Mandatory Capacity "Markets" and the Need for Reform

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I. Introduction

The final major regulatory development of the last decade—the issuance of the PJM Capacity Market Order by the Federal Energy Regulatory Commission (FERC or Commission) in December 2019[1]—put an exclamation point on a conclusion that has been clear for several years: Mandatory capacity markets demand reform. These administrative constructs are operating in the Regional Transmission Organizations and Independent System Operators (RTOs/ISOs) in retail restructured regions, where the majority of the states have implemented retail choice. In these states, the generation assets are no longer owned by investor-owned utilities and operate in markets governed by PJM Interconnection (PJM), ISO New England (ISO-NE) and the New York ISO (NYISO). A review of the current state of these RTOs/ISOs reveals a broken regulatory scheme, and a piecemeal, incremental approach to reforming these capacity markets will not suffice. This paper proposes a set of comprehensive reforms for these regions..

The problem addressed in this paper is not one of "markets" and their use in electricity procurement and delivery. Competitive markets are used to procure resources both within and outside of RTO/ISO footprints, such as the competitive procurement of resources through bilateral contracts. The relevant distinction across the country is between markets that are functioning, and administrative constructs called "markets" that are not functioning and do not resemble actual markets.[2]

In an area rife with complexity, at least this much is clear: Dysfunction finds its home in the RTOs/ISOs with mandatory capacity constructs. These capacity constructs were initially justified as necessary to provide additional revenue to cover the costs of providing capacity, and were intended to work in tandem with load-serving entity[3] (LSE) contracting and ownership. But the RTOs/ISOs with mandatory capacity constructs appear now to view these constructs as the central mechanism for resource procurement and therefore have placed restrictions on procurement mechanisms, such as bilateral contracting, that may impact the outcomes of these constructs. The Minimum Offer Price Rule (MOPR) is the most notable of these restrictions.

As a result, the equilibria emerging from these constructs are not expressions of supply and demand as in a prototypical emergent market.[4] Rather, retail restructured states have pursued policies to encourage the development and operation of resources with certain attributes, and the RTOs/ISOs have responded with the layering of interventions that continually attempt to modify capacity construct outcomes in response to such state actions. With that, we have lost the foundational purpose of restructuring, which purported to encourage competition for generation and other services in a manner that benefits consumers.

Both the state policy actions and RTO/ISO reactions are key indicators of the need for reforms to correct the fundamental flaws and problematic outcomes in the mandatory capacity constructs, including the following:

- Capacity auctions that were not designed to differentiate among each megawatt (MW) of capacity, and therefore are not tools to procure a specific technology type or attribute. At the same time, restructured states and LSEs, including public power and electric cooperative utilities, recognize that MWs are not a completely fungible commodity and seek capacity choices that can achieve policy goals, including fuel diversity and security, emissions reductions, flexibility, economic development, and local reliability needs.

1 *Order Establishing Just and Reasonable Rate Docket Nos. EL16-49 et al., 169 FERC ¶ 61,239 (2019). This will be referred to as the PJM Capacity Market Order.*
2 *The term capacity "constructs" instead of "capacity markets" will be used in this paper.*
3 *The term "load-serving entity" in this paper refers to an entity that has an obligation to serve end-user customers or to serve a utility that has such an obligation. LSEs include public power and electric cooperative utilities, investor-owned utilities that have retained an obligation to serve customers, public power joint action agencies, generation and transmission cooperatives, and retail suppliers providing generation service to utility customers.*
4 *By an "emergent market," we mean exchanges occurring through diffuse, decentralized actions and informed buyers and sellers; as distinguished from the planned market of the RTOs/ISOs, where demand curves are administratively derived and selling methods are prescribed by administrative rules.*

- Complex rules and frequent changes to such rules,[5] where the RTOs/ISOs seek to protect these flawed constructs from actions taken by the states and LSEs to procure or retain certain resources. These volatile and complex rules create greater uncertainty for procurement of resources going forward.
- The expanding use of a MOPR or similar types of buyer-side mitigation that requires a minimum offer for certain resources in the capacity auctions, placing those resources at risk of not clearing the capacity auction, in which case the LSE would be required to pay twice for capacity – once for that resource and a second time to procure additional capacity from the auction.
- An auction structure that results in the procurement of excess capacity above the amount required by the reserve margin, creating inefficiencies in resource procurement.[6]
- Highly volatile short-term revenue streams that are not well suited for long-term financing of new generation, and which in some cases exceed the capacity costs incurred by many resources, especially existing generation.[7]
- The short-term and volatile nature of these constructs has led to a proliferation of merchant-funded generation, almost entirely comprised of natural-gas-fired resources, which in turn has contributed to concerns about insufficient fuel security and resource diversity and created a set of merchant resources dependent upon market revenues.

These flawed market constructs are inefficient mechanisms for procuring capacity and increase the cost of procurement.

A review of the state of play in the RTOs/ISOs in retail restructured regions, as presented in this paper, leads to a fundamental conclusion: A shift from reliance on the capacity constructs to more comprehensive LSE and state resource planning for electricity supply is a beneficial strategy and follows the path states have taken in recent years. Central to such an approach is a shift from the current mandatory capacity constructs to voluntary residual capacity markets within these RTOs/ISOs.

State actions to correct for undesired market outcomes and RTO/ISO interventions in the current mandatory capacity market constructs have taken many forms, from zero emission credit (ZEC) programs aimed at retaining nuclear generators, to MOPRs, to *de facto* integrated resource plans (IRPs)[8] codified through state law. Recent state resource procurement actions, described in the next section and in more detail in the Appendix, demonstrate that states are increasingly pursuing policies to procure specific resource types. These policies are aligned with the states' traditional role in determining resource adequacy and energy policy more broadly, which will continue notwithstanding the restructuring of the IOUs within their jurisdiction. The generation mix in each state, as well as that selected by public power and electric cooperative utilities not under the jurisdiction of the state commissions, directly affects multiple policy goals, including carbon reductions, fuel diversity and economic development.

The reforms proposed in this paper recognize that state and utility resource planning for electricity supply should be fully accommodated within a workable paradigm for the RTOs/ISOs. Comprehensive resource planning benefits

5 *For example, PJM has proposed over thirty changes to the Reliability Pricing Model rules since 2010.*

6 *Capacity procured through PJM's most recent auction, held in May 2018, amounted to a 22 percent reserve margin, or 6.2 percentage points above the 15.8 percent required margin. See 2021/22 RPM Base Residual Auction Report, PJM Interconnection, May 2018. ISO-NE's Forward Capacity Auction 14, held in February 2020, procured an excess of 1,466 MW above the installed capacity requirement, equal to a 4.5 percent surplus. See, "ISO-NE Forward Capacity Auction Closes with Adequate Power System Resources for 2023-2024," ISO New England, February 5, 2020.*

7 *For example, the 2018 State of the Market Report for PJM shows that a hypothetical new combined-cycle (CC) natural gas plant would recover more than 100 percent of their 20-year levelized costs from net energy and ancillary service revenue plus capacity revenue in all zones (see Table 7-12). Data on existing units show that, in the aggregate, net revenues from all markets exceeded 100 percent of the avoided costs for most technology types in 2018 (see Table 7-34), http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2018/2018-som-pjm-sec7.pdf.*

8 *An IRP is a plan, often produced by a vertically integrated utility, to establish how the utility will meet projected resource needs over a planning period through a mix of supply and demand-side resources. IRPs balance policy goals, such as emissions reductions and minimizing cost to customers. A de facto IRP specifies certain resources that will be procured by the utilities to provide energy and capacity to customers outside of the conduct of a full comprehensive IRP.*

The reforms proposed in this paper recognize that state and utility resource planning for electricity supply should be fully accommodated within a workable paradigm for the RTOs/ISOs.

customers, as does the ability to access a voluntary market to sell or procure marginal supply, and to achieve the efficiencies of the centralized dispatch of resources through the current RTO/ISO energy markets.

As discussed further in this white paper, this reform proposal rests on two pillars:

(1) the transition of mandatory capacity constructs to voluntary residual markets to supplement primary methods of procuring capacity (bilateral contracting or self-builds); and

(2) a framework for a greater role in resource planning and procurement for the LSEs and the states to enhance the first pillar.

While achieving the first component involves FERC action, the second is a broader recommendation for state-level actions but does not entail FERC oversight or requirements for state planning and resource procurement. These proposed reforms are intended to create an efficient and cost-effective resource adequacy paradigm within the RTOs/ISOs operating in retail restructured regions. Below are the key features of these reforms:

(1) Capacity markets would be operated on a strictly voluntary, residual basis with procurement close to the time period when the capacity is required. This approach resembles the Midcontinent Independent System Operator (MISO) Planning Resource Auction (PRA).

(2) The capacity markets would not include any buyer-side mitigation, such as a MOPR.

(3) Restructured states could choose to play a greater role in the determination of the optimal mix of resources procured by IOUs within that state without impediments from the RTO/ISO rules, *but such decisions would remain with the states.*

(4) LSEs would continue to be subject to resource adequacy requirements and would be fined for failure to meet those requirements.

(5) Public power and cooperative utilities within the RTO/ISO could meet their resource adequacy obligations through market mechanisms of their choosing, including bilateral contracts, ownership, or procurement through the voluntary residual capacity market.

(6) Seasonal and variable resources would count toward resource adequacy criteria, as appropriate.

As the next section shows, developments within the mandatory capacity market RTOs/ISOs demonstrate that the time is ripe for fundamental reform. Moreover, as other regions may reconsider revisions to or implementation of new resource adequacy constructs, these reforms provide broad guidelines for the development of any such constructs and highlight problematic features to be avoided. This paper may not contain all the answers to the difficult and complex question of how to fully develop and implement a market transition. It is, however, the beginning of a dialogue on how to bring the key elements of this proposal to fruition.

II. The State of the RTOs/ISOs in Retail Restructured Regions

There have been numerous actions taken to avoid the outcomes of the capacity constructs that germinate from states with restructured utilities operating in the RTOs/ISOs and from the RTOs/ISOs themselves. The increasing actions taken by the restructured states to pursue specific energy policy goals have sought to avoid relying only on wholesale market outcomes to determine the resource mix. Such actions have served as the primary impetus for the RTO/ISO interventions. Public power and cooperative utilities, however, have continued to rely on resource ownership and bilateral contracts to meet their obligation to serve the load of their territories, regardless of the restructured status of the state in which they are located. Like many states, public power and cooperative utilities have specific goals that may include minimizing cost to consumers, emissions reductions, and fuel diversity.

Load-serving entities want to retain their ability to self-supply their load without capacity market impediments. In the past, FERC has recognized this self-supply right. For example, the Commission had previously approved a self-supply exemption from the PJM MOPR for public power, electric cooperatives, certain IOUs and large customers, subject to certain net-long and net-short thresholds.[9] This was later reversed by the Commission after a DC Circuit Court decision vacating and remanding the original orders.[10] In the PJM Capacity Market Order, the Commission rejected a PJM proposal for reinstatement of such an exemption along with a broad expansion of the MOPR.[1] The Commission had also approved a self-supply exemption from buyer-side mitigation in the New York ISO in 2015,[12] but then issued a second order in February 2020 narrowing that exemption.[13] The reforms proposed in this paper would remove such impediments to self-supply.

A. Restructured State Actions

There have been two general categories of state actions. First, are state-directed payments to existing resources based on an attribute of that resource, such as carbon-free emissions. This occurred in Illinois, New York, Connecticut, New Jersey and Ohio. Zero-emission credits are a prime example of these payments; the state requires the electric distribution companies to purchase credits from eligible nuclear power plants for an extended time period. Second, are direct procurements of specific types of new resources, typically renewable resources. This has occurred in Massachusetts, New York, Connecticut, New Jersey and Maryland.

These state programs have polarized stakeholders in the energy industry. Broadly speaking, one camp sees these programs as a way to properly account for certain "externalities" they believe are under-valued by the RTO/ISO-operated markets, while the other side argues the payments serve only to keep "uneconomic" resources in operation (not accounting for such externalities) and to artificially suppress or otherwise distort market prices. Regardless of the politics, motivation, or even the specific generation type at issue (nuclear, offshore wind, etc.), these state programs are a symptom of the broader problem: The capacity constructs do not address policy preferences for different types of resources.[14]

A more detailed discussion of these state actions is provided in the Appendix.

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9 *See PJM Interconnection, L.L.C., 143 FERC 61,090 at PP 107-115 (2013), order on reh'g, 153 FERC ¶ 61,066 at PP 52-61 (2015).*

10 *See NRG Power Marketing, LLC v. FERC, 862 F.3d 108 (D.C. Cir. 2017), order on remand, PJM Interconnection, LLC, 161 FERC ¶ 61,252 (2017), requests for reh'g pending.*

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

12 *N.Y Pub. Serv. Comm'n v. N.Y Indep. System Operator, Inc., 153 FERC ¶ 61,022 (2015), reh'g denied, 154 FERC ¶ 61,088 (2016), pet. for review filed sub nom. Entergy Nuclear Power Mktg., LLC v. FERC, No. 16-1107 (D.C. Cir. filed Apr. 5, 2016). A compliance filing from the New York ISO remains pending at FERC. Compliance Filing and Request for Commission Action within Sixty Days, New York Public Service Commission, et al. v. New York Independent System Operator, Inc., Dockets EL15-64, ER16-1404 (April 13, 2016).*

13 *N.Y Indep. System Operator, Inc., 170 FERC ¶ 61,121 (2020). In this order, the Commission excludes the New York Power Authority from the self-supply exemption.*

14 *To be sure, for capacity "market" enthusiasts, this is a feature, not a bug, of capacity "markets."*

B. RTO/ISO Interventions

Along with these state actions, the RTOs/ISOs in retail restructured regions feature an evolving and ever more creative collection of market rule revisions nominally designed to address the perceived market problem of the moment. Such revisions range from minimum bid floors to recent efforts to "accommodate" state actions, reliability-must-run (RMR) contracts, and market changes to address fuel security. It is no wonder that the original goal of the "market" gets lost in all of this back-end fiddling.

The MOPR is the RTO/ISO action likely to have the most negative impact on state and public power resource choice. A MOPR counteracts an essential component of a capacity market––that the sellers bear both the risks and rewards of the competitive process. Instead, a MOPR aims to shield capacity prices from the impact of state- and utility-sponsored resources by placing a floor on the capacity price offers from resources receiving revenues from outside of the capacity constructs. Its function is to ensure sufficient revenue to merchant generators that earn revenues solely from the RTO-operated markets. FERC's December 2019 PJM Capacity Market Order represents the broadest application of the MOPR to date, expanding the MOPR's applicability from new natural gas-fired resources to all new and future resources of all technology types that receive or are entitled to receive a broadly defined "state subsidy." Exemptions are granted only for resources in place as of the date of the order. This order shows how the path of these endless RTO/ISO interventions has led to a highly managed construct that bears no resemblance to a market.

"Market" interventions by RTOs/ISOs are laden with industry jargon, acronyms and complicated processes that make them impossible to understand for anyone not engaged in the daily world of electricity markets. Once unpacked and scrutinized, these market interventions reveal an interest in avoiding pure reliance on the capacity constructs alone. Each intervention results in conflicting goals between actions undertaken by the states and consumer-owned utilities and those undertaken by the RTOs/ISOs. It is worth noting that, following a review and discussions with stakeholders, the province of Alberta, Canada, decided not to implement a capacity market, expressing concerns about the complexity and uncertainty of the construct.[15]

Instead of developing additional complex interventions in the capacity auction construct, any RTO/ISO market reform proposal must truly accommodate utility resource ownership, bilateral contracting, and resource planning. Otherwise, in the words of counsel for the PJM Industrial Customer Coalition, it is just a matter of "trying to find the least bad option."[16] Moreover, for public accountability and transparency reasons, it would be preferable for the RTO/ISO models to expressly acknowledge the necessity for their operations to work in tandem with state and utility resource development.

These RTO/ISO market interventions are also described in greater detail in the Appendix.

[15] *Restoring Certainty in the Electric System, Government of Alberta News Release, July 24, 2019, (with Minister of Energy Sonya Savage stating that "Albertans and investors need certainty in our province's electricity market system, not an experiment. The energy-only market works. Investors want to participate in it and it provides Albertans with reliable and affordable electricity"), https://www.alberta.ca/release.cfm?xID=-642387D0ECA3E-ED8E-6B02-885D35312EBBB3EE#toc-0.*

[16] *Rich Heidorn Jr., Almost Nobody Is Happy with Capacity Markets at Conference, RTO Insider (Sept. 9, 2018) ("Attorney Susan Bruce, who represents the PJM Industrial Customer Coalition, was less sanguine. 'This is a case where there's no good answer from my clients' perspective. [We're] just trying to find the least bad option,' she said), https://www.rtoinsider.com/capacity-markets-frr-mopr-99362/.*

III. Capacity Construct Reforms and Restructured State Options

Determining the needed mix of resource types and attributes through resource planning and the procurement of such resources through bilateral contracting and ownership are fundamental components of a well-rounded and balanced resource procurement approach.[17] Therefore, entities with resource adequacy responsibility should rely upon a broad range of devices in electricity procurement to best serve their customers. To accommodate and integrate these concepts, this capacity construct reform proposal rests on two pillars: (1) the transition of capacity constructs to voluntary residual markets to supplement the primary methods of procuring resources (e.g., bilateral contracting or self-builds); and (2) a recommendation for a more comprehensive approach to resource adequacy and planning by the states and LSEs. This reform involves FERC action only within the first pillar, which would in turn allow for the states, LSEs and large customers to prioritize bilateral contracting and resource planning, with the option to sell excess supply or procure needed incremental capacity through a viable market. While the key reform proposed here is a fundamental shift away from the current mandatory capacity market construct, the proposal also recognizes that an IRP process or equivalent resource planning approach by the states and utilities benefits customers.

> *"If the markets themselves fail to value the environmental attributes that people want and that the courts have said are lawful exercises of state authority, states will justifiably seek alternatives."*
>
> Former ICC Chairman and CEO Brien Sheahan

In an October 2018 opinion piece on PJM capacity constructs, then-chairman of the Illinois Commerce Commission Brien Sheahan posited that PJM's proposed changes to the capacity construct actually diminish the policy preferences of its member states, noting that "if the markets themselves fail to value the environmental attributes that people want and that the courts have said are lawful exercises of state authority, states will justifiably seek alternatives." Chairman Sheahan made clear one such alternative was exiting PJM, writing that "as it becomes clear that administrative markets like PJM's discriminate against, or mitigate the effects of, zero carbon and renewable resources, states with renewable or zero-carbon portfolios will have to reevaluate their participation."[18] The proposal presented here is the "alternative" in the vein of Commissioner Sheahan's opinion piece, as a more feasible and certain approach than the use of, for example, an expanded or super MOPR as contained in the PJM Capacity Market Order. This alternative is designed to remedy the flawed state of play in the RTOs/ISOs in retail restructured

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[17] *This is not to say that there is not a need for oversight of market power within the bilateral markets. But there is a clear benefit to open and transparent planning, as opposed to obscured and uncoordinated processes, as is the case now.*

[18] *Brien Sheahan, When PJM's capacity market stops working for consumers, is it time to leave?, Utility Dive (Oct. 2, 2018), https://www.utilitydive.com/news/when-pjms-capacity-market-stops-working-for-consumers-is-it-time-to-leave/538605/. Consternation among states that submitted to full restructuring continues to grow. Former Maryland Governor Martin O'Malley wrote an opinion piece for Utility Dive expressing frustration with the impediments at the federal level designed to "stymie [the states'] clean energy policies." Governor O'Malley posited that "the only real solution is taking the regional energy policy role away from [PJM] altogether and re-directing them back to their reliability and voluntary market facilitation functions." Martin O'Malley, Ex-Maryland Gov. O'Malley: States must reassert authority on clean energy policy, Utility Dive (March 28, 2019), https://www.utilitydive.com/news/ex-maryland-gov-omalley-states-must-reassert-authority-on-clean-energy-po/551461/. Similarly, at a late 2018 NARUC meeting in Orlando, Florida, state commissioners bristled at the notion that there was a "compact," in the words of PJM CEO Andy Ott, governing the interrelationship between states and the RTO/ISO such that states had ceded authority to the RTO/ISO. Following a panel discussion with state commissioners, Illinois Commerce Commissioner John Rosales said, "We did not agree to give that up. I don't think that was the intention of states that we would give up that right, give up that sovereignty where they would have the authority to make decisions on our behalf." Gavin Bade, PJM, states clash over market jurisdiction at NARUC conference, Utility Dive (Nov. 14, 2018). https://www.utilitydive.com/news/pjm-states-clash-over-market-jurisdiction-at-naruc-conference/542285/.*

regions, while removing impediments to self-supply and enhancing the role of the states.

These issues are rife in states with restructured electricity markets. Against the backdrop of the PJM Capacity Market Order, states have raised significant questions about their ability to pursue energy policy goals in the context of the capacity constructs. The New York Public Service Commission (NY PSC) initiated a proceeding in August 2019 "to consider how to reconcile [the NYISO] resource adequacy programs with the state's renewable energy and environmental emission-reduction goals."[19] The NY PSC said the NYISO capacity construct "fails to recognize and provide compensation for many important factors, such as environmental and local reliability benefits," and the use of buyer-side mitigation is likely to produce an increase in consumer costs.[20] The Connecticut Department of Energy and Environmental Protection, in a January 15, 2020, letter to ISO-NE President and CEO Gordon Van Welie, said it "is investigating the potential options for extricating the state from the compulsory forward capacity auctions."[21] In its 2019 Energy Master Plan, New Jersey said it "is committed to exploring all possible options, including leaving the PJM capacity market, to ensure that the state can realize a clean energy future at reasonable prices."[22]

This proposal would allow the states to pursue their policy goals without a complex departure from RTO/ISO entirely, and therefore continue to have access to the wholesale energy, ancillary services and residual capacity markets.

This section analyzes the two central components of this proposal, and then introduces the more complicated discussion of the implementation of capacity construct reform.

A. The Market Transition

This proposal envisions a move away from complicated mandatory capacity constructs that include significant and numerous interventions to a voluntary construct that empowers bilateral contracting, ownership, and comprehensive resource planning. For example, rather than target specific resources for retention or development, the states could engage in more holistic integrated resource planning to determine an optimal resource mix needed to meet various policy objectives. Public power and cooperative utilities would continue to pursue resource procurement, but without RTO/ISO impediments. Further, by removing the mandatory nature of the capacity constructs, the RTO/ISO interventions described in this paper also fall away because there is no longer a mandate for LSEs to utilize the capacity construct to meet their resource adequacy obligations.[23] Subject to any state resource portfolio requirements, LSEs and others comfortable with the market design and procurement opportunities in the voluntary market could use it; those not comfortable with the market would have no obligation to use it.

> *A voluntary capacity market is an effective way to truly accommodate, as opposed to simply mitigate, state and utility policy goals that drive market interventions in the first place.*

[19] *Order Instituting Proceeding and Soliciting Comments, Case 19-E-0530 – Proceeding on Motion of the Commission to Consider Resource Adequacy Matters, New York Public Service Commission (August 8, 2019) at 4, http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=19-E-0530&submit=Search*

[20] *Id. at 3-4.*

[21] *Letter to Gordon van Weilie, President and CEO, ISO New England, from Katie S. Dykes, Commissioner Connecticut Department of Energy and Environmental Protection (January 15, 2020), http://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f7cdd1168525797d0047c5bf/475c9a0fa3aca8e4852584f800739321/%24FILE/IRP%20Request%20to%20ISO.pdf*

[22] *2019 New Jersey Energy Master Plan (January 2020) at 108, https://nj.gov/bpu/pdf/publicnotice/NJBPU_EMP.pdf*

[23] *As noted later, the RTOs will retain the ability to arrange RMRs if needed.*

Transitioning to a voluntary market does not represent a move away from resource adequacy requirements. LSEs would still be responsible for procuring capacity to meet their reserve margin subject to RTO/ISO penalties for failure to do so. This proposal would not harm reliability.

In essence, a voluntary capacity market is an effective way to truly accommodate, as opposed to simply mitigate, state policy goals that drive market interventions in the first place. This is the opposite of the current situation, where mandated market participation has led to repeated interventions and overlays by the RTOs/ISOs.

The structure of the market proposed here looks much like MISO's PRA. In MISO, the majority of the LSEs own or contract for generation to meet their obligations to serve their customers, and the PRA provides an annual, voluntary residual opportunity for participants to buy and sell incremental supply in the market. In the past two PRAs, 95 percent of the capacity in MISO was self-scheduled into the auction as a price-taker or was part of a Fixed Resource Adequacy Plan (FRAP) and did not participate in the PRA.[24] In a FRAP, the LSE identifies those resources it owns or contracts for that are used to meet its resource adequacy obligation and that are not offered into the PRA. MISO continues to establish resource adequacy requirements for LSEs and imposes a penalty for failure to meet those resource obligations, but views its role as "support[ing] this [resource adequacy] responsibility by providing secure and reliable ways for utilities to buy or sell capacity."[25] This is the role capacity markets should play--as an option provided by the RTO/ISO to support the LSEs' need to meet applicable resource adequacy requirements.

This proposal places the RTO/ISO back in the role of supporting LSEs in their efforts to meet resource adequacy requirements.

This proposal similarly places the RTO/ISO back in the role of supporting LSEs in their efforts to meet resource adequacy requirements by utilizing some combination of bilateral contracts, rate-based assets, and market opportunities to sell or procure marginal supply. The RTO/ISO, however, would still be responsible for ensuring that the LSEs comply with applicable reliability requirements.

MISO conducts the PRA on an annual basis. Under this reform proposal, each RTO/ISO could work with states and LSEs to determine the term of the residual auction. The term could be one year, as in MISO, or it could be seasonal, depending on circumstances within the RTO/ISO. It could also be enhanced with a monthly spot auction, as in the New York ISO or include a voluntary longer-term component. Moreover, the residual auctions should be conducted closer to the delivery year than the current three-year-forward procurement used in PJM and ISO-NE. That approach would allow for more accurate demand projections and allow LSEs to negotiate bilateral contracts without resources being restricted by a capacity obligation at a specific price.[26] This would be a voluntary residual market crafted to meet the needs of LSEs should they decide to go to the market to procure supply, and not a mandated regulatory paradigm for the LSE.

A transition to a residual capacity market is a better means to the same end as so-called "market designs" like a Resource Carve Out (RCO) that was proposed for PJM, but rejected in the PJM Capacity Market Order, or ISO-NE's Competitive Auctions with Sponsored Policy Resources

[24] *2019/2020 Planning Resource Auction (PRA) Results, Midcontinent ISO (April 12, 2019); 2018/2019 Planning Resource Auction (PRA) Results, Midcontinent ISO (May 9, 2018).*

[25] *MISO, Resource Adequacy, https://www.misoenergy.org/planning/resource-adequacy/#nt=%2Fplanningdoctype%3APRA%20Document%2F-planningyear%3APY%2019-20&t=10&p=0&s=Created&sd=desc (last visited Sept. 26, 2019).*

[26] *As proposed by American Municipal Power (AMP) to the PJM Capacity Construct and Public Policy Senior Task Force (CCPPSTF). See Modifications to RPM to Accommodate State Public Policy Initiatives, American Municipal Power, Presentation to the PJM CCPPSTF (Oct. 16, 2017), available at https://www.pjm.com/-/media/committees-groups/task-forces/ccppstf/20170912/20170912-amp-proposal.ashx.*

(CASPR), which pose barriers to state and public power resource procurement. For example, a nuclear generator eligible for ZECs could instead enter into bilateral contracts for capacity and energy with an LSE to meet the state's objectives and requirements, and then count the capacity from the nuclear generator in satisfying the LSE's resource adequacy requirements. The state could also decide to continue the ZECs as an attribute payment only, with the nuclear plant selling into the residual capacity market without the impediment of a MOPR. Alternatively, the state could do so during the transition to bilateral contracts. The shift to a voluntary residual market could also lessen the need for RTO/ISO-led RMR constructs. Any need for generation for reliability purposes—which is what RMR contracts are used for—can be handled through bilateral contracts by individual LSEs or within the state resource planning process.[27]

Finally, the residual capacity markets would have no buyer-side mitigation. Seller-side mitigation in the residual market would be implemented based upon continued supplier-side market power analyses. Current seller-side market power mitigation is necessary due to the mandatory nature of the capacity construct. With a wider array of market options, from the residual capacity market to bilateral contracts and resource ownership options, such seller-side market power would likely be reduced. The RTO market monitors should continue to monitor and mitigate market power in the residual and the bilateral markets, and consider whether seller-side market power mitigation measures are needed.[28]

A transition to short-term and voluntary residual markets would allow electricity markets to function as originally intended—as an avenue for LSEs to procure or sell marginal supply to the extent necessary to meet customer needs.

B. Enhanced Restructured State and Utility Role in Resource Planning

Many state legislatures and regulators have demonstrated time and again they will not be deterred by a capacity construct that fails to account for the policies they enact or the external attributes of the resources they deem favorable. It is not feasible to suggest that an RTO/ISO incorporate every state policy into its market design. This is why the states and utilities are best suited to handle resource procurement that is in line with their policy goals.[29] While public power and electric cooperative utility procurement has not created the same level of concern for the RTOs/ISOs and merchant generators as have state actions, this proposal recognizes that public power utilities, which generally are not subject to the jurisdiction of the state utility commission, also should be able to determine and plan for needed resources without the impediment of RTO interventions, such as the MOPR.

A shift in resource procurement from the capacity constructs to the states and utilities would retain the RTO/ISO responsibility to develop overall resource adequacy and load projections for their region on an annual basis and allocation of those obligations to LSEs. These projections should reflect any reduced demand due to increased energy efficiency, demand response, and distributed generation. The RTO/ISO would develop these annual resource adequacy and load projections in close coordination with the affected state utility commissions, and LSEs (including public power utilities). LSEs bear the ultimate resource adequacy responsibility under this proposal. Moreover, state and local regulators and utilities could provide a better

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[27] *This proposal is not recommending that RMRs be removed as an RTO/ISO tool when needed and may still play a role in addressing local reliability needs.*

[28] *To allow for such an assessment of market power, bilateral agreements and their terms could be submitted to, but not require approval from, PJM and the independent market monitor, as recommended in the proposal for capacity market reform developed by American Municipal Power (AMP) in the PJM Capacity Construct and Public Policy Senior Task Force. See Modifications to RPM to Accommodate State Public Policy Initiatives, American Municipal Power, Presentation to the PJM CCPPSTF (Oct. 16, 2017), available at https://www.pjm.com/-/media/committees-groups/task-forces/ccppstf/20170912/20170912-amp-proposal.ashx.*

[29] *This recommended devolution back to the states is not an implicit approval of any specific state policies nor a request for any change in FERC jurisdiction over the states, but a recognition that: (1) the state actions described herein demonstrate that the states are moving toward greater control over the specific portfolio of resources, and (2) the resource mix outcomes in the fully restructured RTOs/ISOs are not in sync with state energy policy goals.*

understanding on the extent of and growth in distributed energy resources, and the role of these resources in meeting the assigned resource adequacy requirements. While RTOs address this now, incorporating sufficient input from states and LSEs is critical.

After developing the overall annual resource adequacy requirements, the next step involves determining the requirement for each LSE in a particular RTO/ISO. The LSE's resource adequacy responsibility is based on the LSE's load ratio share of the overall resource adequacy requirements, typically based on peak load.[30] To protect customers from costs associated with excess procurement, resource adequacy standards could be seasonal, rather than annual, if the winter peak load is consistently below summer peak load. Once a resource adequacy standard is established on an annual or seasonal basis for a particular LSE, the LSE (with appropriate state or local regulatory oversight) would control how it would meet its obligations and at what cost. This includes how and when to use bilateral contracting or self-build opportunities. Neither the RTOs/ISOs nor FERC would have the ability to order an LSE to procure certain types of resources or utilize certain resource procurement strategies. These decisions and their cost consequences are left to the LSE and the state, as appropriate.

A meaningful compliance enforcement regime would be necessary to ensure resource adequacy. LSEs that fail to meet their resource adequacy requirements by a given deadline in advance of the relevant delivery year (or season) would be fined by the RTO as determined with stakeholder input, such as is in place in MISO.[31]

C. The Architecture of State Resource Planning

The role of the states in resource planning is intertwined with the reform of capacity constructs within the restructured RTOs/ISOs. Some commissioners and supporters of the capacity constructs have argued that because the regulated distribution IOUs within the restructured states no longer have an obligation to serve customers, the mandatory capacity constructs are needed to ensure adequate capacity.[32] As demonstrated in this paper, the states continue to retain their jurisdiction over generation and resource choices and, as such, have implemented mechanisms to procure or retain certain resources needed to meet state policy goals. This paper also recommends that the restructured states undertake resource planning in a more comprehensive manner to accompany the move away from mandatory capacity markets. But it will be up to the states to determine their path forward and this proposal does not recommend any FERC action with regard to these state choices. Therefore, along with the proposed reform of capacity constructs, this section discusses several options for these states without recommending one specific path.

The answer to the question of how to structure the state's role in resource evaluation and planning is not to re-order or revamp regulatory authority, and the architectural considerations set forth in this section are crafted accordingly. The process of determining the resource adequacy responsibility of each LSE would remain with the RTO (and FERC); the procurement of resources to satisfy the responsibility of a particular LSE would depend on state and local decisions on resource planning and procurement.

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[30] *FERC convened a technical conference in April 2018 focusing on capacity procurement in PJM and solicited comments from stakeholders on this issue. Specifically, FERC asked whether PJM's introduction of a single, annual capacity product has pushed valuable, summer-only resources out of the capacity market while increasing capacity costs with little to no reliability benefit. FERC acknowledged that certain intervenors also suggested alternative market designs that include the re-introduction of a seasonal product, a two-season market construct, or a supplemental seasonal ticket system for summer-period resources. See, Notice Inviting Post-Technical Conference Comments, Docket Nos. EL17-32 and EL17-36, p. 3 (June 13, 2018). FERC has not yet concluded its investigation of capacity performance and seasonal resources.*

[31] *For example, MISO imposes a Capacity Deficiency Charge on LSEs that do not meet their resource obligations through the PRA or through a FRAP, equal to the MW of capacity deficiency multiplied for 2.748 times the CONE for the local resource zone. Submission of a FRAP is required for LSEs that opt out of the PRA. MISO Tariff, Module E-1, Sections 69A.9 and 69A.10. SPP's Resource Adequacy rules apply a deficiency payment that is a multiple of CONE and a factor between 125 and 200 percent, depending upon the reserve margin. Order Accepting Tariff Revisions, Docket Nos. ER18-1268-000, ER18-1268-001, 164 FERC ¶ 61,092, ¶ 24 (Aug. 7, 2018).*

[32] *For example, former Commissioner LaFleur said "these markets exist due to the decisions of the states to change the structure of their regulated utilities, leading the regions to rely upon mandatory centralized capacity markets to sustain resource adequacy and reliability." Order on Tariff Filing, Docket No. ER18-619-000, 162 FERC ¶ 61,205 (2018), Commissioner LaFleur Concurrence.*

1. State Conduct of Integrated Resource Plans (IRPs)

One option would be for states to prepare integrated resource plans (IRPs) on behalf of all state-jurisdictional utilities and use the IRP to guide procurement of resources. Alternatively, the state could establish broader resource goals for all state-jurisdictional utilities. For example, as suggested in an earlier paper, states could implement a diverse portfolio standard (DPS) where it is mandated that minimum amounts of certain fuel types be kept on line, based on the availability and costs of fuels in the state.[33] The DPS could incorporate the current Renewable Portfolio Standard (RPS) mechanism and other state policies. Under these two structures, the total resource adequacy needs would be established by the RTO/ISO, but the states and LSEs would retain flexibility through the IRP or DPS process for meeting resource adequacy requirements. Each LSE could utilize the procurement tools at its disposal to meet the state goals. This might involve heavy reliance on bilateral contracting and self-builds, with only small needs met through the residual market.

The states could allow public power and cooperative utilities whose rates are not subject to state regulation to opt-in to the IRP process and any joint procurement opportunities that may arise among the state-jurisdictional utilities. Without opting in, the public power utility would continue to determine and procure its own resource needs (unless already subject to a state requirement, such as an RPS). However, to encourage participation from public power LSEs, it is paramount that a decision to opt-in would not alter the preexisting regulatory structure for the public power LSE under state law.

2. LSE Resource Procurement Options

One approach that could work within the broader construct discussed above is the Bilateral Capacity market approach (BiCap) developed by Cliff Hamal, formerly at Navigant Consulting. Under this approach, the obligation for capacity procurement rests with the distribution utilities. Alternative retail suppliers provide only energy, not capacity. Distribution utilities may use bilateral arrangements to procure capacity to meet customer needs. These might include bilateral contracting for both short-term and long-term periods to fulfill IRPs or standalone solicitations.[34] Distribution utilities would be required to show they have met resource adequacy requirements and could also be subject to any IRP requirements or DPS established by the states, with public power retaining full self-supply rights.

A second general option for states that may be seeking an entirely new regulatory paradigm for resource adequacy evaluation is the use of a power authority. Power authorities would conduct IRPs to determine resource needs and carry out the actual resource procurement on behalf of jurisdictional utilities within the state. These authorities could be set up either for an individual state or multiple states in cooperation. Under this model, public power utilities could voluntarily opt-in to the resource procurement.

The Illinois Power Agency (IPA), while not an exact model of the type of power authority proposed here, plays a similar role in power procurement for certain Illinois utilities. The IPA was established in 2007 to ensure that utility customers who do not exercise the option for retail choice nevertheless benefit from competition in the retail and wholesale market.[35] Each year, the IPA develops electricity procurement plans, conducts a competitive procurement process, and submits a Final Procurement

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33 *See Raymond L. Gifford and Matthew S. Larson, State Actions in Organized Markets: Continued Use of 'Around Market' Solutions to 'Fix' Markets and the Natural Gas Conundrum, Wilkinson Barker Knaur LLP (Feb. 2017).*

34 *The Bi-Cap Approach, p. 7 ("This shift in obligation for capacity, from competitive LSEs to regulated DP will strike some as a step away from competitive markets. But while LSEs may be unregulated entities, their role in current capacity markets is greatly diminished and the current structures are a far cry from what economists would consider an openly competitive market; we tolerate interventions with forced auctions, price caps, price floors and regulatory involvement at every step. Given this situation, the move to the BiCap approach is pro-competitive, in that prices will be set by willing parties through a competitive process such as bilateral negotiation or private solicitation."). Available at: https://appa2.sharepoint.com/:b:/s/integratedmedia-ext/Ebpo21VfBExOrxfBP-_ARMUBdPfDPI7TFs3Y0oeU8oANpA?e=il8hOH*

35 *Illinois Power Agency, Electricity Procurement Plan, Final 2020 Plan, p. 2 (Jan 17, 2020), https://www2.illinois.gov/sites/ipa/Documents/2020%20Final%20Electricity%20Procurement%20Plan/IPA%20Final%202020%20Electricity%20Procurement%20Plan.pdf.*

Plan to the Illinois Commerce Commission. Based on the results of the IPA's procurement plan, the IPA offers recommendations to the states' three participating IOUs (ComEd, Ameren, and MidAmerican) on how they should meet their energy and capacity needs. For example, in the 2020 plan, the IPA recommended that ComEd obtain its full capacity requirement through PJM's capacity construct, MidAmerican obtain its full capacity requirement through MISO's PRA, and Ameren obtain 50 percent of its capacity from the IPA's competitive procurement contracts and the remainder from MISO's PRA, increasing to at least 75 percent in the 2022-23 delivery year.[36] Alternative Retail Electric Suppliers (*i.e.,* competitive suppliers) and public power utilities are not required to participate in the IPA's procurement process. While the IPA is limited in scope due to the nature of retail choice in Illinois, its process is a useful illustration of the way a central power authority may oversee the planning and capacity procurement process in restructured states.[37]

It is worth noting that the role of the IPA may expand significantly in the future. The Illinois Legislature has considered a bill that would, in addition to establishing a 100 percent renewable energy goal by 2050, move all of ComEd's capacity procurement to the IPA, essentially pulling the utility out of the PJM capacity construct.[38] While this bill did not pass in 2019, it will be considered again in 2020, and is indicative of potential energy policy that could be overlaid on the IPA or a similar power authority structure.

3. Implementation of Reforms

Implementing these reforms would require a substantial transition period and the close cooperation of RTOs/ISOs, market monitors, market participants, FERC, and state regulatory authorities. The optimal transition mechanism for the first pillar of this proposal would be an order from FERC requiring the transition to a voluntary capacity market and ordering the RTOs/ISOs to work with relevant stakeholders and state commissions to develop an appropriate transition period (e.g., five years) that would commence after the next relevant annual mandatory capacity construct auction. The transition period would have to be lengthy enough for all outstanding capacity obligations incurred in prior mandatory capacity auctions to be honored and fulfilled, for the states to develop resource adequacy mechanisms, and for the LSEs to make resource procurement plans. At the end of the transition period, the annual capacity market auctions would become voluntary and residual for both buyers and sellers.

The determination of an appropriate transition period may vary in each RTO/ISO based on specific facts and circumstances. In addition, states and LSEs in their respective RTOs/ISOs undergoing the transition must have sufficient time to develop resource adequacy plans either jointly or individually, and to arrange bilateral contracts. The time period also must provide adequate time for review and approval by the relevant authorities. An appropriate transition period to allow all of these things to occur may be five years as a starting point, commencing after the next annual mandatory capacity construct auction in a given RTO/ISO. Again, however, affected RTOs/ISOs, regulatory authorities, LSEs and merchant generators would need to collaborate to determine a suitable transition period.
A key consideration in determining an appropriate

[36] *Id., pp. 75-76.*

[37] *The California Public Utilities Commission (CPUC) is also considering the potential benefits of a centralized procurement authority and held a series of workshops on the topic in April and May 2019. A group of parties in late August 2019 proposed a settlement agreement to establish a central buyer that would procure capacity to meet the residual of a three-year forward procurement obligation that is not met by individual LSEs.*
Joint Motion of California Community Choice Association, Calpine Corporation, Independent Energy Producers Association, Middle River Power, NRG Energy, Inc., San Diego Gas & Electric Company (U 902-E), Shell Energy North America (Us) L.P., and Western Power Trading Forum for Adoption of A Settlement Agreement For A "Residual" Central Procurement Entity Structure For Resource Adequacy, Docket R.17-09-020, California Public Utilities Commission (Aug. 30, 2019), https://cal-cca.org/wp-content/uploads/2019/08/Joint-Motion-for-Adoption-of-Settlement-Agreement-in-RA-Proceeding-8.30.19.pdf.

[38] *Illinois Senate Bill 2132, filed February 28, 2019, http://www.ilga.gov/legislation/101/SB/10100SB2132sam001.htm.*

transition period is what entity individual states select as responsible for planning and for resource procurement. As noted, planning and procurement may be done by a state entity, a power authority, or LSEs themselves under broader state criteria. Competitive retail suppliers are considered LSEs and, theoretically, could be the entity responsible for planning. But these entities are subject to more frequent changes in load and do not engage in longer-term contracts, as are often needed to finance capacity development. The BiCap proposal places responsibility for capacity on the distribution utilities, allowing for more stable load . Alternatively, a power authority could conduct resource planning and procurement for all state-jurisdictional LSEs. Because public power does not engage in retail choice, this issue applies only to IOUs.

The states continue to retain their jurisdiction over generation and resource choices and, as such, have implemented mechanisms to procure or retain certain resources needed to meet state policy goals.

States and affected LSEs need to evaluate the extent to which regulatory/resource planning authorities or approaches would need to be reordered to institute the desired architecture for resource adequacy evaluation and procurement. To allow for an orderly transition, each state needs to address this before implementing a new approach. Statutory or administrative changes may be necessary.

Finally, before embarking on the market transition, LSEs and planning entities *(i.e.*, state agencies or power authorities) within an RTO/ISO should collaborate to consider the processes for resource procurement, general coordination and information-sharing. However, FERC approval would not be required for such processes. This would help resource adequacy evaluations to proceed in similar ways in states throughout an RTO/ISO footprint.[39] A key part of these considerations would be to establish a framework for voluntary information-sharing so states and utilities would have a broader understanding of the nature of the resource mix under development within the RTO region.

[39] *The Electric Reliability Council of Texas' (ERCOT) Regional Planning Group (RPG) is as an example of this collaborative process. Through the RPG, stakeholders provide input and recommendations on transmission planning activities within ERCOT. All transmission service providers in ERCOT are required to participate in the RPG, but participation is open to all stakeholders including the Staff of the Public Utility Commission of Texas, government officials, and consumer groups. See, ERCOT, ERCOT Regional Planning Group Charter, p. 2 (July 1, 2018), http://www.ercot.com/committee/rpg.*

Conclusion

The time for capacity construct reform is now. Reliance on these constructs continues to spawn ever more creative and complex interventions by states and RTOs/ISOs. Rather than forcing LSEs, merchant generators and other market participants to adapt to constantly changing rules and requirements, the transition from mandatory capacity constructs to voluntary, short-term, residual markets is in the best interest of customers. The current mandatory capacity construct will not accommodate state and public power policies; rather, the RTOs/ISOs will continue to implement, patch and plug "mitigation" solutions solely in the name of keeping intact a "market" that exists in name only.

This proposal places RTOs/ISOs in the role of supporting LSEs and states in procuring supply to meet resource adequacy requirements, which is what many signed up for in the first place when moving towards a market model. While the specific implementation of the proposal can vary within each state, the critical component is to allow states and LSEs to utilize a combination of bilateral contracts, self-builds and market opportunities to meet resource adequacy requirements based on circumstances specific to each LSE, with appropriate state oversight. This proposal for reform recognizes above all that customers are best served when utilities and states have greater agency over their own resource planning and procurement processes. Customers will benefit from a flexible yet comprehensive planning paradigm, and this reform proposal is a first step toward making that a reality.

APPENDIX: Retail Restructured State Actions and RTO/ISO Interventions

Retail Restructured State Actions

Direct Payments for Existing Resources

As two recent failed court challenges to the ZEC programs in Illinois and New York demonstrate, state-directed payments to preferred resources through the purchase of zero carbon emissions remain a viable option were it not for the recent expansion of a MOPR to certain existing resources in PJM. In September 2018, the Seventh Circuit Court of Appeals dismissed a challenge to Illinois' ZEC procurement process and the Second Circuit dismissed a similar challenge to New York's ZEC program only weeks later.[40] At the heart of both of these court challenges were arguments by merchant generation owners that state-regulated ZEC programs are pre-empted by the Federal Power Act (FPA), intrude on the authority of the FERC to regulate wholesale power markets, and conflict with FERC's regulatory regime by distorting market outcomes.[41] FERC filed an amicus brief in the Seventh Circuit in support of Illinois, stating plainly: "[t]he Illinois program is not preempted."[42] In its brief, FERC preserved its jurisdictional authority and argued that if ZEC programs do interfere with wholesale capacity markets, it should be FERC, not the courts, tasked with rectifying the issue.[43] In April 2019, the U.S. Supreme Court rejected petitions from merchant generators to review the Second Circuit and Seventh Circuit decisions.

Following in the steps of its ZEC forefathers, the New Jersey Legislature enacted its own ZEC program in May 2018.[44] New Jersey is home to two nuclear plants, the dual-unit 2,278-MW Salem Nuclear Generating Station and the single-unit 1,173-MW Hope Creek Nuclear Generating Station. Together, these plants account for 90 percent of the state's zero-emission, carbon-free electric generation resources.[45] Under the new ZEC program, the nuclear facilities could receive approximately $300 million annually from ZEC credits purchased by the state's electric distribution companies.

On April 18, 2019, the New Jersey Board of Public Utilities (BPU) approved ZECs for PSEG Nuclear LLC's Salem and Hope Generating Stations.[46] Although BPU staff found that the three nuclear units "are not in financial distress and are viable under current market conditions,"[47] the Board awarded the ZECs based on consideration of operational and market risks facing the plants, and on the impacts of the plants' retirement on fuel diversity, fuel security, compliance with state environmental goals, and the state and regional economy.[48]

Connecticut also arranged for payments to retain the generation from Dominion Energy's Millstone facility, the state's only operational nuclear power plant, through

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[40] *Electric Power Supply Ass'n. et al.,* v. Anthony M. Star, et al.*, Nos. 904 F.3d 518 (7th Cir. Sept. 13, 2018); and Coalition for Competitive Electricity et al. v. Zibelman, et al., 906 F.3d 41 (2nd Cir. 2018), cert. den. sub nom. Electric Power Supply Ass'n v. Rhodes, U.S., 139 S. Ct. 1547 (April 15, 2019).*

[41] *Brief of Plaintiffs-Appellants at 3, Electric Power Supply Ass'n. et al.,* v. Anthony M. Star, et al.*, Nos. 17-2433, 17-2445, 2018 U.S. App. LEXIS 25980 (7th Cir. filed Aug. 28, 2017); and Brief and Special Appendix for Plaintiffs-Appellants at 3, Coalition for Competitive Electricity et al. v. Zibelman, et al., No. 17-2654-cv (2nd Cir. filed Oct. 13, 2017). A secondary argument in both complaints was whether the ZEC programs violate the dormant Commerce Clause by discriminating in favor of in-state businesses because the ZEC programs provide a preference for in-state nuclear facilities. This challenge is of less relevance for the purpose of this paper and therefore we do not address it further, though both the Seventh and Second Circuits ultimately determined that the claims brought under the dormant Commerce Clause failed.*

[42] Brief for the United States and the Federal Energy Regulatory Commission as Amici Curiae in Support of Defendants-Respondents and Affirmance at 7, *Electric Power Supply Ass'n. et al., v. Anthony M. Star, et al., Nos. 17-2433, 17-2445, 2018 U.S. App. LEXIS 25980 (7th Cir. filed May 29, 2018) (FERC Amicus Brief).*

[43] *FERC Amicus Brief at 20, Electric Power Supply Ass'n. et al., v. Anthony M. Star, et al., Nos. 17-2433, 17-2445, 2018 U.S. App. LEXIS 25980 (7th Cir. filed May 29, 2018).*

[44] *S2313, 218th Leg., First Annual Sess. (N.J. 2018).*

[45] *See, PSEG Power LLC, About Our Plants, https://corporate.pseg.com/aboutpseg/companyinformation/thepsegfamilyofcompanies/psegnuclearllc (last visited September 26, 2019. PSEG owns 57 percent of Salem and 100 percent of Hope Creek. Exelon Corporation owns the remaining 43 percent of Salem.*

[46] *New Jersey Board of Public Utilities, Docket No. EO18080899, E018121338, and E018121337, Order Determining the Eligibility of Hope Creek, Salem 1, And Salem 2, Nuclear Generators to Receive ZECs (issued April 19, 2019), https://www.bpu.state.nj.us/bpu/pdf/boarddorders/2019/20190418/4-18-19-9A.pdf (NJBPU ZEC Awards Order).*

[47] *NJBPU ZEC Awards Order, p. 10.*

[48] *NJBPU ZEC Awards Order, p. 14-15.*

participation of that facility in a broader procurement of zero carbon resources. As directed by the Legislature,[49] the Public Utilities Regulatory Authority (PURA) and Department of Energy and Environmental Protection (DEEP) conducted a resource assessment of the Millstone nuclear plant and determined that Millstone's generation is crucial to meeting the state's fuel security and greenhouse gas reduction targets. The state allows a generator to apply to DEEP to be considered an "existing resource confirmed at risk" and therefore eligible to compete in a newly established DEEP procurement process for new and existing zero-emission facilities (Zero Carbon RFP).[50]

On December 28, 2018, the Governor and DEEP announced the selections under the Zero Carbon RFP,[51] which included a 10-year contract for half of the output of Millstone. Another nuclear plant, the Seabrook Station in New Hampshire, was selected through the RFP. However, because Seabrook's owners did not declare the plant at risk of early retirement, the plant was selected on the basis of its price offer. Dominion Energy and Connecticut's two electric utility companies, Eversource and United Illuminating, reached an agreement on the terms of the contract in March 2019, reportedly at a lower price than originally accepted in the RFP,[52] and the contracts were approved by the PURA in September 2019.[53]

Additional efforts to develop existing resource support programs in other restructured states further signal that these state actions are not a fleeting trend. In July 2019, Ohio Governor Mike DeWine signed HB 6,[54] which established a mechanism to provide up to $150 million in payments to the state's nuclear plants along with $20 million for certain planned utility-scale solar facilities from 2021 through 2027. The bill also created a non-bypassable charge to provide financial support for two coal-generation facilities operated by the Ohio Valley Electric Corporation, an entity co-owned by three IOUs.

The state-directed payment model that underlies ZEC systems in Illinois, New York and New Jersey bears similarities to both bilateral contracting and resource planning. For example, under the ZEC program established in Illinois by the Future Energy Jobs Bill (FEJB), the Illinois Power Agency utilizes a ZEC RFP process to procure ZECs for subject utilities (*i.e.,* Ameren Illinois, Commonwealth Edison Company, or MidAmerican Energy Company).[55] As part of the RFP process, the IPA developed a model ZEC agreement for suppliers and utilities.[56] The outcome of the ZEC procurement process is therefore a bilateral contract between the successful supplier and utility required to procure ZECs pursuant to the jobs bill. Similarly, under one component of the Clean Energy Standard (CES) in New York, LSEs are required to purchase ZECs annually based upon the LSE's proportional amount of statewide load in a each compliance year.[57] The New York State Energy Research and Development Authority (NYSERDA) developed an Agreement for the Sale of ZECs, with standard terms and conditions approved by the New York Public

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49 *Public Act 17-3, S.B. No. 1501, 2017 Gen. Assem., June Spec. Sess. (Conn. 2017).*

50 *Conn. Dep't. of Energy & Envtl. Prot. and Conn. Pub. Utils. Regulatory Auth., Resource Assessment of Millstone Pursuant to Executive Order No. 59 and Public Act 17-3; Determination Pursuant to Public Act 17-3 (2018) available at http://www.dpuc.state.ct.us/DEEPEnergy.nsf/c6c6d525f-7cdd1168525797d0047c5bf/cbc977effc0e623985258227005d607e/$FILE/DEEP-PURA%20FINAL%20Report%20and%20Determination%20 2-1-18.pdf*

51 *Gov. Malloy Announces Zero-Carbon Resource Selections, December 28, 2018, https://www.ct.gov/deep/cwp/view.asp?Q=607002&A=4965.*

52 *Governor Lamont and Commissioner Dykes: Agreement Between Dominion and Eversource/UI Good for Environment, Economy, and Ratepayers, March 15, 2019, https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2019/03-2019/Governor-Lamont-Agreement-Between-Dominion-and-Eversource-UI.*

53 *Governor Lamont Applauds PURA Approval of Millstone Contract Between Dominion, Eversource, and United Illuminating, September 18, 2019, https://portal.ct.gov/Office-of-the-Governor/News/Press-Releases/2019/09-2019/Governor-Lamont-Applauds-PURA-Approval-of-Millstone-Contract.*

54 *Amended Substitute House Bill Number 6, available at: http://search-prod.lis.state.oh.us/solarapi/v1/general_assembly_133/bills/hb6/EN/06?-format=pdf.*

55 *Illinois Power Agency, Zero Emission Credits, https://www.ipa-energyrfp.com/zero-emission-credits/ (last visited Sept. 26, 1019).*

56 *See, Illinois Power Agency, Model Zero Emission Credit Agreement (Nov. 29, 2017), https://www.ipa-energyrfp.com/?wpfb_dl=1421.*

57 *NYSERDA Clean Energy Standard, REC and ZEC Purchasers, https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/REC-and-ZEC-Purchasers (last visited Sept. 26, 2019).*

Service Commission.[58] Both of these programs utilize a procurement process and ultimately a long-term bilateral contract between the state and the utility to implement the ZEC requirements.

Procurement of New Generation Resources

This second group of state programs involves the direct procurement of specific new resource types through the issuance of requests for proposals, followed by the arrangement of long-term bilateral contracts with the IOUs either for the output of the resource or for RECs. This direct procurement, typically for new renewable resources, both replaces retiring resources and increases the portion of the resource mix from renewable resources. The incremental, yet increasing reach of these state programs shows that the restructured states will continue to turn to their respective legislatures to achieve their desired energy mix.

The Massachusetts General Court (the state Legislature) created a *de facto* legislative IRP in 2016 by passing legislation requiring that the state's IOUs procure 1,200 MW of clean energy (hydropower or another Class I renewable resource) by 2022 and 1,600 MW of offshore wind by 2027.[59] A second bill, passed in 2018, requires the state to investigate whether the utilities should procure up to 1,600 MW of additional offshore wind,[60] resulting in a May 2019 report by the Department of Energy Resources recommending such additional procurement, if found to be cost-effective.[61] This procurement will help to replace output of the 680-MW Pilgrim Nuclear Power Station, which shut down on May 31, 2019.

The state oversaw an RFP solicitation for offshore wind projects and ultimately selected two proposals that each provide 800 MW of offshore wind energy, with a combined generation expected to equal 12 percent of the state's annual demand.[62] The Massachusetts Department of Public Utilities (DPU) approved long-term contracts for one project in April 2019.[63] Negotiations for a second project are under way at this writing. In June 2019, the DPU also approved twenty-year contracts for the purchase of incremental hydropower from Hydro-Quebec. The power for this project does not come from a newly constructed plant, but represents an increase above past hydropower deliveries. [64]

Other states seek to procure new renewable resources with a focus on offshore wind. In May 2017, Maryland

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[58] *New York Public Service Commission, Case 15-E-0302, Order Approving Administrative Cost Recovery, Standardized Agreements and Backstop Principles (Nov. 17, 2016) ("By this order, the Commission (1) approves a reduced ZEC adder for the recovery of ZEC administrative costs; (2) authorizes other REC and ZEC administrative costs, reduced from the amounts initially projected by NYSERDA, to be recovered by NYSERDA from existing fund balances; (3) approves the form and content of standard ZEC and REC agreements to govern REC and ZEC transactions between NYSERDA and the LSEs; (4) approves principles for the electric distribution companies to provide a customer funded financial backstop guarantee mechanism to ensure payments will be made to REC and ZEC generators; and (5) directs electric distribution companies to collaborate with NYSERDA and Staff of the Department of Public Service to develop an implementation process to effectuate the backstop mechanism"); see also Standard Zero-Emissions Energy Certificate Purchase Agreement, https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/REC-and-ZEC-Purchasers/FAQs-for-Load-Serving-Entities.*

[59] *An Act Relative to Energy Diversity, Mass. Acts 2016 c. 188 §§ 83C, 83D.*

[60] *An Act to Advance Clean Energy, Mass. Acts 2018 c. 227 § 21(a).*

[61] *Offshore Wind Study, Massachusetts Department of Energy Resources (May 2019), https://www.mass.gov/files/documents/2019/05/31/OSW%20Study%20-%20Final.pdf.*

[62] *Project Selected to Increase Offshore Wind Energy in the Commonwealth, Press Release, Massachusetts Executive Office of Energy and Environmental Affairs & Department of Energy Resources, October 30, 2019, https://www.mass.gov/news/project-selected-to-increase-offshore-wind-energy-in-the-commonwealth.*

[63] *Department of Public Utilities Approves Offshore Wind Energy Contracts, Massachusetts PUD Press Release, April 16, 2019, https://www.mass.gov/news/department-of-public-utilities-approves-offshore-wind-energy-contracts.*

[64] *Department of Public Utilities Approves Hydroelectricity Contracts, Press Release (June 26, 2019), https://www.mass.gov/news/department-of-public-utilities-approves-hydroelectricity-contracts.*

awarded contracts for Offshore Renewable Energy Credits (ORECs) to two planned projects conditioned on requirements for job creation, ratepayer savings, community investments, and minimization of the impacts on shore views.[65] The projects are still under development. Connecticut had selected nine new solar projects and one new offshore wind project as part of the 2018 Zero Carbon RFP. Further, in compliance with 2019 state legislation, the Connecticut DEEP issued a request for proposals for offshore wind, resulting in the selection of an 804-MW project to advance to contract negotiations with the state's electric distribution companies. The project is expected to provide 14 percent of the state's electricity supply.[66] The New Jersey BPU in June 2019 awarded a contract for the purchase of ORECs by retail energy suppliers from a 1,100-MW project over a twenty-year period.[67] New York also issued a solicitation for offshore wind and in October 2019 signed contracts with the New York State Energy Research and Development Authority to purchase 1,696 MW of ORECs for twenty-five years.[68]

State procurement of new resources has many elements of bilateral contracting and long-term planning. For example, legislators in Massachusetts made two resource planning decisions. First, no state action has been taken to prevent the retirement of nuclear generators, creating a resource need. Second, the state established a policy goal for a greater level of zero-emission generation with a focus on hydropower and offshore wind. The Massachusetts General Court then mandated bilateral contracting to implement its resource acquisition choices. Section 83C of the Energy Diversity Act (Mass. Stat. 2016 c. 188) directs distribution companies to solicit proposals for offshore wind and, upon receipt of reasonable proposals, directs distribution companies to enter into "cost-effective long-term contracts" to be approved by the Massachusetts DPU.[69] Similarly, the legislation in Section 83D directs the same process for "clean energy generation resources," which include firm hydropower, renewables paired with firm hydropower, and other renewable generation. Section 83D goes further, targeting procurement of 9,450,000 megawatt-hours per year of generation[70] from clean energy generation resources.[71]

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[65] *Maryland PSC Awards ORECS to Two Offshore Wind Developers Projects to Create Jobs, Economic Development in New Industry, May 11, 2017, https://www.psc.state.md.us/wp-content/uploads/PSC-Awards-ORECs-to-US-Wind-Skipjack.pdf*

[66] *DEEP Announces Selection of 804 MW of Offshore Wind Power from Park City Wind Project, DEEP Press Release, December 5, 2019, https://www.ct.gov/deep/cwp/view.asp?A=5009&Q=610542.*

[67] *In the Matter of the Board of Public Utilities Offshore Wind Solicitation for 1,100 MW-Evaluation of the Offshore Wind Applications, New Jersey Board of Public Utilities, Docket No QO18121289 June 21, 2019, https://www.state.nj.us/bpu/pdf/boardorders/2019/20190621/6-21-19-8D.pdf.*

[68] *New York State Offshore Wind, 2018 Solicitation, https://www.nyserda.ny.gov/All%20Programs/Programs/Offshore%20Wind/Offshore%20Wind%20Solicitations/Generators%20and%20Developers/2018%20Solicitation.*

[69] *An Act Relative to Energy Diversity, 2016 Mass. Acts c. 188 § 83C(a) ("In order to facilitate the financing of offshore wind energy generation resources in the commonwealth, not later than June 30, 2017, every distribution company shall jointly and competitively solicit proposals for offshore wind energy generation; and, provided, that reasonable proposals have been received, shall enter into cost-effective long-term contracts. Long-term contracts executed pursuant to this section shall be subject to the approval of the department of public utilities and shall be apportioned among the distribution companies.").*

[70] *Energy Diversity Act, 2016 Mass. Acts c. 188, Section 83D(a) ("In order to facilitate the financing of clean energy generation resources, not later than April 1, 2017, every distribution company shall jointly and competitively solicit proposals for clean energy generation and, provided that reasonable proposals have been received, shall enter into cost-effective long-term contracts for clean energy generation for an annual amount of electricity equal to approximately 9,450,000 megawatts-hours. Long-term contracts executed pursuant to this section shall be subject to the approval of the department of public utilities and shall be apportioned among the distribution companies under this section"); see id. at Section 83B ("'Clean energy generation', either: (i) firm service hydroelectric generation from hydroelectric generation alone; (ii) new Class I RPS eligible resources that are firmed up with firm service hydroelectric generation; or (iii) new Class I renewable portfolio standard eligible resources.").*

[71] *H. 4568, Section 83D(a).*

RTO/ISO Interventions

Minimum Offer Price Rule

As noted, the MOPR is the RTO/ISO's biggest impediment to state and utility resource planning and procurement. While implementing a MOPR, PJM and ISO-NE attempted to accommodate these state and utility actions within the context of a MOPR, with little success. The NYISO has buyer-side mitigation rules in place for the down-state zones. While FERC approved exemptions from such rules for certain renewable and self-supply resources, the Commission then in February 2020 narrowed the self-supply exemption and asked the NYISO to reduce the cap for the renewable resource exemption.[72] In two other orders issued that same day, the Commission reversed the previously granted mitigation exemption for certain demand response resources[73] and rejected a requested exemption for energy storage capacity.[74]

ISO-NE has implemented its latest capacity construct revision, the FERC-approved Competitive Auctions with Sponsored Policy Resources (CASPR) program. CASPR is a two-phase auction with a MOPR in the first stage and a second stage where eligible state-sponsored generators can bid to take the place of retiring resources.[76] The retiring resources receive a severance payment equal to the capacity auction price received in the first round, net of the lower price paid to the state-sponsored capacity in the second round. Eligible state-sponsored resources are renewable, clean or alternative energy resources subject to state statute or regulation in place as of January 1, 2018.

In many ways CASPR is a creative, albeit limited, solution to manage the unique conditions of a region faced with a capacity glut and limited fuel source options. However, it is an ISO-sponsored market intervention designed to compensate for an inadequate market structure. In the 2019 Forward Capacity Auction (FCA) in ISO-NE, procuring resources for the 2022/23 delivery year, just 54 MW of the 800-MW Vineyard Wind installation, which had been awarded a contract through the Massachusetts offshore wind solicitation, cleared the CASPR's second stage auction, although 2,160 MW of retiring resources and 544 MW of new supply participated in this substitution auction.[76] In the 2020 FCA, no resources cleared this second auction.

Vineyard Wind was not eligible for a renewable energy exemption from the ISO's MOPR due to language that prevented offshore wind from eligibility. ISO-NE received approval from FERC for a fix to the exemption language, but FERC did not approve a waiver for Vineyard Wind in time for the FCA. This illustrates that the multiple layers of complex market rules intended to "accommodate" the states can instead obstruct implementation of state actions.

In PJM, FERC attempted to address the effect of the ZEC and other state programs on the PJM capacity construct, the Reliability Pricing Model (RPM), through an order issued on June 29, 2018 (Initial PJM RPM Order).[77] In this order, FERC found PJM's Open Access Transmission Tariff (Tariff) to be unjust and unreasonable because it "fails to protect the integrity of competition in the wholesale capacity market against unreasonable price distortions and cost shifts caused by out-of-market support to keep existing uneconomic resources in operation, or to support the uneconomic entry of new resources, regardless of the generation type or quantity of the resources supported by such out-of-market support."

Recognizing that the cycle of interventions impacting the prices paid to the remaining merchant generators and in turn causing development of more interventions designed to address the concerns of the merchant generators could very well continue *ad infinitum*, FERC made a preliminary

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[72] *N.Y Indep. System Operator, Inc., 170 FERC ¶ 61,121 (2020)*

[73] *New York State Public Service Commission, et al v. N.Y Indep. System Operator, Inc., 170 FERC ¶ 61,120 (2020).*

[74] *New York State Public Service Commission and New York State Energy Research and Development Authority v. N.Y Indep. System Operator, Inc., 170 FERC ¶ 61,119 (2020).*

[75] *Order on Tariff Filing, Docket No. ER18-619-000, 162 FERC ¶ 61,205 (2018).*

[76] *Summary of Results of the Thirteenth Forward Capacity Auction (FCA 13) for Capacity Commitment Period 2022-2023, Reliability Committee Meeting, ISO-NE Presentation (March 20, 2019), Slide 18, https://www.iso-ne.com/static-assets/documents/2019/03/a7_fca13_auction_results.pdf.*

[77] *See, Order Rejecting Proposed Tariff Revisions, Granting in Part and Denying in Part Complaint, and Instituting Proceeding Under Section 206 of the Federal Power Act, Docket Nos. EL16-49 et al., 163 FERC ¶ 61,236 (2018) ¶ 150, requests for reh'g pending.*

finding that two modifications to PJM's existing tariff may produce a just and reasonable rate:

1. Expand PJM's MOPR (which currently applies only to new, natural gas-fired resources) so it would apply to any new or existing resource that receives an out-of-market payment, regardless of resource type. There would be few to no exceptions to the modified MOPR.[78]
2. Allow, on a case-by-case basis, resources receiving out-of-market payments and their associated load to withdraw voluntarily from the PJM capacity construct for a fixed period of time. Termed the FRR Alternative, because it is conceptually similar to PJM's Fixed Resource Requirement (FRR), FERC believes this approach could accommodate state policy decisions while allowing resources that receive out-of-market support to remain online.[79]

A number of stakeholders disagreed with the Commission's rationale that the PJM capacity construct is unjust and unreasonable because current rules do not sufficiently protect the capacity construct against "unreasonable price distortions" resulting from state policies. Moreover, these stakeholders voiced concern over the expanded MOPR and implored FERC to consider the fact that most, if not all, generation resources receive some type of preferential policy treatment. Accordingly, a blanket requirement to subject all resources receiving an "out-of-market" payment to the modified MOPR would inject significant uncertainty into the PJM capacity construct moving forward.[80]

In response to the Initial PJM MOPR Order, PJM proposed an exemption to the MOPR for "self-supply resources" owned or contracted for by utilities with an obligation to serve retail customers, as long as the new self-supply resources do not exceed certain thresholds that would render the utility net long or net short on capacity.[81]

For state-sponsored resources, PJM proposed its own version of the FRR Alternative, known as the Resource Carve Out or "RCO."[82] PJM said this proposal recognizes that "a trade-off is inescapable" because providing an "unfettered path" to states' preferred resource types would render PJM's construct "unlawful under the FPA," but a widespread application of the MOPR "leaves these states no practical option to pursue generation-related public policy goals through subsidy."[83] Resources with actionable subsidies may elect RCO, which means they avoid the MOPR and may offer into the capacity auction at a zero price and therefore automatically clear the auction,[84] but RCO resources would not be paid the capacity auction clearing price. Instead, these resources would be compensated through contracts negotiated with buyers "outside of the market," or other mechanisms developed by the relevant states. The capacity construct dollars not paid to RCO resources would then be allocated as a pro-rata credit back to all PJM load in the state subsidizing the specific resource based on the particular load's share of the state's capacity obligation.[85]

The FRR Alternative or RCO, while intended to accommodate states, raised concerns about its feasibility. For example, in a September 2018 letter to PJM the Organization of PJM States, Inc. said "the FRR Alternative may be limited and could be exceedingly difficult to implement."

A year and a half after concluding that the RPM is not just and reasonable, the Commission in December 2019 issued the PJM Capacity Market Order, representing the worst of both worlds—an all-encompassing MOPR with no self-supply exemption and no state accommodations. Specifically, the Commission directs PJM to establish a replacement rate that expands the MOPR's applicability to *all* new and future resources of all technology types that receive or are entitled to receive a "state subsidy" with exemptions granted only for certain resources in place on the date of the order.

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[78] *Initial PJM RPM Order, ¶ 8.*

[79] *Initial PJM RPM Order, ¶ 8.*

[80] *See generally, Request for Rehearing of the American Public Power Association, American Municipal Power, Inc., and Public Power Association of New Jersey, Docket Nos. EL16-49-000 et al., pp. 4-6 (July 30, 2018); PJM Industrial Customer Coalition Request for Rehearing and Clarification, Docket Nos. EL16-49-000 et al., pp. 20-21 (July 30, 2018).*

[81] *PJM Initial Submission, pp. 32-34.*

[82] *Initial Submission of PJM Interconnection, LLC, Docket Nos. EL16-49-000 et al. (Oct. 2, 2018) (PJM Initial Submission).*

[83] *PJM Initial Submission, pp. 4-5.*

[84] *PJM Initial Submission, p. 57.*

[85] *PJM Initial Submission, pp. 58-59.*

The definition of a state subsidy in the Final PJM RPM Order is extremely broad, defining a state subsidy as: "a direct or indirect payment, concession, rebate, subsidy, non-bypassable consumer charge, or other financial benefit that is: (1) a result of any action, mandated process, or sponsored process of a state government, a political subdivision or agency of a state, or an electric cooperative formed pursuant to state law, and that (2) is derived from or connected to the procurement of (a) electricity or electric generation capacity sold at wholesale in interstate commerce, or (b) an attribute of the generation process for electricity or electric generation capacity sold at wholesale in interstate commerce, or (3) will support the construction, development, or operation of a new or existing capacity resource, or (4) could have the effect of allowing a resource to clear in any PJM capacity auction."[86]

RMRs

RMR (reliability must-run) contracts are constructs in the RTOs/ISOs that involve a short-term cost-of-service agreement between the RTO/ISO and a generator that would otherwise retire. With FERC oversight, the RTO/ISO determines whether a particular generator must remain online if needed for reliability over a certain period of time. RMRs are found in both RTOs/ISOs with and without mandatory capacity constructs.[87] The RMR may provide for full or partial recovery of revenue requirements and is fundamentally a cost-of-service arrangement for the generator receiving the RMR contract.[88]

Fuel Security

As Massachusetts advances its legislative IRP efforts, the region's market operator, ISO-NE, is grappling with how to deal with fuel security concerns not adequately addressed by its tariff and exacerbated by FCM outcomes. In one effort to address these concerns, ISO-NE had asked FERC to approve a two-year RMR contract to support Exelon's Mystic Generating Station. ISO-NE posited the Mystic RMR was necessary for fuel security purposes as opposed to the more typical rationale used for an RMR of local electric reliability. Many stakeholders balked at the request and FERC similarly found a tariff waiver to be an "inappropriate vehicle" for such a request, which "effectively creates an entire process that is not in the ISO-NE Tariff."[89] Because of this finding, FERC ordered ISO-NE to submit interim rules for short-term cost-of-service agreements to address fuel security concerns, and by July 2019 to file permanent tariff revisions reflecting improvements to its market designs to address regional fuel security concerns.[90] In response, ISO-NE proposed, and FERC approved, interim measures whereby the ISO could enter into cost-of-service agreements to retain generators seeking to retire but which the ISO determines are needed for fuel security reasons.[91] The Commission also accepted the cost-of-service agreement between ISO-NE and Exelon's Mystic 8 and 9 natural gas units, subject to a number of conditions and effective June 1, 2022.[92]

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[86] *Final PJM RPM Order at P 9.*

[87] *For example, PJM currently has an RMR contract in place with Unit 2 of the BL England Generating Station, a 150-megawatt unit in southern New Jersey. Letter Order, Docket No. ER17-1083-002, 162 FERC ¶ 61,194 (2018); Monitoring Analytics, Quarterly State of the Market Report for PJM: January through June 2018, Table 5-22. CAISO notes that it has seen an uptick in RMRs and has filed tariff revisions that the CAISO states will improve its RMR paradigm, conditionally approved by the Commission in September 2019, 168 FERC ¶ 61,199 (2019).*

[88] *Letter Order, Docket No. ER18-240-00, 163 FERC ¶ 61,073 (2018); Letter Order, Docket No. ER18-230-001, 163 FERC ¶ 61,072 (2018); see also Jason Fordney, FERC Approves CAISO-Calpine RMR Settlements, RTO Insider (May 1, 2018) ("The Metcalf settlement reduces the plant's annual fixed revenue requirement from about $72 million to $43 million through 2020, if it retains its RMR status and makes the plant operator responsible for routine repairs and capital expenses. Under the agreement, the plant will recover $8 million in 2018 capital items in 12 installments of $675,000 beginning on Jan. 1, 2018. If the RMR agreement is extended, capital recovery would remain at about $8 million per year. The settlement also grants the plant $8 million in 2019 and 2020 if the revised agreement is not renewed and the unit shuts down. The Feather River and Yuba City settlements would reduce each plant's 2018 revenue to about $3.5 million from the previous $4.4 million, with a 2 percent hike for 2019 and 2020, if the RMRs are renewed."), available at https://www.rtoinsider.com/caiso-rmr-reliability-must-run-calpine-pge-91686/.*

[89] *Order Denying Waiver Request, Instituting Section 206 Proceeding, and Extending Deadlines, Docket Nos. ER18-1509 and EL18-182, 164 FERC ¶ 61,003, ¶ 47 (2018) (Mystic Order).*

[90] *Mystic Order, ¶ 55; and Order Accepting and Suspending Filing and Establishing Hearing Procedures, Docket No. ER18-1639, 164 FERC ¶ 61,022 (2018).*

[91] *Order Accepting Compliance Filing and Requiring Informational Filings, Docket Nos. EL18-182 and ER18-2364, 165 FERC ¶ 61,202 (Dec. 3, 2018).*

[92] *Order Accepting Agreement, Subject to Condition, And Directing Briefs, Docket ER18-1639-000, 165 FERC ¶ 61,267 (Dec. 20, 2018).*

ISO-NE proposed a second interim fuel security measure, the Inventoried Energy Program.[93] On August 6, 2019, the Commission announced that it did not act on the proposal due to a lack of a quorum and that the Inventoried Energy Program has taken effect by operation of the law.[94] Under this program, for two winter seasons the ISO will pay participating generators a forward price in exchange for an agreement to deliver an agreed-upon amount of energy on winter days when the temperature falls below a certain threshold. Generators will receive credits or penalties for any deviations from their forward commitment. Participants may also opt for a spot-payment only, with no forward commitment.

The ISO also is working toward the development of longer-term fuel security changes, now due in April 2020, which have been focused on new day-ahead ancillary services products that would allow generators to sell to the ISO an option provide energy, if needed, in real-time.[95] While not addressing the capacity markets, these efforts show the ISO's concern that certain resource availability may not result from the current market structure, resulting in new market products and additional layers of revenue.

These interventions show that the RTOs/ISOs themselves also seek to avoid relying only on the outcomes of the capacity constructs. The aspiration of full restructuring suggests cost-of-service regulation has been abandoned for generation resources and that generation owners will now take on the risk of competition, but these 'in-market' interventions reveal that RTO/ISO efforts to ensure some level of cost recovery and minimize risks to sellers are the lifeline for RTOs/ISOs. This approach to "markets" was exemplified in the December 2019 Final PJM RPM Order, which greatly expanded the MOPR and rejected PJM's proposals for a self-supply exemption and carve-out for state-sponsored resources. In this order, the Commission determined that administrative price protections take precedence over preserving state and local determination of generation resource needs, stating that "the accommodation of state subsidy programs would have unacceptable market distorting impacts that would inhibit incentives for competitive investment in the PJM market over the long term."[96]

Because the bulk of the merchant generation constructed within PJM, ISO-NE, and the New York ISO is natural-gas fired generation, the use of a MOPR supports a specific resource type––even if that is not the direct intent of the MOPR. Moreover, a MOPR could prevent some quantity of state-sponsored and self-supply resources from clearing the capacity auctions, thus requiring load-serving entities to purchase capacity from the auction and finding themselves saddled with surplus capacity beyond what is needed for reliability.[97] As described in the prior section, a MOPR is itself an "out-of-market" intervention used by the RTOs/ISOs to manage entry into the market, but without the policy basis that is behind state and utility determinations of needed resources and without achieving the efficiency and cost-savings of a true market. As stated by Commissioner Glick in his dissent from the Final PJM RPM Order, "the Commission compounds its intrusion on state authority by substituting its own policy preferences—a peculiar mix of reverence for 'competition' and reliance on administrative pricing—to entrench the existing resource mix and trample states' concerns about the environmental externalities of electricity generation."[98]

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93 *ISO New England Inc., Docket No. ER19-1428 (March 25, 2019).*

94 *ISO New England Inc., Docket No. ER19-1428 (Aug. 6, 2019).*

95 *Energy Security Improvements, ISO Discussion Paper, April 2019 – Version 1, https://www.iso-ne.com/static-assets/documents/2019/04/a00_iso_discussion_paper_energy_security_improvements.pdf; Energy Security Improvements: Market Solutions for New England, Presentation by Matthew White and Christopher Parent, FERC Public Meeting (July 15, 2019), https://www.ferc.gov/CalendarFiles/20190717100059-07_12_2019_FERC_White_Final_Corrected.pdf.*

96 *Final PJM RPM Order at P 5.*

97 *Commissioner Glick noted in his dissent from the Final PJM RPM Order, at 55: "[T]he PJM capacity market will increasingly operate in an alternate reality, ignoring more and more capacity just because it receives some form of state support. It also means that customers will increasingly be forced to pay twice for capacity or, in different terms, to buy ever more unneeded capacity with each passing year. I cannot fathom how the costs imposed by a resource adequacy regime that is premised on ignoring actual capacity can ever be just and reasonable."*

98 *Commissioner Glick Dissent at 12.*

Although PJM's RCO proposal was rejected, ISO-NE has implemented CASPR, its effort to "accommodate" state resource planning. But this intervention also benefits existing resources because it does not give full flexibility to the states, as state-sponsored resources depend upon the willingness of a generator to retire. Moreover, public power utilities' resource procurement and planning is not accommodated by CASPR. In a further intervention, FERC approved additional changes proposed by ISO-NE to CASPR that bear similarities to the MOPR––a "test price" mechanism to address concerns that generators seeking to retire would submit a "low" bid to ensure clearing of the primary auction before buying out their obligation in the substitution auction.[99]

Finally, the use of RMRs and the recent fuel security efforts also represent RTO/ISO interventions that involve the provision of revenue to specific resources or resources with certain attributes.

[99] *Order Accepting Filing, Docket No. ER19-444-000, 166 FERC ¶ 61,061 (Jan. 29, 2019).*