the clean energy and carbon emission reduction requirements of state laws, or potentially redesigning the market to procure on a competitive basis tranches of different resources sought by states (an idea first developed in 2013 and shared with FERC in a technical conference that same year).

Pursuing New or Expanded Carbon Pricing Mechanisms:

While the MOPR applies to resources that receive direct financial *benefits* from state policies like a Renewable Portfolio Standard (RPS), it does not appear to apply to policies that impose a *direct cost* on emissions. For example, FERC has confirmed that participation in the Regional Greenhouse Gas Initiative (RGGI), which now includes states in ISO-NE and PJM as well as New York, does not subject any capacity resources to MOPR.¹¹ States can explore joining RGGI if they have not already, tightening the emissions caps under RGGI, or creating another carbon pricing mechanism to reduce emissions, encourage retirement of the most carbon-intensive power plants, and create incentives for additional investment in clean energy. While carbon pricing alone without complementary policies will not fully achieve the states' clean energy requirements, they can help speed achievement of them while improving overall market efficiency. In particular, carbon pricing would improve revenue opportunities for non-emitting advanced technologies in the energy market, reducing the importance of capacity revenues and also potentially lowering MOPR offer floors, which could allow more clean resources to clear in the auction.¹²

⁹ Sam Newell, Kathleen Spees and Johannes Pfeifenberger, "Forward Clean Energy Markets: A new solution to state-RTO conflicts," Utility Dive, January 27, 2020, <https://www.utilitydive.com/news/forward-clean-energy-markets-a-new-solution-to-state-rto-conflicts/571151/>

¹⁰ Mike Hogan, Beyond Capacity Markets Ensuring Reliability in Competitive Wholesale Power Markets Under the New Resource Paradigm, Regulatory Assistance Project, August 14, 2012, <https://www.raponline.org/wp-content/uploads/2016/05/rap-hogan-what-lies-beyond-cap-mkts-2012-aug-14.pdf>

¹¹ Calpine Corp. et al. v. PJM Interconnection, L.L.C., 169 FERC ¶ 61,239 (2019)

¹² Comments of Exelon Corporation at 3, Case 19-E-0530: Proceeding on Motion of the Commission to Consider Resource Adequacy Matters, November 8, 2019.



Expanded state-based carbon pricing is already under discussion in several RTOs/ISOs. NYISO is developing rules to incorporate carbon pricing directly into its wholesale markets as a mechanism to achieve New York's aggressive clean energy and climate goals.¹³ PJM stakeholders are exploring how that region's markets can incorporate carbon pricing adopted by all or a portion of its states.¹⁴ In New England, a variety of stakeholders and ISO-NE management have urged policymakers in the region to consider carbon pricing.¹⁵

Finally, a FERC technical conference scheduled for September 30 will explore market design considerations raised by the expansion of state-adopted carbon pricing in RTO/ISO market regions, a discussion that could set the stage for more active consideration of such mechanisms by the states.

Expanding Direct Environmental Regulation of Polluting Power Sources:

States continue to have authority to directly regulate the environmental impacts of conventional power plants. Expanding these efforts would, like carbon pricing, place additional direct costs on emissions by higher polluting power plants and create financial incentives for them to retire and be replaced by cleaner and more economic advanced energy resources. State energy regulators should consult closely with state environmental regulators to explore this option. New Jersey will consider this option as part of its ongoing formal investigation of capacity market alternatives (discussed below).

WHAT HAPPENS NOW?

States are continuing to explore their options for responding to MOPR in both formal and informal ways. In PJM, the New Jersey Board of Public Utilities (NJBP) has initiated a formal investigation, received two rounds of comments from interested parties on FRR and other alternatives, and

¹³ Ethan D. Avallone, Carbon Pricing: Market Design Complete, New York Independent System Operator, June 20, 2019, https://www.nyiso.com/documents/20142/7129597/6.20.2019_MIWG_Carbon_Pricing_MDC_FINAL.pdf/cf67ebb8-d0fc-7b4b-100f-c3756d6afae8#:~:text=The%20NYISO%20proposes%20to%20incorporate,is%20charged%20to%20emitting%20resources.

¹⁴ PJM Interconnection, L.L.C., Carbon Pricing Senior Task Force, <https://www.pjm.com/committees-and-groups/task-forces/cpstf.aspx>

¹⁵ Robert Walton, "ISO New England Chief Presses for Carbon Price in Response to Sanders, Warren and Others," Utility Dive, November 25, 2019, <https://www.utilitydive.com/news/iso-new-england-chief-presses-for-carbon-price-in-response-to-sanders-warr/567955/>



scheduled a technical conference on September 18.^{16,17} AEE, in concert with other clean energy trade organizations, filed comments there warning of the uncertainty and unintended consequences of FRR.¹⁸ Less formal discussions are underway among legislators and regulators in Illinois and Maryland, among other states. Outside of PJM, the New York Public Service Commission and Connecticut Department of Energy and Environmental Protection, like the NJBPU, have also initiated formal investigation, received comments, and held hearings on alternatives to RTO/ISO centralized capacity markets.^{19,20}

The pace at which those state efforts move forward, and the extent to which FRR becomes a true last resort, will also depend on additional action at FERC and in the courts. Dozens of parties have filed lawsuits challenging FERC's MOPR orders, which, if successful, could require removal of the expanded MOPR. Further, a change in leadership at FERC could choose to roll back the MOPR orders.

More immediately, PJM's proposed plan to comply with FERC's MOPR orders, while not a perfect solution, would give advanced energy resource owners flexibility to develop their own specific MOPR offer floors reflecting their actual costs, which would allow many of them to continue to clear in the RPM auctions and count toward regional resource adequacy requirements. If FERC approves that filing without significant changes, many advanced energy resources like wind and solar will be able to clear in the PJM capacity auction in the near term. That will give states more time to consider alternatives before the worst impacts of MOPR on emerging technologies like offshore wind are experienced in future years. States and advanced energy stakeholders should use this time to develop proposed

¹⁶State of New Jersey Board of Public Utilities, Investigation of Resource Adequacy Alternatives, Order Initiating Proceeding, Docket No. EO20030203, March 27, 2020, <https://www.nj.gov/bpu/pdf/boardorders/2020/20200325/3-27-20-2H.pdf>

¹⁷ State of New Jersey Board of Public Utilities, Investigation of Resource Adequacy Alternatives, Notice of Technical Conference, Docket No. EO20030203, July 14, 2020, <https://www.bpu.state.nj.us/bpu/pdf/publicnotice/Capacity%20Proceeding%20Notice%20of%20post-comment%20Technical%20Conference.pdf>

¹⁸ Reply Comments of Advanced Energy Economy American Wind Energy Association Mid-Atlantic Renewable Energy Coalition Solar Energy Industries Association, New Jersey Board of Public Utilities Investigation of Resource Adequacy Alternatives, Docket No. EO 20030203, June 24, 2020, [https://www.bpu.state.nj.us/bpu/pdf/ofrp/Supplemental%20Comments/Advanced%20Energy%20Economy,%20American%20Wind%20Energy%20Association,%20Mid-Atlantic%20Renewable%20Energy%20Coalition%20and%20Solar%20Energy%20Industries%20Association%20\[6-24-2020\].pdf](https://www.bpu.state.nj.us/bpu/pdf/ofrp/Supplemental%20Comments/Advanced%20Energy%20Economy,%20American%20Wind%20Energy%20Association,%20Mid-Atlantic%20Renewable%20Energy%20Coalition%20and%20Solar%20Energy%20Industries%20Association%20[6-24-2020].pdf)

¹⁹ State of New York Public Service Commission, Order Instituting Proceeding and Soliciting Comments, Case 19-E-0530, August 8, 2019, https://powersuite.aee.net/dockets/ny-19-01846-19-e0530/filings/12741128?version=beta&filing_search_id=799055&document_id=138545232

²⁰ Connecticut Department of Energy and Environmental Protection, [http://www.dpuc.state.ct.us/DEEPEnergy.nsf/\\$EnergyView?OpenForm&Start=8.3.19&Count=30&Expand=8.3&Seq=40](http://www.dpuc.state.ct.us/DEEPEnergy.nsf/$EnergyView?OpenForm&Start=8.3.19&Count=30&Expand=8.3&Seq=40)



reforms to energy, capacity, and ancillary services markets like those noted above that better align these markets with state policy goals and prepare them for a future where advanced energy resources like wind, solar, energy storage, demand response, energy efficiency, and distributed energy technologies are the majority of resources on the system.

If FERC rejects PJM’s compliance filing or requires significant changes that restrict the options available to advanced energy resources to reflect their true costs in MOPR offer floors, and make it more difficult for them to clear, then states may accelerate their consideration of FRR. In that case, states and the advanced energy industry will need to push hard – at FERC, in Congress, and in PJM (along with ISO-NE and NYISO, where a FERC decision rejecting PJM’s compliance filing will reverberate) – to align the capacity markets with state energy goals, instead of undermining them. If all of those efforts fail, and the courts uphold FERC’s MOPR orders, then a focus on options like FRR may be necessary.

