UNDERSTANDING POWER MARKETS SERIES

The Governance of Wholesale Power Markets

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Prepared for the 100% Clean Energy Collaborative

OCTOBER 2021

CleanEnergy States Alliance In Partnership with UNITED STATES CLIMATE ALLIANCE

About the 100% Clean Energy Collaborative

The Clean Energy States Alliance (CESA) created the Collaborative to assist states (and other entities) that have 100% clean energy goals by providing knowledge-sharing activities and analysis so that together they can address program challenges and opportunities. The primary participants in the 100% Clean Energy Collaborative are state agency officials with responsibilities for achieving their state's zero-carbon goals, as well as policymakers in other states that may consider establishing similar goals. Through the Collaborative, participants share program insights, engage with analysts who are studying solutions to technical challenges, and participate in Collaborative meetings. The Collaborative offers individualized technical assistance to the 100% states.

To ensure the success of the Collaborative, CESA has entered into a partnership with the U.S. Climate Alliance (USCA), a bipartisan coalition of governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement. CESA and USCA are coordinating their respective activities to create synergies and avoid duplication.

About the Clean Energy States Alliance

CESA is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy. CESA members— mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country. CESA facilitates information sharing, provides technical assistance, coordinates multi-state collaborative projects, and communicates the views and achievements of its members.

About the Author

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Acknowledgements

The author would like to thank the following people for their input: Rich Sedano of the Regulatory Assistance Project, Rob Gramlich of Americans for a Clean Energy Grid, Andrew Sand of the U.S. Climate Alliance, Warren Leon of CESA, and members of the 100% Clean Energy Collaborative Advisory Committee.

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Introduction

Wholesale power markets are core to the functioning of the US electricity system and to the transition to 100% clean energy. Yet their design and operations can be difficult to influence, or even track, due to complicated structures and processes, extensive regulations, and highly technical jargon.

But despite their insularity and arcana, they actually work in logical ways and—with the right participation and designs—can promote operational efficiency, cost reductions, and climate progress. This paper is intended to shed some light on how power markets are governed.

The most important venues for the oversight of wholesale power markets are regional transmission organizations (RTOs) and the Federal Energy Regulatory Commission (FERC). Here are just a few recent developments and controversies that are dealt with in those venues, with big implications for clean energy:

- The minimum offer price rule (MOPR) in the PJM Interconnect forces wind and solar generators to bid higher than they would otherwise, increasing the risk that they will not be accepted and dispatched.
- Some RTOs use capacity markets to ensure there will be sufficient resources in the future, but they are an expensive way to ensure reliability, and they penalize wind and solar resources by giving greater financial value to incumbent resources like coal plants.
- Pushed by FERC, RTOs are just beginning to give value to distributed energy resources (DERs) like battery storage and demand response.
- Expansion of RTO regions can create bigger markets for wind and solar, lower transmission costs, and make integration cheaper. New regional markets are being debated and developed in the West and the Southeast, but many issues remain to be worked out.

This paper in the *Understanding Power Markets* series focuses on how power markets are governed, and how state officials can better monitor and participate in decision-making.

How markets are organized

The advent of wholesale competition in the power sector changed the traditional roles of states, utilities, and other market participants. It created regional wholesale power markets that utilities could join—in some cases, after approval of state regulators. But these regional markets do not always align with state boundaries, complicating and in some ways weakening state regulation of electricity markets.

Regional markets are operated by RTOs, also known as independent system operators (ISOs). RTOs operate a region's electricity grid, administer the region's wholesale electricity markets, and provide reliability planning for the region's bulk electricity system.

RTOs do not own transmission or generation assets like utilities, nor are they government agencies. Instead, they are nonprofit corporations, sometimes known as quasi-autonomous nongovernmental organizations, or "quangos."[1] RTOs that involve interstate commerce are subject to FERC's jurisdiction under the authority of the *Federal Power Act*.

Seven RTOs cover regions with two-thirds of electricity consumers in the United States, as shown in Figure 1. The PJM Interconnection serves the largest number of customers, while the Midcontinent ISO (MISO) and Southwest Power Pool (SPP) serve the largest territories.

The Electric Reliability Council of Texas (ERCOT) is focused entirely within Texas; it is operated independently from the Eastern and Western Interconnections, and it is not subject to FERC jurisdiction. New York (NYISO) and California (CAISO) are also single-state RTOs, but they are part of wider regional grids and have a great deal of interstate commerce, so are subject to FERC oversight.

The market participants in these RTO regions can be traditional vertically integrated utilities (owning generation, transmission, and distribution and directly serving customers) or competitive companies, such as generators, retailers, and others. (For more information on the basic functions of power markets see *How Wholesale Power Markets Work*, a paper in this series.[2])

[1] Joseph Mead and Katherine Warren, "Quasi-Governmental Organizations at the Local Level: Publicly-Appointed Directors Leading Nonprofit Organizations," *Nonprofit Policy Forum*, vol. 7, no. 3, 2016, pp. 289-309.
[2] Bentham Paulos, *How Wholesale Power Markets Work*, for the CESA 100% Clean Energy Collaborative, August 2021.

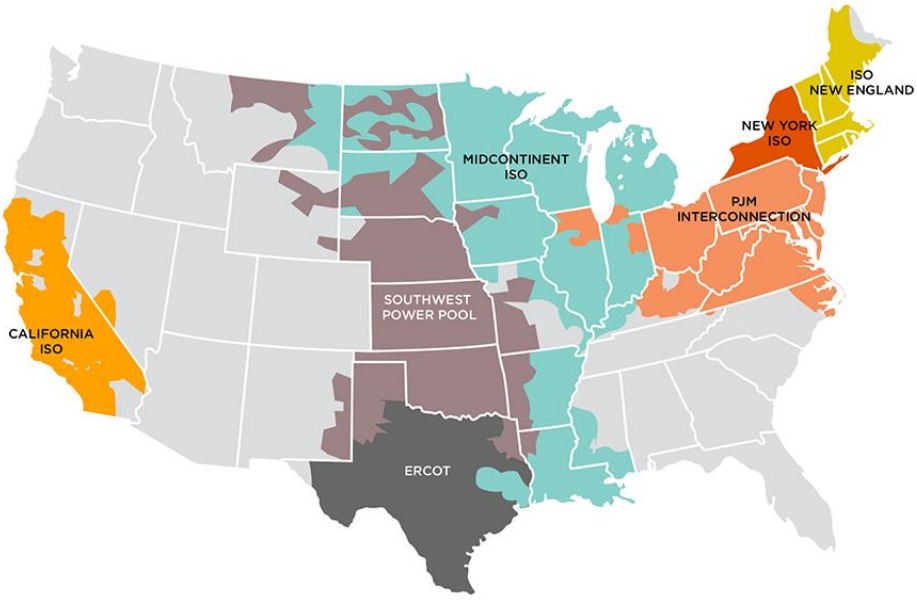

Figure 1: Seven RTOs are active in the US.

Source: Sustainable FERC Project

The governance of RTOs

It is important to remember that RTOs are voluntary business organizations, not government or public agencies. Courts have determined that utilities are not required to join an RTO and can leave an RTO if they wish.[3] Utilities can join an RTO with an eye to maximizing their own profits or asset value, or depart if it threatens their business interests.[4] RTOs, in effect, compete for members; they can offer better terms to attract utilities or adjust their rules to retain members.

In short, an RTO can behave like a private club, with rules that benefit members at the expense of the public. A well-functioning organized market can be economically efficient and can lower costs to consumers, but only if it is closely monitored. It is up to state and federal regulators to use what leverage they have to represent the public interest in wholesale electricity markets.

For a detailed critique of RTO and FERC governance, see the sidebar on page 12, *A Critique of Grid Governance for the Climate Change Era*.

[3] See *Atlantic City Elec. Co. v. F.E.R.C,* 295 F.3d 1 (D.C. Circuit Court 2002).

[4] On the RTO map on the previous page, for example, note that the northern Illinois region served by Exelon is in the PJM region, while the Louisiana-plus territory of Entergy is in MISO, despite the limited geographic connection.

Operating rules

The rules of each RTO are laid out in their tariffs and agreements, which are developed by the RTO and reviewed and approved by FERC. The documents cover the structure and governance of the RTO, plus all the procedures and bylaws that the RTO and market participants must follow.

The basic governing documents include:

- Open Access Transmission Tariff (OATT): governs overall operations of the RTO
- Operating Agreements: the rules for members, market participants, and RTO management and staff
- Transmission Owners Agreement: on how transmission owners will coordinate planning and operations
- Reliability Assurance Agreement: the obligations and standards for the reliable operation of the grid
- Joint Operating Agreements (JOA): how RTOs will collaborate with each other, and with other entities

All the rules, procedures, and requirements for market and system operations are collected in Market Manuals, including what RTOs charge for services, and how costs are to be allocated among market participants.

Internal Structure

There is little standardization of structures and governance among the seven US RTOs. Indeed, they can be "exceedingly complicated," but there are some common themes.[5] (See generic structure example, Figure 2.)

All RTOs are operated by professional staff overseen by a board whose directors are required to have no financial interest in any company participating in the market. In most cases, the board is selected or approved by market participants, or "members" of the RTO. Only California has political appointments of board members.

Members play a central role in RTO governance and decision-making. They are usually companies that do business in the RTO market, such as generation and transmission owners, brokers, and resellers. Market participants are often the only entities with the power to vote on RTO actions or policies. Other stakeholders, including state agencies, can be members with lesser powers, such as lacking the ability to vote. One exception in PJM is the existence of 14 state consumer advocates, known as "ex officio" members, who can vote.

[5] Christopher A. Parent, Katherine S. Fisher, William R. Cotton, and Cali C. Clark, Exeter Associates, Governance Structure and Practices in the FERC-Jurisdictional ISOs/RTOs, prepared for NESCOE, February 2021.

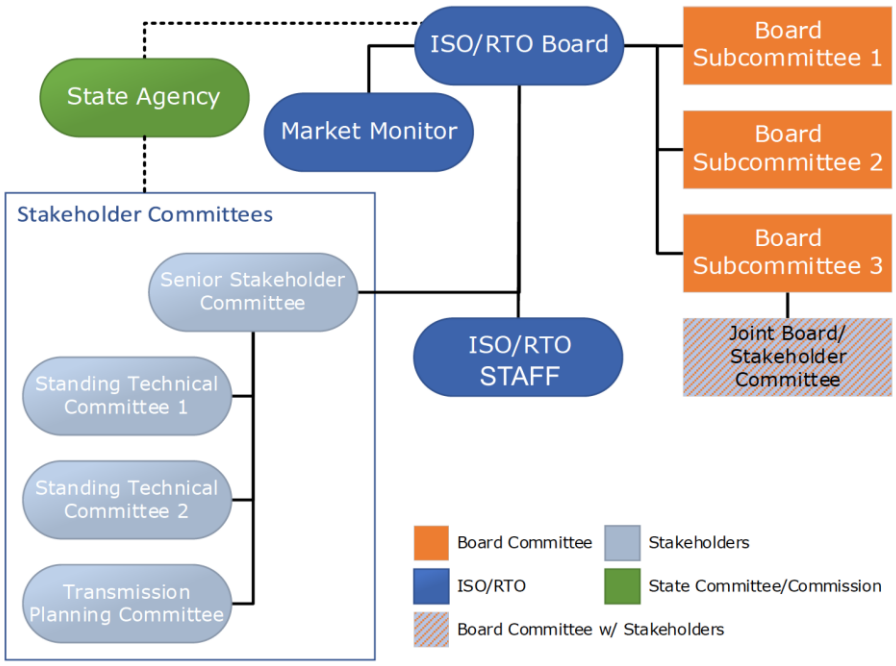

Figure 2: A generic structure of RTO governance. Actual structures vary by RTO.

Source: Exeter Associates, for NESCOE.

Market stakeholders of all kinds can serve on advisory committees, organized by type, by function, or by region. PJM, for example, has 16 committees covering topics such as market implementation, risk management, and board nominations, plus 17 subcommittees and numerous user groups and task forces.[6] States and public interest organizations can participate in most PJM stakeholder meetings and in working groups. States can also form Regional State Committees, described later, which can have their own standing within an RTO and with FERC.

Outside influences

RTOs are also influenced by outside organizations, and ultimately overseen by FERC. Below, we briefly discuss FERC, independent market monitors, and the North American Electric Reliability Council (NERC).

FERC

FERC is empowered by federal laws dating back to 1935 to regulate and license wholesale power markets, as well as oil and gas pipelines, LNG export terminals, and hydroelectric dams.

It is an independent federal agency with about 1,500 employees and five commissioners appointed by the president, with no more than three from one political party. Its powers are comparable to those of state

[6] See PJM Committees.

utility commissions, in that it can set rates and returns on investment, approve or deny new projects, and monitor and enforce compliance with laws and regulations.

Although FERC issues a steady stream of decisions on various projects, tariffs, and policies, it sometimes issues what it calls a "landmark" order, one that has broad implications for a topic. These nationwide rulemakings can come from the commission's own initiative or can be spurred by legislation or petitions.

For example, Order 888 from 1996 required all transmission-owning utilities to open their grids to wholesale transactions through "open access non-discriminatory transmission tariffs." It was followed in 1999 by Order 2000, which encouraged (but did not require) utilities to join regional transmission organizations. Most recently, Order 2222 set rules for how distributed energy resources can participate in wholesale power markets.[7]

Market Monitors

While markets rely somewhat on competitors to police each other, a market monitor serves as a "cop on the beat" to ensure fair practices in wholesale markets.

The monitor is an independent entity that analyzes market actions to ensure compliance with rules, standards, procedures, and practices. It promotes policy and market design with the goal of encouraging fair and competitive markets.

FERC allows the market monitor to be either internal or external to the RTO and requires all monitors to report directly to the RTO's Board of Directors. CAISO and SPP have internal monitors, while the others use external consulting firms. Potomac Economics serves as the independent market monitor for ERCOT, ISO New England, MISO, and New York ISO.

Market monitors serve as both a watchdog and as the lead advocate for fair, open, and transparent markets. While they have no regulatory power, they do have access to proprietary market data and are backed up by FERC's Office of Enforcement.

NERC

NERC plays a key role in grid operations in the US, but it does not have a direct say in wholesale power markets.

NERC is a not-for-profit regulatory authority whose mission is "to assure the effective and efficient reduction of risks to the reliability and security of the grid." NERC "develops and enforces reliability standards; annually assesses seasonal and long-term reliability; monitors the bulk power system through system awareness; and educates, trains, and certifies industry personnel."

[7] See Order 888, Order 2000, and Order 2222.

NERC does this for all utilities in the continental United States, Canada, and the northern portion of Baja California, Mexico. It has 1,400 entities that are required by law to comply with NERC reliability standards. The NERC Board is elected by the Member Representatives Committee, which is made up of one or two representatives from each of 12 categories. Seven of the categories are given to utilities, generators and power marketers; two each to customer groups, RTOs, and regional reliability organizations; and one to states.[8] Matt Schuerger of the Minnesota Public Utility Commission is currently the only state member on the Committee.

NERC is subject to regulation by FERC and governmental authorities in Canada. It has no enforcement powers itself, though FERC can and has enforced NERC reliability standards, including fining utilities.

Decision-making process

The decision-making process in RTOs can appropriately be described as baroque. As voluntary business associations or "quangos," they are not obligated to follow governmental practices such as equal representation and transparency.

Nevertheless, many decisions are made through voting, so a fundamental question in RTO decision-making is who can vote. RTOs have many stakeholders, organized into numerous committees and task forces, all of which are advisory. It can be difficult to participate in the decision-making process, given the frequent meetings, often on extremely technical topics.

By vesting the power to vote only in market participants—utilities and other buyers and sellers of grid services who are dealing in the market—RTO governance operates under the theory that companies with competing business interests will provide a check on each other. In many cases, however, RTO voting is dominated by sellers, far outnumbering consumers and regulators. These dominant members have a common interest in opposing any measures that would reduce demand, induce new forms of competition, or otherwise reduce profits.[9]

A further constraint is that ultimate decisions are made by the RTO board, with FERC providing a check on the board. But RTO boards are often chosen by members, and boards have strong institutional interests in keeping those members happy. FERC, meanwhile, has often deferred to RTOs to set their own policies, failing, for example, to impose a "standard market design" across regions.[10]

As law professor Shelley Welton concludes, "Essentially, then, FERC contracted out the oversight of regional grid management to private, industry-led, voluntary clubs."[11]

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[8] NERC, Membership of the Member Representatives Committee for 2021 – 2023, July 15, 2021.
[9] Shelley Welton, University of South Carolina School of Law, Rethinking Grid Governance for the Climate Change Era, California Law Review, Volume 109: No. 1, February 2021.
[10] Welton.
[11] Welton.

RTO governance practices have led to complaints that RTOs are not transparent and are vulnerable to manipulation by incumbent interests at the expense of the public interest.

Looking again at PJM as an illustration, the RTO relies on Consensus Based Issue Resolution (CBIR) to "develop solutions with collaborative input from all stakeholders." They say that "CBIR is based on the concept that better solutions come from the minds of many."[12]

But market participants can dominate the consensus. Out of the 1,043 total members in PJM, almost all are market participants, including 500 that can vote and 489 non-voting affiliates. Members get a seat on the Members Committee, distributed into five categories: generation owners, other suppliers, transmission owners, electric distributors, and end-use customers. The Members Committee is the "senior" committee in PJM. It selects the board of directors and "reviews and decides upon all major changes and initiatives proposed by committees and user groups," among other things. The last step in the "consensus-based" process requires a two-thirds vote by the Member Committee, which features 503 market participants and 14 ex officio members (state consumer advocates).

The decision-making process can vary widely at other RTOs. CAISO, for instance, has no official members, most committees are established to deal with a single issue, and the board is appointed by the state governor. Important components of power system management are vested in other agencies, like resource adequacy at the state utility commission. Formal collaboration between CAISO, the PUC, and the California Energy Commission is common.[13]

[12] PJM, At a Glance: The PJM Stakeholder Process, accessed August 2021.
[13] For details on individual RTO governance issues see Christopher A. Parent, Katherine S. Fisher, William R. Cotton, and Cali C. Clark, Exeter Associates, Governance Structure and Practices in the FERC-Jurisdictional ISOs/RTOs, prepared for NESCOE, February 2021.

A Critique of Grid Governance for the Climate Change Era

In a detailed critique of grid governance, Shelley Welton, Assistant Professor, University of South Carolina School of Law, argues that the failure of RTOs to more rapidly advance clean energy "can be traced to their functionally privatized governance systems, which are now making public policy decisions that they were never designed to address."

Because RTOs are dominated by market participants, they "have an endemic bias against new resources that threaten incumbent profits" and "should not be treated as benign partners ready to accept and effectuate the popular will on climate change."

While RTOs have "established market rules that undermine states' goals in favor of increasing the profits of incumbent member utilities… states are largely powerless within RTO governance processes to do anything about [it]."

"Neither FERC nor states have the authority needed to make electricity markets bend to democratically established prerogatives that harm industry incumbents. To remedy the situation, federal and state regulators need more robust authority to shape energy market rules to public aims."

She presents four options for consideration.

Pare Them Back: FERC could return RTOs to a leaner form focused on technical tasks suited for industry management, rather than a more comprehensive policy-setting body.

Increase Public Oversight and Control: FERC could accept that RTOs in their modern incarnation are policymaking bodies and increase state and federal regulators' oversight tools commensurately.

Improve the Possibilities for Good Internal Governance: By limiting corporate power and fostering greater competition, stakeholder-led governance could have more true checks and balances.

Explore a Public Option: Some countries exercise public ownership or control over the grid as a common carrier, like highways. That, or closer regulation by states without ownership, could help align regulatory priorities and grid governance.

For more information, see Shelley Welton, University of South Carolina School of Law, Rethinking Grid Governance for the Climate Change Era, *California Law Review*, Volume 109: No. 1, February 2021.

How states in RTO regions can influence market governance

Given the complicated, technical, and time-consuming nature of working on wholesale power markets in regional and federal venues, and the prominent role given to market participants, it can seem daunting for states to influence policies.

Nevertheless, states can and do engage at RTOs and FERC, and they can influence two key functions, resource adequacy and regional transmission planning.

Influencing RTOs

> ***"States have found they have little influence on important policies that not only affect costs but influence their resource mix and inhibit their state policy objectives."***
>
> *Ann McCabe, former member of the Illinois Commerce Commission*

States have different ways of influencing RTO policies and behaviors, with varying degrees of effectiveness.[14] The influence of state governments in an RTO is partly determined by whether that region has made the switch to competitive power markets and retail competition. In those regions, there tends to be a weaker role for state regulators, especially in the areas of procurement and resource adequacy. But when states join together on issues, such as through a Regional State Committee, they can exert greater influence.

At one end of the spectrum is the Southwest Power Pool (SPP), which serves only monopoly utility states. As a condition of approval of the SPP as an RTO in 2004, states required that they hold the authority for region-wide transmission cost allocation and resource adequacy. The formal collaboration of states, called the Regional State Committee, sets policies in these areas and SPP files them for review by FERC.[15]

For regions dominated by restructured states, like New England and PJM, regulators and their state committees have less formal influence. Only a few states are members of the RTOs in either region, and they have limited voting power.

States can exert influence through participating in RTO proceedings, filing comments in FERC dockets about the RTOs, joining a regional state committee, collaborating with the ISO, and exerting "soft power."

[14] Allison Clements, NRDC, Making Sense of Potential Western ISO Governance Structures: The Role of the States, June 2016.
[15] Ann McCabe, David A. Svanda, and Betty Ann Kane, Making Markets Work For PJM States: State Engagement Possibilities with PJM, October 2019.

Participation

Individual states can participate in RTO governance by sitting on advisory committees. However, states may not have any special privileges over other members, such as voting rights, and participation in the frequent meetings can be a significant time commitment.

State agencies can choose to be members of an RTO, though they often do not. For example, in PJM, state consumer advocate offices can be "ex officio" members with voting rights, as part of the End User Customer Sector of the Members Committee.

According to Howard Schneider, former chair of the PJM Board of Managers, "States were concerned that if they became members, they would be bound by FERC decisions affecting the RTO, which, in turn, could impact state energy policies. Since PJM is jurisdictional to FERC and the states are not—states are independent sovereign bodies free to make their own rules and regulations in the energy sector—the states opted not to join as members, but, rather, became observers in the PJM stakeholder process."[16]

Regional State Committees

States do typically participate in a regional state committee (RSC), collaborating with other state agencies. The committee can sometimes have special rights and status, with a specific role in the RTO governance structure.

Four RTOs have regional state committees composed of staff from state utility commissions, legal counsel, and consumer advocate agencies:[17]

- New England States Committee on Electricity (NESCOE)
- Organization of MISO States (OMS)
- Organization of PJM States, Inc. (OPSI)
- SPP Regional State Committee (RSC)

PJM also has an association of state consumer agencies, called Consumer Advocates of the PJM States, Inc. (CAPS).[18] As single-state RTOs, California, New York and ERCOT do not have multi-state committees.

The RSCs vary in their size, budget, and capabilities. For example, the Organization of MISO States (OMS), with a staff of three and annual budget of $1.3 million, has 17 core members of state and local regulators, plus 12 associate members, including consumer advocate organizations, state legal councils, and adjoining state PUCs. The OMS is not a member of MISO but has certain privileges in MISO policy. For example, when MISO files a Section 205 proposal on transmission cost allocation, OMS can require that

[16] Howard Schneider, Charles River Associates, Is it time for states to become voting members of PJM?, January 2019.
[17] For links to each regional state committee see NESCOE, OMS, OPSI, and RSC.
[18] See Consumer Advocates of the PJM States.

OMS' alternative be filed with it.[19] OMS makes about 25 filings at FERC each year, plus frequent comments to the MISO board, the US Department of Energy, and the Court of Appeals.[20]

Filing Rights

Only utilities, and by extension RTOs, have "filing rights" under section 205 of the *Federal Power Act*, giving them the right to propose market rules and prices for review by FERC. All states and RSCs can comment on RTO filings, but they cannot propose their own changes to market rules. In some cases, as previously mentioned with SPP, states or regional committees of states have special arrangements worked out with their RTO.

FERC's legal standard of review for these filings is not whether an RTO proposal is the best proposal, but merely whether it is "just and reasonable."

States (as well as consumers, another utility, or FERC itself) can challenge and replace a rule using Section 206, but they must prove that the existing rule is "unjust and unreasonable," which can be a high bar.[21]

Collaboration

In some cases, states can directly collaborate with the RTO. In California, CAISO has some hallmarks of a state agency, though it is technically a nonprofit corporation with a board appointed by the governor. CAISO, along with the state utility commission and the energy commission, operates a Joint Agency Steering Committee "to ensure regular communication on planning coordination," which entails frequent workshops, planning, and analysis.[22]

RTOs can also base their planning on state policies. PJM and MISO, for example, have based transmission expansion plans in part on state RPSs.

Soft Power

States can also exercise "soft power," or influence that comes from their power of regulation over in-state entities. States can advocate to RTOs and leading governance voices on matters of interest to them. Demand response was originally brought into the markets this way.

While states may not have a vote on RTO measures, they do determine whether their markets are part of the RTO at all. Controversies in PJM over the minimum offer price rule (MOPR) have raised threats from three states that they would withdraw from the market,[23] and has already led Dominion Energy to

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[19] Jennifer Chen and Gabrielle Murnan, Nicholas Institute for Environmental Policy Solutions, State Participation in Resource Adequacy Decisions in Multistate Regional Transmission Organizations, Policy Brief, March 2019.
[20] Organization of MISO States (OMS), OMS Work Products, accessed August 2021.
[21] Chen and Murnan, 2019.
[22] Alignment of Key Infrastructure Planning Processes by CPUC, CEC and CAISO Staff, December 23, 2014.
[23] Catherine Morehouse, Utility Dive, Maryland, Illinois may pursue legislative MOPR exit, despite new FERC nearing, December 11, 2020.

depart.[24] As a result of this pressure, and changes to the lineup of FERC commissioners, PJM filed a proposal with FERC to resolve the MOPR issue.[25]

Influencing Resource Adequacy

A key function of power markets—and a significant source of controversy—is to determine how much generation capacity will be needed in the future. This role was traditionally played by state utilities in dockets with their regulators and is still common in states with vertically integrated monopoly utilities, even if they are in RTOs. In RTOs with restructured markets, like PJM and ISO New England, state regulators do not directly oversee procurement and resource adequacy, but they do use state RPS laws, energy efficiency resource standards, net metering, and other policies to guide it.[26]

When RTOs calculate future grid needs, they often use only traditional engineering principles and may or may not consider state policies or preferences. States, for example, may count distributed energy resources as a capacity resource, plan on savings from energy efficiency programs, or prefer a different sized reserve capacity margin. Some RTOs have required exceptionally large reserve margins, costing consumers billions of dollars per year in capacity payments.[27]

A key procurement mechanism in some regions is the capacity market. PJM, ISO New England, and the New York ISO do rounds of procurement each year for "forward capacity," or generation capacity to be available up to three years in the future.[28] Those capacity payments have proven critical for providing the extra revenue, outside the daily market, that keeps incumbent generators online, including aging coal and nuclear plants.

Other regions require power retailers (load-serving entities) to procure adequate capacity, but it is up to the retailer to meet those targets. ERCOT is the only RTO in the US that does not require certain amounts of capacity or run a market to procure it. They instead rely on the possibility of very high energy prices to stimulate new investment by generators and ancillary service markets for capabilities such as ramping up and down that will be increasingly valuable as renewable power and energy storage grow in prominence on the grid.

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[24] Sarah Vogelsong, The Virginia Mercury, Dominion's exit from regional capacity market raises some eyebrows — and questions, May 25, 2021.
[25] PJM, Inside Lines, PJM Files MOPR Reform Proposal With FERC, August 2, 2021.
[26] The ability of states in RTO regions to directly guide procurement is limited. Maryland regulators tried to require a new gas plant but were overturned in 2016 by the US Supreme Court in *Hughes vs. Talen Energy Marketing*.
[27] Richard Martin, S&P Global Market Intelligence, "Overpowered: PJM market rules drive an era of oversupply," December 3, 2019. And James F. Wilson, Over-Procurement of Generating Capacity in PJM: Causes and Consequences, prepared for the Sierra Club and Natural Resources Defense Council, February 2020.
[28] MISO has a voluntary annual market, called the Planning Resource Auction.

Influencing Transmission Planning

Another important function of RTOs is to manage regional transmission planning. Building out the grid will be a critical part of the transition to 100% clean power systems.

In their recent advanced notice of proposed rulemaking, FERC pointed out that "Regional transmission planning processes generally do little to proactively plan for the resource mix of the future, including both commercially established resources, such as onshore wind and solar, as well as emerging ones, such as offshore wind."[29]

Quite often transmission planning is driven by proposed power plants, regardless of their likelihood of success or any public interest findings, resulting in an inefficient, piecemeal, and short-term process of grid expansion.[30] Meanwhile, the waiting list for new generation projects to interconnect with the grid has grown substantially, as has the wait time for project approval. As of the end of 2020, there were 750 GW of generation projects in interconnection queues, 90 percent of which were zero emission. Waiting times have grown to an *average of 3.5 years*.[31]

There have been two notable exceptions to this muddled situation, in ERCOT and in MISO. Directed by the legislature, the Texas PUC developed the Competitive Renewable Energy Zone (CREZ) concept, which identified high-value wind energy regions and planned transmission to facilitate their development. In this "build it and they will come" approach, the cost of 3,600 miles of new high-voltage lines was recovered in transmission rates, and developers competed to develop 18.5 GW of wind in the newly accessible zones.[32]

In 2011, MISO used state RPS laws as a guide for their Multi-Value Project (MVP) planning process. The generation procurement spelled out in the state laws was used as the planning target for MISO, which developed transmission 17 projects costing $5.5 billion.[33]

Influencing FERC

In the past, FERC largely limited its power sector mission to ensuring competitive markets. With new leadership, FERC has begun to take a more proactive role in policies that cut carbon emissions in the energy sector. Engaging with FERC can be time-consuming, but it can support state policy goals.

FERC's proceedings can be difficult to track and to influence. FERC is working to be more accessible to states and other stakeholders through various offices, working groups, and communications.

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[29] FERC, Joint Statement from Chairman Glick & Commissioner Clements on Building Transmission for the Future, July 15, 2021.
[30] Americans for a Clean Energy Grid, Disconnected: The Need for a New Generator Interconnection Policy, January 7, 2021.
[31] Joseph Rand, et al., Berkeley Lab, Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection as of the End of 2020, May 2021.
[32] Jeff Billo, Senior Manager, Transmission Planning, ERCOT, The Texas Competitive Renewable Energy Zone Process, September 2017
[33] MISO, Multi-Value Projects (MVPs), accessed September 2021.

The State, International and Public Affairs Division (SIPAD) of the Office of External Affairs (OEA) serves as the primary contact point with state, local, and international governments.[34] SIPAD's duties include "informing, advising and educating state officials on the Commission's programs and activities." SIPAD serves as a concierge for state officials, directing them to the appropriate office within FERC.

An Office of Public Participation (OPP) has recently been created to make FERC processes more accessible to members of the public.[35] This will include providing education and outreach to stakeholders and making recommendations about intervenor funding. The Commission hired the office director in October 2021 and plans to reach full operating status by late 2023.

FERC can also create ad hoc vehicles for collaboration with states. FERC recently created a joint federal-state task force with the National Association of Regulatory Utility Commissioners (NARUC) to discuss transmission planning and cost allocation.[36]

The state agencies most likely to participate in FERC proceedings are utility commissions and attorneys general. PUCs may have an attorney tasked with FERC issues, or they may contract with law firms that specialize in FERC proceedings. In some states, only the attorney general is allowed by statute to participate in FERC dockets, while other agencies can provide comments. Still, state agencies may find it hard or expensive to commit resources to tackle federal issues, since they are primarily focused on their internal jurisdiction.

While many FERC proceedings are litigation, they also convene a steady stream of technical conferences, workshops, and public meetings.[37] These can be a good way to learn about current issues and policies. Tracking activity at FERC can also be done through the FERC Insight newsletter[38] and through publications like RTO Insider, Utility Dive, and E&E's Energywire. SIPAD also maintains an email list of state officials and associations to distribute additional information.

States not in RTO regions

Not all states have utilities that participate in RTOs. Especially in the West and Southeast, this creates a very different dynamic for regional power planning and transactions.

As described previously, RTOs offer many benefits such as providing least cost energy, improving reliability, and potentially lowering emissions. Their benefits are likely to increase as future power markets seek to tap the highest quality wind and solar resources. Yet so far, the regions have prioritized local control of resources by utilities and states.

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[34] FERC Office of External Affairs (OEA). The current acting director is Keith Masill, who considers himself the "one stop shop" for state officials. He can be reached at Keith.Masill@ferc.gov or FERCstaterelations@ferc.gov.
[35] FERC Office of Public Participation.
[36] FERC press release: FERC, NARUC to Establish Joint Federal-State Task Force on Electric Transmission, June 17, 2021.
[37] See for example FERC's Technical Conference Schedule.
[38] Sign up at https://www.ferc.gov/ferc-insight-newsletter.

Western and Southeastern states are seeing growing interest in regionalization. Both are developing or expanding markets to provide short-term balancing. The CAISO has offered its Energy Imbalance Market (EIM) since 2014, with 15 current members across the West and six more pending.[39] More recently, SPP has signed up nine utilities for its Western Energy Imbalance Service market (WEIS).[40]

Twelve Western utilities have created the Western Markets Exploratory Group (WMEG) to look at "a staged approach to new market services, including day-ahead energy sales, transmission system expansion, and other power supply and grid solutions consistent with existing state regulations."[41] Fifteen utilities in the Southeast are proposing the creation of the Southeast Energy Exchange Market (SEEM) which would be a "platform for intra-hour energy exchanges."[42]

In the West, the Nevada[43] and Colorado[44] legislatures have passed legislation directing utilities to join RTOs no later than 2030, while Oregon[45] legislation requires a study. Likewise, South Carolina[46] created a market reform study committee, North Carolina[47] is considering legislation, and the Mississippi[48] Public Service Commission opened a docket to study having their largest utility join MISO.

For three years the California legislature had debated opening the CAISO to regional participation to launch a Western RTO (AB813). While the bill engendered extensive debate, it ultimately died in 2018.[49]

Utilities that span multiple non-RTO states tend to create state-specific subsidiaries to align with state regulation. The Southern Company, for example, is a holding company with 18 subsidiaries in six southern states.

States in these regions have developed other platforms for discussion and collaboration, though they are not as formal or active as regional state committees in RTOs. The West has more interaction, such as through the Western Interstate Energy Board (WIEB), composed of public utility commissions, energy facility siting agencies, and consumer advocates from each state. The National Association of Regulatory Utility Commissioners (NARUC) convenes the Western Conference of Public Service Commissioners (WCPSC). WIEB and the WCPSC jointly convene the Committee on Regional Electric Power Cooperation (CREPC), which was the incubator for the western EIM. Also, the 20 utility members of the Northwest

[39] Western Energy Imbalance Market, accessed September 2021.
[40] Southwest Power Pool, Western Energy Imbalance Service, accessed September 2021.
[41] Press release: Several Western Power Providers Announce Plans to Explore Market Options , October 5, 2021.
[42] Southeast Energy Exchange Market, accessed September 2021.
[43] Sen. Brooks et al., Nevada SB448, signed June 10, 2021.
[44] Senators Hansen and Coram, et al., Colorado SB 21-072, signed June 24, 2021.
[45] Sen. Taylor et al., Oregon Senate Bill 589, signed May 21, 2021.
[46] Rep. Sandifer, et al., South Carolina A187, R186, H4940, signed September 29, 2020.
[47] Rep. Strikland, North Carolina House Bill DRH40371-RIa-13.
[48] Mississippi Public Service Commission, Docket 21-AD-52, April 6, 2021.
[49] Bentham Paulos, A Regional Power Market for the West: Risks and Benefits, for Next10, July 17, 2018. Assembly Member Holden, California AB813, February 15, 2017.

Power Pool are developing a new multi-state resource adequacy program, with a goal of being fully functional by 2024. [50]

While CAISO has a board appointed by the California governor, its Energy Imbalance Market (EIM) has a governing board with broader regional representation. The EIM board has powers delegated from the CAISO board for matters specific to the EIM, with members nominated by regional stakeholders. The EIM also has a Body of State Regulators, an educational forum for regulators from ten states to learn about the EIM and related ISO developments.

The Southeast lacks most of these bodies, but NARUC convenes the Southeastern Association of Regulatory Utility Commissioners (SEARUC), which holds an annual conference.[51]

Lastly, NERC has regional reliability coordinators that can be a forum for stakeholders, including the Western Electric Coordinating Council (WECC) and the Southeast Electric Reliability Corporation (SERC).[52] While WECC has a membership category specifically for representatives of state and provincial governments, and many participating state officials, SERC membership does not include any government entities, except government-owned utilities.

Conclusion

Participating in the governance of regional wholesale power markets is not a casual pursuit, but necessary to achieve 100% clean energy goals. Markets are exclusive clubs, dominated by corporations speaking the arcane engineering, financial, regulatory, and legal language to address the challenges facing the modern electricity system. As one industry observer has quipped, “even the acronyms have acronyms.”

The move to deregulated power markets has created ongoing tension over how the public interest is represented. Competitive markets were designed to increase economic efficiency and lower costs, which are certainly in the public interest. But they do not inherently support the public interest goal of a 100% clean electricity system. Dozens of decisions, large and small, will determine whether the transition to a zero-carbon power supply will succeed or fail.

States need to engage in these day-to-day battles and coordinated action among states can increase the likelihood of success. The states could also try to change the rules through Congressional action, although incumbent interests pose a substantial barrier to change. The reforms proposed by Professor Welton (see page 12), for example, would likely require legislation.

Although it takes a serious commitment, understanding and participating in the governance of the markets is necessary to make the transition to a clean energy future.

[50] Northwest Power Pool, Western Resource Adequacy Program.
[51] Southeastern Association of Regulatory Utility Commissioners (SEARUC).
[52] See Western Electric Coordinating Council (WECC) and Southeast Electric Reliability Corporation (SERC).

What You Can Do

If you are a state official concerned about wholesale market progress as it affects climate and energy progress, and are not already involved in wholesale markets, here are some steps you can take to keep abreast of and influence market governance.

- Subscribe to FERC and RTO newsletters and trade publications like *RTO Insider*. Follow RTOs, FERC, and commissioners on social media. Browse the FERC website for statements by FERC commissioners explaining new proceedings and votes on completed cases.
- Participate in FERC technical conferences and workshops, which are often held online.
- If FERC issues come up, work with your PUC counsel or AG office to ensure that state clean energy policy is represented.
- If FERC and RTO issues seem too technical or time-consuming, put an expert either on staff or on contract to track and explain why they are important for your state.
- Ask the National Governors Association staff (or regional governors association) to organize meetings to dig into topics of national or regional importance, with guest speakers able to provide perspective.
- If you are in a state with a regional state committee, learn about that committee's current priorities and make sure they are addressing issues relevant to your state's 100% clean power goal. Make sure your representative on the RSC is promoting your clean policies.
- If your state is not part of an RSC, join other regional associations of governors or energy officials, or coordinate with your state's representative to those associations.
- If you have enough patience and available time, join an RTO as a non-voting member, and sit on the appropriate advisory committees – or collaborate with like-minded states and send a joint representative to the meetings.
- If you work for your state utility commission, NARUC has many committees that facilitate learning and collaboration among states.

Further Reading

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