

State Participation in Resource Adequacy Decisions in Multistate Regional Transmission Organizations

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Key Takeaways

- Regional electricity markets can help maintain reliability goals at least cost, but markets with less state input in decision-making have been procuring a resource mix increasingly in conflict with state energy mandates at consumers expense.
- Variation in state involvement across regions implies that there are no insurmountable barriers to giving states back more authority where they have less than their counterparts in other regions, particularly by transposing existing governance mechanisms from one region to another.
- For example, Southwest Power Pool's Regional State Committee has the power to determine the region's approach to ensuring its resources support reliability. A state committee that approves resource adequacy proposals could enable states to negotiate market mechanisms that procure the types of resources their policies target.
- Individual states in the Midcontinent Independent System Operator maintain the power to override the regional target for resource procurement in their jurisdictions. States wanting to mitigate regional overprocurement can set lower targets for themselves.

Summary

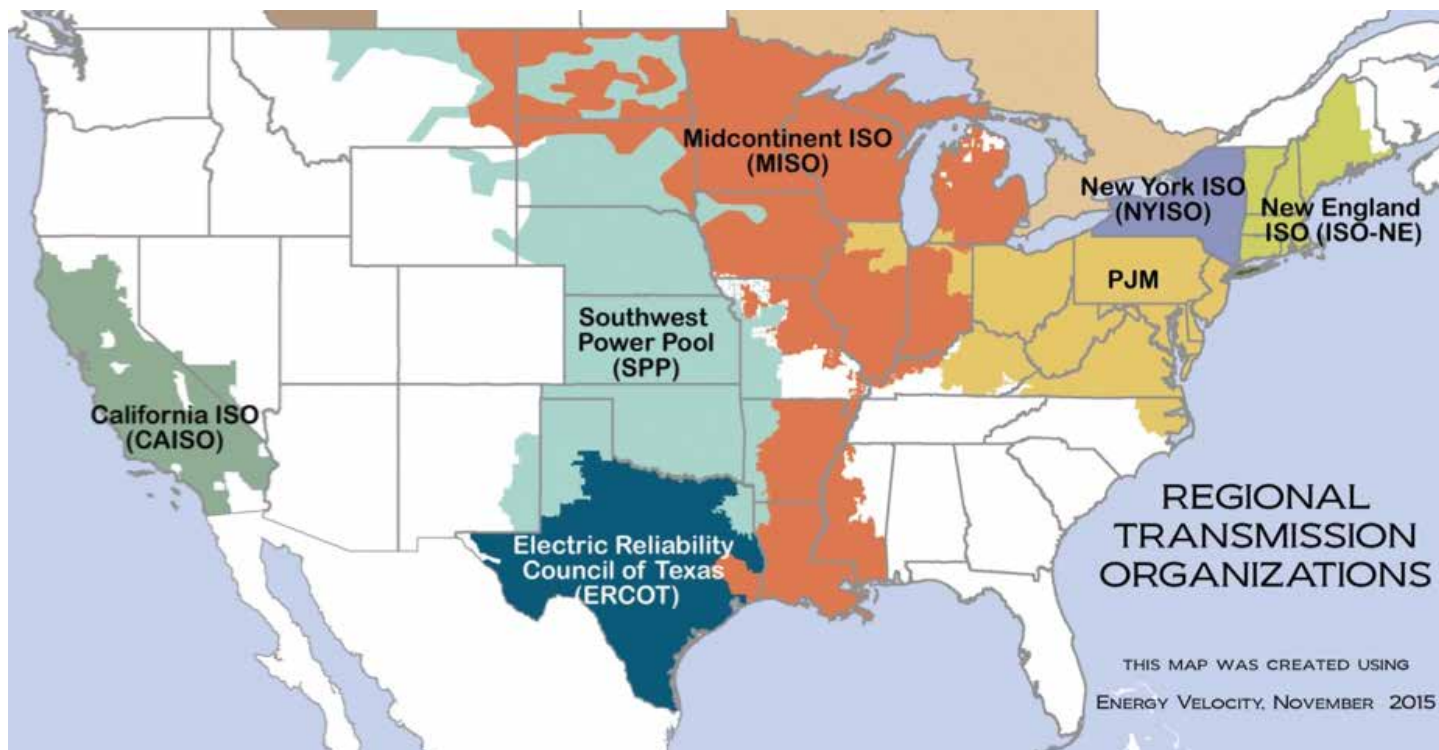
The fight over which resources power the grid and how much is required has intensified as flattening electricity demand, low natural gas prices, and preferences for non-emitting technologies push less efficient power plants to retire. The focus has been on substantive solutions, and most recently on attempting to “accommodate” state energy policies in the regional electricity markets—with disappointing results to states, consumer advocates, and clean energy businesses. Missing from this debate is process reform. How decision-making power is balanced between state and federal regulators determines whose goals are prioritized—state environmental and economic development policies, or generator revenue sufficiency and investor confidence in the regional electricity markets, among others. This paper looks at how the balance of power between state and federal regulators differs across multistate transmission organizations and concludes that existing mechanisms in one region could be adopted in another to enable meaningful state input. States dissatisfied with federal decision-making, therefore, have a range of options short of re-regulating or leaving the markets.

INTRODUCTION

Resource adequacy pertains to the electric system's ability to meet electricity needs now and as forecasted with sufficient supply- or demand-side resources.¹ Resource adequacy rules and requirements, the subject of the fuel wars raging at the Federal Energy Regulatory Commission (FERC), shape the extent to which the grid retains coal and nuclear plants, incentivize new gas plants, or facilitate the deployment of newer, emissions-free technologies.

Ensuring resource adequacy for investor-owned utilities has traditionally been a state role, which includes planning for an appropriate mix and amount of resources.² However, some of that responsibility has been assumed by Regional Transmission Organizations (RTOs) where state regulated utilities have joined such organizations, and ultimately FERC, which oversees the RTOs.

Figure 1. Regional Transmission Organizations



Source: FERC (2015).

The balance of power between federal and state entities is uneven across the regions; for example, the decision-making framework in the Southwest Power Pool (SPP) has preserved the most authority for states over resource adequacy, while in PJM Interconnection, L.L.C. (PJM), states appear to have the smallest voice. Each RTO has a different process, or governance structure, for determining resource adequacy. The degree to which state input influences the outcome depends on how states can engage, whether they have approval power on market rule changes, or whether they can override RTO-wide target reserve margins with their own targets.

This federal-state balance is important because it determines whose mandates are prioritized. FERC-regulated RTOs exclusively focus on transmission system reliability, wholesale market efficiency, and recently, generator revenue sufficiency

¹ See, e.g., North American Electric Reliability Corp. (NERC), *Glossary of Terms Used in NERC Reliability Standards*, July 3, 2018, nerc.com (Adequacy is “[t]he ability of the electric system to supply the aggregate electrical demand and energy requirements of the end-use customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.”).

² While public power and rural electric cooperatives are not regulated by the states, they similarly seek flexibility to choose resources for policy reasons and customer preferences. Indeed, a broader term recognized by FERC, “Relevant Electric Retail Regulatory Authority,” include such entities along with states. *Wholesale Competition in Regions with Organized Electric Markets*, 125 FERC ¶ 61,071, 18 CFR Part 35 (2008) at P 1112, ferc.gov.

and investor confidence. State and local regulatory authorities have similar mandates at the distribution system level to ensure reliability and safety, and reasonable costs and investments (which includes ensuring that RTO costs passed on to their constituents are efficient). But states have broader energy policy goals related to the environment and local economy that rely on the kinds of resources procured, not just the amount.³ Regional markets that de-emphasize public policies and feature weaker state roles have been procuring a resource mix increasingly in conflict with state energy mandates, at consumers expense. This has created tension between state and federal regulators, with some states threatening to pull their regulated utilities out of the markets.

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Much of the focus in the ongoing resource adequacy debate, particularly in the eastern RTOs, has been on substantive solutions but not process reform. To create a path for achieving solutions consistent with regional market principles and public policies, this paper focuses on process changes that balance resource adequacy authority with the aim of facilitating meaningful state input. We compare how states participate in resource adequacy decision-making in multistate RTOs and consider how currently operational governance mechanisms allowing for more state input could be transposed to other RTOs. (The assumption is that borrowing from existing governance mechanisms could be easier than more holistic and creative reforms.) We have not vetted these mechanisms and their potential for success in other regions—further discussions on this topic given regional considerations would be timely and helpful.

RESOURCE ADEQUACY AND FERC'S GROWING ROLE

FERC and its regulated RTOs do not optimize resource adequacy in terms of costs and benefits. Instead, ensuring resource adequacy in the U.S. stems from the historic practice of determining a region's future peak demand and how much extra resources are needed to maintain reliability under all but the most rare and extreme conditions. The extra amount procured above the forecasted peak demand is the target "reserve margin," which is usually about a 15 to 18% buffer over customers' forecasted need. The amount and type of resources needed to meet the demand plus the buffer are determined at the state and regional level through a combination of regulator planning and market mechanisms. Utilities that serve customers are then expected to buy sufficient resources to meet future demand plus the target reserve margin.⁴

The processes of forecasting customer demand and determining the target reserve margins typically reflect a number of conservative assumptions. Forecasted demand is thus regularly overestimated, and target reserve margins tend to be higher than what would be considered economically efficient.⁵ Further, actual reserve margins tend to be much higher than these targets due to additional conservative measures in procuring and retaining resources. Except for the Electric Reliability Council of Texas (ERCOT), the regions have actual margins that exceed their targets. ERCOT does not enforce the target minimum like other regions, so its margin is in part shaped by market forces (albeit with reserves mechanisms that require nonmarket, administrative inputs).⁶

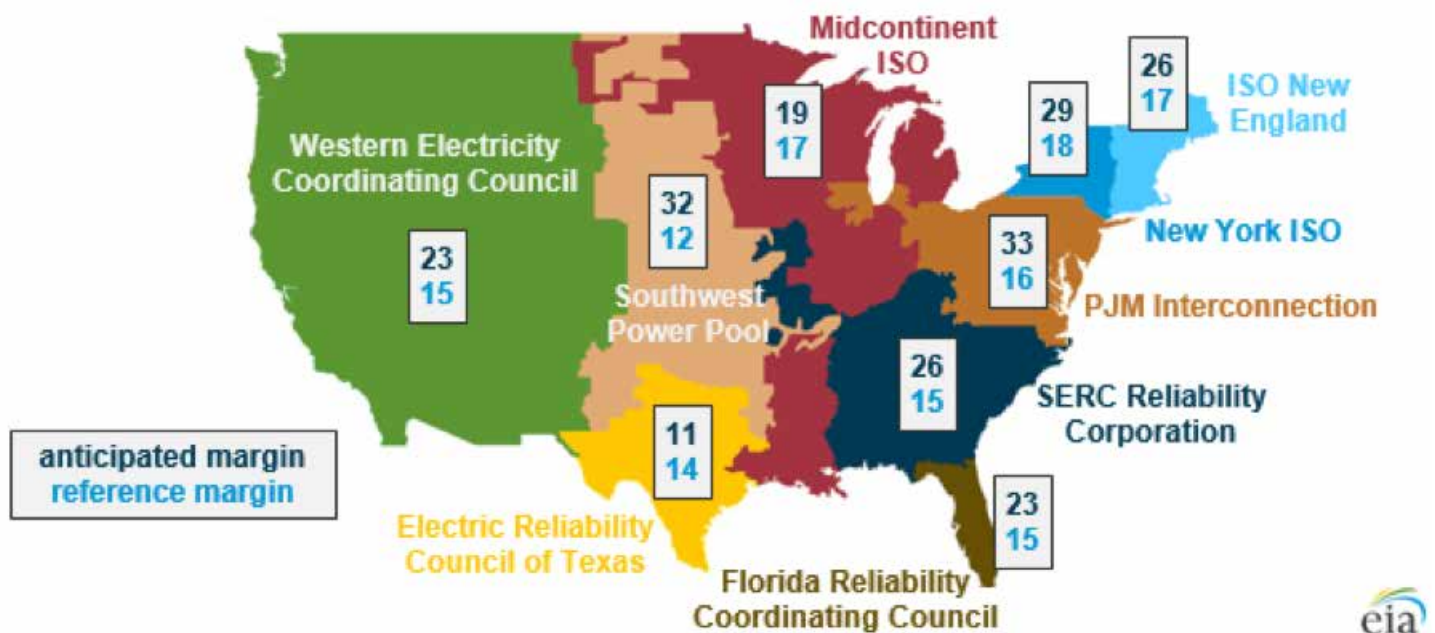
³ B. Forshaw, *State Policies and Wholesale Markets Operated by ISO-NE, NYISO, and PJM*, Docket No. AD17-11-000 (2017) [ferc.gov](https://www.ferc.gov).

⁴ "Resource Adequacy," California Public Utilities Commission, accessed Feb. 18, 2019, [cpuc.ca.gov](https://www.cpuc.ca.gov); "Resource Adequacy," Midcontinent Independent System Operator (MISO), accessed Feb. 19, 2019, [misoenergy.org](https://www.misoenergy.org).

⁵ J. Chen, U.S. Dept. of Energy Quadrennial Energy Review 1.2, Comments of the Sustainable FERC Project, Natural Resources Defense Council (July 1, 2016) [energy.gov](https://www.energy.gov) at 1–12. Most regions in the U.S. use the once-in-ten-years loss of load expectation (1-in-10 LOLE) to establish the target reserve margin, which many experts and stakeholders consider too conservative. J. Wilson, "Reconsidering Resource Adequacy Part 1: Has the one-day-in-ten-years criterion outlived its usefulness?," *Public Utilities Fortnightly*, April 2010; Brattle Group and Astrape Consulting for FERC, *Resource Adequacy Requirements: Reliability and Economic Implications*, by J. Pfeifenberger and K. Carden (2013), [ferc.gov](https://www.ferc.gov). See also Astrape Consulting for EISPC and NARUC, *The Economic Ramifications of Resource Adequacy White Paper*, by K. Carden and N. Wintermantel (2013) [pubs.naruc.org](https://www.pubs.naruc.org). PJM's resource adequacy study makes a number of assumptions that could shift the target reserve margin by several percentage points, such as underestimating import capability by more than 5,500 MW compared to the Eastern Interconnection Planning Collaborative, as well as when demand response would be dispatched. *Id.* at 41.

⁶ This number is consistent with ERCOT's economically optimal reserve margin, rather than a reserve margin calculated from arbitrary reliability targets. The Brattle Group and Astrape Consulting for The Public Utility Commission of Texas, *Estimating the Economically Optimal Reserve Margin*

Figure 2. Summer 2018 Actual Reserve Margins and Target Reserve Margins



Source and notes: U.S. Energy Information Administration (2018). The “anticipated margin” is the amount that expected resources exceed net demand, expressed as a percentage of net demand. This number is close to the actual reserve margin because this assessment is done right before the summer. “Reference margins” are the target reserve margins. Net demand is the total demand minus demand response that is expected to be available during a peak demand hour. A given reserve margin translates to more gigawatts of extra supply in regions with higher demand. For example, PJM’s actual reserve margin translates to 24 gigawatts of surplus capacity over and above its target reserve margin of 23 gigawatts.

While extra supply over and above what’s economically adequate may increase reliability, studies have shown that the incremental cost of that extra reliability far exceeds its value to the customers who must pay for it.⁷ Further, too much supply depresses generator revenues per megawatt and crowds out newer technologies.⁸

Benefits of and Concerns with Regional Markets for Resource Adequacy

Pooling resources across a region can improve load and resource diversity and achieve cost savings through more market competition, broader risk sharing, and reliability improvements.⁹ Capacity markets, which transact in commitments to deliver energy in the future, are one way to ensure resource adequacy regionally. There are three mandatory capacity markets (PJM, the New England Independent System Operator [ISO-NE], and the New York Independent System Operator [NYISO]) and one voluntary capacity market (Midcontinent Independent System Operator [MISO]) in the U.S. A truly competitive market that takes into account the needs and preferences of customers and public policies would facilitate competition from nonincumbent technologies and produce fair prices. But currently, some mandatory capacity “markets” are not competitive because market power is concentrated in a handful of companies.¹⁰ And while these markets

⁷ in ERCOT, by S. Newell et al. (2014) ercot.com.

⁸ The worth of reliable energy to consumers, or “value of lost load,” has been estimated to be \$4,000 to \$25,000 per megawatt-hour, but the 1-in-10 LOLE assumes that customers would pay much more for reliability—around \$200,000 to \$300,000 per megawatt-hour. D. Patton, “Resilience and Emerging Issues in Wholesale Electricity Markets” (June 2018) eia.gov at 4. See also Brattle Group and Astrape Consulting for FERC, *Resource Adequacy Requirements: Reliability and Economic Implications*, by J. Pfeifenberger and K. Carden (2013), ferc.gov at 7.

⁹ J. Chen, “Is Capacity Oversupply Too Much of a Good Thing?,” *Wiley Periodicals* 34 (2017): 15–21. doi 10.1002/gas.22016. R. Surendran, Scarcity Pricing in ERCOT (June 2016), ferc.gov at 3.

¹⁰ MISO and PJM state their markets have produced annual savings due to greater efficiency. PJM claims \$2.8 to 3.1 billion in annual savings from market efficiencies and regional savings. According to PJM, at least a billion dollars of these savings are from market forces procuring less expensive resources. “PJM Value Proposition,” PJM, accessed Feb. 13, 2019, pjm.com. See also PJM, “The Value of Markets: Working to Perfect the Flow of Energy,” June 21, 2018, pjm.com. MISO claims \$2.9 billion and \$3.7 billion related to reliability, more efficient use of the region’s existing transmission and generation assets (energy and ancillary services markets), a reduced need for new assets, and wind integration. “MISO Value Proposition,” MISO, accessed on Feb. 13, 2019, misoenergy.org.

¹¹ Since the inception of PJM’s capacity market, the independent market monitor has found every year that it suffers from structural market

have provided more opportunities compared to most cost-of-service states for demand response, energy efficiency, and most recently, solar-plus-storage systems, newer technologies continue to struggle for access against market rules designed for incumbents.¹¹ Capacity market rules can also procure resources incompatible with public policy because, unlike state resource adequacy plans, they don't currently distinguish between megawatts of capacity from renewable versus fossil resources, which can result in overcapacity and future stranded assets.¹²

Mandatory capacity markets ensure resource adequacy by forecasting electricity demand, establishing a target reserve margin, translating that target to the total capacity that must be procured, and inputting that requirement into capacity auctions. Of these steps, PJM only files the capacity demand curve revisions every four years at FERC, when stakeholders, including nonvoting members, can provide formal input. Otherwise, PJM members can provide informal input during stakeholder meetings. ISO-NE has a few more decision points when it files at FERC, but its resource adequacy process is similarly driven by the RTO. Other opportunities arise to provide formal feedback at FERC when the RTOs file capacity market rule changes, but the scope of those comments must be limited to the matters at issue in those proceedings.

FERC's Growing Role Over Resource Adequacy

As FERC recognizes, resource adequacy implicates the state regulatory role in resource planning, FERC-jurisdictional rates, and the RTO's ability to ensure reliable service.¹³ FERC does not directly set resource adequacy requirements like target reserve margins, and the Federal Power Act Section 215 explicitly withholds authorization for FERC or the North American Electric Reliability Corporation (NERC) to set a standard of adequacy.¹⁴

Even so, FERC essentially sets adequacy requirements by approving proposed minimum quantities of resources (or capacity) that must be bought by state-regulated utilities and other entities serving electricity customers.¹⁵ In regions that ensure resource adequacy through mandatory capacity "markets," FERC reviews market rules that set and

The Federal Power Act Section 215 withholds authorization for FERC to set a standard of adequacy. Even so, in regions that ensure resource adequacy through mandatory capacity "markets," FERC approves rules that set and enforce a minimum quantity of capacity utilities must buy, the relationship between the quantity and price of capacity, and the types of capacity that may be transacted.

power concentration, so that three suppliers could prevent the PJM capacity market from satisfying demand. See Monitoring Analytics, "Analysis of the 2021/2022 RPM Base Residual Auction: Revised," monitoringanalytics.com/reports at 2, 38; PJM, 2021/2022 RPM Base Residual Auction Results, pjm.com, at 4. For prior years, see the corresponding PJM and Monitoring Analytics reports for those years. Monitoring Analytics, Reports, monitoringanalytics.com/reports; PJM, Capacity Market (RPM), pjm.com. The May 2018 was the first time that market mitigation efforts failed and market prices were inflated. *RTO Insider*, "IMM: PJM 2018 Capacity Auction was 'Not Competitive'" (Aug. 9, 2018) rtoinsider.com.

¹¹ For the first time, a residential solar-plus-storage company won 20 megawatts of capacity commitments in ISO-NE's latest capacity auction. J. Spector, "Sunrun Wins Big in New England Capacity Auction With Home Solar and Batteries," *Greentech Media*, Feb. 7, 2019, greentechmedia.com. But newer energy storage technologies, cannot so far meet PJM's capacity market eligibility requirements. PJM's latest response to FERC on enabling storage to participate in its capacity markets includes a duration requirement of 10 hours, which battery companies find would significantly reduce the revenue potential from that market. P. Maloney, "Ahead of FERC storage order deadline, new rules begin to take shape in PJM," *Utility Dive*, Oct. 2, 2018, utilitydive.com.

¹² Because of these flaws as well as administrative restrictions and requirements on capacity "markets," some prefer the term capacity "constructs" to denote the fact that they are not like the traditional concept of free markets. See, e.g. P. Ciampoli, "Association says FERC order on PJM is flawed," *American Public Power Association*, Aug. 8, 2018, publicpower.org. In a similar spirit, we use "markets" in quotes where we want to emphasize the administrative nature of these constructs.

¹³ E.g., *California Independent System Operator Corporation*, 116 FERC ¶ 61,274, at P 1112 (2006). *MISO*, 122 FERC ¶ 61,283, at P 52, 54, 56 (2008).

¹⁴ "The Commission has no authority to fix planning reserve margins." Federal Power Act, 64 FERC ¶ 61,139 at Part II Prior Notice and Filing Requirements (1993); Federal Power Act Section 215 on electric reliability "does not authorize [NERC] or [FERC] to order the construction of additional generation or transmission capacity or to set and enforce compliance with standards for adequacy or safety of electric facilities or services." 16 U.S.C. § 824o(2). For PJM, however, NERC proposed and FERC approved a mandatory standard that would require a specific method for calculating the target reserve margin. ferc.gov. This is now NERC Standard BAL-502-RFC-02, which requires that PJM calculates its target reserve margin assuming that the region should not experience a reliability event more than once in ten years (1-in-10 LOLE). nerc.com. PJM then takes the results of that study to set how much its capacity market procures, which is then approved by FERC (see section titled, "PJM Interconnection" below on the Variable Resource Requirements curve).

¹⁵ FERC's ability to approve minimum quantities of capacity has been upheld. *Conn. Dep't of Pub. Util. Control v. FERC*, 569 F.3d 477 (D.C. Cir. 2009), cert. denied, 558 U.S. 1110 (2010).

enforce a minimum quantity of capacity utilities must buy, the relationship between the quantity and price of capacity, and what types of capacity may be transacted through the market.

Mandatory capacity markets have been contentious, with over twenty distinct cases filed in federal courts to appeal FERC decisions and more lawsuits looming in the near term.¹⁶ These “markets” are evolving toward more restrictive requirements as to what counts as capacity, and how resources sponsored by public policy can participate.¹⁷ These changes have been opposed by states, consumers, and clean energy businesses, but PJM and ISO-NE have been increasingly pursuing changes despite widespread stakeholder opposition.¹⁸

As a result of this erosion of process and diminished ability for states to implement cost-effective energy policies promoting non-emitting or local resources, states and stakeholders have become increasingly frustrated with capacity “markets” to the point where some state commissioners have expressed interest in leaving the RTO.¹⁹

The diminishing role of states in resource adequacy decisions is not a uniform trend across multistate RTOs. Therefore, a comparison of these decision-making processes may shed light on ways to improve them.

COMMONALITIES IN STATE PARTICIPATION IN RESOURCE ADEQUACY ACROSS RTOs

Regional State Committees (RSCs) and Funding

Every multistate RTO has a Regional State Committee (RSC) that provides the collective input of the states on RTO proposals.²⁰ The powers of RSCs vary by RTO, and while they are all funded through the RTO they advise, funding levels also vary.

All multistate RTOs exercise some level of influence on their RSCs’ budgets. MISO’s and SPP’s RSCs’ budgets must be approved by the RTOs’ boards each year.²¹ ISO-NE and PJM provide input on their RSCs’ budgets, and only the RTOs can file the budgets at FERC.²²

Funding for RSCs is important because engaging in stakeholder processes at the RTOs and in litigated proceedings at FERC is time intensive and requires expert economic, legal, and policy analysis.²³ For example, the funding for the SPP RSC enables its representatives to travel to meetings, but not to hire staff to drive consensus among members (unlike other RSCs). A small budget also makes it difficult to obtain help independent of SPP staff on technical questions. OMS and

¹⁶ “Court Cases,” FERC, accessed Feb. 7, 2019, ferc.gov.

¹⁷ These papers summarize a number of capacity market issues, among others. G. Murnan, Z. Ripecky, and J. Chen, “Issues on the Horizon at FERC,” Nicholas Institute for Environmental Policy Solutions, NI Policy Brief 18-03 (2018), nicholasinstitute.duke.edu; J. Chen, “Improving Market Design to Align with Public Policy,” Nicholas Institute for Environmental Policy Solutions, NI Policy Brief 18-02 (2018), nicholasinstitute.duke.edu.

¹⁸ RTOs must be “independent” from market participants as a requirement under FERC Order 2000. *Regional Transmission Organizations*, 90 FERC ¶ 61,201, 18 CFR Part 35, Final Rule, Order on Rehearing, (Feb. 25, 2000). But a related open question we will explore in future scholarship is how RTOs are held accountable if they tend to favor higher levels of reliability (and thus higher generator revenues) despite consumer costs, particularly when “just and reasonable” is not precisely defined under the Federal Power Act and does not require an assessment of costs versus benefits.

¹⁹ G. Bade, “PJM, states clash over market jurisdiction at NARUC conference,” *Utility Dive*, Nov. 14, 2018, utilitydive.com; M. Brooks, “State Regulators Still Frustrated with PJM,” *RTO Insider*, Dec. 17, 2018, rtoinsider.com; B. Sheahan, “When PJM’s capacity market stops working for consumers is it time to leave?” *Utility Dive*, Oct. 2, 2018, utilitydive.com.

²⁰ The concept of RSCs can be traced back to a 2002 National Governors Association report and a FERC Notice of Proposed Rulemaking on standard market design. Both suggested a committee of states to inform decision-making on the transmission system level. FERC terminated the rulemaking as standard market design proved controversial, but the RSCs that exist today reflect many of the intended goals of both FERC’s and the National Governors Associations’ proposals. FERC, “Remedying Undue Discrimination Docket No. RM01-12-000 through Open Access Transmission Service and Standard Electricity Market Design; Notice of Proposed Rulemaking,” 64 *Fed. Reg.* 55451 (July 31, 2002) at PP 551, 552, 553, 554, federalregister.gov; W. Smith., “Formation and Nurture of a Regional State Committee,” *Energy Law Journal* 28(185)(2007):185–205, at 189–190, eba-net.org; FERC, “Order Terminating Proceedings” (Docket No. RM01-12-000) July 19, 2005, ferc.gov.

²¹ SPP, “Governing Documents Tariff, Bylaws,” (Docket No. ER10-2145), Jan. 23, 2019, at 66, spp.org. “OMS Funding Agreement,” p. 2.

²² ISO-NE, The New England Power Pool (NEPOOL) and NESCOE, “Memorandum of Understanding Among ISO-NE, NEPOOL, and NESCOE,” Nov. 21, 2007, at 4, iso-ne.com; PJM, “Schedule-9 OPSI Funding,” (Docket No. ER17-1372-000), June 1, 2017, pjm.com.

²³ A common issue that stakeholders have raised is the volume of meetings is difficult to manage. PJM Members Committee, “Stakeholder Process Super Forum: Next Steps,” Oct. 25, 2018, pjm.com; PJM Super Forum, “Survey Verbatim Comments,” July 25, 2018, pjm.com. Mork, R. 2018. “In 2018, PJM had 498 stakeholder meetings,” accessed at linkedin.com. February 2018.

NESCOE have larger budgets, and they generate more work products and have the capacity to engage more actively in stakeholder processes.

Table 1. Comparison of Regional State Committees

RTO	Regional State Committee	Acronym	Annual Budget Provided by RTO (\$M)	Resource Adequacy Decision Power
SPP	SPP Regional State Committee	RSC	~\$0.3-0.499 ^a	Provide collective approval through state committee vote for the approach to resource adequacy
MISO	Organization of MISO States	OMS	~\$1.5 ^b	Individual state can set own target different from regional target reserve margin
ISO-NE	New England States Committee on Electricity	NESCOE	~\$2.3 ^c	Has single, collective vote to approve target reserve margin
PJM	Organization of PJM States, Inc	OPSI	\$0.425-\$0.696 ^d	Provide collective comments on proposals

Sources and notes:

^a SPP RSC Minutes, Oct. 30, 2017, spp.org; SPP RSC Business Meeting Minutes, Oct. 29, 2018, spp.org.

^b "Organization Docs-OMS Funding," OMS, accessed Feb. 7, 2019, misostates.org; OMS and MISO, "OMS Funding Agreement," 2003, misostates.org.

^c "NESCOE Annual Budgets," NESCOE, accessed Feb. 11, 2019, nescoe.com.

^d OPSI was granted an initial annual budget of \$425,000, and any increases cannot exceed 15% without FERC approving a Section 205 filing from PJM. PJM, "PJM Open Access Transmission Tariff," (Docket No. ER10-2710-000), Sept. 17, 2010, at 678, pjm.com. FERC, "Order of Funding Mechanism for Organization of PJM States," (Docket No. ER06-78-000 and ER06-78-001), Dec. 20, 2005, ferc.gov; Informational Filing on OPSI Annual Budget, Oct. 19, 2017, pjm.com; Informational Filing on OPSI Annual Budget, Oct. 22, 2018, pjm.com.

RSC Powers and Constraints under the Federal Power Act

FERC is required under Federal Power Act Sections 205 and 206 to ensure that public utilities, such as RTOs, charge "just and reasonable" wholesale electricity rates. According to FERC, RSCs are not public utilities (like transmission owners and RTOs), and thus cannot file under Section 205 to propose market rule changes.²⁴ States' abilities to directly influence the RTOs' Section 205 filings vary by RTO. Within the RTO stakeholder processes, the states cannot vote, with limited exceptions, but may provide input at stakeholder meetings, and occasionally, meetings with the RTO boards.

Like other stakeholders, RSCs and member states can file Section 206 complaints at FERC. However, the ability to file a Section 206 complaint is no substitute for the ability to file a Section 205 proposal or to influence an RTO's 205 filing. The difference between Sections 205 and 206 is significant. An RTO filing under Section 205 only needs to show that the proposed change is just and reasonable. FERC cannot consider alternatives and can only approve the 205 filing without material changes, or FERC must reject it.²⁵ Under Section 205, the RTO proposal need not be the best among potential options. And FERC cannot adopt the comments of states and other nonvoting constituents unless the issues they raise are sufficient to render the RTO's 205 filing unjust and unreasonable. In this situation, nonvoting entities have little influence in the RTO process and on the FERC decision, which raises serious process questions. Under Section 206, a party petitioning for a rule

Unless the issues states and nonvoting entities raise are sufficient to render the RTO's 205 filing unjust and unreasonable, FERC can do little in response to their comments. In such circumstances, these entities have little influence in the RTO process and on the FERC decision, which raises serious process questions.

²⁴ 16 USC §§ 824(e), 824d, 824e. *ISO-NE, Bangor Hydro-Electric Company, The Consumers of New England v. NEPOOL*, 106 FERC ¶ 61,280 (2004) at P 79. FERC rejected the New England Conference of Public Utility Commissioners' (NECPUC) "request that the Regional State Committee be given concurrent filing rights along with the Transmission Owners over rate design changes," finding that "[t]he FPA grants Section 205 filing rights to public utilities only, and the Regional State Committee will not be a public utility."

²⁵ *NRG Power Marketing, LLC et al. v. FERC*, (D.C. Cir. 2017), ferc.gov.

change must meet a higher legal bar by proving that the existing rule is unjust and unreasonable and that the proposed change is just and reasonable.

A variation on Section 205 filings that allows FERC to consider alternative proposals is ISO-NE's "jump ball" provision. If stakeholders garner at least a 60% vote on their own market rule proposal, ISO-NE is required to file it on equal footing with ISO-NE's proposal at FERC. FERC may adopt any or all of ISO-NE's or the alternate proposal.²⁶

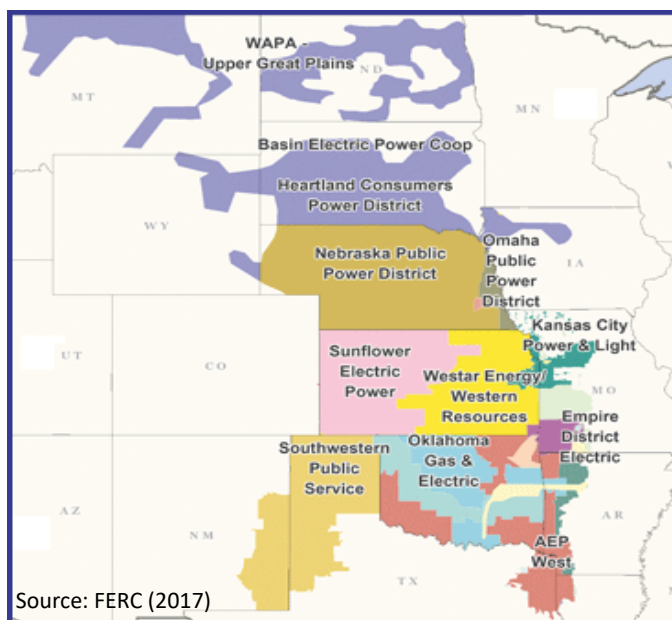
RTO-SPECIFIC RULES

Southwest Power Pool (SPP)

States in SPP have preserved the greatest amount of their traditional authority over resource adequacy compared to other multistate RTOs. State support was key in SPP's approval as an RTO, and through negotiations the states were able to retain much of their existing state authority. The FERC-approved SPP Bylaws acknowledge that "nothing in the formation or operation of SPP as a [FERC] recognized regional transmission organization is in any way intended to diminish existing state regulatory jurisdiction and authority."²⁷ In SPP, the RSC determines the approach for resource adequacy across the entire region.²⁸

The SPP Bylaws provide that the RSC will determine the approach for resource adequacy across the entire region, and SPP will make the requisite filings at FERC.

Figure 3. Southwest Power Pool



SPP Regional State Committee (RSC)

The SPP RSC is open to a single public utility commission representative from each state which has regulatory oversight over one or more of SPP's stakeholder members.²⁹

In contrast to other RSCs, the SPP RSC has an important role in shaping Federal Power Act Section 205 filings pertaining to resource adequacy. The SPP Bylaws provide that the RSC will determine the approach for resource adequacy across the entire region, and SPP will make the requisite filings at FERC.³⁰ However, SPP may file its own proposal under Section 205 on related matters.³¹

SPP's deference to its RSC in resource adequacy decisions was recently highlighted in the language of SPP's FERC filing to revise SPP's planning reserve margin target from 13.6% to 12%. This reduction can lower capacity requirements in SPP by about 900 megawatts and is expected to save SPP's

²⁶ The "jump ball" provision provides that if ISO-NE's market rule proposal differs from a proposal approved by a Participants Committee vote of 60% or more, ISO-NE "shall, as part of any required Section 205 filing," describe the alternate market rule proposal in sufficient detail to permit reasonable review by FERC and also explain its reasons for not adopting the alternate proposal and why it believes its own proposal is superior. ISO-NE and NEPOOL, "Participants Agreement," Apr. 10, 2009, at section 11.1.5., iso-ne.com. However, it's an open question how FERC could mix and match the two proposals given that the court in *NRG* (see footnote 25) interpreted the Federal Power Act to mean that FERC cannot make material changes to Section 205 filings.

²⁷ "SPP Governing Documents Tariff, Bylaws" at 65.

²⁸ FERC supported this role for the RSC in its order granting SPP RTO status and affirmed it on rehearing. *SPP*, 106 FERC ¶ 61,110, P 220, ferc.gov; *SPP*, 109 FERC ¶ 61,010 (2004) at P 93, ferc.gov. FERC rejected arguments that the RSC is infringing on SPP's own Section 205 filing rights because SPP agreed to file with FERC certain regional proposals that may be developed by the RSC, and because SPP may file its own proposals in addition to RSC proposals.

²⁹ The RSC is comprised of retail regulatory commissioners from agencies in Arkansas, Iowa, Kansas, Missouri, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, and Texas.

³⁰ "SPP Governing Documents Tariff, Bylaws" at 66.

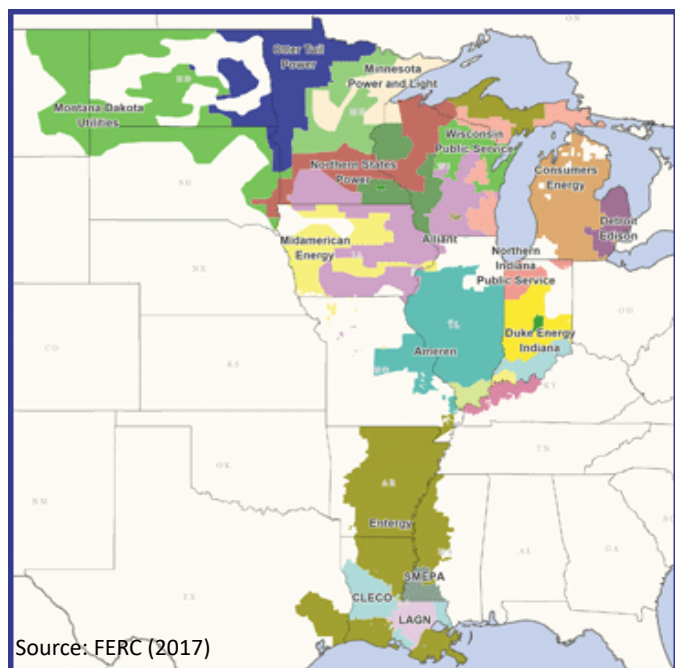
³¹ *Southwest Power Pool, Inc.*, 109 FERC ¶ 61,010 at P 93 (2004).

load-serving members approximately \$90 million annually.³² (SPP’s actual reserve margin is high, and to take advantage of the lower RTO requirement and attendant cost savings, states would have to revisit regulatory protections for uneconomic power plants.³³) SPP explained in its FERC filing the RSC’s authority over resource adequacy and the process by which SPP brought the proposal to the RSC for approval through a vote.³⁴

Midcontinent Independent System Operator (MISO)

MISO acknowledges that states have resource adequacy responsibility, but notes that it is shared with the load-serving entities, RTO, and FERC.³⁵ MISO establishes resource adequacy requirements based on initial input from the states, and each utility can meet the requirement through owned resources, contracted resources, or participation in MISO’s voluntary capacity Planning Resource Auction.³⁶ Individual states maintain the power to override the regional planning reserve margin for their jurisdictions.³⁷

Figure 4. MISO



Organization of MISO States (OMS)

OMS represents 17 state and local public utility regulators and 11 associate members (including consumer advocate organizations, state legal councils, and adjoining state public utility commissions).³⁸ Other than cost allocation issues, consensus among OMS members is encouraged but not mandatory—OMS reflects dissents in final position statements.³⁹

MISO’s filing mechanism for regional transmission cost allocation enables OMS to develop an alternative to be filed with MISO’s under Section 205 (with MISO’s financial and technical support).⁴⁰ Unlike SPP, however, this mechanism does not extend to resource adequacy matters.⁴¹ This example is nevertheless instructive because MISO and OMS didn’t negotiate this authority upfront; rather, it arose from a settlement addressing the Arkansas Public Service Commission’s concerns in approving Entergy Arkansas transferring functional control of its electric transmission

³² *Southwest Power Pool, Inc.*, 164 FERC ¶ 61,092 at P 9 (2018), ferc.gov. SPP, “SPP Board votes to lower planning reserve margins, award first competitively bid project, approve \$363M in transmission upgrades,” Apr. 26, 2016, spp.org.

³³ T. Kleckner, “Report: Costly Coal Undermining SPP Market, Bilking Consumers, MMU Agrees Self-Commitment ‘Distorts’ Market,” *RTO Insider*, Dec. 11, 2017, rtoinsider.com.

³⁴ *Tariff Revisions to Implement a Set of Resource Adequacy Policies*, Docket Nos. ER18-1268-000, -001, Mar. 30, 2018, at. 7–8, spp.org.

³⁵ MISO, *2018 MISO Transmission Expansion Plan, Book 2 Resource Adequacy*, (2018), 5, misoenergy.org. MISO, “Resource Adequacy Principles,” Supply Adequacy Working Group, Apr. 3, 2014, at slide 4, misoenergy.org.

³⁶ MISO, *Business Practices Manual on Resource Adequacy*, Manual No. 11 (2018), at 12; MISO, *Resource Availability and Need Issues Statement Whitepaper* (2018) at 25–26, misoenergy.org.

³⁷ MISO Tariff, Module E, Section 68A.1 (“The Transmission Provider will determine a Planning Reserve Margin (PRM) using analytical study methods described in Section 68A.2, provided that if a state regulatory body establishes a PRM for its regulated entities that is higher or lower than the PRM determined by the transmission Provider, then the state-established PRM will apply to the Coincident Peak Demand of [Load Serving Entities (LSEs)] under that state’s jurisdiction.”); MISO Business Practice Manual 11, Section 3.5.5 (“If a state regulatory body establishes a minimum PRM for the LSEs under their jurisdiction, then that state-set PRM would be adopted by MISO for jurisdictional LSEs in such state.”).

³⁸ “About,” OMS, accessed Feb. 19, 2019, misostates.org; “Members,” OMS, accessed Feb. 19, 2019, misostates.org; “Associate Membership List,” OMS, last updated Dec. 18, 2018, misostates.org.

³⁹ “OMS Process for Approving Position Statements,” OMS, last updated May 18, 2017, misostates.org.

⁴⁰ OMS develops its position through a stakeholder process co-chaired by an OMS member or a separate OMS-only process. A supermajority of OMS participants must vote in favor of the proposal and MISO must approve it to file under Section 205. MISO, “Agreement of Transmission Facilities Owners to Organize,” Mar. 2, 2018, at Appendix K, misoenergy.org.

⁴¹ MISO, “Agreement of Transmission Facilities Owners to Organize,” Mar. 2, 2018, at section III.E.3.a, misoenergy.org. SPP’s Regional State Committee reached an agreement with SPP under which SPP agrees to file certain proposed tariff changes at the direction of the regional state committee. In the Midwest, no such filing rights were proposed. Smith., “Formation and Nurture of a Regional State Committee,” at p. 203.

facilities to MISO.⁴² FERC noted in its approval that it had “previously accepted proposals to grant section 205 filing rights to state regulatory committees,” and that “such filing rights can facilitate state consensus on certain regional issues, as well as a partnership between this Commission and state commissions.”⁴³

In MISO, individual states maintain the power to override the regional planning reserve margin for their jurisdictions.

OMS is active in developing work products through Working Groups led by staff representatives of member-state commissions. These Working Groups develop comments in FERC and Department of Energy proceedings, as well as court filings and comments at MISO.⁴⁴ Currently, OMS has seven working groups, including one focused on resource adequacy.⁴⁵ OMS can thus engage with MISO in an issue-focused and state-driven manner.

MISO appears to have a relatively collaborative culture. Currently, for example, MISO and OMS are working together on a plan for integrating distributed energy resources within the broader goal of maintaining resource adequacy. MISO and OMS established joint priorities and a timeline for holding stakeholder meetings with the goal of aligning state interests with MISO operational incorporation of distributed energy resources.⁴⁶

MISO Advisory Committee

MISO states can also participate in resource adequacy decisions through the Advisory Committee. In MISO, the ten-sector Advisory Committee approves market, reliability, and operational recommendations to the MISO Board based on weighted sector votes. The State Regulatory Authorities sector holds the most weight at 16% and represents entities that regulate retail electric and distribution rates or representatives of public consumer groups. Currently, the 17 members of the State Regulatory Authorities sector are almost exclusively public utility commissions.⁴⁷ The Advisory Committee’s authority is somewhat diluted by the fact MISO can still file a Section 205 proposal without committee approval.⁴⁸

New England Independent System Operator (ISO-NE)

ISO-NE was created by the New England Power Pool (NEPOOL), which is an association of market participants established in 1971 to pool resources, to oversee wholesale electricity markets and transmission following FERC Order 888. The New England States Committee on Electricity (NESCOE) serves as ISO-NE’s RSC.

New England States Committee on Electricity (NESCOE)

NESCOE represents the policy interests of six New England states. NESCOE is actively involved in stakeholder processes and provides input on proposed rules and tariffs concerning resource adequacy and system planning and expansion.⁴⁹ NESCOE can also propose market rules and reliability standards.⁵⁰ In contrast to other RSCs, NESCOE’s members are appointed through the Governor’s office of each state, and are usually commission chairs or members or representatives from the Governors’ offices.⁵¹ NESCOE makes policy determinations with a majority vote (i.e., a numerical majority of the states) and a majority-weighted vote to reflect relative electric load of each state within the region’s overall load.⁵²

In ISO-NE, the resource adequacy target, or Installed Capacity Requirement, is determined through a NEPOOL stakeholder process.⁵³ The proposed Installed Capacity Requirement makes its way up through a technical subcommittee, a reliability committee, and then the broader “Participants Committee,” where NESCOE is allowed a single vote.⁵⁴ The

⁴² *MISO and MISO Transmission Owners*, 143 FERC ¶ 61,165 (May 23, 2013) ferc.gov at P 3.

⁴³ *Id.* at P 30.

⁴⁴ “Work Products,” OMS, accessed Feb. 15, 2019, misostates.org.

⁴⁵ “Work Groups,” OMS, accessed Feb. 15, 2019, misostates.org.

⁴⁶ “MISO-OMS Dialogue,” NARUC Winter Policy Summit, Feb. 11, 2019.

⁴⁷ “Membership Listing by Stakeholder Group,” MISO, last updated Dec. 2018, misoenergy.org.

⁴⁸ “MISO Agreement of Transmission Facilities Owners to Organize,” at Appendix K.

⁴⁹ *The Governors of: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont*, 112 FERC ¶ 61,049 (2005).

⁵⁰ “Memorandum of Understanding Among ISO-NE, NEPOOL, and NESCOE,” at 5; “ISO-NE Participants Agreement.”

⁵¹ “NESCOE Managers,” North England States Committee on Electricity, accessed Feb. 8, 2019, nescoe.com.

⁵² *Id.*

⁵³ “Installed Capacity Requirement,” ISO-NE, accessed Feb. 19, 2019, iso-ne.com.

⁵⁴ “Memorandum of Understanding Among ISO-NE, NEPOOL, and NESCOE,” at 3. “Installed Capacity Requirement,” ISO-New England Inc., accessed Feb. 8, 2019, iso-ne.com.

final proposal is then submitted to FERC for approval, which gives all interested parties an opportunity to file comments at FERC.

The New England Conference of Public Utilities Commissioners (NECPUC) represents the views of Public Utility Commissions across New England. A NECPUC representative participates in the nominating process for the ISO-NE Board of Directors.⁵⁵ Because NESCOE is tasked to focus on ISO-NE matters, NECPUC can refrain from engaging in matters at the RTO that could come before the state public utility commissions for review.⁵⁶ NESCOE attempts to avoid duplication of efforts or conflicting policy positions with NECPUC.⁵⁷

Figure 5. ISO-NE



Source: FERC (2017).

Recent Examples of Contention over Resource Adequacy in New England

In ISO-NE, capacity auction rules have generated controversy over the ability for state-sponsored resources and renewable technology resources to participate. Recently, NEPOOL convened the Integrating Markets and Public Policy (IMAPP) task force with a goal of resolving tensions between state energy policies and market efficiency. IMAPP stakeholders included state officials and market participants. The task force proposed several market mechanisms.⁵⁸ Ultimately, ISO-NE did not select the states' preferred proposal and instead proposed a two-step auction known as the Competitive Auctions with Subsidized Policy Resources (CASPR).⁵⁹ NESCOE expressed disappointment in how ISO-NE drove the process to its preferred solution: "The states are of one mind on one thing about CASPR. It is that ISO-NE's approach at the very end of an otherwise open and collaborative process—and specifically its 11th hour changes—was, to put it mildly, disheartening. These late changes were accompanied by little explanation and provided no time for meaningful dialogue."⁶⁰

Under CASPR, state-sponsored resources may compete in the Forward Capacity Auction but must bid at or above an administratively determined minimum offer price, making it less likely they will clear that first auction. State-sponsored resources that do not receive capacity supply obligations in the Forward Capacity Auction can participate in the Substitution Auction. To earn a capacity commitment in the Substitution Auction, the state-sponsored resources would have to buy out retiring generators and take on their capacity commitments from the Forward Capacity Auction.⁶¹ The retiring generators receive the capacity payment from the Forward Capacity Auction and then pay the state-sponsored resources to take on that obligation. These generators would rationally do this if they can sell the commitments at a higher price than they were paid. The state-sponsored resources would thus likely receive less from the Substitution Auction than what the Forward Capacity Auction would have paid them.

This design, approved by FERC and first implemented in February 2019, has been criticized as favoring traditional generation over newer policy-sponsored resources, all while publicized as an idea beneficial to state energy policy—despite

⁵⁵ "Board of Directors," ISO-New England, Inc., accessed Feb. 8, 2019, iso-ne.com.

⁵⁶ "Memorandum of Understanding Among ISO-NE, NEPOOL, and NESCOE," at Appendix A, p. 1.

⁵⁷ *Id.* at 3.

⁵⁸ ISO-NE, *NEPOOL 2016 IMAPP Proposals Observations, Issues, and Next Steps* (2017) 1, iso-ne.com.

⁵⁹ ISO-NE, *Competitive Auctions with Subsidized Policy Resources* (2017) iso-ne.com.

⁶⁰ NESCOE comments to NEPOOL Participants Committee, "NESCOE Statement," Dec. 8, 2017, nepool.com at 1–2.

⁶¹ ISO-NE to NEPOOL, *Competitive Auctions with Subsidized Policy Resources: The ISO's Proposed Approach to Balancing Wholesale Markets and States' Policies* (2017) nepool.com.

mixed state support at best.⁶² Indeed, the recent Forward Capacity Auction secured 34,839 megawatts at about \$1.6 billion for the commitment period of June 1, 2022, to May 31, 2023. The only resource to win a capacity commitment in the first Substitution Auction was Vineyard Wind, an 800-megawatt offshore wind project. It earned a 54-megawatt capacity commitment.⁶³

An additional 145 megawatts of renewable technology resources received capacity commitments under an exemption that is being phased out. This exemption allows a limited amount of renewable technology resources to participate in the auction without being subject to ISO-NE's minimum offer price rule, which bumps up offers from resources deemed subsidized. The exemption had strong state support to spare ratepayers from paying once for state-supported resources and then again for duplicate capacity through the auction if the state-supported resources were not qualified to receive capacity commitments. Rather than supporting exemptions for state-selected resources, ISO-NE retained about 1,400 megawatts of Exelon's uneconomic gas-fired Mystic River 8 and 9 units for fuel security reasons under cost-of-service contracts and had them bid into the auction at zero dollars.⁶⁴ ISO New England filed the results with FERC on February 28, and interested parties have until April 12 to submit comments to FERC.⁶⁵

Another recent example of state-ISO-NE tension over resource adequacy pertains to ISO-NE's "Fuel Security Retention Proposal."⁶⁶ NEPOOL did not approve the proposal and instead approved a version with changes that was supported by NESCOE. However, ISO-NE did not include NEPOOL and NESCOE's recommended changes in its Section 206 filing (and the jump ball provision does not apply to Section 206 filings).⁶⁷ This example highlights the states' interests in protecting their ratepayers' against what they view as unnecessarily expensive proposals and ISO-NE's disregard for policy mandates adopted by six state legislatures, as well as the states' public utility commissions, energy offices, and other state efforts to implement those policies.

PJM Interconnection (PJM)

PJM drives most of the resource adequacy decisions in its region since it can unilaterally file capacity market rule changes to FERC under Section 205.⁶⁸ PJM determines a peak load forecast and target reserve margin annually that are input into the capacity auction.⁶⁹ How the reserve margin impacts how much capacity is procured is apparent from the capacity "demand curve" (known as the Variable Resources Requirements or VRR curve).

PJM reviews the VRR curve every four years and submits its revised curve to FERC for approval, where parties can comment on the filing.⁷⁰ Thus, as part of the normal resource adequacy planning process, commenters other than voting PJM members have an opportunity once every four years to provide formal input in a public forum.

⁶² "Competitive Auctions with Sponsored Policy Resources (CASPR) Project," ISO-NE, accessed on Feb. 8, 2019, iso-ne.com. R. Heidorn, "Split FERC Approves ISO-NE CASPR Plan," *RTO Insider*, Mar. 11, 2018, rtoinsider.com.

⁶³ ISO-NE, "New England's Forward Capacity Auction Closes with Adequate Power System Resources for 2022-2023," Feb. 6, 2019, iso-ne.com.

⁶⁴ A. Coffman Smith, "New England capacity auction sees snubbed Vineyard Wind clear substitution round," S & P Global Market Intelligence, Feb. 7, 2019, spglobal.com.

⁶⁵ ISO New England Inc., Docket No. ER19-___-000, Forward Capacity Auction Results Filing, (Feb. 28, 2019) iso-ne.com.

⁶⁶ ISO-NE, 165 FERC ¶ 61,202 (2018) at P 19, 33, 36, iso-ne.com.

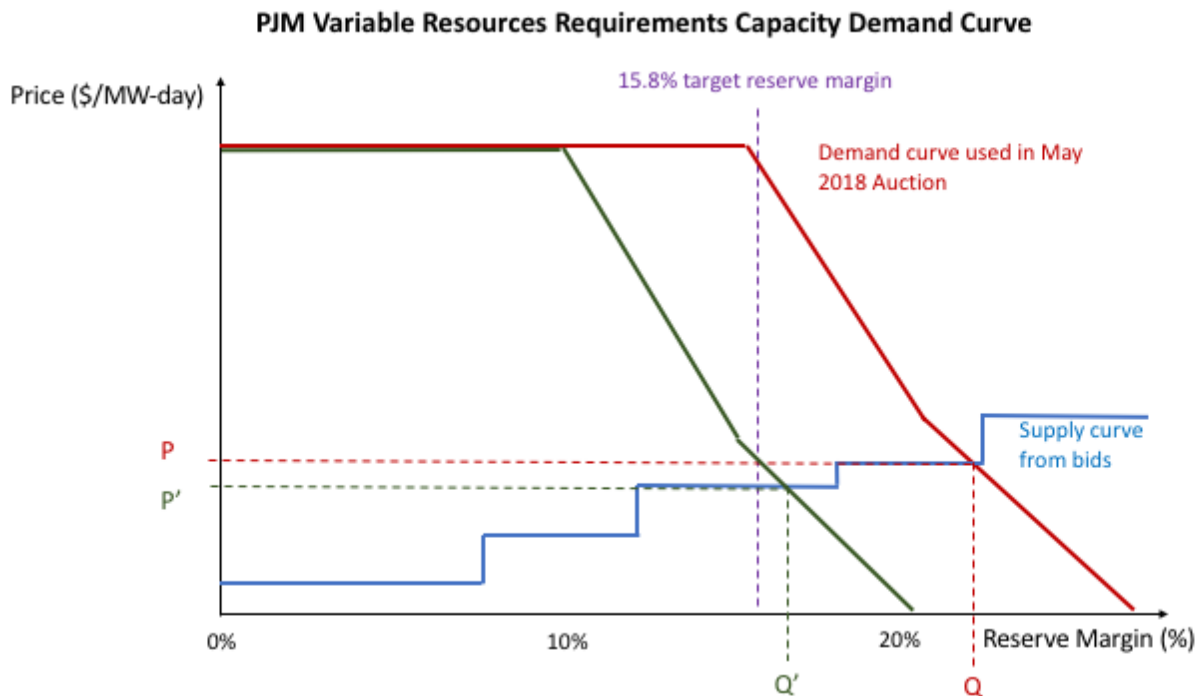
⁶⁷ Protest and Motion of The NEPOOL Participants Committee, Docket Nos. EL18-182-000 and ER18-2364-000 (Sept. 14, 2018).

⁶⁸ "PJM is permitted to make unilateral section 205 filings to revise its capacity market provisions . . . since these provisions relate to the reliability of the system, which is PJM's responsibility." *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,157 at P 15 (2016), *aff'd sub nom. Advanced Energy*, 860 F.3d 656. See generally *Md. Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1284 (D.C. Cir. 2011).

⁶⁹ "Resource Adequacy Planning," PJM, accessed on Feb. 8, 2019, pjm.com. PJM resource adequacy requirements are defined in the Reliability Assurance Agreement among Load Serving Entities in the PJM Region. PJM is responsible for calculating the amount of resource capacity required to meet the defined reliability criteria, BAL-502-RFC-02. PJM Board of Managers approves the final reserve margin value, which is then the basis for defining the RTO Reliability Requirement for use in PJM's capacity auctions.

⁷⁰ The Brattle Group for PJM, "Fourth Review of PJM's Variable Resource Requirement Curve," by S. Newell et al. (2018), pjm.com.

Figure 6. PJM Variable Resources Requirements Capacity Demand Curve



Note: Unlike most market demand curves, PJM’s VRR curve is not based on customers’ willingness to pay for capacity. PJM designed its VRR demand curve (in red) so it is likely to overshoot its 15.8% target (the quantity procured is Q). There are a number of inputs that could change how much the curve causes the auction to procure; for example, setting a less conservative target reserve margin would shift the demand curve to the left (in green), which would result in lower quantities of capacity procurement at lower prices (Q’, P’).⁷¹

Organization of PJM States (OPSI)

PJM’s RSC is the Organization of PJM States, Inc. (OPSI), which consists of 14 public utility commission representatives from each PJM state and the District of Columbia.

Figure 7. PJM



Source: FERC (2017).

OPSI liaises with PJM and monitors proposals impacting state interests.⁷²

PJM has offered the states in its footprint membership, but they have so far declined.⁷³ According to former PJM Chairman Howard Schneider, PJM states had a number of concerns, including being bound as PJM members by FERC decisions, which could then impact state energy policies. Another deterrent he mentioned could be the membership fee.⁷⁴ Finally, the states would likely be placed in the “Other Suppliers” sector, for lack of a better fit with the other voting groups (transmission owner, generation owner, electric distributor, or end-use customer).⁷⁵ In that case, the states’ votes would be diluted, particularly in the

⁷¹ See footnote 5 for reasons why the target reserve margin might be adjusted. For variations on the VRR curve proposed by Brattle; see G. Murnan, Z. Ripecky, and J. Chen, “Issues on the Horizon at FERC.”

⁷² PJM and Organization of PJM States (OPSI), “Memorandum of Understanding Between PJM and OPSI,” June 8, 2014, pubs.naruc.org.

⁷³ PJM, *PJM Manual 34: PJM Stakeholder Process*, prepared by Market Services Division, Stakeholder Affairs Department, (2016), [pjm.com](https://www.pjm.com).

⁷⁴ H. Schneider, “Is it time for states to become voting members of PJM?,” Charles River Associates, Jan. 2019, [crai.com](https://www.crai.com).

⁷⁵ “PJM Learning Center, Committees and Groups FAQs,” PJM, accessed on Feb. 8, 2019, [learn.pjm.com](https://www.learn.pjm.com).

highest committees, where each sector is accorded the same weight—the Other Suppliers sector has 347 voting members influencing one-fifth of the total vote, which is more than three times more voting members than any other sector. In contrast, the Transmission Owners sector, which includes Exelon, FirstEnergy, Duke, and AEP, only has 15 voting members who collectively influence one-fifth of the sector-weighted vote.⁷⁶ Creating a new sector for states would face stiff opposition from incumbents because it would diminish their voting power.⁷⁷

OPSI and its member states are not members of PJM and thus cannot vote on any issue at PJM, including any that influence resource adequacy decisions.⁷⁸ Rather, they have one annual meeting with the PJM Board to discuss issues of joint concern and can create proposals for PJM's consideration.⁷⁹ OPSI can attend stakeholder committee meetings (but not the regular PJM member meetings with the PJM Board), add agenda items, and provide input.⁸⁰ OPSI can also file comments and complaints at FERC. Since 2016, OPSI has filed at FERC comments and a rehearing request to oppose PJM's proposals in its capacity market and state public policies docket and in the resilience proceeding.⁸¹

OPSI's purpose is to help PJM states to function cooperatively, which means the OPSI Board must approve positions through a majority vote.⁸² OPSI largely accomplishes this by writing letters to the PJM Board and adopting resolutions. OPSI does not have standing work groups, unlike OMS.

Since 2016, OPSI has written six letters to the PJM Board. In three letters, they objected to: the substance of and rushed stakeholder process on energy and operating reserve market changes; PJM's parameters and assumptions seeking to remove the impact of state policy preferences on its capacity market; and PJM's proposal to adjust capacity market prices to eliminate the effects of certain state policies. Another OPSI letter recommended an alternate solution for state policy preferred resources, while two emphasized the importance of the independent market monitor. OPSI also adopted three resolutions since 2016 on demand response and capacity markets, demand response and utility peak shaving, and financial transmission rights.⁸³ Taken together, these letters and resolutions mostly concern capacity market changes impacting consumer costs and state public policies, as well as related process concerns inhibiting state and stakeholder participation in influencing these PJM changes. Despite these letters, PJM has moved forward on capacity market changes that OPSI found objectionable. PJM has also recommended that its Board file PJM's proposed changes to its energy and operating reserves market; the Board agreed to do so, with tweaks, after its regular meeting with PJM members that excludes OPSI and its member states.⁸⁴

Recent Examples of Contention over Capacity Market Rules in PJM

Most of the controversy over resource adequacy in PJM involves capacity market proposals. Because PJM can unilaterally file these proposals under Section 205 without majority or supermajority stakeholder support, it has filed a slate of proposals at FERC that states, consumer groups, and clean energy advocates strongly opposed.⁸⁵ Tensions between PJM and the PJM states also seem to be driven by PJM's increasingly frequent modifications to its capacity market rules, driving both action and uncertainty at the state level.⁸⁶ OPSI has written at least three letters to the PJM Board in the past two years on capacity market issues, but with minimal impact.

⁷⁶ PJM, Member List, last updated Feb. 19, 2019 pjm.com. See also C. Simione, "PJM Governance" (May 19, 2017) pjm.com at 33.

⁷⁷ Schneider, "Is it time for states to become voting members of PJM?" at 2.

⁷⁸ PJM Manual 34.

⁷⁹ "Memorandum of Understanding Between PJM and OPSI"; PJM to OPSI, "Proposed Agenda for October 30, 2018 Board to Board Meeting," Oct. 23, 2018, pjm.com.

⁸⁰ "Liaison Committee Meeting to be Closed to Non-members," *RTO Insider*, Oct. 1, 2018, rtoinsider.com; PJM Manual 34.

⁸¹ Comments of OPSI on Grid Resilience in Regional Transmission Organizations and Independent System Operators, Docket No. AD1-87 (2018) opsi.us; "Resolutions and Filings," OPSI, accessed on Feb. 18, 2019, opsi.us.

⁸² OPSI, "OPSI By-Laws," last modified June 18, 2013, opsi.us.

⁸³ "Board Communications," PJM, accessed on Feb. 8, 2019, pjm.com.

⁸⁴ *RTO Insider*, "PJM Advances Own Energy Price Formation Plan: With Tweaks, Board Approves Section 206 Filing with FERC" (Feb. 13, 2019) rtoinsider.com.

⁸⁵ Fuller summaries are available at: G. Murnan, Z. Ripecky, and J. Chen, "Issues on the Horizon at FERC."; C. Smith, "PJM Advances Own Energy Price Formation Plan, With Tweaks, Board Approves Section 206 Filing with FERC," *RTO Insider*, Feb. 13, 2019, rtoinsider.com.

⁸⁶ G. Bade, "Electricity markets: States reassert authority over power generation," *Utility Dive*, Oct. 16, 2018, utilitydive.com. R. Glick, "Dissent on PJM Interconnection Capacity Market Proposals," (Docket Nos. EL16-49-000, ER18-1314-000, ER18-1314-001, EL18-178-000), June 29, 2018, ferc.gov.

Two broad categories of capacity rule changes and proposals filed at FERC in the past couple of years relate to: eligibility requirements that favor year-round baseload resources over resources with seasonal characteristics that can offer flexibility in matching the seasonal demand profile in PJM (like wind, solar, and seasonal demand response); and a proposal to carve out certain policy-sponsored resources from the capacity auction while inflating the prices remaining capacity resources receive (largely fossil-fired generation).⁸⁷

PJM has also recently filed its proposed revised capacity “demand curve” at FERC, which while an improvement from the current version, did not heed significant recommendations from its expert consultants at the Brattle Group, and as a result, still falls short of the reforms needed to avoid over-procuring capacity.⁸⁸ In conjunction with this filing, PJM made a separate 206 filing that was repeatedly opposed by PJM members.⁸⁹

Additional contentious stakeholder processes will likely result in FERC filings in the near future. PJM seeks to compensate generators for “fuel security,” potentially by valuing it in the capacity market or developing a winter reserve product.⁹⁰ Relatedly, PJM is seeking to increase how it values its operating reserves, and the PJM Board, after a closed-door meeting with only PJM members (and the independent market monitor) has indicated that it will file its own proposal under Section 206 of the Federal Power Act.⁹¹ Stakeholders have not approved this proposal, and OPSI wrote to the PJM Board protesting the unnecessarily rushed timeline, lack of analysis needed to assess the costs and effectiveness of PJM’s proposal.⁹²

COMPARISON AND POTENTIAL SOLUTIONS

Contention over resource adequacy is likely to continue. One way to reduce litigation and produce better outcomes is through improving the resource adequacy decision-making process to better account for input from the states in the RTO process before it has to be litigated at FERC and the courts.

The roles states currently play in resource adequacy decisions vary across RTOs. In SPP and MISO, states have more input in resource adequacy decisions, while ISO-NE states collectively have only a single vote in approving the region’s target reserve margin. In PJM, states have no formal role in resource adequacy decisions in the RTO process.

It’s not surprising, then, that much of the recent controversy over resource adequacy has been in PJM and ISO-NE.⁹³ PJM’s CEO Andy Ott and former Board Chairman Schneider have each opined that it would be beneficial for states to have a more formal role in resource adequacy decisions.⁹⁴ But what kind of state involvement would facilitate their input meaningfully to balance the RTO’s and the states’ interests? So far, PJM states have not found it worthwhile to participate as members given what it currently affords them.

⁸⁷ R. Heidorn, “Something for Everyone to Dislike in Capacity Performance Proposal,” *RTO Insider*, Sept. 23, 2014, rtoinsider.com; G. Bade, “PJM stakeholders pan capacity market reforms in FERC comments,” *Utility Dive*, May 8, 2018, utilitydive.com; J. St. John, “Stakeholders Across the Spectrum Ask FERC to Reconsider Its PJM Capacity Market Ruling,” *Greentech Media*, Aug. 8, 2018, greentechmedia.com. PJM, 2021/2022 RPM Base Residual Auction Results, pjm.com at 22–23.

⁸⁸ Protest of the Independent Market Monitor for PJM, Docket No. ER19-105-000, monitoringanalytics.com; for an explainer of the issue, see J. Chen, “PJM Auction Illustrates Importance of Demand Curve Fix,” June 14, 2018, nrdc.org. PJM discusses the benefits of the sloped shape of its VRR curve in its recent “View Point” and the parameters it’s based on, but not the exact horizontal or vertical positioning of the curve, the steepness of its slope, or where the slope begins—all of which can result in overprocuring capacity at higher costs to consumers. PJM, “View Point – The Variable Resource Requirement (VRR) Curve How the shape saves money and increases reliability,” Sept. 2018, pjm.com. The Brattle Group for PJM, “Fourth Review of PJM’s Variable Resource Requirement Curve,” by S. Newell et al. (2018), pjm.com; PJM Interconnection, L.L.C., Docket No. ER19-105-000, Periodic Review of Variable Resource Requirement Curve Shape and Key Parameters, pjm.com.

⁸⁹ PJM Markets and Reliability Committee, Draft Minutes, July 26, 2018, pjm.com; PJM Members Committee, Draft Minutes, Oct. 22, 2018, pjm.com.

⁹⁰ R. Sweeney, “Full PJM Study Makes Case for Fuel Security Payments,” *RTO Insider*, Dec. 17, 2018, rtoinsider.com; R. Heidorn and M. Brooks, “PJM Begins Campaign for ‘Fuel Security’ Payments,” *RTO Insider*, Nov. 1, 2018, rtoinsider.com; “Don’t Rush on Resilience, Commenters Urge: Warn Against PJM Overreach, Abandoning Stakeholder Process,” May 9, 2018, rtoinsider.com.

⁹¹ “PJM Board Directs Staff to File Reserve Pricing Proposal,” *PJM Inside Lines*, Feb. 13, 2019, insidelines.pjm.com.

⁹² M. Brooks, “Section 206 Filing on PJM Reserve Pricing Likely,” *RTO Insider*, Jan. 7, 2019, rtoinsider.com; OPSI to PJM Board of Managers, Jan. 23, 2019, pjm.com.

⁹³ M. Kuser, “CASPR Filing Draws Stakeholder Support, Protests,” *RTO Insider*, Jan. 31, 2018, rtoinsider.com.

⁹⁴ PJM CEO Andy Ott said states gave up authority over resource adequacy, but also said that “if states would rather have a stronger say, we can take that part, make an adjustment and it will be fine.” Schneider, “Is it time for states to become voting members of PJM?” at 3.

PJM states have also expressed concern about taking positions on matters in the RTO process that could then be reviewed at their public utility commissions, but one way to mitigate that concern is to have the states appoint non-decisional representatives to be voting representatives in PJM. This could alleviate perceived conflicts between voting at PJM and remaining objective for related state-level matters. Also, a directly appointed state representative such as an energy director might be able to take a broader view of the state's interests that state utility commission members may not see as within their scope.

Could PJM and ISO-NE Adopt Elements of SPP's and MISO's Resource Adequacy Governance?

At the heart of the debate is whether resource adequacy is solely about securing sufficient lowest-cost capacity eligible to participate in the market, or whether the kinds of capacity (e.g., non-emitting or local) matter.⁹⁵ To ensure a fair debate, state roles in the decision-making process is key. Would it help PJM and ISO-NE to adopt elements of resource adequacy governance like SPP and MISO, and is there anything prohibiting it?

With a MISO-like provision enabling individual states to set a target reserve margin that differs from the rest of the RTO, a PJM or ISO-NE state could choose a lower target and have its utilities procure less from the capacity market to make room for policy-preferred resources. This would allow a state to carve out up to the regional target margin from the capacity market, rendering the capacity markets more, but not completely, voluntary. (This option has a similar flavor to the recent PJM resource carveout proposal but could provide additional flexibility.⁹⁶)

An SPP-like state committee that approves resource adequacy decisions could also give PJM or ISO-NE states more input on capacity market rules. In such a state committee, states could “veto” capacity market proposals and other resource adequacy requirements they find inconsistent with their mandates. Although the RTO could file its own proposal under Section 205, this power would give the states leverage with the RTO and its members in the stakeholder process to negotiate market rules that work for them. For example, states might be able to negotiate rules to create market mechanisms that could efficiently procure the types of resources their policies target.

Having to achieve consensus among the states to speak with one voice at the RTO can hobble input from the states, but a committee in which each state gets its own vote allows the states to provide input even if they don't agree with each other. States that disagree with the outcome of the vote could potentially procure less from the capacity market through the MISO-like mechanism described above.

Variation in state involvement in resource adequacy decisions across RTOs implies that there are no insurmountable legal or reliability barriers to giving states back more resource adequacy authority where they have less than their counterparts in other regions. This should be especially the case in transposing existing governance mechanisms from one region to another.

Some may raise the fact that the states in RTOs other than SPP could have negotiated to preserve more of their rights at the time these RTOs were formed. But states can always renegotiate (which we saw in the Arkansas/MISO example on cost allocation above), and their participation in RTOs is voluntary. Further, preserving the states' ability to carry out their own laws is equally important in all RTOs. When RTOs essentially inhibit states from executing their statutory mandates,

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⁹⁵ RTOs are starting to recognize attributes of capacity in seeking to value fuel-secure megawatts of capacity, such as power plants with on-site coal or nuclear fuel. E.g., PJM, “Valuing Fuel Security” (Apr. 30, 2018) pjm.com at 5.

⁹⁶ J. Chen, “Improving Market Design to Align with Public Policy.”

such as their ability to cost-effectively implement Renewable Portfolio Standards, this suggests that power in the RTO resource adequacy decision-making processes needs to be re-balanced.

RTOs with Vertically Integrated versus Restructured and Diverse States

A distinguishing factor between the RTOs is the composition of regulated versus restructured states. While SPP and MISO consist largely of vertically integrated states, these RTOs also include parts of restructured states (Illinois and Texas). In contrast, states in PJM and ISO-NE are mostly restructured; the exceptions are Virginia, West Virginia, North Carolina, Tennessee, Kentucky, Indiana, Michigan, and Vermont.

Some might argue that the RTO must exercise more control over resource adequacy in restructured regions because capacity is a public good and that states procuring less can free-ride from the extra capacity of others. But this free-ridership is not much more of a threat if states are restructured. Vertically integrated states in RTOs also share capacity, and SPP, for example, was able to reduce its target reserve margin due in large part to a greater ability to share resources regionally through transmission investments.⁹⁷ Free-ridership is also not any more likely if states are allowed to approve proposals by vote in an SPP-like governance structure compared to a regime where they do not.

With a MISO-like mechanism, a state could potentially choose a lower target reserve margin to benefit from its neighbors' extra capacity. But if a state's regulated utility is short on capacity, meaning that it pulled more power from the grid during peak times than what the utility had paid for in capacity, the RTO should be able to measure that. Then, the free-ridership concern could be mitigated by adopting penalties or mandatory payments applied to under-purchasers of capacity and paying bonuses to those who procured extra capacity that others have used. For example, if a utility purchased 100 megawatts but hit 110 megawatts on the hottest afternoon in August, it would have to compensate the utilities it borrowed from for the extra 10 megawatts. Exactly how much compensation would be worked out between the states and utilities in advance. If the utility never exceeds its 100 megawatts, it wouldn't pay a penalty, and the utility carrying extra capacity would not get paid for it. With a properly calibrated payment system, states and their utilities can rationally choose the level of risk of over- or under-procuring capacity. Further, such a system would be more consistent with the Federal Power Act's deference to state authority over generation and adequacy.

Another potential objection could be that vertically integrated states have more oversight power over their regulated utilities compared to restructured states, such as enforcing resource adequacy requirements. But restructured states could develop this capability without full re-regulation, and RTOs could have an oversight role in facilitating development and enforcement of market rules and ensuring that utilities procure the amount required, with the states providing greater input throughout the process.

Thus, if properly and carefully designed, there seems to be no reason why governance structures allowing individual states to set their own reserve margins or enabling a state committee to approve resource adequacy decisions through a vote, could not be transposed to regions where states are mostly restructured.

SPP states tend to be more homogeneous than PJM states (and perhaps also ISO-NE), so one concern is that a committee of states with more diverse interests may not be able to agree to a regional resource adequacy approach. Just and reasonable rates, undue discrimination, and reliability would not be endangered for lack of state consensus, however, because FERC's federal mandate, including the reliability aspects of resource adequacy, acts as a backstop. With the threat of RTO/FERC action looming, states might be more willing to negotiate a consensus to avoid others making resource adequacy decisions for them.

Achieving an Appropriate Balance

Others might be concerned about states wielding too much power as a result of this rebalancing. However, a state committee "veto" in the RTO process does not prevent the RTO from filing its own proposal under Section 205, nor can it overcome FERC's mandate under the Federal Power Act. Similarly, states cannot through participating in a MISO-like carveout impede market efficiency or grid reliability for others. FERC must still ensure that the markets enable all technologies to compete and that reliability is maintained.

⁹⁷ SPP credited its ~\$6 billion transmission buildout in the last decade for the ability to operate on a lower reserve margin. "SPP board votes to lower planning reserve margins, award first competitively bid project, approve \$363M in transmission upgrades," SPP, Apr. 26, 2016, spp.org.

Having more options on the table could help fine-tune the balance between state and FERC authority over resource adequacy. An option that would grant less deference to the RSC than the SPP mechanism could be a variation of the ISO-NE jump ball provision, where the RTO would file the RSC's and the RTO's proposals under Section 205. (This version also borrows from what MISO does with cost allocation filings for OMS.) The jump ball enables FERC to consider both and adopt any part of either proposal. The voting structure could be tweaked, but the default under an ISO-NE-like jump ball is that the states' proposal would have to gain supermajority stakeholder support.

CONCLUSION

No RTO governance process is perfect, and there are certainly governance issues beyond those related to resource adequacy that are not within the scope of this paper.⁹⁸ However, this survey makes clear that there are options already in operation for resource adequacy reform that do not require dissatisfied restructured states in RTOs to re-regulate. There are likely more holistic and creative solutions available, and we have not evaluated the effectiveness of these governance mechanisms beyond the degree of authority they lend to the states. Ultimately, whether these or other governance mechanisms would work is up to states, stakeholders, and decision-makers to settle through discussion. We hope these ideas can help spark the dialogue needed to resolve more detailed questions and ultimately improve tensions over resource adequacy issues.

Authority over resource adequacy is not all-or-nothing—dissatisfied restructured states in RTOs have options short of re-regulating and leaving the RTO.

⁹⁸ For example, SPP's high exit fee poses a barrier to entry for certain non-incumbent participants. See, e.g., *American Wind Energy Association, et al. v. Southwest Power Pool, Inc.* (Docket no. EL19-11) Nov. 2, 2018, elibrary.ferc.gov.

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