Rethinking Grid Governance for the Climate Change Era

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Rethinking Grid Governance for the Climate Change Era

Shelley Welton*

The electricity sector is often appropriately called the linchpin of efforts to respond to climate change. Over the next few decades, the U.S. electricity sector will need to double in size to accommodate electric vehicles, while transforming to run entirely on clean energy. To drive this transformation, states are increasingly adopting 100 percent clean energy targets. But fossil fuel corporations are pushing back, seeking to maintain their structural domination of the U.S. energy sector. This Article calls attention to one central but under-scrutinized way that these companies impede the clean energy transition: incumbent fossil fuel companies essentially run the United States’ electricity grid, writing its rules in ways that favor their private interests at the expense of societal goals.

In most of the country, entities known as Regional Transmission Organizations (RTOs) manage the electricity grid under Federal Energy Regulatory Commission (FERC) oversight. These organizations, formed in the late 1990s, have a distinct intellectual lineage in the privatization and new governance movements of that time. Most RTOs are structured as private industry clubs, in which industry members “vote” on the rules for regional electricity markets and grid operation. This governance arrangement has proven successful at maintaining a reliable grid but often serves as an impediment to progress on clean energy. Over the twenty years of their existence, many RTOs have resisted incorporating clean energy and energy conservation measures into their grids and market rules, despite strong evidence that treating these resources commensurately would lower costs and improve market functionality. Now, several regions are pursuing reforms in the name of “investor confidence”

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and “fuel security” that privilege coal and natural gas resources—the same fossil fuels that many states are trying to phase out of their energy mix.

This Article contends that the United States’ functionally privatized mode of electricity governance must be reevaluated as regulatory priorities shift in response to climate change. U.S. electricity law suffers from a gaping and growing accountability gap, in which 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. Drawing from informative differences across RTOs, the Article concludes with four reform pathways, suggesting that FERC or Congress might (1) pare back RTOs’ responsibilities, (2) enhance state and federal oversight capabilities, (3) police corporate agglomeration in the sector, and (4) explore public ownership or control over the grid.

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INTRODUCTION

The good news: over the last fifteen years, the United States’ greenhouse gas emissions have fallen roughly 12 percent.¹ The bad: this decline is mostly due to the replacement of one particularly dirty fossil fuel—coal—with a slightly cleaner fossil fuel—natural gas.² More recently, the coronavirus pandemic contributed to a further drop in emissions, but as one commentator succinctly put it, “I think it’s safe to say nobody wants to see greenhouse gasses reduced this way.”³

The replacement of coal by natural gas should similarly receive little celebration, as this strategy is incapable of reducing emissions to the degree necessary to avoid catastrophic levels of climate change.⁴ What this strategy does produce, perversely, is more long-lived fossil fuel infrastructure whose value companies fight hard to preserve. Some of these self-preservation efforts have received substantial media and scholarly attention, including the decades-long, industry-funded climate change denial campaign.⁵ But others are more covert. This Article argues that one central but under-scrutinized way that fossil fuel companies maintain dominance is by essentially running the United States’

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² See id. Natural gas combustion has half the carbon emissions of coal and considerably fewer local air pollutant emissions. However, methane leaks during natural gas production offset a contested portion of its carbon benefits. See Ramón A. Alvarez et al., Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain, 361 SCI. 186, 186 (2018) (finding considerably higher methane emissions from natural gas than were reported by the U.S. Environmental Protection Agency); Ellen Knickmeyer & Seth Borenstein, Americans’ Energy Use Surges Despite Climate Change Concern, AP NEWS (Apr. 18, 2019), https://www.apnews.com/7d4c9cc8f8c3444b9b800a5f9c48866?hootPostID=a01ce7fc3dbf46b1beac b635b1aa0b7 [https://perma.cc/JBA9-QLKC] (reflecting 10 percent increase in U.S. natural gas consumption in 2018).


⁴ See infra Part III.A.

⁵ See NAOMI ORESKES & ERIK M. CONWAY, MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING 169 (2011).
electricity grid, writing its rules in ways that favor their private interests at the expense of public clean energy goals.

Scholars, the media, and politicians have begun to turn a critical eye toward structural corporate domination in many U.S. economic sectors—most notably, banking and the Internet. They have paid less attention to the electricity industry, even though its byzantine regulatory structure is ripe for abuse by a small number of powerful incumbents. In most of the country, the electricity grid is managed by Regional Transmission Organizations (RTOs), whose primary charge is to keep your lights on by managing the transmission grid and operating regional electricity markets.

These RTOs are, to be blunt, hardly anyone’s ideal governance structure. RTOs were born out of the deregulatory fever that swept through the U.S. economy beginning in the 1970s. Proponents of electricity deregulation believed that greater competition among electricity suppliers would drive down prices and spur innovation in the sector. However, full-throated deregulation is impossible in electricity, given the persistence of natural monopoly characteristics and the requirement of a perfect balance between supply and demand of electrons across the grid at all times. Consequently, as the Federal

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7. This Article does not discuss those regions of the country that have decided not to join RTOs—the Southeast and much of the West. A companion work-in-progress, The States that Opted Out, examines the status of electricity governance in those regions.

8. These grid managers are also called “Independent System Operators” (ISOs) in some regions. In this article, except where relevant for purposes of historical accuracy, I intend RTOs to include ISOs, as “[t]he difference between an ISO and RTO is largely semantic these days.” Devin Hartman, Wholesale Electricity Markets in the Technological Age, R ST. POL’Y STUDY NO. 67, Aug. 2016, at 3 n.5.


10. Paul L. Joskow, Lessons Learned from Electricity Market Liberalization, 29 ENERGY J. (SPECIAL ISSUE) 9, 11 (2008) (suggesting that competitive wholesale markets should “provide better incentives for controlling construction and operating costs of new and existing generating capacity” and should “encourage innovation in power supply technologies,” among other benefits).

Energy Regulatory Commission (FERC) worked to make electricity provisioning more competitive in the 1990s, it determined that intermediary organizations would be necessary to coordinate the emerging marketplace. In designing these organizations, FERC embraced the intellectual and pragmatic trends of the times, which favored privatization and “new governance”-style arrangements that emphasized collaboration between industry and regulators. RTOs are institutions distinctly cut from this cloth. They are private membership clubs in which incumbent industry members make the rules for electricity markets and the electricity grid through private mini-democracies—with voting privileges reserved for RTO members—under broad regulatory authority.

When FERC created RTOs, the agency did not fully anticipate the vital role that these institutions would grow to play in controlling energy markets and U.S. energy infrastructure; nor did it anticipate the ways in which public objectives for the sector stood on the precipice of significant change. Thus, perhaps FERC can be forgiven for its initial faith in a “[l]ighter-[h]anded” regulatory structure. Two decades later, however, this faith is demonstrably misplaced.

In the last two years alone, ten states as well as Washington, D.C., and Puerto Rico have adopted 100 percent clean energy targets by legislation or executive order, thereby setting the United States on a plausible course toward real climate progress. With a new presidential administration now committed to rapid climate action, there is considerable hope that clean energy progress will accelerate. But achieving these goals requires the cooperation of RTOs, which must manage the integration of these resources into their grids and markets.
Certain RTOs have at times acted as partners, amending their rules to ensure that clean energy resources can participate in the grid.18 Increasingly, however, RTOs have used their control over market rules to erect problematic impediments to progress on clean energy.

This Article argues that RTOs’ failures on this score can be traced to their functionally privatized governance systems, which are now making public policy decisions that they were never designed to address. RTOs have a myopic focus on grid reliability and growth in electricity supply that is at odds with public objectives for the sector. Consequently, many RTOs have actively resisted incorporating demand-side technologies, small-scale renewables, and energy storage into their grids and market rules, despite evidence that treating these resources commensurately would lower costs and improve market functionality.19 Now, several regions have adopted reforms in the name of “investor confidence” and “fuel security” that punish renewable resources while privileging the same fossil fuels that many states are trying to phase out of their energy mix.20

This Article contends that U.S. grid governance must be redesigned to accommodate a new era of regulatory priorities that include responding to climate change.21 RTOs are able to adopt positions against new clean energy technologies because their hybrid, quasi-governmental institutional structures allow incumbent industry members to dominate stakeholder processes. Moreover, these same incumbents have dramatically concentrated their governance power through a trend of mergers over the last decade-plus, all while legislation and court precedent have narrowed FERC’s oversight tools and its ability to force change when the agency’s priorities diverge from those of RTOs.22 States, too, have struggled to retain their statutory authority over generation resources under increasingly marketized conditions.23


19. See infra Part III.B.

20. See infra Part III.C.


22. See infra Part II.D.

The result is a growing accountability gap, in which neither FERC nor states have the authority needed to make electricity markets bend to democratically established prerogatives that harm industry incumbents. The problem is not regional grid governance per se. More robust regional collaboration—and perhaps ultimately a single national grid—is a prerequisite to integrating sufficient renewable energy into the U.S. energy system. For this reason, the Article’s preferred solution is to restructure regional grid governance, reclaiming it for public control rather than abandoning it.

In constructing its narrative of grid governance as untenably privatized, the Article stakes a claim contrary to those in energy law who see the RTO model as admirable or, at least, not an inherent obstacle to responding to climate change. Despite intense interest in energy federalism in recent years, there has largely been a reflexive scholarly acceptance of RTOs. This Article seeks to upend that acceptance. As the Article’s excavation of RTOs’ record on clean energy illustrates, these organizations should not be treated as benign partners ready to accept and effectuate the popular will on climate change. Instead, grid
governance reform should itself be a priority of those who seek to advance decarbonization in the United States. To build its case, the Article draws from a growing body of scholarship, largely outside the legal literature, devoted to understanding how grid governance functions in various regions. These studies illuminate the mechanisms at work inside various RTOs, but they stop short of systematically connecting these mechanisms to many RTOs’ lackluster records on clean energy. Drawing from dozens of clean-energy-related filings at FERC, the Article forges these critical connections in order to diagnose the central flaw in RTO governance as an endemic bias against new resources that threaten incumbent profits. It argues that only enhanced public oversight and control can remedy this bias. Fortunately, poor governance structures have not equally compromised all RTOs. Some regional designs provide more political accountability than others, and the Article makes use of these differences in proposing reform recommendations.

There are four paths to better grid governance, some of which could be pursued in combination. First, FERC could return RTOs to a leaner form focused on technical tasks suited for industry management. Second, FERC could accept that RTOs in their modern incarnation are policy-making bodies, and increase state and federal regulators’ oversight tools commensurately. Some of these reforms could be done by the agency; others would require congressional intervention. Third, to enhance the legitimacy of stakeholder governance, FERC or Congress could reduce agglomerated corporate power within the electricity sector. Finally, and most radically, if the new administration wanted to accomplish maximum progress on climate change, it could explore how to transition RTOs to public ownership or control.

For those outside the field of energy law, the story of how industry incumbents have distorted grid governance may simply appear as a recapitulation of the dangers of privatization. But the tale told here is unique in an instructive way. All these challenges arose within one legal framework: public utility law. In fact, they largely arose within one statutory phrase: FERC’s obligation to ensure that rates in the electricity sector are “just,” “reasonable,”


31. See infra Part V.
and non-discriminatory. Managed competition via RTOs is FERC’s latest theory of how to accomplish this longstanding public utility mission.Outside energy law, public utility law is experiencing a rebirth. In other fields suffering from concentrated corporate power, scholars are revisiting the public utility concept as a way to rebalance those sectors toward the public interest. The idea animating these proposals is that expanding the public utility concept to new domains could provide stronger public oversight and control of these sectors. I am, in general, sympathetic to the pursuit. But the framework of public utility law did not prevent RTO actions privileging fossil fuels over clean energy, because FERC and the courts have interpreted the public utility charge capiously enough to allow for the privatized model of governance described herein. Public utility, then, has been undone from within in energy law by blind faith in market constructs, with insufficient attention to institutional theory and design. Understanding the transformation of public utility law within grid governance should aid efforts to apply the normative potential of public utility in other sectors.

This Article proceeds in five parts. Part I excavates the origins of RTOs, situating them in their intellectual lineage. Part II traces RTOs’ development from birth to modern form and describes the concurrent doctrinal and legislative developments that changed the legal landscape of RTO governance. Part III draws from multiple examples of flawed or intransigent RTO decision-making on clean energy in order to illustrate that these governance structures are ill-equipped to oversee the transformation of the grid demanded by climate change. Part IV then connects these challenges to RTO structure, arguing that the fundamental flaw in RTOs is one of overly privatized governance. Finally, Part V develops four categories of reforms that could align RTO governance with the public demands placed on the grid to help manage the accelerating climate crisis.

I. CONTEXTUALIZING THE BIRTH OF RTOs

The electricity industry consists of three basic parts: supply, transmission, and delivery of electrons. In most of the country, RTOs hold these parts together.

33. See infra Part I.
34. See, e.g., K. SABEEL RAHMAN, DEMOCRACY AGAINST DOMINATION 131 (2017) (celebrating the legal robustness of the public utility concept); Jim Rossi & Morgan Ricks, Foreword to Revisiting the Public Utility, 35 YALE J. REGUL. 711 (2018) (special issue on “revisiting the public utility,” with contributions considering its application across economic sectors).
35. See K. Sabeel Rahman, Infrastructural Regulation and the New Utilities, 35 YALE J. REGUL. 911, 914–15 (2018) (arguing that the “public utility tradition” offers important lessons for tackling the modern, cross-sectoral challenge of “unaccountable or arbitrary control over access to basic infrastructure”).
36. Cf. Boyd, supra note 13, at 1619 (arguing that “public utility” should be understood “first and foremost as a normative effort” or “undertaking” aimed at protecting the public’s interest in key infrastructure sectors).
by running a series of markets and dispatch algorithms that decide which electrons should be sent where, and when, to maximize the grid’s reliability and minimize costs. However, these grid managers are relatively new organizations. This Part tells the story of why FERC created these strange institutional creatures, connecting their origin story to the broader intellectual movements toward deregulation and privatization.

From the advent of electricity until the 1990s, the industry was dominated by vertically integrated, often investor-owned corporations that controlled all three components of the system within their monopoly service territory. In exchange for this privilege, the law regulated these corporations as public utilities, subjecting their rates to close regulatory scrutiny. At first, this was done on a state-by-state basis. Then, beginning in 1935 with passage of the Federal Power Act, Congress gave FERC control over interstate wholesale sales between utilities and interstate transmission, while explicitly leaving the states with control over generation resources and retail sales to end-use consumers.

This arrangement endured for many decades, with minor modifications to adapt to changing times. As utilities began to trade more power among themselves, several received permission from FERC to form “power pools,” which jointly coordinated electricity dispatch to enhance system efficiencies. By the 1990s, several of these pools had petitioned FERC to form Independent System Operators (ISOs) to act as more centralized dispatch agents, charged with managing all the transmission lines within a region. These ISOs became the blueprint for FERC’s later push to form larger, multi-state RTOs across the country.

In the 1990s, the drive for competition began in earnest in the electricity industry. Some states split ownership of generation from ownership of transmission and distribution as a way to increase industry competition. Similarly, states experimented with “retail choice” programs, in which consumers could shop around for an electricity provider rather than be tethered to their designated monopoly utility. As more power began to flow among utilities, FERC ordered these entities to file open access tariffs with the Commission—a move intended to promote a more integrated power grid by ensuring that utilities did not overcharge their competitors for use of their

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39. Dworkin & Goldwasser, supra note 9, at 554 (describing the history of power pools).
40. See Order 2000, supra note 11, at 815 (noting that ISOs had been approved or conditionally approved for California, Pennsylvania-New Jersey-Maryland or PJM (the mid-Atlantic), New York, New England, and the Midwest, and that Texas had established its own ISO).
41. See infra notes 92–93.
42. See Kearney & Merrill, supra note 9, at 1367–68.
transmission lines. FERC also suggested that regions explore more tightly coordinated forms of transmission management as a way to prevent this discrimination.

However, open access filings proved too anemic a solution, as they did not eliminate utilities’ ability to surreptitiously favor their own resources or grant preferences to a limited number of collaborators. In 1999, FERC tried to create a more fulsome solution by pushing for all regions to form RTOs to control transmission. Notably, as with the agency’s acceptance of power pools and independent system operators, FERC created RTOs without any new statutory authority. Instead, the Commission used its broad and longstanding Federal Power Act authority to ensure “just and reasonable rates.” To connect this authority to its proposal, FERC explained that independent regional control of the grid would “reduce opportunities for unduly discriminatory conduct,” enable more efficient system dispatches, and enhance transmission planning. Based on a number of modeled scenarios, the Commission estimated that RTO formation might save $2.4 billion per year.

In this way, FERC told a story of RTOs as the obvious answer to unfolding events. But even if some novel governing arrangement may have been

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46. Order 2000, supra note 11, at 824 (explaining that functional unbundling of assets was not enough because it was “difficult for transmission providers to implement and difficult for the market and the Commission to monitor and police”).
47. Id. at 811, 813, 824 (“[V]ertically integrated utilities have the incentive and the opportunity to favor their generation interests over those of their competitors.”). For more on changes leading to the formation of RTOs, see generally Richard F. Hirsh, Power Loss: The Origins of Deregulation and Restructuring in the American Electric Utility System (1999) (discussing the erosion of the “utility consensus” that prevailed through the bulk of the twentieth century); Joskow, supra note 10 (situating U.S. deregulatory movement within international context); Spence, supra note 9, at 767–79.
49. Order 2000, supra note 11, at 829.
50. Id. at 830. Whether RTOs have in fact produced all these gains remains a matter of scholarly debate. See Seth Blumsack, Measuring the Benefits and Costs of Regional Electric Grid Integration, 28 ENERGY L.J. 147, 148 (2007) (“Broadly speaking, analyses by RTOs and industry consultants trumpet benefits to consumers in the billions of dollars, while academics have generally come to the opposite conclusion.”).
necessary to facilitate deregulation within the electricity sector, the peculiar form that regional grid governance has taken was not inevitable. To the contrary, this form was one manifestation of the privatization movement that swept the U.S. administrative state around this time. Understanding RTOs as a part of this shift in bureaucratic theory and practice helps to contextualize the challenges of RTOs as interrelated with broader critiques of the privatization movement.

By the time FERC formed RTOs, there was strong bipartisan agreement that government should deregulate where it could and run more like a business where it could not. Academics from libertarians to progressives championed ideas of “new governance” that would “dislocate traditional state-produced regulation from its privileged place” and replace it “with a more participatory and collaborative model, in which government, industry, and society share responsibility for achieving policy goals.” Strategies to accomplish this collaboration included transferring responsibilities to “private businesses and nonprofit organizations” that could engage in “audited self-regulation.” These theories of reinventing government resulted in a host of new quasi-governmental, hybrid, or boundary organizations operating at the border between government and the private sector.

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52. See, e.g., infra Part IV (describing alterations and alternatives to the current governance regime).
53. I use “privatization” broadly, as others have, to indicate the use of private actors to carry out state responsibilities. See MICHAELS, supra note 13, at 106.
54. See KEVIN R. KOSAR, THE QUASI GOVERNMENT: HYBRID ORGANIZATIONS WITH BOTH GOVERNMENT AND PRIVATE SECTOR LEGAL CHARACTERISTICS 31 (2011) (describing the intellectual lineage of “New Public Management”); MICHAELS, supra note 13, at 79–118 (tracing the decades of thinking and practice that led to this bi-partisan consensus). See also Jody Freeman, Collaborative Governance in the Administrative State, 45 UCLA L. REV. 1, 3 (1997) (describing regulation as being widely “under attack . . . as inefficient, ineffective, and undemocratic”). U.S. theories along these lines owe much to earlier British experiments. See MICHAELS, supra note 13, at 9596 (describing Thatcher’s privatization program); MARY M. TIMNEY, POWER FOR THE PEOPLE: PROTECTING STATES’ ENERGY POLICY INTERESTS IN AN ERA OF DEREGULATION 99–100 (2004) (describing this lineage).
56. Lobel, supra note 55, at 345; see Verkuil, supra note 55, at 399 (underlining the rapid growth in the “number of private contractors doing the work of government”).
58. See JONATHAN G.S. KOPPELL, THE POLITICS OF QUASI-GOVERNMENT: HYBRID ORGANIZATIONS AND THE DYNAMICS OF BUREAUCRATIC CONTROL 1–8 (2006); KOSAR, supra note 54, at ii (“These hybrid organizations . . . have grown in number, size, and importance in recent decades.”); David H. Guston, Boundary Organizations in Environmental Policy and Science: An Introduction, 26 SCI. TECH. & HUM. VALUES 399, 400–02 (2001); Anne Joseph O’Connell,
In the case of electricity, scholars and regulators agreed that complete deregulation was impossible. The transmission grid retains natural monopoly characteristics because it is inefficient for multiple companies to duplicate transmission lines in a single locale. Moreover, the grid must maintain a perfect balance between supply and demand of electrons at all times. Therefore, some regulatory entity had to oversee the modern grid—and one can see fingerprints of these privatization theories throughout FERC’s design of RTOs.

FERC’s particular brand of privatization took the following form: the agency issued an order asking utilities to join RTOs, accompanied by a stern, parental-style plea: “[W]e expect jurisdictional utilities to form RTOs. If the industry fails to form RTOs under this approach, the Commission will reconsider what further regulatory steps are in the public interest.” To entice utilities to join, FERC left the design details up to the industry. The Commission merely offered a list of required “characteristics” and “functions” that RTOs must have. Most centrally, it required that RTOs be (1) independent, (2) regional, and (3) responsible for the operation of the grid. To meet these characteristics, FERC specified that RTOs must be given authority to design and administer their own regional tariffs, which would establish rules for regional transmission management.

Understanding this tariff authority is critical to understanding the power dynamics between FERC and RTOs. FERC oversees these tariffs as utility rate filings under Federal Power Act section 205, which requires the agency to play a “passive and reactive role” by approving any RTO filing that it determines will result in “just and reasonable” rates. In contrast, for FERC or any other entity

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60. Nevertheless, FERC explicitly credits deregulatory theories as the driving force behind reforms precipitating the creation of RTOs. See Order 2000, supra note 11, at 813–15 (discussing restructuring as impetus); ELEC. ENERGY MKT. COMPETITION TASK FORCE, REPORT TO CONGRESS ON COMPETITION IN WHOLESALE AND RETAIL MARKETS FOR ELECTRIC ENERGY 2 (2007); Boyd, supra note 13, at 1661–64.

61. Many prominent energy policy scholars also advocated for this format. See, e.g., WILLIAM W. HOGAN, CARRIE CULLEN HITT & JANELLE SCHMIDT, HARV. ELEC. POL’Y GRP., GOVERNANCE STRUCTURES FOR AN INDEPENDENT SYSTEM OPERATOR (ISO) 2 (1996) (noting “significant advantages” to the ISO approach to electricity management); Paul L. Joskow, Restructuring, Competition and Regulatory Reform in the U.S. Electricity Sector, 11 J. ECON. PERSPS. 119, 121 (1997).


63. Id. at 842. FERC clarified that, by “independent,” it meant independent from “market participants.” Id.

64. Id. at 858.

65. See Morgan Stanley Capital Grp. Inc. v. Pub. Util. Dist. No. 1, 554 U.S. 527, 530 (2008); NRG Power Mktg. v. FERC, 862 F.3d 108, 114 (D.C. Cir. 2017) (observing that “Section 205 puts FERC in a passive and reactive role”) (internal quotations omitted). See also Dworkin & Goldwasser, supra note 9, at 577 (noting the contentiousness of RTO section 205 filings rights); James et al., supra note 30, at 3 (labeling the “different burdens of proof between Section 205 and 206” as “critical”).
to force a change in an RTO’s (or a utility’s) rates, FERC must act under section 206, whether on its own motion or in response to a complaint. The higher burden of proof in section 206 requires FERC to demonstrate that the current rates are “entirely outside the zone of reasonableness.” Thus, having section 205 filing authority gives RTOs particular influence over regional rules.

When encouraging RTOs, FERC declined to mandate any particular regional boundaries, ownership structure, or organizational form. Thus, FERC allowed for both for-profit and not-for-profit RTOs and left open the rules regarding independent board composition. FERC also demurred as to the role that states should play within RTO governance, allowing regional negotiations to establish the role of these government regulators.

Essentially, then, FERC contracted out the oversight of regional grid management to private, industry-led, voluntary clubs. In the words of several FERC contemporaries, these clubs were “quintessentially American” in their “democratic” approach to industry regulation, relying “on checks and balances among all industry segments to help prevent unfair advantages.” To be sure, this was not classic contracting-out, where the government signed away its pre-existing duties to a private contractor. It was a more nuanced form of outsourcing, where a new, private intermediary was created to interface between traditional public utilities and their federal regulator. You could call it, in the words of Jon Michaels, “millennial privatization” or treat it as a product of “new governance” theory. You could call RTOs hybrid or quasi-governmental organizations, self-regulatory organizations, or more provocatively, “legal

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66. NRG Power Mktg., 862 F.3d at 114 n.2 (quoting City of Winnfield v. FERC, 744 F.2d 871, 875 (D.C. Cir. 1984)); see also Chen & Murnan, supra note 30, at 7–8.
67. See Dworkin & Goldwasser, supra note 9, at 577.
69. See id. at 848–49, 858, 910.
70. O’Neill et al., supra note 45, at 23.
72. See Michaels, supra note 13, at 18, 105–10 (using this term to cover the more diffuse, unusual styles of privatization that emerged during the 1990s).
74. See Simeone, supra note 30, at 22 (“[L]ike utilities, RTO’s operate transmission grids, but like regulators, RTO’s oversee markets, impose penalties, and are tasked with balancing stakeholder concerns.”); Stafford & Wilson, supra note 18, at 234 (describing RTOs as boundary organizations and policy-making bodies); see also Ronald C. Moe, The Emerging Federal Quasi Government: Issues of Management and Accountability, 61 Pub. Admin. Rev. 290, 291 (2001) (“The truth is that the quasi government, virtually by its name alone and the intentional blurring of its boundaries, is not definable in any precise way.”).
75. See infra notes 82–86 and accompanying text.
The nomenclature is much debated but not that central for my purposes.

It is not clear whether FERC could have chosen a structure other than the private-club RTO model, given how popular these new forms of collaborative, industry-driven governance had become among both political parties. Moreover, there was the dubious matter of legal authority: several states and utilities suggested FERC would overreach its jurisdiction were it to make RTO membership mandatory. FERC equivocated on this point, reserving judgment on whether it could mandate the establishment of RTOs. Ultimately, congressional opposition killed the idea, rendering the jurisdictional question moot for the time being.

FERC also explicitly celebrated the creation of voluntary RTOs on new governance grounds, explaining that RTOs would “facilitate lighter handed regulation.” On this score, FERC’s optimism had some support in institutional theory. Perhaps the closest institutional analog to RTOs is the world of “self-regulatory organizations” (SROs), which is best theorized within securities law. In analyzing the propriety of financial SROs, legal scholars have found that these organizations work best when: market participants have incentives to self-policing; the interests of regulators and market participants align; technical expertise within the industry is critical to effective rulemaking; and potential victims of wrongdoing are within the industry and are not weak or vulnerable.

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77. See Michaels, supra note 13, at 104–05.


79. See id. at 840 n.162 (“We need not decide in this case the extent of the Commission’s authority to mandate generically RTO participation.”).


83. See Birdthistle & Henderson, supra note 82, at 8; Park, supra note 82, at 144; Omarova, supra note 82, at 416.

84. See Birdthistle & Henderson, supra note 82, at 26.

85. Id. at 56; Omarova, supra note 82, at 433; Coglianese et al., supra note 82, at 224.

86. Birdthistle & Henderson, supra note 82, at 26.
At RTOs’ inception, the electricity industry arguably had many of these characteristics. RTOs’ primary charge—establishing rules for the efficient use of the interconnected transmission grid—would benefit all industry participants and consumers, as almost everyone bought or sold some outside power by this point. FERC likely also perceived any potential victims of discriminatory RTO practices as limited to sophisticated industry players, given that RTOs would regulate wholesale transactions between independent generators and utilities.

Perhaps most critically, FERC perceived the initial scope of RTO governance as limited, designed to tap into the industry’s particular expertise without threatening to usurp the regulator’s role. Because RTOs grew out of power pools and independent system operators, industry control of this more robust form of regional collaboration likely seemed unthreatening. RTOs were merely an expansion of these pre-existing, technocratic bodies. In accordance with this vision, one former FERC staffer explained that FERC thought that RTO stakeholder governance processes would be limited to fights about “whether bids for electricity for the next day should be due at 2 p.m. or 4 p.m.”

As the next section will describe, things have turned out quite differently. In part through FERC initiatives, and in part through RTO-led mission expansion, RTOs have come to have a consequential role in dictating the terms of U.S. energy infrastructure investment, with ramifications that reach far beyond internal industry players. At the same time, the rise of climate change as a policy priority has created increasing divergence between the priorities of industry incumbents and their state and federal regulators—thus changing substantially the calculus of self-regulation.

II. RTOs’ Adolescence: A Messy Period of Growth

The previous Section focused on RTOs’ creation. This Section describes how this grid governance experiment has evolved during two decades of implementation, focusing on two key developments: (1) RTO stakeholder governance arrangements and (2) growth in RTO responsibilities. The Section then explains how the courts and Congress have complicated FERC’s efforts to

87. See Order 888, supra note 44, at 21,594 (noting the “industry’s interest (which we share) in the . . . potential for an ISO to provide non-discriminatory transmission services . . .”).
88. See Dworkin & Goldwasser, supra note 9, at 555 (suggesting that FERC valued RTOs’ “on-the-ground knowledge”).
89. See Boyd, supra note 13, at 1663 (outlining history behind RTOs); Dworkin & Goldwasser, supra note 9, at 554 (noting that several RTO functions were previously performed “on a multi-company basis through power pools, including those which, like the New England Power Pool (NEPOOL), were described as ‘tight’ power pools because they had significant control over dispatch and transmission scheduling on an operational basis”).
90. Telephone Interview with Former FERC Staffer (Mar. 28, 2019) (notes on file with author, anonymity granted due to continued role in industry).
91. See infra Part II.C.
manage RTOs, through precedent and legislative changes that impoverish both regulatory accountability and intra-industry competition.

A. The Spectrum of Regional Responses

FERC’s efforts to create a uniform model of grid governance were unsuccessful. Order 2000’s parental-style plea to form RTOs allowed utilities either to file a proposal for an RTO or else “a description of efforts to participate in an RTO.”92 Some regions—particularly those that already had an ISO—quickly acquiesced to RTO formation.93 In contrast, utilities in the South and the West (aside from California), two regions with historically low power prices, resisted regionalization.94 In light of these mixed results, in 2002, FERC issued notice of plans to exercise a heavier parental hand by forcing all regions to adopt a Standard Market Design.95 But again, utilities in non-RTO regions balked, and states resisted FERC’s perceived jurisdictional power grab.96 And so FERC backpedaled. In 2005, it officially terminated its proposed rule, declining to enforce a single model across the United States electricity sector.97

Accordingly, the United States is left with a hodge-podge system: official RTOs in four regions; smaller ISOs that function equivalently to RTOs in two regions; and no central regional grid coordinator in the remainder of the country (see Figure 1).98 Today, two-thirds of the country (measured by population) is under an RTO/ISO, but not all of the scale FERC desired.99

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93. FERC approved some of these pre-existing ISOs as RTOs; others it rejected as being not regional enough in scope (for this reason, New York’s and California’s ISOs have never been officially designated as RTOs). See N.Y. Indep. Sys. Operator, Inc., 96 FERC ¶ 61,059, 61,184 (July 12, 2001); ISO New England, Inc., 106 FERC ¶ 61,280, 62,023 n.8 (Mar. 24, 2004); Pac. Gas & Elec. Co., 106 FERC ¶ 61,242, 61,855 (Mar. 9, 2004).
94. See Order 2000, supra note 11, at 935–36.
98. See generally William Boyd & Ann E. Carlson, Accidents of Federalism: Ratemaking and Policy Innovation in Public Utility Law, 63 UCLA L. REV. 810 (2016) (describing the three different models of state electricity regulation). Texas also has an RTO, but its grid is not connected interstate and thus is not under federal jurisdiction. See id. at 855.
B. The Modern RTO: Stakeholder Governance

As RTOs took shape in the early 2000s, critics worried that their early governance design was too responsive to the concerns of volunteer member utilities and insufficiently protective of the public interest.\(^\text{101}\) To respond to these concerns, FERC focused on shoring up the internal stakeholder process used to inform RTO decision-making. In 2008, FERC ordered each RTO to demonstrate that its stakeholder processes met specified “responsiveness” criteria, intended to “establish a means for customers and other stakeholders to have a form of direct access to the board of directors, and thereby to increase the boards of directors’ responsiveness to these entities.”\(^\text{102}\) But here again, FERC deferred to RTOs to shape their own processes. The result of this deference has been a profusion of dense, convoluted RTO stakeholder governance processes, each with its own quirks (for details, see Appendix A).\(^\text{103}\) To provide a flavor of RTO governance today, I offer below sketches of the internal governance machinations of the two most divergent RTOs: PJM and California.

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\(^{102}\) Order 719, supra note 101, at 64,154.

\(^{103}\) See Welton, Appendix A, supra note 14.
1. Big and Bold: PJM’s Membership-Driven RTO Governance

PJM (originally named for Pennsylvania-Jersey-Maryland, but now encompassing portions of thirteen states and Washington, D.C.) is the biggest and perhaps the boldest of RTO governance experiments. However, the broad outlines of its governance practices are representative of most RTOs other than California.\(^{104}\) PJM is technically a limited liability company but has no assets of its own, so it functions like a not-for-profit.\(^{105}\) The company is governed by a nine-member, independent board of directors\(^ {106}\) elected by the Members Committee, which is the senior governing committee of PJM.\(^ {107}\) Each member of PJM gets one vote at the Members Committee, where decisions are taken by weighted sectoral voting to ensure that no market sector dominates the others through sheer number of participants.\(^ {108}\) To become a voting member, one must apply and demonstrate an ownership interest in one PJM sector: transmission owner, generation owner, other supplier, electric distributor, or end-use customer.\(^ {109}\) The key entities charged with protecting consumer interests—state-level consumer advocates—are simply lumped in with end-use customers for purposes of voting, giving them limited power within these proceedings.\(^ {110}\) Other stakeholders can still participate in RTO meetings, but hold no voting sway.\(^ {111}\)

In a move that sets PJM apart from other RTOs, it has split its section 205 filing rights—recall, those are the rights to petition FERC for any “just and reasonable” change to operating rules—between the Members Committee and the PJM Board, each of which controls changes to certain markets and other topics within the region.\(^ {112}\) Issues reach the consideration of the Members Committee through internal lower committees.\(^ {113}\) For most issues, the Members Committee requires a two-thirds weighted vote to pass an issue on either to the

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\(^{104}\) See E4THEFUTURE, supra note 30, at 3, 6.

\(^{105}\) See Dworkin & Goldwasser, supra note 9, at 552 n.43 (explaining that PJM operates at a “zero profit margin”) (internal quotations omitted). All other RTOs are non-profit. Id. at 552.

\(^{106}\) Independence here is defined by FERC as lacking financial or personal interest in market participants. See Order 2000, supra note 11, at 842.

\(^{107}\) E4THEFUTURE, supra note 30, at 9.

\(^{108}\) In PJM, each sector gets an equal weight in voting—that is, 20 percent, since there are five sectors. See id. at 10.

\(^{109}\) E4THEFUTURE, supra note 30, at 6; SIMEONE, supra note 30, at 10.


\(^{111}\) See James et al., supra note 30, at 2.

\(^{112}\) PJM’s Board holds filing rights over the region’s capacity market, among other issues, whereas the Members Committee controls the operating agreement, which governs energy and ancillary service markets. See Order of Proposed Tariff Revisions, PJM Interconnection, L.L.C., 151 FERC ¶ 61,208, 62,297 n.3 (June 9, 2015).

\(^{113}\) SIMEONE, supra note 30, at 9–10. “User groups” provide an additional means of bringing an issue before the Members Committee. See Welton, Appendix A, supra note 14.
PJM Board or to FERC. Of course, any member or other stakeholder is free to propose changes under section 206 of the Federal Power Act, but the member then has the burden of demonstrating to FERC that the existing rules are “unjust and unreasonable.”

Two other features of PJM governance deserve mention because of their advisory powers: the role of the market monitor and the role of the states. FERC requires RTOs to engage independent market monitors to ensure that no firm exercises market power to manipulate market rules for private gain. In PJM, an independent firm named Monitoring Analytics provides this service and makes annual reports and recommendations on the state of PJM’s market performance. However, PJM does not have to adopt the recommendations made by its market monitor, and researchers suggest that less than half of Monitoring Analytics’ recommendations made to PJM between 1999 and 2015 were ever adopted.

PJM—like all multi-state RTOs—also has a regional state committee, which is known as the Organization of PJM States, Inc., or OPSI. A public utility commission representative from each state within PJM’s footprint (as well as D.C.—no taxation without representation here) serves as part of OPSI. But OPSI’s role is limited to influence: OPSI “liaises with PJM and monitors proposals impacting state interests,” but has no formal role in PJM decision-making structures.

PJM’s modern governance structure thus consists of a complex arrangement of shared power between an independent board and RTO members, who jointly hold power over a plethora of grid management decisions. Most RTO governance processes operate similarly to PJM—with some divergence in the role of the states’ committee, the composition of membership sectors, and the

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114. SIMEONE, supra note 30, at 10; Yoo & Blumsack, supra note 30, at 129 (“[T]he [Members Committee] can bypass the PJM board and make filings directly with FERC by exercising its filing rights, although it seldom does so.”) (internal citation omitted).

115. See supra notes 65–67 and accompanying text.

116. See Order on Compliance Filing, PJM Interconnection, L.L.C., 129 FERC ¶ 61,250, 62,378 (Dec. 18, 2009); SIMEONE, supra note 30, at 28. See also Dworkin & Goldwasser, supra note 9, at 571–77 (discussing role of and challenges facing market monitors); Spence & Prentice, supra note 28, at 132 (2012) (observing shift from regulatory focus on controlling market power to preventing market manipulation).


118. See SIMEONE, supra note 30, at 28. See also Hartman, supra note 8 at 15 (“Market-design problems whose fixes are unpopular with key market stakeholders still go unresolved for extended periods . . . .”).


120. Chen & Murnan, supra note 30, at 13.
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parsing of section 205 filing rights. One region, however, differs dramatically and thus merits exploration at greater length.

2. Keeping it Close: California’s State-Led ISO Governance

California is a complex case study when it comes to electricity, given that its fiascos in the early days of deregulation remain energy law’s most prominent cautionary tale (although the state’s 2019 blackouts to avoid wildfires may give this superlative a run for its money). Most commentators have concluded that private manipulation of the state’s nascent state electricity markets played a substantial role in these early crises, although market design flaws and weather conditions also contributed. In light of this history, it is not coincidental that California lawmakers have chosen to maintain substantial state control over their ISO, and have thus imbued it with a markedly different governance structure.

California created its ISO—nicknamed CAISO—as part of its 1995 restructuring of the state’s electricity system. After considerable adjustments to the ISO’s initial design, California arrived at its modern ISO structure in the early 2000s. CAISO has a five-member board, appointed by the Governor of California with approval of the Senate.

Its decision-making operates similarly to “the standard administrative process of a government agency”: CAISO staff draft white papers or straw proposals for addressing identified problems, take comments from interested parties, and then send the final proposal to the CAISO Board of Governors to be voted on. The Board is in charge of submitting any proposed tariff changes to FERC. That means that politically accountable

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121. See infra Part V and Welton, Appendix A, supra note 14.


123. See Duane, supra note 122, at 507–17.

124. E4THE FUTURE, supra note 30, at 10 (noting that California’s single state structure allows it to give “considerably more influence to state political entities, such as the California Public Utilities Commission and the California Energy Commission, than is generally the case in ISOs”).


126. James et al., supra note 30, at 67.

127. E4THE FUTURE, supra note 30, at 10 (“There is no official membership structure in CAISO and there are no limitations on who can be a stakeholder.”).

128. Id.
board members hold all of the section 205 filing rights in California, in contrast to PJM’s split rights between an independent board and a private Members Committee.\textsuperscript{129} California’s market monitoring also takes place in-house, through a Department of Market Monitoring that produces reports, submits comments, and participates in stakeholder processes.\textsuperscript{130}

Through this RTO structure, California maintains considerable state control over the priorities and actions of its RTO—in contrast to the largely private structure of other RTOs. This political control has proven important in its efforts to decarbonize the grid\textsuperscript{131}—a topic taken up in Part III.

\textbf{C. The Modern RTO: Expanding Control}

As RTOs’ governance has matured, these organizations have also grown in responsibilities, albeit unevenly across regions. When FERC designed RTOs, the agency was focused on the challenge of ensuring non-discriminatory access to privately owned and managed transmission infrastructure. To be sure, FERC countenanced that RTOs’ role might expand to include administering electricity markets.\textsuperscript{132} But the Commission scarcely devoted any early attention to this topic.

Over time, every RTO has elected to run a set of markets. RTOs administer markets for the trading of electricity itself and for ancillary services—basically, all the technical support services needed to ensure reliable delivery of power.\textsuperscript{133} That means that all RTOs, through their governance processes, must create eligibility and bidding rules for these markets—a significant responsibility to bestow upon the incumbent group of market participants.\textsuperscript{134} FERC has also steadily expanded RTOs’ role with respect to transmission planning and transmission cost allocation, and now requires each region to have detailed

\textsuperscript{129} See Order of Proposed Tariff Revisions, supra note 112, at 62,297 n.3.


\textsuperscript{131} See BENTHAM PAULOS, NEXT 10, A REGIONAL POWER MARKET FOR THE WEST: RISKS AND BENEFITS 6 (2018) ("CAISO has a strong connection to state policies and coordinates with state energy and environmental agencies.").

\textsuperscript{132} Order 2000, supra note 11, at 913 (instructing RTOs to consider whether establishing a power exchange would “provide additional benefit in its region”).


\textsuperscript{134} The convoluted mechanisms of “price formation” in these markets are beyond the scope of this article, given its focus on governance, but are the subject of a detailed and insightful examination in William Boyd, Ways of Price Making and the Challenge of Market Governance in U.S. Energy Law, 105 MINN. L. REV. 739 (2020).
procedures for identifying needed transmission grid expansion and apportioning the costs of such lines among member utilities.\textsuperscript{135}

Moreover, several RTOs have expanded their roles further by assuming control over “resource adequacy.” Traditionally, states have been in charge of planning to ensure that adequate generation is constructed to meet anticipated future electricity demand—\textsuperscript{136}—in the industry, this is called ensuring adequate “capacity.”\textsuperscript{137} But some regions, including PJM, New England, and New York, have decided that it makes more sense for capacity to be centrally procured.\textsuperscript{138} These regions are notable for having far more states that have required divestment of generation assets, thereby causing a gap in utility-scale planning for resource adequacy.\textsuperscript{139} As a remedy, after contentious negotiations and litigation, these eastern RTOs have instituted centralized, mandatory capacity markets.\textsuperscript{140} In these markets, the RTO assigns a capacity obligation to all utilities in the region that serve end-use customers, and then requires utilities to purchase adequate capacity (typically three years in advance) through an auction, into which generation companies bid.\textsuperscript{141} Thus these administrative “markets,” instead of state planners, largely determine what resources will receive financing in the region.\textsuperscript{142} The layering of capacity markets on top of energy markets has proven a controversial and unstable element in the eastern RTOs.\textsuperscript{143}

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\textsuperscript{136} State authority over generation resources is explicit in the Federal Power Act, which provides that the Commission “shall not have jurisdiction . . . over facilities used for the generation of electric energy . . . .” 16 U.S.C. § 824(b)(1) (2018).

\textsuperscript{137} See Conn. Dep’t of Pub. Util. Control v. FERC, 569 F.3d 477, 479 (D.C. Cir. 2009) (“’Capacity’ is not electricity itself but the ability to produce it when necessary.”).

\textsuperscript{138} Otherwise, a regional market may result in a “free rider problem, where some utilities count on the capacity they expect others to buy in order to support their own reliability.” Id. Many regions cooperated on capacity long before RTOs/ISOs arrived. See id.; SHARON JACOBS & ARI PESKO, GETCHES-WILKINSON CTR., ENERGY EMERGENCIES VS. MANUFACTURED CRISIS: THE LIMITS OF FEDERAL AUTHORITY TO DISRUPT POWER MARKETS 5 (2019); Dworkin & Goldwasser, supra note 9, at 553.

\textsuperscript{139} See Welton, Appendix A, supra note 14 (showing restructuring status by region).

\textsuperscript{140} FERC and the courts have sanctioned RTOs’ usage of these markets, but many states feel that they continue to usurp state authority. See, e.g., Conn. Dep’t of Pub. Util. Control, 569 F.3d at 481 (upholding New England’s capacity market against state claims of RTO jurisdictional overreach); Md. Pub. Serv. Comm’n v. FERC, 632 F.3d 1283, 1284–85 (D.C. Cir. 2011) (similar regarding PJM).


\textsuperscript{142} See Chen & Murnan, supra note 30, at 5 n.12 (suggesting these are perhaps more accurately called capacity “constructs,” rather than “markets”).

\textsuperscript{143} See infra Parts III.B, V.A. See also SIMEONE, supra note 30, at 16 (noting “[c]onstant changes” to the PJM capacity market construct as a challenge for the region). Many have also critiqued

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In other regions—particularly those where utilities continue to own substantial generation—responsibility for resource adequacy has not been given over so thoroughly to RTOs. In California, the state public utility commission retains control over resource adequacy and plans for future capacity additions. MISO—the Midwestern ISO—runs a voluntary capacity market, so that states can instead direct their utilities to procure long-term contracts or self-supply new capacity, should they so desire. And in the Southwestern Power Pool, resource adequacy decisions are explicitly reserved for the Regional State Committee—a compromise negotiated by participating states so as not to abdicate so much of their power to the RTO. As Parts III and IV will describe, the question of who controls resource adequacy becomes particularly important under conditions of climate change, because the type of resources added to the grid will make or break state climate goals, not to mention planetary warming thresholds.

D. The Other Branches Intervene: Wrinkles in RTO Governance

The result of RTOs’ expanded suite of responsibilities is that they are now the key architects of market structures and market pricing mechanisms for electricity—and these markets now substantially influence the course of the sector. When FERC designed these creatures, it presumed that it would be able to adequately police their development (perhaps, again, a classic parenting mistake). But of course, FERC cannot design governance arrangements in a vacuum: Congress and the courts often act in ways that affect FERC’s best-laid plans. This final subsection describes how both judicial and legislative developments have complicated FERC’s scheme of private grid governance.

1. Doctrinal Limitations on FERC’s Oversight Authority

In the time since RTOs’ inception, a pair of circuit court opinions has circumscribed FERC’s ability to manage the governance of these regional entities. The first blow in this regard came shortly after RTOs’ formation. In 2004, FERC decided that California’s method of ISO/RTO board selection was insufficiently independent, and therefore ordered the state to choose its capacity markets as economically inefficient. See Blumsack, supra note 50, at 176 n.79 (gathering critiques).


145. See Welton, Appendix A, supra note 14.

146. See Chen & Murnan, supra note 30, at 8.

147. See Dworkin & Goldwasser, supra note 9, at 578 (quoting former FERC Chairman Kelliher’s explanation that “RTOs are not self-regulating organizations; they cannot set rules and enforce rules unilaterally . . . we set and enforce the rules, so we’re ultimately responsible”).

148. Recall that ISOs and RTOs are functionally identical for purposes of this analysis. See supra note 8.
board “through a method dictated by FERC.” California appealed, and in 2004, the D.C. Circuit held in CAISO v. FERC that FERC has “no authority” to “order a public utility subject to its regulation to replace its governing board.”

Although FERC claimed this authority under its power to regulate practices “affecting” jurisdictional rates, the court found it “crystal clear” that “practice” does not extend to “corporate governance or structure.” If it did, the court reasoned, then what would stop FERC from replacing the board of Duke Energy tomorrow? (Heaven forbid.) The court explained that the proper remedy for FERC to use, if CAISO’s board appointment rules threaten the ISO’s independence, is to revoke approval of the ISO altogether.

Although CAISO arguably enlarged FERC’s authority to regulate markets and pricing by cementing the agency’s authority over “practices affecting rates,” it simultaneously narrowed FERC’s authority to regulate RTO governance itself. Moreover, the D.C. Circuit—reasoning under the text and structure of the Federal Power Act—rendered obvious a point that much energy law scholarship seems to gloss over: RTOs are not a special “quasi-governmental” body in the eyes of the law. FERC can oversee their governance only to the same extent as it can traditional investor-owned utilities. This formalistic equivalence is at odds with the functional reality of RTOs today, which operate as policy-making bodies that scarcely resemble traditional utilities.

Whereas CAISO limited the scope of RTO practices that FERC can regulate, a 2017 opinion placed boundaries on FERC’s ability to regulate even those practices and rates clearly within its jurisdiction. In NRG v. FERC, the D.C. Circuit considered a challenge to FERC’s longstanding practice of requiring

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149. Cal. Indep. Sys. Operator v. FERC, 372 F.3d 395, 396 (D.C. Cir. 2004). There is a longer history of changes in California’s board formation procedures, see id. at 396–98, but I dispense with these details.
150. Id. at 398.
151. Id. at 399, 400.
152. Id. at 404.
155. See Joel B. Eisen, FERC’s Expansive Authority to Transform the Electric Grid, 49 U.C. DAVIS L. REV. 1783, 1832 (2016) (arguing for this reading of CAISO).
156. See infra Part III.
RTOs to modify their filings to gain regulatory approval under section 205. In that case, several companies challenged FERC’s modifications to a PJM section 205 filing that adjusted the region’s capacity market. The court held, in brief, that the Commission exceeded its legal authority by requiring more than “minor” modifications to the RTO’s proposal, even though the RTO had accepted FERC’s proposed modifications.

NRG thus further limits FERC’s oversight authority of RTOs, as it means that FERC must approach RTOs’ proposed tariffs essentially on a “take it or leave it” basis. That’s a big deal in a field where stakeholder negotiations and board deliberation can drag on for years. Without the ability to propose anything beyond “minor” modifications, FERC has at its disposal only the drastic remedy of completely denying an RTO’s long-negotiated proposal, thus leaving to fester whatever problem the proposal was designed to address. The combined effect of CAISO and NRG, then, is to render FERC unable to reform RTO governance at the same time that it must wholly accept or reject whatever proposals come out of RTO governance arrangements.

2. Merger Mania

These doctrinal limitations on FERC’s RTO oversight have been compounded by legislative developments that have transformed public utilities themselves. In 2005, Congress repealed the longstanding Public Utilities Holding Company Act (PUHCA), which since 1935 had prevented mergers between non-geographically contiguous utilities. Since PUHCA’s repeal, there has been explosive growth in utility mergers—with substantial collateral consequences for RTO governance.

PUHCA emerged from the crisis in utility holding companies that contributed to the stock market crash of 1929, which precipitated the Great Depression. During an exhaustive investigation, the Federal Trade Commission found rampant abuses of the holding company structure, in which a few major companies controlled vast numbers of smaller utilities and ancillary businesses. The holding companies were accused of running a pyramid

158. Id. at 110, 114.
159. NRG Power Mktg. clarifies that FERC’s role in evaluating section 205 filings is “passive and reactive.” Id. at 114.
160. Cf. Order on Tariff Filing, ISO New England, Inc., 162 FERC ¶ 61,205 (Comm’r Glick, dissenting in part). To be sure, FERC may retain some backroom bargaining authority, but even this is diminished when an RTO board or RTO stakeholders know that FERC is eager to see changes occur—since they also know the agency is thus likely to approve whatever proposal the RTO sends its way.
163. See H. R. REP. NO. 827-73 (1934); Karmel, supra note 162, at 849 (describing the main “evils” the FTC investigation uncovered).
scheme in which they watered down stock and failed to maintain reasonable debt to equity ratios. PUHCA attempted to limit these practices and protect investors by eliminating the use of holding companies except in the case of geographically contiguous utilities, where joint ownership was understood to bring economies of scale. These restrictions followed from the Progressive philosophy—championed by Louis Brandeis—that giant monopoly holding companies presented a “[c]urse of [b]igness,” threatening democracy by eliminating competition and accruing outsized political and economic power.

Intellectual currents shifted in the second half of the twentieth century, such that “bigness” no longer reigned as a concern in antitrust law. These changes in antitrust theories are not typically connected with RTOs or the energy sector because regulated utilities are largely insulated from antitrust challenges. But the movement has nevertheless had dramatic impacts upon the electricity industry, since the same intellectual trend manifested itself in public utility law through the demise of PUHCA. Once “bigness” was no longer a concern, the 1935 prohibition on non-contiguous utility mergers lost merit.


166. See Louis D. Brandeis, A Curse of Bigness, HARPER’S WkLY., Jan. 10, 1914, at 18; William A. Gregory & Rennard Strickland, Hugo Black’s Congressional Investigation of Lobbying and the Public Utilities Holding Company Act: A Historical View of the Power Trust, New Deal Politics, and Regulatory Propaganda, 29 OKLA. L. REV. 543, 548–49 (1976) (tying PUHCA to the Brandesian movement to reign in “bigness”); Markian M.W. Melnyk & William S. Lamb, PUHCA’s Gone: What is Next for Holding Companies?, 27 ENERGY L.J. 1, 5 (2006) (“PUHCA was as much about a desire to control the corrosive effects of powerful business interests . . . on the democratic process, as it was about promoting economical and efficient utility service throughout the nation . . . ”).

167. As several scholars have documented, beginning in the 1960s, largely under the intellectual leadership of Robert Bork, antitrust theory experienced a marked turn. Whereas early courts and scholars saw antitrust laws as serving a multiplicity of ends, Bork and his progeny asserted that antitrust should focus exclusively on protection of consumer welfare. As this new interpretation of the goals of antitrust curried favor in the courts and enforcement agencies, concerns about the “bigness” of corporations as a problem in and of itself fell away. See Wu, supra note 6, at 102–18; Khan & Vaheesan, supra note 6, at 268–74; Robert Pitofsky, The Political Content of Antitrust, 127 U. PA. L. REV. 1051, 1051–52 (1979).

168. See Vaheesan, supra note 28, at 940–42 (collecting circuit court cases holding regulated utilities exempt from antitrust challenges).

169. See SEC. & EXCH. COMM’N DIV. OF INV. MGMT., supra note 164, at 60 (rejecting theories of regulation based on “preconceived notions of size.”).
“barrier to innovation and competition in the utility industry.”\textsuperscript{170} In 2005, Congress did away with PUHCA in its entirety, lifting the substantive prohibitions on holding companies’ ownership of utilities and other businesses.\textsuperscript{171}

The repeal resulted in an explosion in utility-sector mergers.\textsuperscript{172} As of 2016, there were fifty remaining utility systems, down from hundreds a few decades earlier.\textsuperscript{173} In theory, the fact that FERC still must approve utility mergers could serve as a check on consolidation. But FERC evaluates utility mergers under Federal Power Act section 203, whose “public interest” standard has been interpreted to require the agency to ensure only that the merger will do “no harm” to competition within the industry.\textsuperscript{174} FERC applies this standard in a piecemeal and lenient fashion, refusing to examine broader industry impacts in deciding individual applications.\textsuperscript{175}

Consequently, utility mega-holding companies have returned.\textsuperscript{176} There is a certain irony in the fact that deregulatory theories led FERC to turn increasingly to competition as the basis for ensuring “just and reasonable” rates, while also leading Congress to lift the prohibitions that had ensured robust competition in the industry over the previous eighty years.\textsuperscript{177} To be sure, some utility mergers create efficiencies through economies of scale or complementary business ventures.\textsuperscript{178} But they also create challenges by concentrating economic and

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\begin{enumerate}
\item \textsuperscript{170} Id. at 1, 7, 60. See also CONG. RSCH. SERV., supra note 164, at 1; Richard L. Gordon, The Public Utility Holding Company Act: The Easy Step in Electric Utility Regulatory Reform, 15 REGUL. 58, 58 (1992) (“PUHCA is an act of questionable original value and clear current redundancy. It should be totally repealed.”); Lawrence J. Spiwak, Expanding the FERC’s Jurisdiction to Review Utility Mergers, 14 ENERGY L.J. 385, 385 (1993) (describing “heavy criticism” of PUHCA during the early 1990s).
\item \textsuperscript{172} See Jack Azagury, Walt Shill & Ted Walker, The Race to Consolidate, PUB. UTILS. FORTNIGHTLY MAG., (Sept. 2012), https://www.fortnightly.com/fortnightly/2012/09/race-consolidate [https://perma.cc/A62H-A5Q6] (“[I]n the past 18 months alone we have seen a greater growth in the concentration of the top players in the industry than in the preceding 10 years.”); Melnyk & Lamb, supra note 166, at 1–2 (explaining that until PUHCA’s repeal, utility acquisitions were limited “principally” by the statute).
\item \textsuperscript{173} Scott Hempling, Inconsistent with the Public Interest: FERC’s Three Decades of Defeance to Electricity Consolidation, 39 ENERGY L.J. 233, 251 n.32 (2018).
\item \textsuperscript{174} 16 U.S.C. § 824b (2018); Hempling, supra note 173, at 239.
\item \textsuperscript{175} See Hempling, supra note 173, at 308–09.
\item \textsuperscript{176} See id. at 233.
\item \textsuperscript{177} Indeed, Sandeep Vaheesan has pointed out that Alfred Kahn, one of the godfathers of competition in the electricity industry, “stressed the importance of antitrust enforcement in deregulated markets” to ensure competition. Vaheesan, supra note 28, at 923 n.2.
\item \textsuperscript{178} See, e.g., Raymond S. Hartman, The Efficiency Effects of Electric Utility Mergers: Lessons from Statistical Cost Analysis, 17 ENERGY L.J. 425, 427–31 (1996) (discussing historical utility mergers that increased the size of generating units “to capture increasing returns to scale, thereby lowering average generation costs,” and developing factors that may allow more modern utilities to capitalize
\end{enumerate}
\end{footnotesize}
political power in a small number of companies—not least for theories of RTO governance, which rely upon internal industry checks to legitimate RTO decision-making. These internal checks presume opposing interests that do not exist because holding companies have consolidated across demand- and supply-side affiliates.

The holding company resurgence appears even more problematic when one looks at patterns of infrastructure investment. In 2018, independent power producers owned 87% of solar and wind energy developments in the United States, whereas regulated utilities owned only 13%. Post-PUHCA, holding companies can own both these categories of business. But they have increasingly concentrated their interests within the regulated utility space: at the end of 2018, independent power entities made up less than 12% of their overall portfolios, whereas regulated utilities comprised nearly 69%. That means that the largest utility holding companies have interests predominantly opposed to renewable energy development. Moreover, many companies focused on independent power production concentrate their fossil fuel holdings within certain RTOs, giving them a vested interest in shaping particular regions’ market rules.

Part IV will consider in more detail how merger activity undercuts the theories behind RTOs’ governance design. First, it is time to examine how RTOs’ privatized stakeholder model of governance—expanded over time to include market administration and resource adequacy under shrinking doctrinal oversight—plays out on matters of substantive import in modern grid governance.

III. RTOs CONFRONT THE CLIMATE IMPERATIVE

Perhaps it is just dumb bad luck—but it may be less coincidental—that the formation of RTOs and mounting policy concern over anthropogenic climate change are firmly tied to the consolidation of large power producers within certain RTOs.”


Post-PUHCA, holding companies can own both these categories of business. But they have increasingly concentrated their interests within the regulated utility space: at the end of 2018, independent power entities made up less than 12% of their overall portfolios, whereas regulated utilities comprised nearly 69%. That means that the largest utility holding companies have interests predominantly opposed to renewable energy development. Moreover, many companies focused on independent power production concentrate their fossil fuel holdings within certain RTOs, giving them a vested interest in shaping particular regions’ market rules. For example, Calpine, the independent power production company driving anti-renewable reforms in PJM, see infra Part III.C, owns considerable renewable generation in the western United States, but over 99% of its eastern holdings are concentrated in natural gas. See Our Fleet, CALPINE, https://www.calpine.com/operations/power-operations/our-fleet [https://perma.cc/AF5U-T9YB]. NRG, another independent power proponent of anti-renewable reforms in eastern markets, similarly owns predominantly natural gas resources in the east. See Leading the Nation with an Integrated Power Plant Portfolio, NRG, https://www.nrg.com/generation/asset-map.html [https://perma.cc/QT9J-KNC4].
change share a similar timeline. Consequently, RTOs have had to adapt to an energy law landscape that has embraced a shifting set of priorities since the early 2000s. As described in this Section, RTO governance has increasingly resisted these changed priorities, especially when they threaten incumbent members of the energy sector. However, not all RTOs have struggled equally, suggesting that certain governance models may be better suited to the climate change era.

A. The Link Between Grid Governance and Climate Change

The electricity sector has been appropriately called the “linchpin of efforts to reduce greenhouse gas (GHG) emissions,” central to “[v]irtually all credible pathways to climate stabilization.” For decarbonization to succeed, the U.S. transportation and heating sectors will need to electrify—creating both opportunities and pressure for the electricity sector to scale up and clean up at the same time. Most experts agree that the United States’ electricity sector needs to run on 100 percent clean energy by 2050, if not earlier, to achieve internationally established climate change goals. Despite renewables’ recent growth, there is a long way to go to reach these kinds of numbers. In 2019, fossil fuels produced 63% of U.S. electricity (with coal at 23.5% and natural gas at 38.5%)—while nuclear energy produced 19.7%, hydropower and wind each produced around 7%, and solar energy produced only 1.8%.

As grid managers, RTOs play a key role in enabling sectoral transformation. This role is complicated, however, by the fact that neither FERC...
nor RTOs have an independent mandate to decarbonize.\textsuperscript{190} Moreover, the Federal Power Act explicitly leaves decisions over the electric generation mix to the states.\textsuperscript{191} For this reason, those within RTOs often describe these organizations as policy-takers, not policy-makers, in charge of making the markets and grid function well in light of whatever policies their member states adopt.\textsuperscript{192}

Adopt they have: in the last two decades, twenty-nine states have required their utilities to secure an increasing percentage of their electricity from renewable energy sources;\textsuperscript{193} every state has put in place laws to encourage efficiency and conservation;\textsuperscript{194} and many states have adopted a range of tax incentives, special pricing arrangements, and other laws to help promote rooftop solar, energy storage, electric vehicles, offshore wind, and other promising decarbonization technologies.\textsuperscript{195} More recently, a spate of states has upped the ambition of their renewable targets, aiming to reach 100 percent clean electricity generation by 2040–2050—with many more considering similar legislation.\textsuperscript{196}

To reach these goals will require the affirmative support of “policy-taking” RTOs.\textsuperscript{197} RTOs will have to adjust their markets and dispatch to accommodate the expected influx of renewable energy. Wind and solar are variable resources—they only produce energy when the wind is blowing or the sun is shining.\textsuperscript{198} To integrate these resources, RTOs will have to reform their systems to better model renewable energy’s output; reward other sources for being

\textsuperscript{190} Most commentators accept that decarbonization is not within FERC’s charge to maintain “just and reasonable” rates—although some argue that FERC could justifiably incorporate this goal. See, e.g., Christopher J. Bateman & James T. B. Tripp, Toward Greener FERC Regulation of the Power Industry, 38 HARV. ENV’T L. REV. 275, 278 (2014) (urging FERC to incorporate environmental considerations into market design); Eisen, supra note 155, at 1786 (urging FERC to consider adopting a “carbon adder” to market pricing). For purposes of this article, I accept FERC’s movement in this direction as unlikely. See Rich Glick & Matthew Christiansen, FERC and Climate Change, 40 ENERGY L.J. 1, 5, 30–33 (2019) (explaining FERC’s role as a fuel-neutral regulator that is not in charge of setting priorities for the generation mix, but can and should accommodate state climate priorities).


\textsuperscript{192} See Stafford & Wilson, supra note 18, at 229 (quoting RTO staffer explaining: “We are a taker of policy not a maker of policy . . . We don’t create policy. We attempt to interpret policy as handed to us.”). See also Order on Tariff Filing, ISO New England, Inc., 162 FERC ¶ 61,205, 61,226 (2018) (FERC insisting that the agency remains resource neutral); Our Three Critical Roles, ISO New England, https://www.iso-ne.com/about/what-we-do/three-roles [https://perma.cc/XR2A-UWVV].


\textsuperscript{194} See Database of State Incentives for Renewables & Efficiency, N.C. CLEAN ENERGY TECH. CTR., https://www.dsireusa.org [https://perma.cc/CM9G-CQ2S].

\textsuperscript{195} See Jim Rossi, Carbon Taxation by Regulation, 102 MINN. L. REV. 277, 301–12 (2017). See also Database of State Incentives for Renewables & Efficiency, supra note 194.

\textsuperscript{196} See Pyper, supra note 17.

\textsuperscript{197} I return to contest this RTO self-characterization infra Part III.B.

available to act as flexible, fast-ramping backups; and better integrate demand-side technologies to smooth fluctuations in energy supply.199

At the same time, RTOs will have to support decreased reliance on natural gas to power the U.S. electricity sector. This objective is politically fraught, given that companies are building long-lived infrastructure in the natural gas sector at a rapid clip.200 These companies will not easily relinquish the value of these assets, yet this infrastructure cannot be used for its useful life if we are to confront the climate imperative (at least not without substantial advancements in carbon capture and storage, which is not yet adequately commercialized).201

The expansion of renewable energy will also require construction of a lot more transmission infrastructure to connect remote solar and wind resources to population centers.202 In their role as regional transmission planning coordinators,203 RTOs’ willingness to enable maximum transmission expansion will help determine the viability of a renewables-heavy electricity sector.

In sum, if the United States is to have any chance at decarbonizing at the rate necessary to avoid catastrophic climate change,204 then RTOs must play a pivotal role. The remainder of this section explores how RTOs have responded as putative “policy-takers” to the climate change priorities established by state and federal entities.

199. See Jenkins et al., supra note 185, at 2507 (explaining need for more “flexible and responsive” power systems in the future).


201. See CHARLES TEPLIN, MARK DYSON, ALEX ENGEL & GRANT GLAZER, ROCKY MOUNTAIN INST., THE GROWING MARKET FOR CLEAN ENERGY PORTFOLIOS: ECONOMIC OPPORTUNITIES FOR A SHIFT FROM NEW GAS-FIRED GENERATION TO CLEAN ENERGY ACROSS THE UNITED STATES ELECTRICITY INDUSTRY 6–7 (2019) (describing how gas is no longer cost-competitive with clean energy); William Boyd, supra note 13, at 1624 (discussing this dynamic); Emily Hammond & Jim Rossi, Stranded Costs and Grid Decarbonization, 82 BROOKLYN L. REV. 645, 647 (2017); Jenkins et al., supra note 185, at 2506 (supporting carbon capture and storage as a solution); Serkin & Vandenbergh, supra note 200, at 1022 (discussing this challenge).


203. See infra Part III.B for more detail.

204. See Jenkins et al., supra note 185, at 2498.
B. RTOs as Heel-Draggers

On the whole, RTOs are inveterate stalkers when it comes to integrating new resources that would improve their markets but threaten incumbents’ bottom line. This is not a minor flaw: RTO heel-dragging causes years, if not decades, of delay in critical market improvements, costing billions of dollars and causing significant greenhouse gas emissions. 205 It is perverse that our key grid operators—ostensibly created to improve competition and efficiency—should have to be forced, through years-long processes, to make design improvements that benefit consumers and the environment.

RTOs’ dilatory tactics have manifested in several technically dense controversies, which I outline here only in broad strokes. (Indeed, likely one of the reasons that RTOs get away with these delays is that these topics are so complicated that they confound efforts at media attention or civic engagement.) The first such controversy is over what is known as demand response. Currently, most customers pay a per-kilowatt-hour fee for electricity that does not shift over the course of the day, week, month, or year—such that their demand fluctuates mostly in response to the weather and their daily schedules. 206 This causes major spikes in demand during peak hot and cold periods, and supply must be adequate to cover these spikes. 207 To alleviate the costs of building supply that operates only at peak periods—and to help integrate more renewables onto the grid—economists have long called for making electricity demand more responsive to changes in supply. 208 However, demand response is less popular among transmission and generation owners. Because demand response reduces the amount of infrastructure that needs to be built, and serves as a balancing resource


207. Id.

for renewable resources that may be competing with traditional fossil fuel resources, these entities see it as a threat to their revenue streams.\textsuperscript{209}

Although FERC has eschewed any specific role as an environmental regulator, it has embraced demand response as a means of ensuring "just and reasonable rates."\textsuperscript{210} RTOs, though, have on the whole been far less enthusiastic about integrating demand response. To force RTOs’ hand, FERC in 2008 required RTOs to amend their market rules to "accept bids from demand response resources, on a basis comparable to any other resources . . . ."\textsuperscript{211} The Commission surely hoped that was a job complete. But many RTOs continued to disadvantage demand response resources by paying less for reductions in megawatts demanded than was paid to suppliers for providing megawatts.\textsuperscript{212} To remedy this deficiency, just three years later FERC had to promulgate another rule that required RTOs to compensate demand response “at the market price for energy.”\textsuperscript{213} Power generators challenged this order in court and the Supreme Court ultimately upheld it.\textsuperscript{214}


212. The particulars of this debate are complex. Economists generally tend to prefer price-responsive demand, in which consumers naturally respond to price signals by lowering demand, over incentive payments for demand reduction, which strategically pay consumers for reducing their demand at certain times. See DAHLKE & PROBOR, \textit{supra} note 205, at 3; Bushnell et al., \textit{supra} note 208, at 10-11; Faruqui et al., \textit{supra} note 206, at 1551. For this reason, some economists questioned the theoretic propriety of paying demand response providers the same “locational marginal price” as generators. See FERC Order No. 745, Demand Response Compensation in Organized Wholesale Energy Markets, 76 Fed. Reg. 16,658 (Mar. 24, 2011) (codified at 18 C.F.R. pt. 35 (2019)) [hereinafter Order 745] (cataloguing this debate). FERC’s focus, however, was on promoting a \textit{maximum} amount of demand response in energy markets and thereby lowering overall system costs—in which case it made sense to treat demand response providers of “negawatts” the same as generators providing megawatts. See id. at 16,667.

213. Order 745, \textit{supra} note 212, at 16,658. FERC also imposed a “cost-effectiveness” test to ensure that demand response was compensated at this level only when it produced “net benefits” for the system. \textit{Id}. at 16,659.

214. FERC v. Elec. Power Supply Ass’n, 136 S. Ct. 760, 775 (2016) (“If rewarded at [locational marginal price], rather than at some lesser amount, more demand response providers will enter more bids capable of displacing generation, thus necessarily lowering wholesale electricity prices.”).
Still, in a tale not unlike the one plaguing women in American workplaces, demand response’s “equal pay for equal work” fight within RTOs is not over. Additional complex barriers remain across regions. At the same time, new demand-side technologies have emerged that require their own concerted battles to overcome RTO resistance. In particular, attention has focused in the last several years on energy storage. Energy storage is often called the “holy grail” of clean energy efforts because of its ability to balance out renewable energy supply by storing it during periods of abundance, and releasing it during periods of under-supply.

Given these myriad benefits, FERC has been particularly interested in better integrating storage into energy markets. Certain RTO members, however, have considerably less interest because storage lessens the need for natural gas. The natural gas industry argues that it has an important role in a high-renewables grid, because as a fast-ramping, dispatchable resource, it balances out the intermittency of renewables. But storage can play this same role, emissions-free—not to mention that it can also reduce and replace transmission and distribution infrastructure. If the storage industry can capitalize upon these many value streams, it will become a significant threat to incumbent resources.


220. See id.
For these reasons, FERC again has had to force RTOs into action. In 2018, FERC ordered RTOs to create a “participation model” for storage to remedy unreasonable market barriers that regions have erected. But many RTO responses to the order have been underwhelming, with recent compliance filings clinging to discriminatory practices. For example, PJM’s filing contained a requirement that storage must be able to run for a minimum of ten hours to qualify as a Capacity Storage Resource—a requirement the Energy Storage Association called unnecessary and discriminatory. FERC has since initiated a paper hearing to determine whether this requirement is warranted.

None too pleased with these developments, industry incumbents also took to the courts to stave off storage as a competitor, although with limited success: in July 2020, the D.C. Circuit quickly dispensed with a challenge brought by several RTO member utilities and their trade groups that contested FERC’s jurisdiction to force the participation of storage resources in wholesale markets.

More recently, FERC has acted to integrate distributed energy resources (DER) into markets. DER is a technical term for small-scale generation devices like rooftop solar panels. DER can play a similar role to storage in balancing energy supply and demand and improving the reliability and efficiency of the grid, especially when aggregated into larger units that can participate in RTO markets.

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FERC issued this order under section 206, finding current markets unjust and unreasonable. See Order on Compliance Filing, Instituting Section 206 Proceeding, and Establishing Paper Hearing, PJM Interconnection, LLC, 169 FERC ¶ 61,049, at P 142 (Oct. 17, 2019).

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markets.227 DER’s potential in this regard led FERC, in 2020, to issue Order 2222, which requires RTOs to revise their tariffs to allow “distributed energy resource aggregations” to participate fully in RTO markets.228 FERC had to foist this reform upon certain of its RTOs, which insisted that in spite of DER’s significant growth in the last decade and projected “explosive growth” in the next several years,229 “DER programing must not be done in haste.”230 Again, then, we see at least some RTOs hesitant to independently advance resources that could cut emissions and lower prices by reducing the need to build generation, transmission, and distribution infrastructure. Whether these regions will respond to FERC’s order with robust reforms remains to be seen, but past practice leaves room for doubt.231

The final example of RTO heel-dragging that bears mention is transmission policy. As discussed in Part III.A, building more large-scale transmission will be key to integrating a large amount of renewable energy into the system.232 To be fair, RTOs do not bear most of the blame for the challenges plaguing transmission planning and construction—states, utilities, FERC, certain environmental groups, Congress, and the courts play major roles.233 But RTOs have exacerbated the problem by continuing to erect barriers to non-incumbent

227. See Order 2222, supra note 226, at P 5. MIT’s project on the “utility of the future” catalogues a range of values that DER bring to the grid, including “Energy,” “Network capacity margin,” “Power quality,” “Reliability and resiliency,” “Black-start,” “Firm generation capacity,” “Operating reserves,” and “Price hedging” in addition to their environmental and climate change benefits. See MASS. INST. OF TECH., supra note 226, at 266. On complexities, see Order 841, supra note 221, at 9580 (explaining that although the agency “continue[d] to believe that removing barriers to distributed energy resource aggregations in the RTO/ISO markets is important, we have determined that more information is needed with respect to those proposals . . .”).

228. See Order 2222, supra note 226, at P 8.


230. Comments of the Midcontinent Independent System Operator, Inc., at 2, FERC Docket No. RM18-9-000 (June 26, 2018); see also Post-Technical Conference Comments of ISO New England Inc. at 2, FERC Docket No. RM18-9-000 (June 26, 2018) (“ISO-NE does not see a need for an additional DER participation model in the New England region at this time.”)

231. In the agency’s usual manner, FERC allowed RTOs substantial discretion to decide precisely how to fairly integrate DER aggregations into their markets. See Order 2222, supra note 226, at P 7.

232. See supra note 202 and accompanying text.

transmission companies competing to build new transmission lines. Moreover, as I have catalogued elsewhere, they have resisted creating planning processes that weigh “non-transmission alternatives” fairly.

These examples make clear the extent to which RTOs are obfuscating when they claim not to be policy-makers. Clearly, the market rules established by RTO governance processes have profound impacts on which resources power the U.S. electricity grid. Indeed, as FERC has explained, the reason that markets have discriminated against demand response, storage, and DER is that barriers “can emerge when the rules governing participation in those markets are designed for traditional resources and in effect limit the services that emerging technologies can provide.” Note the passive voice: the barriers just “emerged.” Such passive problem-creation is the predictable result of a member-driven process for raising and vetting issues, where incumbents have both reason and power to block the entry of new competitor technologies.

C. RTOs as Anticompetitive Forces against Renewable Energy

When it comes to demand response, storage, DER, and transmission policy, RTOs have been slow and tepid. When it comes to renewable energy, certain RTOs have been aggressive and misguided. Treatment of renewables has been particularly alarming in ISO New England (ISO-NE) and PJM—two of the RTOs with mandatory capacity markets. These two RTOs have recently instituted capacity market reforms that make it significantly harder for renewables to compete in their markets—thereby putting aggressive state renewable energy goals at risk.

These reforms are tediously complex; for present purposes, I stick to the basics. These RTOs have asserted that the market participation of resources that receive “state support” results in “price suppression and thus negatively

234. See e.g., Order on Initial Decision, TranSource, L.L.C. v. PJM Interconnection, LLC, 168 FERC ¶ 61,119, at 3–4 (Aug. 26, 2019) (detailing complaints that PJM’s transmission planning unduly discriminated against merchant transmission projects and ordering some transparency improvements); CRISTIN LYONS & BRIAN MESSICK, SCOTT MADDEN MGMT. CONSULTANTS, FERC ORDER NO. 1000: FIVE YEARS ON 3 (2016).


236. Order 841, supra note 221, at 9582.

impact[s] the market’s ability to retain and justly compensate needed existing resources and to attract new, competitively-compensated resources.” In plainer speak, natural gas generators in particular are worried that the entry of substantial renewable resources into the market might lower market prices enough to drive fossil fuel companies out of business, or halt future construction of fossil fuel-fired generation. Consequently, these RTOs have pushed for reforms that limit the ability of “state-supported resources” to participate in their markets. Curiously, though, these RTOs define “state support” only to include certain state-driven policies that tend to promote clean energy, while leaving out many long-standing federal and state subsidies to fossil fuel resources.

FERC approved these changes to ISO New England’s capacity market in 2018 and finalized its approval of PJM’s capacity market redesign in 2020. In fact, FERC went further than PJM had even requested, extending exclusions on full market participation to a host of additional resources receiving state support. In dissent, FERC Commissioner Richard Glick asserted that the majority’s logic now “permits the Commission to zero out any state effort to address the externalities associated with sales of electricity.” Perhaps unsurprisingly, given the breadth of this order, states and other parties swiftly filed challenges to it in a set of cases that has been consolidated in the Seventh Circuit.

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238. Order on Tariff Filing, ISO New England, Inc., 162 FERC ¶ 61,205, at P 5 (Mar. 9, 2018); Macey & Salovaara, supra note 141, at 4 (explaining this phenomenon in more detail).

239. More specifically, these regions will now subject state-supported resources to a “minimum offer price rule” that requires them to bid into capacity markets at levels less likely to clear and receive payment. See Order on Tariff Filing, ISO New England, Inc., 162 FERC ¶ 61,205, at P 2–3 (Mar. 9, 2018); Order Establishing Just and Reasonable Rate, Calpine Corp. v. PJM Interconnection, L.L.C., 169 FERC ¶ 61,239, at P 2 (Dec. 19, 2019) (directing “PJM to submit a replacement rate that . . . extends the MOPR to include both new and existing resources, internal and external, that receive, or are entitled to receive, certain out-of-market payments . . .”). Because, however, state law requires these resources to be constructed to meet renewable procurement mandates, states will build them anyway—but they will not count toward the regions’ installed capacity (unless, in ISO-NE, they then clear a “substitution auction” and buy the capacity obligation of a resource that wants to retire, as explained in Order on Tariff Filing, supra, at P 7). For more detailed accounts of these reforms, see Danny Cullenward & Shelley Welton, The Quiet Undoing: How Regional Electricity Market Reforms Threaten State Clean Energy Goals, 36 YALE J. REGUL. BULL. 106 (2018); Macey & Salovaara, supra note 141, at 47–51.

240. See Calpine Corp. v. PJM Interconnection, L.L.C., 169 FERC ¶ 61,239, 62,998 (Comm’r Glick, dissenting) (accusing these reforms of specifically and arbitrarily targeting “state resource decisionmaking, and particularly state efforts to address the externalities of electricity generation”); Calpine Corp. v. PJM Interconnection, order on rehe’g and clarification, 171 FERC ¶ 61,034, 61,235–36 (Apr. 16, 2020) (Comm’r Glick, dissenting) (cataloguing the “federal subsidies [that] have pervaded the energy sector for more than a century . . . ” in support of fossil fuels, and which “remain pervasive in PJM”).


242. See 171 FERC ¶ 61,034 at 61,226 (Apr. 16, 2020) (Comm’r Glick, dissenting) (describing FERC’s order as creating “a sweeping definition of state subsidy that will subject much, if not most, of the resources in PJM’s capacity market to a minimum offer price rule (MOPR)”).

Circuit.\(^\text{244}\) If upheld, this order—like its counterpart in New England—will make it difficult for renewable energy to participate in the regional capacity market—which in turn will make it considerably more expensive for states to meet their clean energy objectives.\(^\text{245}\) Many worry that the orders will have a particularly pernicious effect on the development of promising but still-nascent technologies like offshore wind, which several East Coast states are actively promoting through state laws and policies.\(^\text{246}\)

These reforms represent the antithesis of RTOs acting in their asserted role of policy-taker. Numerous states have decided—under their well-established Federal Power Act authority to control their own generation—that they prefer a generation mix that emits less carbon dioxide, and they have used lawful state policies to promote these ends.\(^\text{247}\) RTOs’ market reforms are protectionist maneuvers by incumbents—in particular, fossil-fuel generation owners—to prop up the fossil fuel industry against encroachment by these resources. RTOs have identified no legitimate threat that renewables pose to their capacity markets, beyond vague worries about the “integrity of competition” or “investor confidence.”\(^\text{248}\)

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\(^{245}\) See MICHAEL GOGGIN & ROB GRAMLICH, GRID STRATEGIES LLC, *A MOVING TARGET: AN UPDATE ON THE CONSUMER IMPACTS OF FERC INTERFERENCE WITH STATE POLICIES IN THE PJM REGION 3-4 (2020)* (observing that although “the cost [of the PJM order] depends on what price floors FERC applies to various state-supported resources,” the reforms are likely to “result in billions or tens of billions of dollars in excess costs to electricity consumers across PJM”); Catherine Morehouse, *Exelon, PSEG Urge New Jersey to Adopt FRR Alternative to PJM, as Competitive Providers Push for CASPR*, UTIL. DIVE (May 21, 2020), https://www.utilitydive.com/news/exelon-pseg-urge-new-jersey-to-adopt-fr-alternative-to-pjm-as-retail-pro/578380 [https://perma.cc/QAJ4-HXKT] (describing New Jersey’s capacity market reforms as forcing “clean generators to essentially buy their way into the market” by paying an old resource to retire, “thus raising the costs of renewables”) (quoting Rob Gramlich) (alteration in original).


\(^{247}\) See Hughes v. Talen Energy Mkgt., LLC, 136 S. Ct. 1288, 1299 (2016) (holding that states act within their traditional domain by “encouraging production of new or clean generation” so long as they do not condition programs on federal wholesale market participation); Alco Fin. Ltd. v. Klee, 861 F.3d 82, 101–02 (2d Cir. 2017); Conn. Dep’t of Pub. Util. Control v. FERC, 569 F.3d 477, 481 (D.C. Cir. 2009) (explaining states’ rights to “limit new construction to more expensive, environmentally-friendly units, or to take any other action in their role as regulators of generation facilities without direct interference from the Commission”).

\(^{248}\) Order on Tariff Filing, ISO New England Inc., 162 FERC ¶ 61,205, at P 21 (Mar. 9, 2018) (describing capacity markets as designed “to produce a level of investor confidence that is sufficient to ensure resource adequacy at just and reasonable rates”); Order Rejecting Proposed Tariff Revisions,
But these market operators should not want fossil fuel generators to be confident in building new, polluting generation for states that do not want it or need it.\footnote{249} There is no evidence that either New England or the mid-Atlantic faces anything approaching a capacity deficit. Quite the opposite: during a ten-year period of essentially flat demand growth between 2008 and 2017, PJM added fifteen thousand megawatts of largely unnecessary new generation—almost all of it natural gas.\footnote{250} These additions have caused the region to substantially exceed expert recommendations of needed capacity additions. The North American Electric Reliability Corporation (NERC) is a standard-setting organization charged with determining the target reserve margin for each region of the United States—that is, the percentage of supply that each region should maintain above peak demand to ensure reliability.\footnote{251} In summer 2018, NERC set PJM’s target reserve margin at 16.1\%.\footnote{252} PJM’s actual margin that summer was 32.8\%, and the region’s anticipated reserve margin in 2021 is an astounding

45%. Across regions with capacity markets, similar results predominate—with the consequence that consumers are paying over $1 billion each year for unnecessary fossil fuel investments.

All that said, I do not mean to suggest that grid operators face no challenges in integrating renewables. But the legitimate concerns raised about renewables, including fast ramps and resource seasonality, cannot be appropriately addressed through the crude mechanism of capacity market payments. What is needed to address these challenges is a focus on enhancing the grid’s flexibility—a feature that many fossil fuel plants receiving capacity payments do not support, and which most RTOs have consequently failed to adopt as a key system criterion.

One final and growing set of RTO actions that discriminates against renewables bears highlighting: the recent obsession with “fuel security.” The plans hatched by President Donald Trump and the Department of Energy to subsidize coal and nuclear power as “fuel-secure” resources have received significant attention the last couple of years. None of these plans has come to fruition, largely because FERC in 2018 did not accept that these resources—whose distinguishing characteristic is that they can store large quantities of fuel on-site—especially contribute to the resiliency of the grid. Yet these same

253. Id.
254. See ROB GRAMLICH & MICHAEL GOGGIN, GRID STRATEGIES LLC, TOO MUCH OF THE WRONG THING: THE NEED FOR CAPACITY MARKET REPLACEMENT OR REFORM 7, 16 (2019) (finding that capacity markets attract predominantly natural gas across markets and estimating $1.4 billion in excess costs across PJM, ISO-NE, and NYISO). In RTOs without mandatory capacity markets, environmentalists have raised concerns that a different method of propping up uneconomic fossil fuel resources has emerged in the form of self-scheduling. Self-scheduling occurs when a generator indicates to its RTO that it plans to run during a certain period of time irrespective of market price—and many coal resources in these regions have done precisely this. See JEREMY FISHER, AL ARMENDARIZ, MATTHEW MILLER, BRENDAN PIERPONT, CASEY ROBERTS, JOSH SMITH & GREG WANNIER, SIERRA CLUB, PLAYING WITH OTHER PEOPLE’S MONEY: HOW NON-ECONOMIC COAL OPERATIONS DISTORT ENERGY MARKETS 4, 8 (2019) (finding costs of $3.5 billion to the region from self-scheduling, resulting in 10% more coal being utilized). However, self-scheduling presents less concern for purposes of my analysis, because states in these regions retain control over self-scheduling behaviors and have tools to reform the practice. See Tom Kleeckner, Enviros, States Question Coal Self-Commitments, RTO INSIDER (Dec. 3, 2019), https://rtoinsider.com/enviros-states-question-coal-self-commitments-149256 (https://perma.cc/YP62-F6CV) (describing how Minnesota and Missouri have launched investigations into self-scheduling).
255. See Cullenward & Welton, supra note 239, at 117–18. See also Macey & Salovaara, supra note 141, at 45 (critiquing FERC for “treat[ing] capacity markets as a stand-in for reliability”).
256. See GRAMLICH & GOGGIN, supra note 254, at 11–12 (“What the grid increasingly needs is flexibility . . . and many fossil and nuclear resources that receive large capacity payments provide little to no flexibility.”).
258. Memorandum from Rick Perry, Sec’y, Dep’t of Energy, to Chief of Staff, Dep’t of Energy (Apr. 14, 2017); Order Terminating Rulemaking Proceeding, Initiating New Proceeding, and Establishing Additional Procedures, Grid Reliability and Resilience Pricing, 162 FERC ¶ 61,012, at P 25(d) (Jan. 8, 2018) (terminating the Department of Energy’s proposed rulemaking); see also Trevor
concepts have motivated changes in RTO rules that privilege traditional resources over renewables, on scant evidence to justify such differential treatment. Most glaringly, ISO-NE has had an ongoing controversy about how best to ensure adequate electricity supplies during the winter, when the region often risks a shortage of natural gas. ISO-NE recently proposed a short-term solution under which ratepayers would subsidize uneconomic fossil fuel plants by about $150 million per year to provide "winter energy security." After the Commission initially expressed skepticism about ISO-NE’s proposal, FERC’s procedural rules allowed the proposal to go into effect in August 2019 due to lack of a quorum to vote the proposal up or down. Many worry that this incident is a harbinger of more actions to come from RTO incumbents using the amorphous concept of "fuel security" to prop up increasingly uneconomic fossil fuel resources.

The key takeaway of this analysis is that the policy priorities required to address climate change place particular strain on RTO governance. That said, readers may have noticed that the discussion above focused on certain RTOs more than others. Not all RTOs are equally resistant to renewables or demand-side resources. MISO, for example, has been a leader in integrating wind into its system, along with the Southwestern Power Pool. Similarly, California has led the way on promoting more fulsome integration of DER and storage.

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Houser, John Larsen & Peter Marsters, The Real Electricity Reliability Crisis, RHODIUM GRP. (Oct. 3, 2017), https://rhg.com/research/the-real-electricity-reliability-crisis-doc-nopr (finding that between 2012 and 2016, 0.00007% of electricity disruptions were "due to fuel supply problems," mostly caused by one event in Northern Minnesota that "involved a coal-fired power plant").

259. See JACOBS AND PESKOE, supra note 138, at 9 (“Fuel availability is not causing blackouts.”).

260. See Order Accepting Agreement, Subject to Condition, and Directing Briefs, Constellation Mystic Power, LLC, 165 FERC ¶ 61,267 (Dec. 20, 2018).


265. See Stafford & Wilson, supra note 18, Kleckner, Another Wind Penetration Record for SPP, supra note 18; Kleckner, Overheard at the Great Plains Institute SPP Workshop, supra note 18.

important to emphasize these regional differences when diagnosing what precisely has gone wrong in RTO governance, and what continues to go right. I consider what can be learned from divergent RTO practices in Part V. First, though, I return to governance theory to illuminate the institutional forces behind the troubling RTO behaviors described in this Section.

IV.

Privatization as the Problem: Diagnosing RTOs’ Flaws

It is time to connect the dots. Parts I and II introduced RTOs, contextualizing them as variations on the theme of privatization that has swept through U.S. governance. Part III illustrated why RTOs are problematic in practice, showing how they have resisted the policy priorities of state and federal regulators. This Section links RTOs’ origin story and their performance to diagnose what has gone wrong in RTO governance, highlighting how the failures detailed in Part III are the result of flawed institutional design. In brief, I contend that FERC was shortsighted in structuring regional grid governors as private membership entities answerable to regulators only under the traditional legal levers of utility rate regulation.

Many scholars writing during the boom days of privatization approached the movement equivocally. To evaluate its wisdom in any given context, they suggested, required weighing the efficiency and effectiveness gains that more entrepreneurial governance might provide against the likely losses in direct governmental or political accountability. Two decades in, the experience of RTOs eludes even this generous framing. RTOs’ membership-club format has not led to entrepreneurial efficiency—to the contrary, incumbents use these institutions to block cost-reducing reforms. At the same time, this governance structure has created a growing rift between the objectives of market operators and the democratically determined objectives of state and federal regulators—in just the ways that many critics of outsourcing had predicted.

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268. Cf. O’Connell, supra note 58, at 852 (suggesting that “boundary entities, in some cases, might sacrifice the goals of both efficiency and accountability that shape agency design”).

269. See Mashaw, supra note 267, at 135–36; see also Minow, note 71, at 1235 (describing the challenges of private actors adjudicating access to services).
This Section discusses why FERC should abandon hope in RTOs’ membership-club democracy as a sound method of grid management. After building the case that a reform effort focused on RTOs’ internal governance flaws is inadequate, the Section goes on to diagnose two larger accountability gaps that, it argues, form the real core of RTO governance problems: an inversion of the proper hierarchy between RTOs’ responsibilities and states’ legitimate policy priorities, and an oversight deficit between RTOs and their primary government regulator, FERC.

A. The Limits of Self-Regulation

Much of the recent research on RTOs has focused on their internal governance processes. In aggregate, this research suggests that these processes (outside California) excel at producing reforms that serve incumbents’ business interests but struggle to effectuate reforms that enhance competition or shrink the demand for electricity. This subpart summarizes this research, before arguing that a holistic view of RTO governance flaws suggests the need for more robust fixes than are typically suggested.

One clear pattern in RTO governance is a tendency to favor building traditional infrastructure. Recall that most RTO governance processes utilize weighted sectoral voting, with demand and supply sides of the market ostensibly checking each other.\footnote{270} However, this theory of self-checking has never really had a grounding in reality. As FERC observed in 2002 with respect to PJM, “[f]our of [the region’s five membership] classes represent interests that would benefit from higher levels of demand.”\footnote{271} That is to say, generation and transmission-owning entities generally all want to build more infrastructure, and those selling electricity generally prefer to sell more of it.\footnote{272} Of the voting sectors in PJM, only end-use customers have a strong incentive to favor demand-reducing technologies.\footnote{273} The other natural watchdog against overbuilding tendencies is consumer advocates. However, in most regions, consumer advocates have no voting power, and at most they hold 8 percent (in MISO).\footnote{274} Accordingly, it proves relatively easy to muster supermajority support for incumbent-supply-enhancing proposals within RTO governance processes.\footnote{275}

\footnote{270} See supra Part II.B.1 and Welton, Appendix A, supra note 14 (summarizing voting sectors in each RTO).
\footnote{272} See Vandenbergh & Rossi, supra note 209, at 1531.
\footnote{273} See supra Part II.B.1.
\footnote{274} See Welton, Appendix A, supra note 14 (showing consumer advocate weighted votes by region).
\footnote{275} See supra notes 249–254 and accompanying text regarding oversupply in RTOs with capacity markets.
In contrast, when proposals are advanced to increase competition and promote new technologies, it proves difficult to overcome supermajority voting thresholds. For example, in their 2018 modeling of PJM voting patterns on capacity market reforms, Kyungjin Yoo and Seth Blumsack found that of six proposals advanced in PJM to reform the oversupplied capacity market, not one could obtain the supermajority support necessary to advance out of the Members Committee—despite the fact that the “status quo” option received the least support of all.276 Other reforms beneficial to consumers often wither and die in committee, as evidenced by RTOs’ patterned responses to demand-side technologies and clean energy.277

Independent RTO boards could provide a check on the incumbent bias of stakeholder processes. Recall that RTO boards are generally not bound by the outcome of stakeholder voting processes.278 However, RTO boards have been critiqued as overly focused on two interests. The first is reliability, which these boards prioritize in their “institutional self-interest,” given the extreme negative reactions that transmission-scale blackouts provoke.279 The second is the interests of transmission-holding companies, whose withdrawal would shrink the geographical footprint of the RTO.280 In combination, these institutional interests appear to prevent robust policing of incumbent favoritism and render these boards imperfect stewards of the public interest.

As illustrative examples of opaque board interests, consider the processes producing the anti-renewable capacity market reforms in PJM and ISO New England. Each region failed to secure supermajority support for these reforms—

276. Yoo & Blumsack, supra note 30, at 139, 148.
277. See supra Part III; see also KYUNGJIN YOO, VOTING BEHAVIOR IN PJM REGIONAL TRANSMISSION ORGANIZATION 1 (2016) (finding that sectoral voting coalitions are frequently able to block the passage of PJM market reforms); Cranton, supra note 208, at 4–5 (reporting “numerous examples of basic market flaws . . . enduring for an extended period” of time because of “changes that would adversely impact a large and organized group of participants, such as the suppliers”); E4THE FUTURE, supra note 30, at 6; James et al., supra note 8, at 14 (“[S]takeholders who wish to maintain a power imbalance may use their current power advantage to discourage periodic review and adjustments that disadvantage them.”); Comments of Solar Energy Industries Association in Support of Opening Competitive Market Participation for Electric Storage and Distributed Energy Resources, Electric Storage Participation in Mkts Operated by Reg’l Transmission Orgs. and Indep. Sys. Operators at 3, FERC Docket Nos. RM16-23, AS16-20 (Feb. 23, 2017) (asserting that new entrants face “an inherent disadvantage in a multi-region stakeholder process”); Elise Caplan & Patrick E. McCullar, Markets in Name Only: Mandatory Capacity Markets and their Adverse Impact on Load-Serving Entities, 26 ELEC. J. 52, 52–53 (2013) (arguing that in RTO capacity markets “complex rules have been rewritten to create barriers to entry and anti-competitive conditions that provide an optimal earnings scenario for one group of sellers (incumbent merchant generators) by restricting the entry of new supply”).
278. There are limited exceptions to this statement, including PJM’s split filing rights and a special ISO-NE provision for “jump ball” filings. See Welton, Appendix A, supra note 14.
279. See Dworkin & Goldwasser, supra note 9, at 562.
280. See id. at 558; SIMEONE, supra note 30, at 24; Protest, Request for Evidentiary Hearing, and Request for Recusal of Commissioner McNamee of Public Citizen, Inc., PJM Interconnection, LLC, FERC Docket Nos. EL19-58, 19-1468. at 3 (May 15, 2019) (noting that PJM’s rate proposal would benefit only the narrow interests of its nuclear-, coal-, and natural gas-owning members).
and each board proceeded nevertheless, in the face of state opposition. In fact, PJM’s Board could not even come to an internal consensus. The region instead offered “two alternate (mutually exclusive) proposals,” each of which failed the stakeholder process, for the Commission to choose between. It is difficult to know each board’s internal motivations for filing changes that did not pass internal governance proceedings. But the pattern displayed—championing reforms that benefit large incumbent interests, at the expense of clean energy developers and over state protests—lends some force to worries that RTO boards may prioritize capacity over-procurement and self-preservation.

The most frequently proposed solution to these governance flaws is internal governance reform. However, I believe the transformation demanded by climate change cuts too deeply against theories of industry self-regulation to make internal reforms an effective stand-alone solution. Industry self-regulation works when the incumbent firms in an industry expect to be the firms of tomorrow, and expect their long-lived infrastructure investments to pay dividends. In that case, all firms have reciprocal incentives to engage in fair dealing. But for climate change policies to succeed, certain companies—notably, those that have invested in coal and natural gas infrastructure—must lose money and market share. To avoid this outcome, they will use their voting power to bias market rules in favor of their assets.

Even if voting sectors within RTOs were weighted differently, such that clean energy companies had more say in governance, the level of industry consolidation that has followed in the wake of PUHCA’s repeal could still skew voting patterns in favor of traditional generation sources. One component of electricity sector deregulation—particularly in the eastern states—was the

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282. See PJM Transmittal Letter, supra note 281 at 6.

283. See GRAMLICH & GOGGIN, supra note 254, at 18.

284. See Brooks, supra note 21 (summarizing calls from senators and commissioners to review RTO governance processes for compliance with the principles of Order 719 and to ensure greater transparency and stakeholder access); E4THEFUTURE, supra note 30, at 14 (considering whether RTOs should create a new voting sector for clean energy resources); SIMEONE, supra note 30, at 2 (arguing that “FERC should consider requiring . . . RTO/ISO’s to periodically evaluate their stakeholder governance systems . . . ”); James et al., supra note 8, at 19 (recommending a reexamination of RTOs’ internal governance); Amanda Durish Cook, Task Team Zeroes in on MISO Board Recommendations, RTO INSIDER (Sept. 3, 2019) https://rtoinsider.com/miso-board-qualification-task-team-141978 [https://perma.cc/Z2YH-PLQM] (describing how MISO is considering reserving a board seat for “candidates who have experience representing utility customers”).

285. See supra notes 83–86 and accompanying text.

286. See Birdthistle & Henderson, supra note 82, at 8; Park, supra note 82, at 144; Omarova, supra note 82, at 416.

287. See supra Part III.A.
splitting apart of previously vertically integrated utilities into oppositional entities: supply on the one hand, and demand on the other. But the incomplete restructuring of the industry, combined with the return of mega-holding companies, erodes these gains: now large holding companies have numerous assets on both the supply and demand side of the ledger, creating large combined voting sway in RTO governance. For RTO governance to prove effective under these conditions, demand-serving affiliates within a holding company would have to check their supply-side sister companies. Technically, affiliates are supposed to be walled off from one another in stakeholder processes, so that such opposition can occur. But in practice, it is nearly impossible to know how often affiliates align their votes with holding company priorities, because only vote totals—not who voted for what—are recorded in lower-level committee meetings, where affiliate abuse might happen. Moreover, there has also been substantial consolidation in the ownership of merchant (i.e., competitive, non-utility) gas-fired plants in recent years: private equity firms have purchased a large number of such plants in the United States, along with making significant investments in shale oil plays. This consolidation, too, creates obvious incentives for these entities to ensure that market rules perpetuate these fossil resources.

All to say, it is difficult to continue to trust in the RTO construct when legislators and regulators have abnegated what used to be a core element of public utility doctrine: ensuring that dominant corporations do not, through a combination of concentrated vertical and horizontal power, run their sector for their own gain at the expense of people and the planet. On this topic, one final

288. See Spence, supra note 9, at 772–75.

289. For example, Simeone found that “in 2015, over 77 percent of the generation resources needed to meet PJM’s peak were controlled, in full or in part, by only 10 companies.” SIMEONE, supra note 30, at 38. Her research further indicates that six major holding companies controlled the majority of this generation. See id. (breaking down megawatts of generation owned by parent company). Note that this figure explicitly excludes renewable energy resources. Id.

290. See SIMEONE, supra note 30, at 36 (“Restructured energy companies are legally supposed to have functional firewalls between business segments (e.g., generation, transmission, and distribution) that prevent collusion among these Affiliates, in order to promote competition and reduce monopoly power.”).

291. See Jonathan Raab & Patrick Field, Raab Assocs., Ltd., An Assessment of PJM’s Governance and Stakeholder Process 12–16 (2009); SIMEONE, supra note 30, at 32 (observing that a transmission company “that has significant generation assets and electric distribution companies is likely to vote on proposals that benefit the generation asset (e.g. increase capacity prices”).

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point about skewed RTO incentives bears mention: even if the effects of industry consolidation were not a concern, a well-structured private RTO would still likely have interests out of step with the pressing and growing public interest in addressing climate change. An industry organization fundamentally devoted to keeping the lights on at reasonable prices cannot be expected to magically prioritize solving a problem that throws its basic operations out of whack. That is—or should be—the job of external regulators. Remember, RTOs are not operating in a legal vacuum. The courts have made clear that these entities are subject to public utility regulation, the same as any investor-owned utility.293

Thus, in my estimation, the bigger question that research into RTO governance leaves unanswered is this: what has gone wrong in these external oversight processes? Why aren’t states and FERC able to channel RTO decision-making in the ways that federal statutory law contemplates? The remainder of this Section constructs that analysis, considering why the mechanisms built to superimpose democratically determined prerogatives on the electricity industry are failing.

B. RTOs Trample States’ Legitimate Priorities

Recall that the Federal Power Act gives states control over electricity generation and retail sales.294 This jurisdictional split has been critical in upholding a range of state laws aimed at promoting renewable energy and, most recently, nuclear energy.295 Even as courts have moved toward recognizing the electricity space as one of “collaborative federalism,” rather than a bright-line split in jurisdiction,296 they have remained clear that states retain their prerogative to determine the energy mix within their borders—so long as they do not explicitly regulate FERC’s wholesale markets.297

As RTOs have established rules regarding transmission planning and energy and capacity market participation, they have increasingly touched upon

293. See supra notes 154–156 and accompanying text.
297. See Hughes, 136 S. Ct. at 1299; Allco Fin. Ltd., 861 F.3d at 87; Conn. Dep’t of Pub. Util. Control v. FERC, 569 F.3d 477, 481 (D.C. Cir. 2009).
matters of state concern.\textsuperscript{298} In theory, that should not be a problem: RTOs’ persistent claims that they are neutral policy-takers means they should take state policy priorities as market constraints.\textsuperscript{299} But as described in Part III, that’s not what these organizations are doing. Certain RTOs’ aggressive use of market rules to wall state-supported renewable energy out of markets, and to resist the incorporation of other new technologies, puts the lie to arguments that RTOs passively accept state clean energy policies. To the contrary, RTOs have established market rules that undermine states’ goals in favor of increasing the profits of incumbent member utilities.\textsuperscript{300}

States are largely powerless within RTO governance processes to do anything about the fact that RTOs are undermining their lawful state policies (at least outside California). Even though FERC realized at the inception of RTOs that their governance would directly impact state policies, it hesitated to give states any formalized role in RTO governance.\textsuperscript{301} Consequently, states have been left with merely an advisory role in RTO policy-making in most regions—and this role does not carry nearly enough weight when it gets in the way of member-utilities’ profits. To take one example, PJM acknowledged that proponents of anti-renewable reforms in its markets intended to “[d]isincentivize states from providing subsidies in the first instance.”\textsuperscript{302} Such initiatives amount to a brazen usurpation of lawful state prerogatives for the gain of private fossil fuel interests.

States that object to the policy impacts (and hefty price tags) of RTO market rules do have a “nuclear option”: they can require their jurisdictional utilities to withdraw from the RTO. Indeed, several states have initiated efforts along these lines. New Jersey’s Board of Public Utilities has begun a proceeding to consider whether to withdraw its utilities from the PJM capacity market and have the state guarantee resource adequacy instead,\textsuperscript{303} and Maryland has indicated its interest

\textsuperscript{298} See supra Part II.B. See also Boyd, supra note 13, at 1669–70 (“[M]arket design matters a great deal.”); Jody Freeman, The Uncomfortable Convergence of Energy and Environmental Law, 41 HARV. ENV’T L. REV. 339, 359 (2017) (describing how these market rules “determine the order in which different types of energy, such as coal, natural gas, and wind power, will be dispatched to satisfy demand . . .”).

\textsuperscript{299} See supra note 192 and accompanying text.

\textsuperscript{300} See supra Part III; see also Dissent in Part of Commissioner Richard Glick on ISO New England Inc. and New England Power Pool Participants Committee at 2, FERC Docket No. ER19-444-000 (Jan. 29, 2019) (accusing ISO-NE of exhibiting a preference for fossil fuels).

\textsuperscript{301} Several commenters on Order 2000 (including some states) suggested that state voting rights within RTOs would be “inappropriate” or “awkward,” given potentially related federal and state proceedings and possible parochial tendencies of state officials. See Order 2000, supra note 11, at 849.

\textsuperscript{302} See Capacity Repricing or in the Alternative MOPR-Ex Proposal: Tariff Revisions to Address Impacts of State Public Policies on the PJM Capacity Market at 56 n.138, PJM Interconnection, LLC, FERC Docket No. ER18-1314 (Apr. 9, 2018).

in a similar move.\textsuperscript{304} Connecticut has threatened to go further by withdrawing from ISO-NE altogether.\textsuperscript{305}

However, although legally permissible, pulling utilities out of an RTO is a fraught and time-consuming process. FERC approval must be secured, and a withdrawing state or utility would have to figure out how to replace a host of complex technical and engineering oversight functions previously performed by the RTO.\textsuperscript{306} Whether the eastern RTOs’ aggressive recent actions finally prompt any states to follow through on withdrawal remains to be seen.\textsuperscript{307} Even so, these withdrawals would scarcely be a clean energy victory, given the benefits that broad regionalization offers clean energy.\textsuperscript{308} Thus the ability to exit gives states devoted to a clean energy transition at best incomplete leverage within their RTOs.

It is worth acknowledging that not every state objects to RTOs’ frequent incumbency biases. Indeed, some states themselves continue to adopt special supports for fossil fuels,\textsuperscript{309} which is their lawful prerogative under the Federal Power Act. More generally, states have frequently voiced concerns that RTO rule changes to incorporate demand-side technologies may usurp state jurisdiction.\textsuperscript{310} But jurisdictional concerns aside, states have largely supported

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\textsuperscript{304} See Morehouse, supra note 245.
\textsuperscript{305} See id. at 7 (observing that presently, “[i]n addition to administering FERC-regulated energy, capacity, and ancillary services markets, ISO-NE serves as the NERC-approved Reliability Coordinator, Balancing Authority, Transmission Operator, Transmission Service Provider, Planning Coordinator, Resource Planner, Reserve Sharing Group, and Transmission Planner”).
\textsuperscript{306} See Order Establishing Just and Reasonable Rate, Calpine Corp. v. PJM Interconnection, L.L.C., 169 FERC ¶ 61,239, 62,995 P 2 (Dec. 19, 2019) (Comm’r Glick, dissenting) (predicting that states might finally abandon PJM due to their overly restrictive rules regarding participation of state-supported resources).
\textsuperscript{307} See infra Part V.
\textsuperscript{308} See infra Part V.
\textsuperscript{309} See, e.g., Leah C. Stokes, \textit{While the Planet Overheats, Ohio’s Coal Industry Gets a Bailout}, \textit{Guardian} (July 28, 2019) (https://www.theguardian.com/commentisfree/2019/jul/28/planet-overheats-ohios-coal-industry-gets-a-bailout) (describing an Ohio law that subsidizes coal and rolls back clean energy programs); see also FISHER, ARMENDARIZ, MILLER, PIERPONT, ROBERTS, SMITH & WANNIER, supra note 254, regarding self-scheduling.
\textsuperscript{310} See, e.g., Opening Brief of Petitioners at 15, Nat’l Ass’n of Regul. Util. Comm’rs v. FERC, 964 F.3d 1177 (D.C. Cir. 2020) (arguing on behalf of the trade group for state public utility regulators that FERC regulation of “local storage resources located on the local distribution system” usurps state jurisdiction); Request for Rehearing of the Organization of MISO States, Demand Response Comp. in Organized Wholesale Mkt., FERC Docket No. RM10-17-000 (Apr. 14, 2011) (opposing FERC’s proposed payment levels for demand response); Request for Rehearing on Behalf of the Public Utilities Commission of Ohio at 3, Wholesale Competition in Regions with Organized Elec. Mkt., FERC Docket Nos. RM07-19-000 & AD07-7-000 (Nov. 14, 2008); Emily Holden, \textit{States Unhappy with Order 1000 Implementation}, \textit{CQ Roll Call} (July 25, 2013).
FERC-led efforts to reduce costs in RTOs by including more resources. And many of those states most active on climate have pleaded for more support from their RTO—or at least not active hostility—to help accomplish their clean energy goals. Similarly, several regional state organizations have written letters to their RTOs asking for rule revisions to better respect state clean energy goals and help incorporate cost-saving, climate-friendly technologies.

That RTOs have acted so slowly—and sometimes intransigently—in the face of these state pleas suggests a mismatch in the current duties of RTOs and the role of state regulators in these organizations. Several scholars have commended RTOs as regional-level institutions in which states can play an important role—and I agree, as a matter of theory. But in practice, the current relative powerlessness of states within RTOs inverts the hierarchy that the Federal Power Act creates between policy-makers and market operators. Part V considers how a reexamination of the state role in RTOs might be one way of improving their functionality.


312. See sources cited supra note 249.


314. See Chen & Murnan, supra note 30, at 1 (“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.”).

315. See Lyons, supra note 27, at 972; Ososky & Wiseman, supra note 28, at 53.
C. RTOs and FERC: Diminishment and Aggrandizement

One retort to my critiques of the weak role of state regulators in RTOs is that FERC is there to mind the store—and to act as an adjudicator of federalist tensions within energy policy.\(^\text{316}\) Perhaps the problem, then, is with the agency. Certainly this is true in part. But as I explain below, the privatized RTO structure both diminishes and aggrandizes the role of FERC in problematic ways, with respect to different policy priorities. In short, the structure of FERC’s legal oversight of RTOs makes it easy for FERC to justify approving reforms favored by incumbents, but difficult for the agency to force the industry to innovate.

1. Diminished FERC Authority in the Face of Competing Priorities

Take the first category of RTO challenges catalogued above: resistance to FERC’s efforts to incorporate demand response, storage, and DER into their markets.\(^\text{317}\) Here, FERC’s priorities—ensuring lower-cost electricity by including more demand-side resources—have been at odds with those of incumbent generation and transmission owners.\(^\text{318}\) Moreover, RTOs’ focus on reliability above other priorities gives these organizations limited incentives to take risks on new resources. It has thus taken numerous orders and much cajoling for FERC to get RTOs to adopt necessary reforms—with many changes still needed.\(^\text{319}\)

One might view this situation as tolerable—after all, FERC has ordered RTOs into action on these resources. But scholars and students of administrative law should quickly see that this is an odd way for agency policy-making to proceed.\(^\text{320}\) To force RTOs to address FERC’s priorities, the agency must first issue a finding under Federal Power Act section 206 that current RTO tariffs are “unjust and unreasonable.”\(^\text{321}\) Then, RTOs work through their internal governance processes to propose solutions. If FERC rejects a proposal, the whole process starts over—often, over the course of more than a year, while the problem that provoked FERC’s section 206 finding festers on. FERC has thus created a regulatory structure that is a far cry from the typical Chevron deference to agency action, in which the agency selects the best path forward under flexible


\(^{317}\) See supra Part III.B.

\(^{318}\) See Vandenbergh & Rossi, supra note 271, at 1531 (“[T]he rate structure in most jurisdictions creates incentives for utilities to promote demand growth.”).

\(^{319}\) See supra Part II.A.

\(^{320}\) Cf. Moe, supra note 74, at 290 (noting that hybrid entities are better able than agencies to “pursue their own institutional interests, which may or may not conform to the public interest as defined by the nation’s elected leadership”).

Statutory authority. The statutory requirement that FERC accept any RTO practice that it cannot prove patently unreasonable—coupled with FERC’s tendency to solve problems through regional compliance filings—diminishes the agency’s ability to accomplish desirable reforms on any reasonable timeline. To make RTOs better servants of the public interest, a new model of agency oversight is necessary.

2. Aggrandized FERC Authority When Interests Align

Better oversight would not, however, have stopped RTOs’ recent efforts to block renewables’ participation or to prioritize fuel security as a marker of grid resiliency. Here, FERC has been firmly on board. Indeed, in the case of PJM, the Commission ordered the RTO to be even more punitive with respect to “state-supported resource[s]” than the region had proposed. A similar dynamic adhered in the recent case of New York ISO’s (NYISO’s) proposed revisions to its capacity market. After reaching agreement among its stakeholders and market monitor, NYISO filed a request to amend its tariff to better align capacity market rules with state public policy preferences for renewable energy. In September 2020, the Commission denied this request on the grounds that NYISO did not “provide sufficient justification” for prioritizing resources favored by state policy. This decision again provoked a strong dissent from Commissioner Glick, who accused the Commission of erecting “a mind-boggling series of unnecessary and unreasoned obstacles aimed at stalling New York’s efforts to transition the state toward its clean energy future.”

As these developments illustrate, the Trump Administration has staffed a Commission that has frequently favored coal and natural gas over renewable resources—causing many to worry that FERC, once a bulwark independent commission, may be dominated by administration loyalists in ways that undercut its mission to ensure just, reasonable, and non-discriminatory rates. So what does private governance have to do with this challenge?


323. See supra Part III.C.

324. See Order Establishing a Just and Reasonable Rate, Calpine Corp. v. PJM Interconnection, LLC, 169 FERC ¶ 61,239, 62,993 (Dec. 19, 2019) (expanding the minimum offer price rule to include new self-supplying resources and public power as well as clean energy resources that receive state subsidies).

325. See N.Y. System Op., Inc., supra note 237, at P 3 (describing agreement), P 8, 18 (describing NYISO’s rationale for the proposal).

326. Id. at P 29.

327. Id. (Comm’r Glick, dissenting, at P 1).

The counterintuitive insights provided by Jon Michaels in his 2017 examination of the perils of privatization, *Constitutional Coup*, prove prescient on this question. Michaels asserts that the reason to worry about privatization is not that it diminishes agency power, but that it concentrates it, forming a problematic pipeline between agency heads and private contractors.\(^\text{329}\) When these parties act in tandem, Michaels worries, it subverts the “administrative separation of powers” that typically triangulates power between agency heads, agency staff, and civil society.\(^\text{330}\)

Recent anti-renewables activity in RTOs is a case study in this kind of aggrandizement of power. In the case of policies that prop up fossil fuel plants, incumbent suppliers prove eager participants in proposing and pushing forward these market reforms—even over the protest of many on the demand side of energy markets.\(^\text{331}\) When these profit-driven priorities align with the political priorities of agency heads, it is a recipe for aggressive agency action of dubious democratic pedigree.\(^\text{332}\) FERC’s obligation to passively and reactively accept any “just and reasonable” proposal filed by RTOs provides an agency sympathetic to incumbents’ agenda with substantial cover in promoting whatever private interests come to dominate the RTO.\(^\text{333}\) Thus, whereas FERC’s action-forcing mechanisms are limited when it disagrees with RTOs’ policy prerogatives, the deferential review required of RTOs’ protectionist proposals aggrandizes the agency’s power in cases of private sector-regulator alignment.

One marker of the recent power grab on the part of incumbents aligned with Trump administration officials can be seen in the recent profusion of dissenting opinions from FERC commissioners—once a relative rarity.\(^\text{334}\) These dissents track the increasing alarm among certain commissioners that the Trump Administration’s FERC had abandoned the agency’s long-purported goal of creating “fuel-neutral” energy markets\(^\text{335}\)—and instead aligned itself with certain

\(^{329}\) See Michaels, supra note 13, at 120–25.

\(^{330}\) Id. at 77, 81.

\(^{331}\) See supra note 281 and accompanying text.

\(^{332}\) See, e.g., Protest, Request for Evidentiary Hearing, and Request for Recusal of Commissioner McNamie of Public Citizen, Inc. at 2, PJM Interconnection, L.L.C., FERC Docket Nos. EL19-58 et al. (May 15, 2019) (asserting that PJM’s capacity market repricing plan prompts “a bad case of déjà vu . . . [because it] is simply a regional version of U.S. Energy Secretary Rick Perry’s Grid Resilience bailout push”).

\(^{333}\) See Chen & Murnan, supra note 30, at 7.


\(^{335}\) FERC has maintained throughout recent controversies that fuel neutrality, or resource agnosticism, is a core commitment. See, e.g., Order on Tariff Filing, ISO New England Inc., 162 FERC ¶ 61,205, at P 26 (Mar. 9, 2018).
incumbents’ interests. The private-club-to-sympathetic-commissioner pipeline facilitates the rapid translation of this policy alignment into consequential reforms.

The joint challenges detailed in this part—internal governance flaws, state powerlessness, and FERC diminishment/aggrandizement—all point to the conclusion that decarbonizing the electricity sector will require more than just developing and promoting smart substantive policies. Before these can be adopted, the sector’s club-like governance structure must be reconsidered.

V.
WAYS FORWARD: A REFORM AGENDA

Here is where we have come: although the challenge of climate change is pushing state and federal legislators and regulators to adopt policies and priorities that privilege clean energy, the U.S. electricity grid is governed predominantly by behemoth, incumbent industry members with little interest in facilitating these changes. To build the clean energy economy needed for the twenty-first century—the century of climate change—RTO governance reforms are imperative.

The 2021 presidential transition presents an opening for FERC to pivot in new directions. Consequently, reformers are now focusing on how a Biden FERC could pursue policies that facilitate progress on climate change. But this Article highlights the challenges of leaping to substantive reforms without a critical examination of their institutional context. As I hope the analysis here makes clear, the new administration—as well as state and public interest advocates—should pay equal attention to grid governance reform as a precondition for durable climate progress.

The goal for reformers should not be to abandon the regional format and unwind back to a time when states had predominant control. Both technology and policy prerogatives have usurped this possibility. Not only does today’s interconnected grid make regional management economically and technically desirable, but the growing policy mandate to transition to clean energy demands even greater regional cooperation on climate. Indeed, many states in regions

336. In particular, Commissioner Glick has dissented from a number of recent FERC orders. See Order on Tariff Filing, ISO New England, Inc., 162 FERC ¶ 61,205 (Comm’r Glick, dissenting in part); Order Rejecting Proposed Tariff Revisions, Granting in Part and Denying in Part Complaint, and Instituting Proceeding Under Section 206 of the Federal Power Act, 163 FERC ¶ 61,236, Calpine Corp. v. PJM Interconnection, L.L.C (June 29, 2018) (Comm’r Glick, dissenting); Order on Tariff Filing, ISO New Enlg. Inc., 162 FERC ¶ 61,205 (Comm’r Glick, dissenting in part and concurring in part); Constellation Mystic Power, LLC at 5, FERC Docket No. ER18-1639-000 (Dec. 20, 2018) (Comm’r Glick, dissenting); Dissent in Part of Commissioner Richard Glick on ISO New England Inc. and New England Power Pool Participants Committee at 2, FERC Docket No. ER19-444-000 (Jan. 29, 2019).

337. See JULIANA BRINT, JOSHI CONSTANTI, FRANZ HOCHESTRASSER & LUCY KESSLER, YALE ENV’T PROTECTION CLINIC, ENHANCED WESTERN GRID INTEGRATION: A LEGAL AND POLICY ANALYSIS OF THE EFFECTS ON CALIFORNIA’S CLEAN ENERGY LAWS 3–4 (2017); Klass, The Electric
that previously declined to join an RTO have renewed their interest in regionalizing grid governance—but have reservations regarding the risks of prevailing RTO governance structures.338

The answer, then, is not to scrap RTOs but to transform them into regional entities capable of accomplishing evolving public objectives.339 And so, the critical questions become: What is the ideal institutional structure for regional grid governance? How should federal and state regulators share this densely technical, rapidly evolving space with the infrastructure companies that keep our lights on? There are, I argue, four pathways—some mutually reinforcing—to better grid governance: (1) pare back RTO authority; (2) increase regulatory oversight; (3) better police sectoral corporate power; and (4) consider a public option.

A. Pare Them Back

As mentioned earlier, FERC did not expect RTOs to come to have the range of functions and functional policy-making authority that they do today. Instead, it saw a role for these organizations in doing what utilities had long done, but on a more efficient, integrated regional scale: managing the flow of electrons over the transmission grid.340 Some RTOs have strayed further from this basic mission than others. In particular, by turning resource adequacy over to markets, PJM and ISO New England have cemented their reliance on convoluted stakeholder processes to oversee a broad range of decisions about who gets to participate in energy and capacity markets, and on what terms.341

In contrast, MISO has engendered less controversy than its eastern neighbors by eschewing a mandatory capacity market and retaining more state
authority in resource adequacy determinations. Similarly, one might point to Southwest Power Pool (SPP) as an RTO that has amassed relatively little power beyond managing the grid and running basic energy markets. In the process, SPP has managed to integrate impressive quantities of renewable energy and to avoid enervating its state partners (at least, for the most part). To be sure, states and RTOs in these regions have some issues remaining to work out, not least around coal, but states at least have authority to act on these challenges.

This comparative assessment points to one plausible reform: return RTOs to a more basic set of functions. Most notably, there is rising support for the idea of eliminating mandatory capacity markets from eastern RTOs. FERC should be able to take this step unilaterally by declaring that the current mandatory capacity market constructs are “unjust and unreasonable” under Federal Power Act section 206 and ordering regions to find another solution to resource adequacy that better accommodates states. One model worth considering is that of California, where the California Public Utilities Commission and CAISO share responsibility over resource adequacy in a way that tracks their comparative advantages: CAISO is in charge of the technical elements of forecasting resource adequacy requirements, while the state commission oversees planning for how to meet these requirements.

Restructuring control over resource adequacy would go a long way toward remedying the mischief that pro-fossil companies have caused in ISO-New England and PJM. Nevertheless, this move alone will not solve all governance challenges. Already, there are controversies over how RTOs determine “price

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342. See Welton, Appendix A, supra note 14 (describing how resource adequacy is established in the region). See also Macey & Salovaara, supra note 141, at 29 (endorsing MISO’s simpler approach to resource adequacy).

343. See Welton, Appendix A, supra note 14 (detailing the shared governance arrangement in SPP, where the regional state committee retains authority over resource adequacy and many transmission decisions); Order on Rehearing, Sw. Power Pool, Inc., 109 FERC ¶ 61,010, 61,052 (Oct. 1, 2004) (upholding SPP’s design in the face of arguments that it gave the regional state committee too much power).

344. See BINZ, supra note 338, at 17 (explaining that the SPP Regional State Committee “has historically maintained a collaborative relationship with SPP and has never filed comments adverse to SPP’s FERC filings” (internal quotes omitted)).

345. See Kleckner, supra note 254 (discussing self-scheduling).

346. See Kleckner, supra note 254 (discussing self-scheduling).


348. See CAL. PUB. UTIL. COMM’N, Resource Adequacy, supra note 144.

349. See Jacob Mays, David P. Morton & Richard P. O’Neill, Asymmetric Risks and Fuel Neutrality in Electricity Capacity Markets, 4 NATURE ENERGY 948, 953 (2019) (finding that capacity markets are inherently biased against low-carbon resources, which tend to have high fixed costs and near-zero operating costs).
formation” in energy markets and ancillary service markets as well. Many of these concerns are legitimate: as renewable energy drives the marginal-bid-based clearing price in energy markets downward, there are important questions to be answered regarding how to ensure adequate compensation to incent new development.\textsuperscript{350} But again, the challenge comes down to who writes these rules within the RTO context. To ensure that pricing in these basic markets remains just and reasonable under changing conditions, FERC may need to take a heavier hand in dictating what fair treatment looks like.\textsuperscript{351} In other words, the jig is up on light-touch, experimental regulation of core RTO functions. These organizations have proven themselves institutionally ill-suited to the type of self-management idealized by new governance reformers.

All to say, if FERC were willing to assert its muscle, there are several steps the agency could take to pare back the authority of RTOs to make them more closely resemble the blueprint laid out two decades ago and embodied by some of the less controversial modern RTO experiments. The decision to embrace such reforms depends, of course, on the political and policy priorities of the agency at a given time. And even if FERC were inclined to pursue reforms along these lines, there would likely be industry backlash, which might manifest itself through “hydraulics” that put pressure on other points of RTO decision-making (notably, energy market rules).\textsuperscript{352} But at least FERC would have a narrower set of potential market rule distortions to police and could therefore do so with more vigilance.

\section*{B. Increase Public Oversight and Control}

A second set of reforms involves accepting RTOs’ aggrandized modern responsibilities and enhancing public oversight and control of these organizations commensurately. As Anne Joseph O’Connell has observed in her work on boundary organizations, these kinds of “centripetal” reforms—where power moves away from private entities, back toward government—are not common.\textsuperscript{353} Nevertheless, O’Connell suggests that these shifts are most likely where “the benefits of more political control . . . increase compared to the costs.”\textsuperscript{354} As this Article has traced, climate change places grid governance in

\begin{itemize}
  \item \textsuperscript{350} Renewable energy creates challenging dynamics in energy markets because its variable cost is close to zero—thus creating a “missing money” problem for sources who rely on these markets to cover their average costs. See Bushnell et al., supra note 141, at 12, 35–38; Macey & Salovaara, supra note 141, at 22–25.
  \item \textsuperscript{351} See James et al., supra note 30, at 18 (suggesting that FERC should be less deferential to proposals coming from RTOs).
  \item \textsuperscript{352} Cf. Samuel Issacharoff & Pamela S. Karlan, The Hydraulics of Campaign Finance Reform, 77 TEX. L. REV. 1705, 1713 (1999) (tracing the hydraulics of campaign finance reform, and arguing that “[t]he money that reform squeezes out of the formal campaign process must go somewhere”).
  \item \textsuperscript{353} See O’Connell, supra note 58, at 873.
  \item \textsuperscript{354} Id. at 893.
\end{itemize}
just such a position, as the risks of relying on private membership clubs to pursue decarbonization initiatives that cut against their interests have become apparent.

Enhanced public control might emanate from both the states and FERC. This Section describes options for each in turn. Moreover, it is worth noting that this increased oversight could function alongside the reforms suggested in the previous part, which focus on paring back RTOs’ responsibilities.

Here too, there are modern models. As described in Part II.C, California’s ISO stands apart for having selected a unique governance structure in which the ISO functions more like a state agency than a private club. This agency-like structure allows California to have confidence that the goals of its ISO align with the goals of the state. Such alignment has been particularly important as California has dramatically ramped up its climate ambitions. CAISO boasts openly about its commitment to a “Clean, Green Grid” and has adopted the integration of renewable energy and demand-side technologies as a core part of its mission.355

Transferring this model of pure political control beyond a single-state RTO proves complicated, given that state interests within a region often do not align. California itself has struggled with this issue as the state considers whether to regionalize its RTO to enhance the integration of renewable energy.356 One primary concern has been that a regional RTO that relinquished the state-agency format would cede too much control to private players or sister states with incompatible goals.357

But RTO reform need not go as far as the California model to create a more robust role for states. MISO, for example, has incorporated state regulatory authorities as the most powerful weighted voting bloc within its Membership Committee—thus building in a more direct state oversight role of its markets.358 FERC might consider forcing other regions to reform their governance structures to provide a similarly strong role for state interests (probably again through a section 206 finding that RTOs’ current usurpation of state prerogatives creates unjust and unreasonable prices, and that membership rules are practices affecting these rates and therefore within FERC’s jurisdiction).359

356. See BINZ, supra note 348, at 4–6 (examining challenges of moving to a regional governance system); PAULOS, supra note 131, at 5–7 (analyzing both sides of this debate); Lenhart et al., supra note 133, at 95, 102 (describing CAISO as “tightly aligned with California policy making processes and achieving aggressive California policy goals”).
357. See CAL. ISO, PRINCIPLES FOR GOVERNANCE OF A REGIONAL ISO 2 (Oct. 7, 2016) (describing “governance structure” as “one of the key topics that must be addressed for regionalization to go forward”).
358. See Chen & Murnan, supra note 30, at 10 (describing MISO’s “relatively collaborative culture” between the ISO and the states); Welton, Appendix A, supra note 14 (showing that state authorities receive a 16 percent weighted vote in MISO).
359. See Order Rejecting Revisions, New England Power Pool Participants Comm., 166 FERC ¶ 61,062, 61,276 (Jan. 29, 2019).
A stronger reform would be to give regional state committees a veto-point over RTO decision-making at a level superior to regular membership. Along these lines, several states at the time of RTO formation proposed that the organizations should be governed by “Federal-State Joint Boards,” which would engage in collaborative decision-making on matters of shared jurisdiction. This idea was never fleshed into a fully formed proposal, because FERC opted for the private RTO model. However, reinvigorated discussions along these lines might now prove fruitful.

There are, of course, risks to giving states too much control over RTOs, especially given the polarization among states regarding their attitudes toward clean energy. In regions where many states oppose clean energy, a stronger state oversight presence might not prove an antidote to challenges of incumbent favoritism within the RTO. But this risk is baked into energy law: As the Federal Power Act makes clear, “[t]he states, not the Commission, are the entities responsible for shaping the generation mix.” To respect individual state prerogatives, any reforms in the direction of greater state control should include mechanisms to ensure that states cannot run rough-shod over each other’s preferences. With such protections in place, I favor giving states greater de facto control over energy generation, to mirror their putative legal control, in spite of the risks. If that control results in more fossil-fueled energy, then changing state policy preferences to better favor clean energy is a democratic battle that must be fought and won at the state level. As hard as that battle may be, it is preferable to continuing to cede control over the energy transition to the very companies who stand to lose the most from it.

However, if FERC remains wary of so fully involving states in regional market oversight, it could pursue more piecemeal, but still impactful, changes: For example, recognizing the traditional state role over resource adequacy, FERC could give regional state committees the right to approve or reject by supermajority RTOs’ proposed changes in resource adequacy rules. Or

361. See generally LEAH CARDAMORE STOKES, SHORT CIRCUITING POLICY: INTEREST GROUPS AND THE BATTLE OVER CLEAN ENERGY AND CLIMATE POLICY IN THE AMERICAN STATES (2020) (tracing the difficult politics of clean energy in four “red” states over the last fifteen years and showing how fossil-fuel allied interest groups dominate political and regulatory processes in Texas, Kansas, Arizona, and Ohio).
362. Order on Rehearing and Clarification, Calpine Corp. v. PJM Interconnection, 171 FERC ¶ 61,035 (Comm’r Glick, dissenting, at P 5) (Apr. 16, 2020).
363. Given that SPP already allows its regional state committee control over resource adequacy, this proposal seems legally plausible. See Chen & Murnan, supra note 30, at 15–16 (making this point).
perhaps FERC could give regional state committees the right to file a competing proposal when they disagree with an RTO’s section 205 filing—the same right that is presently afforded to New England’s stakeholder governance group.\(^{364}\)

So much for state involvement. What about FERC’s own oversight strategies? As described in Part II.D, the circuit courts have diminished these as well through opinions that limit the matters FERC can regulate and the extent to which the agency can amend RTO proposals. FERC still has tools, however, blunted though they may be. The agency could become more muscular in its use of section 206 findings that regional tariffs are “unjust and unreasonable,” might more actively control regional responses to such filings, and might use section 206 findings as the basis of a larger proceeding devoted to reconsidering the RTO format.\(^{365}\)

Ultimately, if RTOs are to retain their current powers, it is time to reckon with the fact that these institutions are categorically different from investor-owned utilities and should not be treated identically under the law. Section 205—the section that provides that any RTO or utility filing that is “just and reasonable” must be accepted—was meant for basic pricing schemes, not policy-making proposals.\(^{366}\) The ideal solution here would be for Congress to create a special category of review for RTO tariff filings within the Federal Power Act, providing FERC with the ability to amend portions of RTO filings and to reject solutions that it finds plausible but inferior. These changes would recalibrate FERC’s authority over RTOs to align it with the authority of other federal agencies engaged in policy-making, which operate under the benefit of \textit{Chevron} deference to preferred agency solutions.\(^{367}\)

\textbf{C. Improve the Possibilities for Good Internal Governance}

In addition to shedding RTO functions and/or enhancing federal and state oversight, reformers might consider cabining the creeping dominance of the sector by a few key players. For the reasons described above, I have limited confidence that reforms focused on RTOs’ internal governance processes alone could adequately recalibrate sectoral responsibility. But reforms in this vein stand much better chance of success if FERC simultaneously peers behind the curtain of agglomerated corporate power in the utility industry. Otherwise, no matter how many tweaks FERC makes in voting sectors and their relative

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\(^{364}\) See Welton, Appendix A, \textit{supra} note 14 for more on ISO-NE “jump ball” filings.

\(^{365}\) See Boyd, \textit{supra} note 134, at 9 (arguing that FERC has unused authority to regulate price formation in RTOs).


\(^{367}\) See Barnett & Walker, \textit{supra} note 322, and accompanying text.
weights, heavyweight corporations with holdings that cut across these sectors will continue to have the ability to manipulate votes toward their best interest. Moreover, to the extent there is a perception that RTO boards often bend to the most powerful interests in the industry when filing non-stakeholder-approved tariff amendments, only a decrease in holding company authority could remedy these feared backchannel dealings.

If FERC wanted to increase scrutiny of corporate mergers and their impact on electricity governance, it could do so by drawing upon pre-existing regulatory authority. FERC’s statutory charge is to ensure that proposed mergers are “consistent with the public interest.”\textsuperscript{368} The agency’s current practice is governed by a Merger Policy Statement, which FERC itself could amend.\textsuperscript{369} As utility expert Scott Hempling has suggested, perhaps “public interest” review should include not only a market power screen, but a more searching inquiry into whether each additional merger might harm the overall structural competition of the electricity sector.\textsuperscript{370} Alternatively, FERC might place conditions on mergers that limit RTO stakeholder participation when the merger could create opportunities for self-interested voting.\textsuperscript{371}

For a more robust fix, Congress might revisit its 2005 decision to repeal PUHCA, which repudiated the last vestiges of protection against mega-utilities. Utilities, of course, suggest that the post-PUHCA diversification of their holdings has brought significant gains—while others question this account.\textsuperscript{372} More work needs to be done to understand the full implications of utility merger activity unleashed in 2005.\textsuperscript{373}

Alternatively, if Congress and the executive branch prove unwilling, the courts may present an increasingly plausible avenue for reigning in utility power. To date, electricity corporations have largely been immunized from antitrust challenges due to FERC oversight and regulation.\textsuperscript{374} The theory animating this

\begin{itemize}
\item \textsuperscript{368} 16 U.S.C. § 824b(a)(4) (2018).
\item \textsuperscript{370} See Hempling, supra note 173, at 268–72. See also Order 592, supra note 369, at 68,606 (listing “effects on competition” as one of three guiding criteria). To be sure, circuit precedent constrains FERC to the extent that the agency cannot require merger applicants to show a positive benefit. See Pac. Power & Light Co. v. Fed. Power Comm’n, 111 F.2d 1014, 1016 (1940) (creating this constraint).
\item \textsuperscript{371} See 16 U.S.C.§ 824b(b) (2018) (granting FERC the authority to place “necessary or appropriate” conditions on mergers).
\item \textsuperscript{372} See Hempling, supra note 173, at 238, 279 (explaining how diversification poses risks in a landscape with regulated and unregulated markets).
\item \textsuperscript{373} Id. at 240 (observing dearth of studies on “long-term effects of the industry’s consolidation”).
\item \textsuperscript{374} See Vaheesan, supra note 28.
\end{itemize}
immunization is that FERC’s review of utilities’ filed rates obviates the need for judicial antitrust scrutiny. However, in light of the significant changes in the industry, scholars have questioned whether courts should continue to allow the filed rate doctrine to stand as a bar to claims of industry collusion, and the Supreme Court recently reaffirmed the applicability of state antitrust laws to FERC-regulated natural gas pipelines. Similarly, the D.C. Circuit recently found that another public-private boundary entity—Amtrak—violated the Due Process Clause through its dual roles as competitor and regulator of train operations. In that opinion, the court signaled a growing skepticism of such arrangements, observing that “government’s increasing reliance on public-private partnerships portends an even more ill-fitting accommodation between the exercise of regulatory power and concerns about fairness and accountability.”

Although there is no rock-solid case under current precedent to assert that RTOs’ self-interested rulemakings create either an antitrust or due process challenge, continued display of an incumbency bias could push courts towards accepting a theory crafted along these lines.

D. Explore a Public Option

There is, finally, a more radical option that reformers might consider: Taking a cue from several European countries and the California model, management of the grid could be made more thoroughly public. This option would go much further than the suggestions for enhanced control offered in subpart (b), and would face substantial—perhaps politically insurmountable—opposition from the utility industry. Nevertheless, in a moment where the national conversation about climate change policy has tacked in a more progressive direction, it is worth considering. Indeed, if infrastructure development on the scale envisioned by the proponents of a Green New Deal is to succeed, a publicly owned or operated grid might form a critical institutional piece of the puzzle. Moreover, to integrate ever-increasing levels of variable renewable energy, experts are converging on the conclusion that the U.S. grid would be best run as a single, national, coordinated machine.

376. See id. at 1592, 1597; Vaheesan, supra note 28, at 921.
379. Id. at 31.
new ways of structuring such an organization that avoid the pathologies of the current RTO format should help advance this pressing conversation.

Considerably more work is needed to develop the contours of a public grid governance model—work that is beyond the scope of this Article. But in its broad outlines, it might resemble what the group Public Citizen asked FERC to consider back in the 1990s. Recognizing the inherent conflict between consumer interests and private transmission owners, Public Citizen urged FERC to create “three publicly-owned non-profit transmission companies (public transcos) [that would] own and operate the transmission systems . . .” These public transcos would have “no affiliates and no subsidiaries,” and would be run by a “publicly accountable board of directors . . .” As we know, FERC declined to pursue the public transco model. Several European countries, however, have gone this route, with ownership of the grid vested in a single state-owned enterprise. California provides an alternative model of political control without ownership, and has proven that more direct political control can align regulatory priorities and grid governance.

How FERC might effectuate a transition to public ownership or control is a complex question. Perhaps a bold FERC, looking at the necessary pace and scale of decarbonization, might justify ordering significant RTO governance reform or transmission divestment to a public entity as a necessary precondition for “just and reasonable” rates in the era of climate change. It is, however, unclear whether the federal courts would be willing to sanction such profound industry restructuring under longstanding statutory authority. It might take a full-throated congressional effort to abandon the private grid.

I mention the public option not as a likely short-term solution, but to round out the picture of possible governance structures as policy-makers think about the future of the grid—and to refuse to be constrained to the narrowed imaginary

the US hitting ambitious decarbonization goals involves a massive buildout of transmission to eventually create a national grid”).

383. Id. at 5.
384. Id. at 6.
386. See supra Part II.B.2.
388. See Util. Air Regul. Grp. v. Env’t Prot. Agency, 573 U.S. 302, 324 (2014) (invalidating EPA’s “Tailoring Rule” on grounds of statutory overreach); Freeman & Spence, supra note 48, at 3 (observing that agencies rarely “go for broke” when using outdated statutes to address new problems, as they are “cognizant of the preferences of their political overseers and the risk of being overturned in the courts”).
that the privatization movement has left us. Even the threat of a public takeover might prod RTOs to relent to the less thoroughgoing, but still impactful, reforms suggested above. In any event, the next step down the road to public transcos should almost certainly be more rigorous comparative study of how public models have performed in other countries, and the possibilities and limitations they might face in the United States.

CONCLUSION

Commentators have long opined that democracy presents a key impediment to progress on climate change, because each of us is psychologically and structurally hard-wired to vote against the long-term interests of humanity. States and localities have begun to overcome this putative hurdle to climate progress: One-third of Americans now live in a city or state with a 100 percent clean energy mandate or goal. Now that federal leaders too are prioritizing climate action, many hope for swift results via executive branch authority. However, political progress has unleashed a new effort by fossil fuel incumbents to structure the energy system in their favor.

To remedy this mismatch between democratic priorities and grid governance, this Article has argued that the functionally privatized model that FERC selected to run competitive electricity markets two decades ago must be reformed to match modern public aims. Reforms in this sector must be calculated, swift, and decisive if the United States is to achieve anything close to the clean energy transition demanded by atmospheric physics.

At the same time, the Article has contextualized RTOs as sectoral symptoms of troubling trends toward privatization and agglomeration that pervade the modern U.S. economy and the institutions ostensibly designed to shape and control it. In this context, RTOs highlight the importance of institutional structure when seeking to deploy a legal framework as broad and powerful as public utility. An expansion of public utility law to new sectors could help to curb the extreme corporate domination of this second Gilded Age. But


390. See UCLA LUSKIN CTR., supra note 17, at 2.

391. Cf. KARL POLANYI, THE GREAT TRANSFORMATION: THE POLITICAL AND ECONOMIC ORIGINS OF OUR TIME, 3–5, 45 (1944) (illustrating how markets have always been politically and historically embedded, and how the nineteenth century idea of the “self-regulating market system” represented a violent rupture from this norm).
before embracing this strategy, the modern potential of public utility must first be reclaimed within the electricity sector, which will either embrace the existential challenge of climate change or take us all down with it.