

Rethinking Grid Governance for the Climate Change Era

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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’

1. See Trevor Houser & Hannah Pitt, *Preliminary US Emissions Estimates for 2019*, RHODIUM GRP. (Jan. 7, 2020), <https://rhg.com/research/preliminary-us-emissions-2019> [<https://perma.cc/7BTS-BWRC>].

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/7d4c9cc8f8c344fb9b800a5fd9c48866?hootPostID=a01ce7fe3ddb461beeac635b1aa0bf7> [<https://perma.cc/JBA9-QLKC>] (reflecting 10 percent increase in U.S. natural gas consumption in 2018).

3. Paul Huttner, *Forecast: U.S. Greenhouse Gas Emissions to Fall 7.5-Percent in 2020*, MPR NEWS (Apr. 8, 2020, 12:20 PM), <https://www.mprnews.org/story/2020/04/08/us-greenhouse-gas-emissions-may-fall-75percent-in-2020> [<https://perma.cc/VMY3-RJJA>].

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.⁶ 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,⁷ 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.⁸

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.⁹ Proponents of electricity deregulation believed that greater competition among electricity suppliers would drive down prices and spur innovation in the sector.¹⁰ 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.¹¹ Consequently, as the Federal

6. See, e.g., GANESH SITARAMAN, *TAKING ANTITRUST AWAY FROM THE COURTS: A STRUCTURAL APPROACH TO REVERSING THE SECOND AGE OF MONOPOLY POWER* 3 (2018); ANDREW ROSS SORKIN, *TOO BIG TO FAIL* (2009); TIM WU, *THE CURSE OF BIGNESS: ANTITRUST IN THE NEW GILDED AGE* 16 (2018); Lina Khan & Sandeep Vaheesan, *Market Power and Inequality: The Antitrust Counterrevolution and Its Discontents*, 11 *HARV. L. & POL’Y REV.* 235, 236 (2017); Elizabeth Warren, *Here’s How We Can Break up Big Tech*, *MEDIUM* (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c> [<https://perma.cc/5LSV-PYCA>]; SIMON JOHNSON & JAMES KWAK, *13 BANKERS: THE WALL STREET TAKEOVER AND THE NEXT FINANCIAL MELTDOWN* 10, 13 (2010).

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.

9. See Michael H. Dworkin & Rachel Aslin Goldwasser, *Ensuring Consideration of the Public Interest in the Governance and Accountability of Regional Transmission Organizations*, 28 *ENERGY L.J.* 543, 545–46 (2007) (describing how FERC “has increasingly relied on market forces rather than cost-of-service regulation to provide the ‘just and reasonable’ rates” that the Federal Power Act requires); Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 *COLUM. L. REV.* 1323, 1327 (1998) (detailing this broader trend); David B. Spence, *Can Law Manage Competitive Energy Markets?*, 93 *CORNELL L. REV.* 765, 766 (2008) (describing conflicts embedded in energy-market deregulation).

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).

11. See FERC Order No. 2000, *Regional Transmission Organizations*, 65 *Fed. Reg.* 810, 811 (issued Dec. 20, 1999) (codified at 18 C.F.R. pt. 35 (2019)) [hereinafter Order 2000] (endorsing

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.¹² 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.¹³ 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.¹⁴

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.¹⁵ Thus, perhaps FERC can be forgiven for its initial faith in a “[l]ighter-[h]anded” regulatory structure.¹⁶ 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.¹⁷ 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.

competition but proposing intermediary organizations to manage “operational and reliability issues”); *infra* Part I.

12. See Order 2000, *supra* note 11, at 811; *infra* Part I.

13. See *infra* Part I.A (tracing RTOs’ intellectual genealogy). See also JON D. MICHAELS, CONSTITUTIONAL COUP: PRIVATIZATION’S THREAT TO THE AMERICAN REPUBLIC 106 (2017) (tracing the intellectual lineage of a wide range of privatization techniques). I am sympathetic to William Boyd’s view that “[o]ne could, of course, consider the entire history of public utility regulation as an effort to create and sustain various types of hybrid institutions.” William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1663 n.194 (2014). Viewed in that light, RTOs are one particularly neoliberal version of this hybridism that I believe to be singularly ill-advised.

14. This description is overgeneralized. See *infra* Part II.B–C and Shelley Welton, Appendix A (Feb. 2021), <https://www.californialawreview.org/print/rethinking-grid-governance>, for more on specific RTO structures.

15. See Kenneth Rose, *Trouble in Market Paradise: Development of the Regional Transmission Operator*, 50 J. ECON. ISSUES 535, 536 (2016) (explaining that RTOs have “developed and grown over time, taking on an increasing responsibility and importance”); see also *infra* Part III (on RTOs and the climate change challenge).

16. Order 2000, *supra* note 11, at 827.

17. Hawaii was the first state to pass such a law, in 2015. See UCLA LUSKIN CTR. FOR INNOVATION, PROGRESS TOWARD 100% CLEAN ENERGY IN CITIES & STATES ACROSS THE U.S. 2 (2019); Julia Pyper, *Tracking Progress on 100% Clean Energy Targets*, GREENTECH MEDIA (Nov. 12, 2019), <https://www.greentechmedia.com/articles/read/tracking-progress-on-100-clean-energy-targets> [<https://perma.cc/GR9E-DJ6P>] (reporting that “[s]even states, as well as Puerto Rico and the District of Columbia, have passed 100 percent clean energy transition laws,” and several others have executive orders to the same effect).

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

18. See Benjamin A. Stafford & Elizabeth J. Wilson, *Winds of Change in Energy Systems: Policy Implementation, Technology Deployment, and Regional Transmission Organizations*, 21 ENERGY RSCH. & SOC. SCI. 222, 225–26 (2016) (describing the Midwest ISO's successful integration of wind energy); Tom Kleckner, *Another Wind Penetration Record for SPP*, RTO INSIDER (Apr. 6, 2018), <https://rtoinsider.com/spp-wind-penetration-record-89917> [<https://perma.cc/3AEG-6SRZ>]; Tom Kleckner, *Overheard at the Great Plains Institute SPP Workshop*, RTO INSIDER (Dec. 18, 2017), <https://rtoinsider.com/great-plains-institute-spp-82580> [<https://perma.cc/T3A8-S3BP>] (discussing wind integration in the Southwest Power Pool).

19. See *infra* Part III.B.

20. See *infra* Part III.C.

21. At last, some members of Congress appear to agree; in June 2019 congressional hearings, the House Energy and Commerce Committee's Subcommittee on Energy urged FERC to holistically review RTO governance policies. Michael Brooks, *FERC Probed on RTO Governance, Market Issues*, RTO INSIDER (June 13, 2019), <https://rtoinsider.com/ferc-probed-rto-governance-market-issues-138272> [<https://perma.cc/XN94-QZDL>].

22. See *infra* Part II.D.

23. The Federal Power Act explicitly gives states the right to choose how to source their electricity. See 16 U.S.C. § 824(a)–(b) (2018); *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1292 (2016).

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.²⁴ For this reason, the Article’s preferred solution is to restructure regional grid governance, reclaiming it for public control rather than abandoning it.²⁵

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.²⁶ Despite intense interest in energy federalism in recent years,²⁷ there has largely been a reflexive scholarly acceptance of RTOs.²⁸ 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.²⁹ Instead, grid

24. See *infra* Part III.A.

25. See *infra* Part V.

26. This effort accords with work by William Boyd and David Spence questioning the ability of electricity markets as currently designed to accomplish climate change aims. See Boyd, *supra* note 13, 1683–1708; David Spence, *Naïve Energy Markets*, 92 NOTRE DAME L. REV. 973, 976 (2017). However, neither Boyd nor Spence diagnoses RTO governance as a critical flaw underpinning electricity market disfunction.

27. See, e.g., Joel B. Eisen, *Dual Electricity Federalism Is Dead, but How Dead, and What Replaces It?*, 8 GEO. WASH. J. ENERGY & ENV’T L. 3, 3 (2017); Daniel A. Lyons, *Protecting States in the New World of Energy Federalism*, 67 EMORY L.J. 921, 924 (2018); Jim Rossi, *The Brave New Path of Energy Federalism*, 95 TEX. L. REV. 399, 400 (2016); Ari Peskoe, *Easing Jurisdictional Tensions by Integrating Public Policy in Wholesale Electricity Markets*, 38 ENERGY L.J. 1, 1 (2017); Hannah J. Wiseman, *Disaggregating Preemption in Energy Law*, 40 HARV. ENV’T L. REV. 293, 294 (2016).

28. After an early article questioning the RTO structure, see Dworkin & Goldwasser, *supra* note 9, at 544, the field has largely gone silent on questions of grid governance. Several scholars have celebrated RTOs as intermediaries of federalist tensions in energy law, a characterization I agree with in its theoretical potential but contest in its current implementation. See, e.g., Hari M. Osofsky & Hannah J. Wiseman, *Hybrid Energy Governance*, 2014 U. ILL. L. REV. 1, 53 (celebrating RTOs as a bridge between state and federal regulators); Lyons, *supra* note 27, at 972 (urging “greater reliance on regional cooperative-federalism structures such as RTOs”). Several legal scholars have also analyzed the problem of “market power” in electricity markets, by which certain firms game market rules to increase profits. These scholars appropriately raise questions about regulators’ abilities to police such abusive behaviors. But either explicitly or implicitly, these analyses accept the basic governance structures of RTOs. See Joseph T. Kelliher, *Market Manipulation, Market Power, and the Authority of the Federal Energy Regulatory Commission*, 26 ENERGY L.J. 1, 11 (2005); Alvin K. Klevorick, *The Oversight of Restructured Electricity Markets*, in ELECTRICITY DEREGULATION: CHOICES AND CHALLENGES 297, 300 (James M. Griffin & Steven L. Puller eds., 2005); David B. Spence & Robert Prentice, *The Transformation of American Energy Markets and the Problem of Market Power*, 53 B.C. L. REV. 131, 131 (2012); Sandeep Vaheesan, *Market Power in Power Markets: The Filed-Rate Doctrine and Competition in Electricity*, 46 U. MICH. J.L. REFORM 921, 928–32 (2013).

29. For this reason, absent governance reform, I am skeptical of ongoing efforts to give RTOs control over carbon pricing. See Shelley Welton, *Electricity Markets and the Social Project of Decarbonization*, 118 COLUM. L. REV. 1067, 1080–82 (2018).

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.³⁰ 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.³¹ 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,"

30. See CHRISTINA SIMEONE, PJM GOVERNANCE: CAN REFORMS IMPROVE OUTCOMES? 22 (2017); Stafford & Wilson, *supra* note 18, at 222; Kyungjin Yoo & Seth Blumsack, *Can Capacity Markets Be Designed by Democracy?*, 53 J. REGUL. ECON. 127, 127–28 (2018); Mark James, Kevin B. Jones, Ashleigh H. Krick & Rikaela R. Greane, *How the RTO Stakeholder Process Affects Market Efficiency*, R. ST. POL'Y STUDY No. 112, Oct. 2017, at 1; Jennifer Chen & Gabrielle Muman, *State Participation in Resource Adequacy Decisions in Multistate Regional Transmission Organizations*, DUKE U. NICHOLAS INST. FOR ENV'T POL'Y SOLUTIONS, Mar. 2019, at 1; E4THE FUTURE, INC., REGIONAL ENERGY MARKETS: DO INCONSISTENT GOVERNANCE STRUCTURES IMPEDE U.S. MARKET SUCCESS? 2 (2016).

31. See *infra* Part V.

and non-discriminatory.³² Managed competition via RTOs is FERC's latest theory of how to accomplish this longstanding public utility mission.³³

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.³⁴ 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.³⁵ 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 capaciously 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.³⁶

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

32. See 16 U.S.C. § 824d(a)–(b) (2018).

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.³⁷ 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.³⁸

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.³⁹ 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.⁴⁰ These ISOs became the blueprint for FERC's later push to form larger, multi-state RTOs across the country.⁴¹

In the 1990s, the drive for competition began in earnest in the electricity industry.⁴² 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.⁴³ 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

37. See *Morgan Stanley Cap. Grp. Inc. v. Pub. Util. Dist. No. 1*, 554 U.S. 527, 535–36 (2008); Spence, *supra* note 9, at 769.

38. 16 U.S.C. § 824 (2018); *New York v. FERC*, 535 U.S. 1, 20–21 (2002) (discussing history of Federal Power Act).

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.

43. See MATHEW J. MOREY & LAURENCE D. KIRSCH, *RETAIL CHOICE IN ELECTRICITY: WHAT HAVE WE LEARNED IN 20 YEARS?* 3–5 (2016).

transmission lines.⁴⁴ FERC also suggested that regions explore more tightly coordinated forms of transmission management as a way to prevent this discrimination.⁴⁵

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.⁴⁶ In 1999, FERC tried to create a more fulsome solution by pushing for all regions to form RTOs to control transmission.⁴⁷ 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."⁴⁸ 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.⁴⁹ Based on a number of modeled scenarios, the Commission estimated that RTO formation might save \$2.4 billion per year.⁵⁰

In this way, FERC told a story of RTOs as the obvious answer to unfolding events.⁵¹ But even if *some* novel governing arrangement may have been

44. FERC Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540 (issued Apr. 24, 1996) (codified at 18 C.F.R. pts. 35, 385 (2019)) [hereinafter Order 888].

45. See *id.* at 21,594; see also Richard P. O'Neill et al., *The Governance of Energy Displacement Network Oligopolies*, Office of Economic Policy 23 (Fed. Energy Regul. Comm'n, Discussion Paper No. 96-08, 1996), <https://www.ferc.gov/legal/maj-ord-reg/land-docs/oligopoly.pdf> [<https://perma.cc/E5UQ-E3GE>] (describing ISOs as "a step beyond functional unbundling").

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.

48. See 16 U.S.C. § 824d–e (2018); Order 2000, *supra* note 11, at 837; see also Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 43–58 (2014) (describing how FERC used longstanding Federal Power Act authority to manage deregulation). Congress provided FERC some additional statutory authority for restructuring in the Energy Policy Act of 1992, but the agency largely proceeded on its own initiative. See Freeman & Spence, *supra*; see also Energy Policy Act of 1992, Pub. L. No. 102-486, § 711, 106 Stat. 2776 (codified in scattered sections of 15 U.S.C., 16 U.S.C., 42 U.S.C.).

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.").

51. See Order 2000, *supra* note 11, 828–29.

necessary to facilitate deregulation within the electricity sector, the peculiar form that regional grid governance has taken was not inevitable.⁵² To the contrary, this form was one manifestation of the privatization movement that swept the U.S. administrative state around this time.⁵³ 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.⁵⁴ 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.”⁵⁵ Strategies to accomplish this collaboration included transferring responsibilities to “private businesses and nonprofit organizations” that could engage in “audited self-regulation.”⁵⁶ These theories of reinventing government⁵⁷ resulted in a host of new quasi-governmental, hybrid, or boundary organizations operating at the border between government and the private sector.⁵⁸

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).

55. Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342, 344, 345–46, 350 (2004) (describing the contours of the “new governance” movement and its bipartisan support). See also Charles F. Sabel & William H. Simon, *Minimalism and Experimentalism in the Administrative State*, 100 GEO. L.J. 53, 53–61 (2011) (outlining the movement towards “minimalism” and “experimentalism”); Paul R. Verkuil, *Public Law Limitations on Privatization of Government Functions*, 84 N.C. L. REV. 397, 418 (2006) (describing “[t]he new lexicon of government management” including “‘privatization,’ ‘public and private partnerships,’ ‘deregulation,’ ‘downsizing,’ and ‘self-regulation’”).

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”).

57. See generally DAVID OSBORNE & TED GAEBLER, *REINVENTING GOVERNMENT: HOW THE ENTREPRENEURIAL SPIRIT IS TRANSFORMING THE PUBLIC SECTOR* (1992).

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.⁵⁹ Moreover, the grid must maintain a perfect balance between supply and demand of electrons at all times.⁶⁰ 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.⁶¹

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.”⁶² 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.⁶³ 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.⁶⁴

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.⁶⁵ In contrast, for FERC or any other entity

Bureaucracy at the Boundary, 162 U. PA. L. REV. 841, 842 (2014); Harold Seidman, *The Quasi World of the Federal Government*, BROOKINGS REV., Summer 1988, at 23.

59. See Paul L. Joskow, *Incentive Regulation in Theory and in Practice: Electricity Distribution and Transmission Networks*, in ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED? 291 (Nancy L. Rose ed., 2014).

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).

62. Order 2000, *supra* note 11, at 811.

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 filing 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."⁶⁶ Thus, having section 205 filing authority gives RTOs particular influence over regional rules.⁶⁷

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.⁶⁸ 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.⁶⁹

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."⁷⁰ To be sure, this was not classic contracting-out, where the government signed away its pre-existing duties to a private contractor.⁷¹ 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"⁷² or treat it as a product of "new governance" theory.⁷³ You could call RTOs hybrid or quasi-governmental organizations,⁷⁴ self-regulatory organizations,⁷⁵ or more provocatively, "legal

66. *NRG Power Mktg.*, 862 F.3d at 114 n.2 (quoting *City of Winfield 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.

68. See Order 2000, *supra* note 11, at 847–48, 857.

69. See *id.* at 848–49, 858, 910.

70. O'Neill et al., *supra* note 45, at 23.

71. On the prevalence of contracting out during this time, see GOVERNMENT BY CONTRACT: OUTSOURCING AND AMERICAN DEMOCRACY (Jody Freeman & Martha Minow eds., 2009); Martha Minow, *Public and Private Partnerships: Accounting for the New Religion*, 116 HARV. L. REV. 1229, 1233 (2003).

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).

73. See, e.g., Lester M. Salamon, *The New Governance and the Tools of Public Action: An Introduction*, in THE TOOLS OF GOVERNMENT: A GUIDE TO THE NEW GOVERNANCE 1, 14, 15 (Lester M. Salamon ed., 2002) (describing arrangements that "defy" traditional precepts of the public/private divide as "new governance," a theory rooted in collaboration between the public and private spheres).

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.

cartels.”⁷⁶ 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.⁷⁷ 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.⁷⁸ FERC equivocated on this point, reserving judgment on whether it could mandate the establishment of RTOs.⁷⁹ Ultimately, congressional opposition killed the idea, rendering the jurisdictional question moot for the time being.⁸⁰

FERC also explicitly celebrated the creation of voluntary RTOs on new governance grounds, explaining that RTOs would “facilitate lighter handed regulation.”⁸¹ 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.⁸² In analyzing the propriety of financial SROs, legal scholars have found that these organizations work best when: market participants have incentives to self-police;⁸³ the interests of regulators and market participants align;⁸⁴ technical expertise within the industry is critical to effective rulemaking;⁸⁵ and potential victims of wrongdoing are within the industry and are not weak or vulnerable.⁸⁶

76. Martin O’Malley, *Ex-Maryland Gov O’Malley: States Must Reassert Authority on Clean Energy Policy*, UTIL. DIVE (Mar. 28, 2019), <https://www.utilitydive.com/news/ex-maryland-gov-omalley-states-must-reassert-authority-on-clean-energy-po/551461> [https://perma.cc/YUG8-4WLF].

77. See MICHAELS, *supra* note 13, at 104–05.

78. See Order 2000, *supra* note 11, at 831–33, 838–40.

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.”).

80. See Clinton A. Vince et al., *What Is Happening and Where in the World of RTOs and ISOs?*, 27 ENERGY L.J. 65, 75–76 (2006).

81. Order 2000, *supra* note 11, at 811, 830.

82. As Saule Omarova describes, the Financial Industry Regulatory Authority (FINRA) and the registered stock exchanges “operate under strict oversight by the Securities Exchange Commission (SEC) and direct their activities primarily at managing, often in excruciating detail, the everyday business of securities broker-dealers and other market intermediaries”—making them relatively similar in institutional positioning to RTOs. Saule T. Omarova, *Wall Street as Community of Fate: Toward Financial Industry Self-Regulation*, 159 U. PA. L. REV. 411, 417 (2011); see William A. Birdthistle & M. Todd Henderson, *Becoming a Fifth Branch*, 99 CORNELL L. REV. 1 (2013); James J. Park, *Rules, Principles, and the Competition to Enforce the Securities Laws*, 100 CALIF. L. REV. 115 (2012); Cary Coglianese, Elizabeth K. Keating, Michael L. Michael & Thomas J. Healey, *The Role of Government in Corporate Governance*, 1 N.Y.U. J.L. & BUS. 219 (2004).

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.⁸⁷ 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.⁸⁸ Because RTOs grew out of power pools and independent system operators, industry control of this more robust form of regional collaboration likely seemed unthreatening.⁸⁹ 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."⁹⁰

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.⁹¹ 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

92. Order 2000, *supra* note 11, at 812.

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.

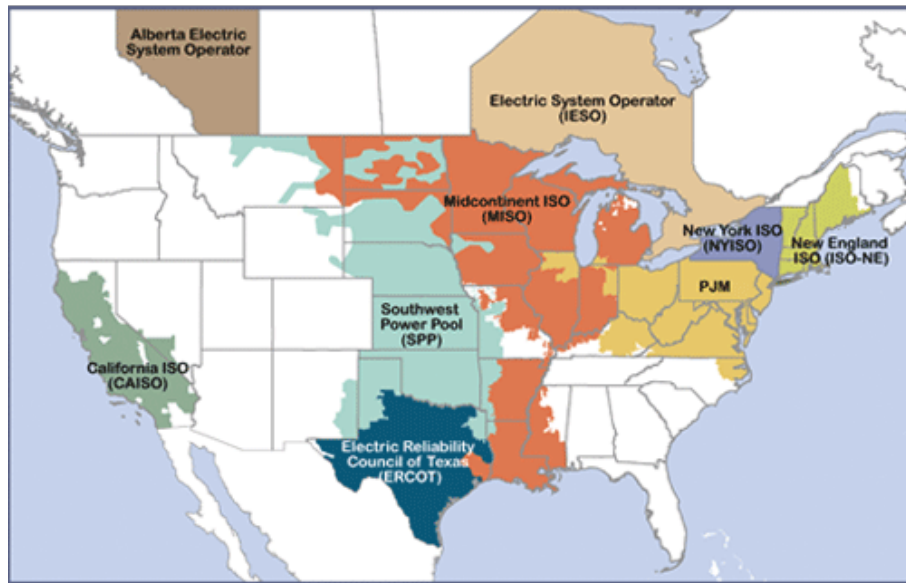
95. Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design, 67 Fed. Reg. 55,452, 55,455, 55,458 (July 31, 2002) (codified at 18 C.F.R. pt. 35 (2019)) (describing RTO formation process as too slow and uncertain); *id.* at 55,564 (describing required markets).

96. *See* CONG. RSCH. SERV., FEDERAL ENERGY REGULATORY COMMISSION'S STANDARD MARKET DESIGN ACTIVITIES 3 (2003) (noting widespread state opposition).

97. *See* Order Terminating Proceeding, 70 Fed. Reg. 43,140–02, 43,140–41 (July 26, 2005).

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.

99. E4THE FUTURE, *supra* note 30, at 3.

Figure 1. RTOs and ISOs by Region¹⁰⁰

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.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.”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).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.

100. *RTOs and ISOs*, FED. ENERGY REGUL. COMM’N, <https://www.ferc.gov/industries-data/electric/power-sales-and-markets/rtos-and-isos> [<https://perma.cc/9497-EP3B>].

101. See FERC Order No. 719, Wholesale Competition in Regions with Organized Electricity Markets, 73 Fed. Reg. 64,100 (Oct. 28, 2008) (codified at 18 C.F.R. pt. 35 (2019)) [hereinafter Order 719]; Dworkin & Goldwasser, *supra* note 9, at 543, 547–48; Klevorick, *supra* note 28, at 309.

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 directors¹⁰⁶ 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

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. SIMEONE, *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. E4THE FUTURE, *supra* note 30, at 6; SIMEONE, *supra* note 30, at 10.

110. See *Doing Business with PJM FAQs*, PJM, <https://learn.pjm.com/pjm-structure/governance/doing-business-with-pjm-faqs/what-are-the-categories-of-pjm-membership.aspx> [<https://perma.cc/Y6KR-RNZ3>].

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.¹¹⁴ 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.”¹¹⁵

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.¹¹⁶ 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.¹¹⁷ 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.¹¹⁸

PJM—like all multi-state RTOs—also has a regional state committee, which is known as the Organization of PJM States, Inc., or OPSI.¹¹⁹ 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.¹²⁰

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

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).

117. See MONITORING ANALYTICS,
<https://www.monitoringanalytics.com/home/index.shtml> [<https://perma.cc/HK7T-WH63>].

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 . . .”).

119. ORG. OF PJM STATES, INC., <https://opsi.us> [<https://perma.cc/3BFH-7BYC>]. See also William H. Smith, Jr., *Formation and Nurture of a Regional State Committee*, 28 ENERGY L.J. 185, 196–98 (2007) (detailing the creation of MISO’s regional state committee).

120. Chen & Murnan, *supra* note 30, at 13.

parsing of section 205 filing rights.¹²¹ 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).¹²² 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.¹²³ 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.¹²⁴

California created its ISO—nicknamed CAISO—as part of its 1995 restructuring of the state's electricity system.¹²⁵ 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.¹²⁶ 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.¹²⁷ The Board is in charge of submitting any proposed tariff changes to FERC.¹²⁸ That means that politically accountable

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

122. On the electricity crisis, see, for example, Timothy P. Duane, *Regulation's Rationale: Learning from the California Energy Crisis*, 19 YALE J. ON REGUL. 471 (2002); Frank A. Wolak, *Diagnosing the California Electricity Crisis*, ELEC. J., Aug.-Sept. 2003, at 11. See also Order Conditionally Accepting the California Independent System Operator's Electric Tariff Filing to Reflect Market Redesign and Technology Upgrade, Cal. Indep. Sys. Operator Corp., 116 F.E.R.C. ¶ 61,274, 62,124 (Sept. 21, 2006) (describing thirty reforms to California's market over a six-year period to “avoid the mistakes of the California energy crisis of 2000-2001”). On the recent blackouts and wildfires, see *Power Lines Are Still Starting California Wildfires. We Can't Wait Three Years for a Fix*, L.A. TIMES (Nov. 29, 2019, 4:00 AM), <https://www.latimes.com/opinion/story/2019-11-29/fix-california-wildfires-utilities-and-fire-starting-power-lines> [<https://web.archive.org/save/https://www.latimes.com/opinion/story/2019-11-29/fix-california-wildfires-utilities-and-fire-starting-power-lines>].

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”).

125. Order Instituting Rulemaking on the Commission's Proposed Policies Governing Restructuring California's Electric Service Industry and Reforming Regulation, 64 C.P.U.C. 2d 1, 95 (Dec. 20, 1995).

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.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.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 grid¹³¹—a topic taken up in Part III.

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.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.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.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

129. See Order of Proposed Tariff Revisions, *supra* note 112, at 62,297 n.3.

130. See *Market Monitoring*, CAL. ISO, <http://www.caiso.com/market/Pages/MarketMonitoring/Default.aspx> [<https://perma.cc/LZJ5-GCHU>].

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.”).

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

133. See ZHI ZHOU, TODD LEVIN & GUENTER CONZELMANN, ARGONNE NAT'L LAB'Y, SURVEY OF U.S. ANCILLARY SERVICES MARKETS (2016); Charles H. Koch, Jr., *Control and Governance of Transmission Organizations in the Restructured Electricity Industry*, 27 FLA. ST. U. L. REV. 569, 574 (2000) (discussing the need for reserves). CAISO also runs an innovative “energy imbalance market” in the West, where utilities voluntarily share resources in a short-term market to help balance loads more efficiently across the region. See Stephanie Lenhart, Natalie Nelson-Marsh, Elizabeth J. Wilson & David Solan, *Electricity Governance and the Western Energy Imbalance Market in the United States: The Necessity of Interorganizational Collaboration*, 19 ENERGY RSCH. & SOC. SCI. 94, 95 (2016).

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.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 demand¹³⁶—in the industry, this is called ensuring adequate “capacity.”¹³⁷ But some regions, including PJM, New England, and New York, have decided that it makes more sense for capacity to be centrally procured.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.¹³⁹ As a remedy, after contentious negotiations and litigation, these eastern RTOs have instituted centralized, mandatory capacity markets.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.¹⁴¹ Thus these administrative “markets,” instead of state planners, largely determine what resources will receive financing in the region.¹⁴² The layering of capacity markets on top of energy markets has proven a controversial and unstable element in the eastern RTOs.¹⁴³

135. See FERC Order No. 1000, Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 76 Fed. Reg. 49,842, 48,845–46 (Aug. 11, 2011) (codified at 18 C.F.R. pt. 35 (2019)) [hereinafter Order 1000]. Order 1000 imposes these same transmission obligations on regions without an RTO. *Id.*

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).

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.”).

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 PESKOE, GETCHES-WILKINSON CTR., ENERGY EMERGENCIES VS. MANUFACTURED CRISES: THE LIMITS OF FEDERAL AUTHORITY TO DISRUPT POWER MARKETS 5 (2019); Dworkin & Goldwasser, *supra* note 9, at 553.

139. See Welton, Appendix A, *supra* note 14 (showing restructuring status by region).

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).

141. I am simplifying my description of capacity markets; for an in-depth exploration, see Order on Rehearing, Midwest Indep. Transmission Sys. Operator, Inc., 153 FERC ¶ 61,229, 61,246 (Nov. 20, 2015); James Bushnell, Michaela Flagg & Erin Mansur, *Capacity Markets at a Crossroads* 24–31 (Energy Inst. at Haas, Working Paper No. 278, 2017); Chen & Murnan, *supra* note 30; Joshua C. Macey & Jackson Salovaara, *Rate Regulation Redux*, 168 U. PA. L. REV. 1181 (2020).

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

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

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.¹⁴⁴ 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.¹⁴⁵ 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.¹⁴⁶ 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).¹⁴⁷ 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 selection¹⁴⁸ 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).

144. See CAL. PUB. UTIL. CODE § 380 (West 2019); CAL. PUB. UTIL. COMM'N, *Resource Adequacy*, <https://www.cpuc.ca.gov/ra> [<https://perma.cc/8B9X-YH45>].

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.”¹⁴⁹ 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.”¹⁵⁰ 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.”¹⁵¹ If it did, the court reasoned, then what would stop FERC from replacing the board of Duke Energy tomorrow?¹⁵² (Heaven forbid.¹⁵³) 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.¹⁵⁴

Although *CAISO* arguably enlarged FERC’s authority to regulate markets and pricing by cementing the agency’s authority over “practices affecting rates,”¹⁵⁵ 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.¹⁵⁶

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

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.

153. *See* Fred Clasen-Kelly & Sarah Skinner, ‘Taking Care of the People Wasn’t a Priority.’ *Is Duke Energy to Blame for Flooding?*, CHARLOTTE OBSERVER (June 24, 2019, 5:16 PM), [charlotteobserver.com/news/local/article231820373.html](https://www.charlotteobserver.com/news/local/article231820373.html) [<https://web.archive.org/save/https://www.charlotteobserver.com/news/local/article231820373.html>]; Herman K. Trabish, *Duke Pleads Guilty to Nine Coal Ash Charges Stemming from Dan River Spill*, UTIL. DIVE (May 15, 2015), <https://www.utilitydive.com/news/duke-pleads-guilty-to-nine-coal-ash-charges-stemming-from-dan-river-spill/398144> [<https://perma.cc/4U9Z-YEGM>]; David Zucchini, *Duke Energy Fined \$102 Million for Polluting Rivers with Coal Ash*, L.A. TIMES (May 14, 2015, 7:01 PM), [latimes.com/nation/la-na-duke-energy-coal-ash-20150514-story.html](https://www.latimes.com/nation/la-na-duke-energy-coal-ash-20150514-story.html) [<https://web.archive.org/web/20150515040125/latimes.com/nation/la-na-duke-energy-coal-ash-20150514-story.html>].

154. *Cal. Indep. Sys. Operator*, 372 F.3d at 404. FERC expressed concern about undertaking this “drastic remedy.” *Id.*

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.¹⁵⁷ 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.¹⁵⁸

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.¹⁵⁹ 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.¹⁶⁰ 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.¹⁶¹ 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.¹⁶² 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.¹⁶³ The holding companies were accused of running a pyramid

157. *NRG Power Mktg. v. FERC*, 862 F.3d 108, 110 (D.C. Cir. 2017).

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.

161. *See* Public Utility Act of 1935, ch. 687, 49 Stat. 803, *repealed by* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (codified as amended at 42 U.S.C. § 13201 et seq. (2018)).

162. *See* Roberta S. Karmel, *Is the Public Utility Holding Company Act a Model for Breaking Up the Banks That Are Too-Big-to-Fail?*, 62 HASTINGS L.J. 821, 845–46 (2011).

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.¹⁶⁴ 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.¹⁶⁵ 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.¹⁶⁶

Intellectual currents shifted in the second half of the twentieth century, such that “bigness” no longer reigned as a concern in antitrust law.¹⁶⁷ These changes in antitrust theories are not typically connected with RTOs or the energy sector because regulated utilities are largely insulated from antitrust challenges.¹⁶⁸ 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.¹⁶⁹ In a 1995 report, the Securities and Exchange Commission found that “the conduct that gave rise to the Act ha[d] all but disappeared,” and that PUHCA had become a

164. See CONG. RSCH. SERV., RL33739, THE REPEAL OF THE PUBLIC UTILITY HOLDING COMPANY ACT OF 1935 (PUHCA 1935) AND ITS IMPACT ON ELECTRIC AND GAS UTILITIES 3 (2006); SEC. & EXCH. COMM’N DIV. OF INV. MGMT., THE REGULATION OF PUBLIC-UTILITY HOLDING COMPANIES 14–15 (1995); Norman S. Buchanan, *The Public Utility Holding Company Problem*, 25 CALIF. L. REV. 517, 520–22 (1937); David Ferber, Arthur Blasberg, Jr. & Melvin Katz, *Conflicts of Interest in Reorganization Proceedings Under the Public Utility Holding Company Act of 1935 and Chapter X of the Bankruptcy Act*, 28 GEO. WASH. L. REV. 319, 322 (1959).

165. Public Utility Act of 1935, ch. 687, 47 Stat. 1844 § 2(a)(29) repealed by Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (codified as amended at 42 U.S.C. § 13201 et seq. (2018)) (defining “integrated public-utility system” as one “whose utility assets . . . are physically interconnected . . .”). See also Douglas W. Hawes, *Public Utility Holding Company Act of 1935—Fossil or Foil?*, 30 VAND. L. REV. 605, 606, 609 (1977).

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 Brandeisian 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 carried 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.”¹⁷⁰ In 2005, Congress did away with PUHCA in its entirety, lifting the substantive prohibitions on holding companies’ ownership of utilities and other businesses.¹⁷¹

The repeal resulted in an explosion in utility-sector mergers.¹⁷² As of 2016, there were fifty remaining utility systems, down from hundreds a few decades earlier.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.¹⁷⁴ FERC applies this standard in a piecemeal and lenient fashion, refusing to examine broader industry impacts in deciding individual applications.¹⁷⁵

Consequently, utility mega-holding companies have returned.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.¹⁷⁷ To be sure, some utility mergers create efficiencies through economies of scale or complementary business ventures.¹⁷⁸ But they also create challenges by concentrating economic and

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).

171. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, §§ 1261–77 (codified as amended at 42 U.S.C. § 13201 et seq. (2018)); FERC Order No. 667, Repeal of the Public Utility Holding Company Act of 1935 and Enactment of the Public Utility Holding Company Act of 2005, 70 Fed. Reg. at 75,592 (Dec. 20, 2005) (codified at 18 C.F.R. pt. 365–66 (2019)) [hereinafter Order 667] (implementing new reporting requirements).

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).

173. Scott Hempling, *Inconsistent with the Public Interest: FERC’s Three Decades of Deference to Electricity Consolidation*, 39 *ENERGY L.J.* 233, 251 n.32 (2018).

174. 16 U.S.C. § 824b (2018); Hempling, *supra* note 173, at 239.

175. *See* Hempling, *supra* note 173, at 308–09.

176. *See id.* at 233.

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.

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

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.¹⁷⁹ 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%.¹⁸⁰ 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%.¹⁸¹ 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.¹⁸²

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

upon economies of scale). *But see* Hempling, *supra* note 173, at 234, 238 (pointing out that mergers can also create “diseconomies of scale due to non-integrated operations”).

179. Hempling, *supra* note 173, at 238, 271. *See also infra* Part III.

180. Calculations derived from data in U.S. ENERGY INFO. ADMIN., ELECTRIC POWER ANNUAL 2018, tbls. 3.2.B. & 3.3.B. (2019), <https://www.eia.gov/electricity/annual/pdf/epa.pdf> [<https://perma.cc/PK6N-X63L>].

181. EDISON ELEC. INST., 2018 FINANCIAL REVIEW: ANNUAL REPORT OF THE U.S. INVESTOR-OWNED ELECTRIC UTILITY INDUSTRY 37.

182. 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.¹⁸³ 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.¹⁸⁴

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.”¹⁸⁵ 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.¹⁸⁶ 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.¹⁸⁷ Despite renewables’ recent growth, there is a long way to go to reach these kinds of numbers.¹⁸⁸ 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%.¹⁸⁹

As grid managers, RTOs play a key role in enabling sectoral transformation. This role is complicated, however, by the fact that neither FERC

183. The signature global climate convention—the United Nations Framework Convention on Climate Change—was signed in 1992, and the follow-on Kyoto Protocol was signed in 1997. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Feb. 16, 2005, 2303 U.N.T.S. 162; United Nations Framework Convention on Climate Change, Mar. 21, 1992, 1771 U.N.T.S. 107. If one sees rising emissions and deregulation as products of the same neoliberal economic agenda, then their contemporaneous timing appears to be part of a concerted effort toward economic growth at all costs. *See generally* NAOMI KLEIN, *THIS CHANGES EVERYTHING: CAPITALISM VS. THE CLIMATE* (2014) (linking these challenges); ANDREAS MALM, *FOSSIL CAPITAL: THE RISE OF STEAM POWER AND THE ROOTS OF GLOBAL WARMING* 393 (2016) (arguing that climate change is a “*lifting of the veil* on two centuries of fossil capital . . .”).

184. *See infra* Part V.

185. Jesse D. Jenkins, Max Luke & Samuel Thernstrom, *Getting to Zero Carbon Emissions in the Electric Power Sector*, 2 *JOULE* 2498, 2498 (2018).

186. *See* Alexandra B. Klass, *Expanding the U.S. Electric Transmission and Distribution Grid to Meet Deep Decarbonization Goals*, 47 *ENV’T. L. REP.* 10,749, 10,751 (2017) (explaining that to reach “deep decarbonization,” electricity generation “would need to approximately double . . . by 2050 while its carbon intensity is reduced to 3-10% of its current level”). *See also* Jenkins et al., *supra* note 185, at 2,506.

187. *See* Jenkins et al., *supra* note 185 (metareview of forty studies of such “deep decarbonization”). Of course, if the United States alone decarbonized, it would not avoid these consequences—that requires a larger diplomatic effort.

188. *See* Michael B. Gerrard, *Legal Pathways for a Massive Increase in Utility-Scale Renewable Generation Capacity*, 47 *ENV’T L. REP.* 10,591, 10,591 (2017).

189. *See What Is U.S. Electricity Generation by Energy Source?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3> [<https://perma.cc/K933-VHZ9>].

nor RTOs have an independent mandate to decarbonize.¹⁹⁰ Moreover, the Federal Power Act explicitly leaves decisions over the electric generation mix to the states.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.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;¹⁹³ every state has put in place laws to encourage efficiency and conservation;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.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.¹⁹⁶

To reach these goals will require the affirmative support of “policy-taking” RTOs.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.¹⁹⁸ To integrate these resources, RTOs will have to reform their systems to better model renewable energy’s output; reward other sources for being

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).

191. *See* 16 U.S.C. § 824(b)(1) (2018).

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/XB2A-UWVV>].

193. N.C. CLEAN ENERGY TECH. CTR., U.S. DEP’T OF ENERGY, RENEWABLE PORTFOLIO STANDARD POLICIES (2018), <http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2018/10/Renewable-Portfolio-Standards-2018.pdf> [<https://perma.cc/S4W7-U3YV>].

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

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.

196. *See* Pyper, *supra* note 17.

197. I return to contest this RTO self-characterization *infra* Part III.B.

198. *See* E. ELA, V. DIAKOV, E. IBANEZ & M. HEANEY, NAT’L RENEWABLE ENERGY LAB’Y, IMPACTS OF VARIABILITY AND UNCERTAINTY IN SOLAR PHOTOVOLTAIC GENERATION AT MULTIPLE TIMESCALES 8 (2013).

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).

200. See Christopher Serkin & Michael P. Vandenbergh, *Prospective Grandfathering: Anticipating the Energy Transition Problem*, 102 MINN. L. REV. 1019, 1021–22 (2018); Chloe Holden, *As Coal Retires in PJM, Why Aren't Renewables Filling the Vacuum?*, GREENTECH MEDIA (May 20, 2019), https://www.greentechmedia.com/articles/read/as-coal-retires-in-pjm-why-arent-renewables-filling-the-vacuum?utm_source=Sailthru&utm_medium=email&utm_campaign=Newsletter%20Weekly%20Roundup:%20Utility%20Dive%205-25-2019&utm_term=Utility%20Dive%20Weekender#gs.9dffa9 [https://perma.cc/ES95-S6VY] (describing "PJM's natural-gas plant building boom"); David Pomerantz, *Duke Energy's Zero-Carbon Goal Undermined by Massive Gas Rush*, ENERGY & POL'Y INST. (Sept. 17, 2019), <https://www.energyandpolicy.org/duke-energy-net-zero-carbon> [https://perma.cc/AG7J-PCC5] (describing how Duke Energy's plans to build gas infrastructure are incompatible with the company's climate change goals).

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).

202. See Jenkins et al., *supra* note 185, at 2506; Klass, *supra* note 186; Alexander E. MacDonald, Christopher T.M. Clack, Anneliese Alexander, Adam Dunbar, James Wilczak & Yuanfu Xie, *Future Cost-Competitive Electricity Systems and Their Impact on US CO₂ Emissions*, 6 NATURE CLIMATE CHANGE 526, 526 (2016).

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 stallers 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

205. See STEVE DAHLKE & MATT PROROK, GREAT PLAINS INST., CONSUMER SAVINGS, PRICE, AND EMISSIONS IMPACTS OF INCREASING DEMAND RESPONSE IN THE MIDCONTINENT ELECTRICITY MARKET 1 (2018) (finding savings potential from untapped demand response in MISO alone of up to \$18.5 million per year); SAM NEWELL, KATHLEEN SPEES, YINGXIA YANG, ELLIOT METZLER & JOHN IMON PEDTKE, BRATTLE GRP., OPPORTUNITIES TO MORE EFFICIENTLY MEET SEASONAL CAPACITY NEEDS IN PJM 2 (2018) (estimating that better accommodating seasonal resources could save consumers hundreds of millions of dollars each year); JOHANNES P. PFEIFENBERGER, JUDY CHANG, AKARSH SHEILENDRANATH, J. MICHAEL HAGERTY, SIMON LEVIN & WREN JIANG, BRATTLE GRP., COST SAVINGS OFFERED BY COMPETITION IN ELECTRIC TRANSMISSION: EXPERIENCE TO DATE AND THE POTENTIAL FOR ADDITIONAL CUSTOMER VALUE 1–2 (2019) (estimating that more competitive transmission processes could create “customer value” of “approximately \$8 billion over the course of five years”); Iulia Gheorghiu, *PJM Capacity Market Plan to Increase Costs \$8.4B, Market Monitor Estimates*, UTIL. DIVE (Sept. 18, 2019), <https://www.utilitydive.com/news/PJM-capacity-market-ferc-costs-8billion-risks-state-subsidies-clean-energy-nuclear-mopr/563152> [https://perma.cc/V26Z-PTQK].

206. For this reason, most electricity demand is inelastic. A. Faruqui, A. Hajos, R.M. Hledik & S.A. Newell, *Fostering Economic Demand Response in the Midwest ISO*, 35 ENERGY 1544, 1544 (2009).

207. *Id.*

208. See Severin Borenstein, Michael Jaske & Arthur Rosenfeld, *Dynamic Pricing, Advanced Metering, and Demand Response in Electricity Markets* 5 (Ctr. for the Study of Energy Mkts., Working Paper No. 105, 2002); James Bushnell, Benjamin F. Hobbs & Frank A. Wolak, *When it Comes to Demand Response, Is FERC Its Own Worst Enemy?*, 22 ELEC. J. 9, 9–10 (2009).

for renewable resources that may be competing with traditional fossil fuel resources, these entities see it as a threat to their revenue streams.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.”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”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.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.”²¹³ Power generators challenged this order in court and the Supreme Court ultimately upheld it.²¹⁴

209. See Michael P. Vandenberg & Jim Rossi, *Good for You, Bad for Us: The Financial Disincentive for Net Demand Reduction*, 65 VAND. L. REV. 1527, 1530–31 (2012).

210. See 16 U.S.C. § 824d(a) (2018); Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, § 1252(f) (2005) (codified at 16 U.S.C. § 2624 (2018)) (instructing that “unnecessary barriers to demand response participation in energy, capacity, and ancillary service markets shall be eliminated”); Order 719, *supra* note 101, at 64,103 (recognizing the value of demand response in wholesale markets).

211. Order 719, *supra* note 101, at 64,107 (ancillary services), 64,119 (bidding into energy and capacity markets), 64,110 (comparability requirement). Before this time, the Commission had issued several orders related to demand response and had included demand response goals in its failed Standard Market Design proceeding. See, e.g., Order on Tariff Filing and Complaint, N.Y. Indep. Sys. Operator, Inc., N.Y. State Elec. & Gas Corp. v. N.Y. Indep. Sys. Operator, Inc., 92 FERC ¶ 61,073, 61,305 (July 26, 2000) (requiring NYISO to “continue developing a demand-responsive mechanism” to mitigate price spikes during summer months); Order Accepting in Part and Modifying in Part Standard Market Design Filing and Dismissing Compliance Filing, New England Power Pool & ISO New England, Inc., 100 FERC ¶ 61,287, 62,283 (Sept. 20, 2002) (requiring the northeastern market to broaden eligibility for participation in demand response programs).

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 & PROROK, *supra* note 205, at 3; Bushnell et al., *supra* note 208, at 10–11; Faruqui et al., *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 *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, *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. *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,²¹⁵ demand response's "equal pay for equal work" fight within RTOs is not over. Additional complex barriers remain across regions.²¹⁶ 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.²¹⁷

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.²¹⁸ But storage can play this same role, emissions-free—not to mention that it can also reduce and replace transmission and distribution infrastructure.²¹⁹ If the storage industry can capitalize upon these many value streams, it will become a significant threat to incumbent resources.²²⁰

215. See Emma Goldberg, *Why the Gender Pay Gap Still Persists (and What We Can Do About It)*, WASH. POST (May 14, 2019, 3:00 AM), <https://beta.washingtonpost.com/outlook/2019/05/14/why-gender-pay-gap-still-persists-what-we-can-do-about-it> [<https://perma.cc/JF47-VSYY>]; *Pay Equity & Discrimination*, INST. FOR WOMEN'S POL'Y RSCH., <https://iwpr.org/issue/employment-education-economic-change/pay-equity-discrimination> [<https://perma.cc/MQ8T-PVD6>].

216. See, e.g., DAHLKE & PROROK, *supra* note 205, at 2–3 (analyzing why demand response is underutilized in MISO); Protest of Clean Energy Advocates at 2–3, 17–18, PJM Interconnection, L.L.C., FERC Docket No. ER19-1486-000 (May 15, 2019) (contesting PJM's treatment of demand response in proposed reforms to reserve pricing); Peter Cappers, Jason MacDonald, Charles Goldman & Ookie Ma, *An Assessment of Market and Policy Barriers for Demand Response Providing Ancillary Services in U.S. Electricity Markets*, 62 ENERGY POL'Y 1031, 1032 (2013) (finding significant barriers remain to demand response's participation in ancillary service markets across RTOs); Faruqui et al., *supra* note 206, at 1546 (similar). The treatment of seasonally available resources remains another challenge. See Order Dismissing Rehearing and Clarification, Old Dominion Elec. Coop. and Direct Energy Bus. v. PJM Interconnection, 164 FERC ¶ 61,116, at P 3 (Aug. 17, 2018); Pre-Technical Conference Comments of NRDC & Sustainable FERC Project at 1–2, Old Dominion Elec. Coop., FERC Docket Nos. EL17-32-000, EL17-36-000 (Apr. 11, 2018); NEWELL ET AL., *supra* note 205, at 2.

217. See, e.g., David Roberts, *A Tiny, Beleaguered Government Agency Seeks an Energy Holy Grail: Long-Term Energy Storage*, VOX (Oct. 4, 2018, 8:23 AM), <https://www.vox.com/energy-and-environment/2018/9/20/17877850/arpa-e-long-term-energy-storage-days> [<https://perma.cc/L3E7-HTS4>] ("If we want to get variable renewable energy up to 60 percent, 80 percent, or even more of our electricity, we need long-term energy storage. It is the missing puzzle piece, the holy grail."); Herman K. Trabish, *Energy Storage for the Grid: Better than the Holy Grail*, GREENTECH MEDIA (Oct. 7, 2010), <https://www.greentechmedia.com/articles/read/energy-storage-for-the-grid-better-than-the-holy-grail#gs.nyz0g3> [<https://perma.cc/LVX4-MWFU>].

218. See, e.g., *Natural Gas & Renewables: Working Together*, INTERSTATE NAT. GAS ASS'N OF AM., <https://www.ingaa.org/File.aspx?id=30374&v=b0798882> [<https://perma.cc/UM8N-8WFP>].

219. See GARRETT FITZGERALD, JAMES MANDEL, JESSE MORRIS & HERVÉ TOUATI, ROCKY MOUNTAIN INST., *THE ECONOMICS OF BATTERY ENERGY STORAGE 6* (2015) (diagramming the many grid services that storage offers).

220. See *id.*

For these reasons, FERC again has had to force RTOs into action.²²¹ In 2018, FERC ordered RTOs to create a “participation model” for storage to remedy unreasonable market barriers that regions have erected.²²² But many RTO responses to the order have been underwhelming, with recent compliance filings clinging to discriminatory practices.²²³ 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.²²⁴

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.²²⁵

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.²²⁶ 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

221. To be fair, RTOs took steps prior to Order 841 to begin incorporating energy storage into their markets—but FERC judged these too tepid and scattered. *See* FERC Order No. 841, Electric Storage Participation in Markets Operated by Regional Transmission Organizations and Independent System Operators, 83 Fed. Reg. 9580, 9583, 9583 n.14 (Feb. 15, 2018) (codified at 18 C.F.R. pt. 35 (2019)) [hereinafter Order 841]. *See also* James et al., *supra* note 30, at 18 (observing FERC’s reticence to force action on the “electric storage resource participation problem”).

222. FERC issued this order under section 206, finding current markets unjust and unreasonable. Order 841, *supra* note 221, at 9582.

223. *See, e.g.*, Comments of the Institute for Policy Integrity at New York University School of Law at 2, N.Y. Indep. Sys. Operator, Inc., FERC Docket No. ER19-467-000 (Feb. 7, 2019) (critiquing NYISO for prohibiting dual retail-wholesale participation); Protest of the City of New York at 9, N.Y. Indep. Sys. Operator, Inc., FERC Docket No. ER19-467-000 (Feb. 7, 2019) (critiquing NYISO for inappropriately trying to extend “buyer-side market power mitigation rules” to include energy storage and other small resources through its compliance filing).

224. *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).

225. *See* Nat’l. Ass’n. of Regul. Util. v. FERC, 964 F.3d 1177, 1186 (D.C. Cir. 2020) (“We swiftly conclude that FERC’s prohibition of state-imposed participation bans directly affects wholesale rates.”).

226. DER also includes electric vehicles, home energy management systems, fuel cells, and even electric home water heaters—all of which “are now cost-effective in certain applications.” *See* MASS. INST. OF TECH., UTILITY OF THE FUTURE: AN MIT ENERGY INITIATIVE RESPONSE TO AN INDUSTRY IN TRANSITION 40 (2016). FERC specifically defines DER as “any resource located on the distribution system, any subsystem thereof or behind a customer meter. These resources may include, but are not limited to, electric storage resources, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment.” FERC Order No. 2222, Participation of Distributed Energy Resource Aggregations in Markets Operated by Regional Transmission Organization and Independent System Operators, 172 FERC ¶ 61,247, at P 1 n.1 (Sept. 17, 2020) (codified at 18 C.F.R. pt. 35 (2020)) [hereinafter Order 2222].

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[s] 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.

229. See Jeff St. John, *Distributed Energy Poised for "Explosive Growth" on the U.S. Grid*, GREEN TECH MEDIA (June 21, 2018), <https://www.greentechmedia.com/articles/read/distributed-energy-poised-for-explosive-growth-on-the-us-grid#gs.os43e7> [<https://perma.cc/Q5JE-YFLW>].

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.

233. There is a large literature on these many challenges. See, e.g., Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the "Public Interest" in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705 (2010); Alexandra B. Klass, *The Electric Grid at a Crossroads: A Regional Approach to Siting Transmission Lines*, 48 U.C. DAVIS L. REV. 1895 (2015); Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801 (2012); Alexandra B. Klass & Jim Rossi, *Revitalizing Dormant Commerce Clause Review for Interstate Coordination*, 100 MINN. L. REV. 129 (2015); Alexandra B. Klass, *Takings and Transmission*, 91 N.C. L. REV. 1079 (2013); Ashira Pelman Ostrow, *Grid Governance: The Role of a National Network Coordinator*, 35 CARDOZO L. REV. 1993 (2014); Jim Rossi, *The Trojan Horse of Electric Power Transmission Line Siting Authority*, 39 ENV'T L. 1015 (2009).

transmission companies competing to build new transmission lines.²³⁴ Moreover, as I have catalogued elsewhere, they have resisted creating planning processes that weigh “non-transmission alternatives” fairly.²³⁵

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.”²³⁶ 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.²³⁷ 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).

235. See Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENV’T L. REV. 457, 508 (2015).

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

237. See *supra* note 138 and accompanying text. New York has similar concerns. See Complaint on Behalf of the New York State Public Service Commission and the New York State Energy Research and Development Authority and Request for Fast Track Processing at 3, N.Y. State Pub. Serv. Comm’n v. N.Y. Indep. Sys. Operator, Inc., FERC Docket No. EL19-86-000 (July 29, 2019) (“The NYISO’s current [capacity market] rules are used as both a shield to preserve the market position of incumbent generators and as a sword against new market entrants.”). See also Order Instituting Proceeding and Soliciting Comments at 3–4, N.Y. Pub. Serv. Comm’n, Case No. 19-E-0530 (Aug. 8, 2019). In 2020, however, FERC declined to allow NYISO to amend its capacity market rules to address these concerns. See N.Y. System Op., Inc., Order Rejecting Tariff Revisions, Docket No. ER20-1718-001, P 1 (Sept. 4, 2020). See also *infra* notes 325–327 and accompanying text for more analysis of New York’s particular challenges.

impact[s] the market’s ability to retain and justly compensate needed existing resources and to attract new, competitively-compensated resources.”²³⁸ 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.²³⁹ 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.²⁴⁰

FERC approved these changes to ISO New England’s capacity market in 2018 and finalized its approval of PJM’s capacity market redesign in 2020.²⁴¹ 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.²⁴² 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.”²⁴³ 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

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 reh’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”).

241. See Order on Tariff Filing, ISO New England Inc., 162 FERC ¶ 61,205; Calpine Corp. v. PJM Interconnection, LLC, 169 FERC ¶ 61,239 (2019), *order on reh’g and clarification*, 171 FERC ¶ 61,034 (Apr. 16, 2020).

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)”).

243. See Calpine Corp. v. PJM Interconnection, LLC, 169 FERC ¶ 61,239, 62,999 (2019), *order on reh’g and clarification*, 171 FERC ¶ 61,034 (Apr. 16, 2020) (Comm’r Glick, dissenting).

Circuit.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.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.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.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.”²⁴⁸

244. See *Petition for Review of the New Jersey Board of Public Utilities and Public Service Commission of Maryland*, N.J. Bd. of Pub. Utils. v. FERC, (D.C. Cir. Apr. 27, 2020), <https://www.nj.gov/oag/newsreleases20/Merged-MOPR-Petition-for-Review-4.27.2020.pdf> [<https://perma.cc/7GAP-K7JM>]; *Ill. Commerce Comm’n v. FERC*, Case No. 20-1645 (7th Cir., consolidated May 8, 2020).

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-frr-alternative-to-pjm-as-retail-pro/578380> [<https://perma.cc/QAJ4-HXKT>] (describing New England’s capacity market reforms as forcing “clean generators to essentially buy their way in[to the market] by paying an old resource to retire,” thus raising the costs of renewables) (quoting Rob Gramlich) (alteration in original).

246. See Catherine Morehouse, *State-Federal Tension ‘at an All Time High’ Between MOPR, Net Metering Attack, Says Head Maryland Regulator*, UTIL. DIVE (May 22, 2020), <https://www.utilitydive.com/news/state-federal-tension-at-an-all-time-high-between-mopr-net-metering-atta/578471> [<https://perma.cc/9DJL-JY28>] (“The biggest immediate concern for states like New Jersey and Maryland is the [PJM] order’s impact on offshore wind development—New Jersey is aiming to add 7,500 MW by 2035 and Maryland’s renewable portfolio standard has a 1,200 MW offshore wind carveout.”).

247. See *Hughes v. Talen Energy Mktg., 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); *Allco 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.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.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.²⁵¹ In summer 2018, NERC set PJM’s target reserve margin at 16.1%.²⁵² PJM’s actual margin that summer was 32.8%, and the region’s anticipated reserve margin in 2021 is an astounding

Granting in Part and Denying in Part Complaint, and Instituting Proceeding Under Section 206 of the Federal Power Act, *Calpine Corp. v. PJM Interconnection, LLC*, 163 FERC ¶ 61,236, at P 150 (June 29, 2018) (finding that increasing state out-of-market support for certain resources causes PJM’s market design to fail to “protect the integrity of competition in the wholesale capacity market . . .”).

249. FERC Commissioner Glick made this point eloquently in his separately authored opinions on the PJM and ISO-NE capacity market redesigns. See *Order Rejecting Proposed Tariff Revisions, Granting in Part and Denying in Part Complaint, and Instituting Proceeding Under Section 206 of the Federal Power Act*, 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 Engl. Inc.*, 162 FERC ¶ 61,205 (Comm’r Glick, dissenting in part and concurring in part). States themselves have voiced strong opposition to these reforms. See, e.g., Letter from Joseph Fiordaliso, President, N.J. Bd. of Pub. Utils., to Ake Almgren, Chairman, PJM Bd. of Managers at 2 (July 5, 2019) (critiquing PJM for not prioritizing “the public interests of its own constituent States”); Comments of the Organization of PJM States, Inc. at 2, *PJM Interconnection, L.L.C.*, FERC Docket Nos. EL19-58-000, ER19-1486-000 (May 15, 2019); Reply Comments of the Maryland Public Service Commission, *Calpine Corp. v. PJM Interconnection, LLC*, FERC Docket Nos. EL16-49-000, et al. (Nov. 5, 2018) (urging PJM to adopt capacity market reforms that respect state policy preferences); Comments of the New England States Committee on Electricity at 3, *ISO New England Inc.*, FERC Docket No. ER18-619-000 (Jan. 29, 2018) (insisting that ISO-NE monitor its reforms to ensure that it accommodates state resource preferences in practice); Protest by the Connecticut Public Utilities Regulatory Authority, the Connecticut Department of Energy and Environmental Protection, and the Connecticut Office of Consumer Council, *ISO New England Inc.*, FERC Docket No. ER18-619-000 (Jan. 29, 2018) (objecting to New England’s capacity market reforms). See also PAUL HIBBARD, SUSAN TIERNEY & KATHERINE FRANKLIN, *ELECTRICITY MARKETS, RELIABILITY AND THE EVOLVING U.S. POWER SYSTEM* 41 (2017) (arguing that retirements of conventional resources present no reliability threat); Macey & Salovaara, *supra* note 141, at 42, 50; Robbie Orvis, *The State of U.S. Wholesale Power Markets: Is Reliability at Risk from Low Prices?*, UTIL. DIVE (May 22, 2017), <https://www.utilitydive.com/news/the-state-of-us-wholesale-power-markets-is-reliability-at-risk-from-low-pr/443273> [<https://perma.cc/HJ34-Z236>] (“[A] closer look at data from several of the nation’s wholesale power markets indicates a ‘problem’ does not actually exist at all; wholesale markets are operating as intended.”).

250. Stephanie Tsao & Richard Martin, *Overpowered: PJM Market Rules Drive an Era of Oversupply*, S&P GLOBAL (Dec. 3, 2019), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/54111666> [<https://perma.cc/7DJW-PAZU>].

251. *NERC Report Highlights Potential Summer Electricity Issues for Texas and California*, U.S. ENERGY INFO. ADMIN. (June 18, 2019), <https://www.eia.gov/todayinenergy/detail.php?id=39892> [<https://perma.cc/B7DF-4LDJ>].

252. Tsao & Martin, *supra* note 250.

45%.²⁵³ 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.²⁵⁴

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.²⁵⁵ 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.²⁵⁶

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.²⁵⁷ 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.²⁵⁸ 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 Kleckner, *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.”).

257. See JACOBS & PESKOE, *supra* note 138, at 16–27 (documenting this saga); Emily Holden, *Pruitt Says Coal Losses Make Grid Vulnerable. Not Really*, E&E NEWS (June 7, 2017), <https://www.eenews.net/stories/1060055661> [<https://perma.cc/Y3Y9-GA49>].

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.²⁵⁹ 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.²⁶⁰ 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.”²⁶¹ After the Commission initially expressed skepticism about ISO-NE’s proposal,²⁶² 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.²⁶³ 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.²⁶⁴

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.²⁶⁵ Similarly, California has led the way on promoting more fulsome integration of DER and storage.²⁶⁶ It is

Houser, John Larsen & Peter Marsters, *The Real Electricity Reliability Crisis*, RHODIUM GRP. (Oct. 3, 2017), <https://rhg.com/research/the-real-electricity-reliability-crisis-doe-nopr> [<https://perma.cc/E8NK-HJFM>] (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).

261. Inventoried Energy Program at 1, ISO New England, FERC Docket No. ER19-1428-000 (Mar. 25, 2019).

262. See Letter from FERC Office of Energy Market Regulation to NYISO, Re: Compliance Filing to Order No. 841, Docket No. ER19-467-000 (Apr. 1, 2019).

263. See Notice of Filing Taking Effect by Operation of Law, ISO New England Inc., FERC Docket No. ER19-1428-001 (Aug. 6, 2019); Statement of Commissioner Glick at 1, ISO New England Inc., FERC Docket No. ER19-1428-001 (Aug. 8, 2019).

264. See, e.g., Constellation Mystic Power, LLC at 5, FERC Docket No. ER18-1639-000 (Dec. 20, 2018) (Comm’r Glick, dissenting) (accusing the Commission of jurisdictional overreach to bail out a natural gas import facility); Bruce Ho, *New England Grid Operator Ignores Value of Offshore Wind*, NAT’L RES. DEF. COUNCIL (Apr. 3, 2019), <https://www.nrdc.org/experts/bruce-ho/new-england-grid-operator-ignores-value-offshore-wind> [<https://perma.cc/2GNL-6K9F>] (describing how ISO-NE has discriminated against offshore wind).

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.

266. Comments of Advanced Energy Economy at 1, Cal. Indep. Sys. Operator Corp., FERC Docket No. ER19-468-000 (Feb. 7, 2019) (commending “CAISO for its leadership in integrating advanced energy technologies . . . into its markets”); Jason Fordney, *CAISO Moves Ahead with Load-Shifting, DR Products*, RTO INSIDER (Jan. 24, 2018), <https://rtoinsider.com/caiso-demand-response-energy-storage-84916> [<https://perma.cc/H335-SDSC>]

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.²⁶⁷ Two decades in, the experience of RTOs eludes even this generous framing.²⁶⁸ 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.²⁶⁹

(describing California's "years-long effort to integrate more storage and demand response [DR] into its markets").

267. See KOSAR, *supra* note 54, at ii (describing the "controversial" pitting of supporters of quasi-government, who want to maximize performance, against detractors, who worry about weakening the capacity of government); Jerry L. Mashaw, *Accountability and Institutional Design: Some Thoughts on the Grammar of Governance*, in PUBLIC ACCOUNTABILITY: DESIGNS, DILEMMAS AND EXPERIENCES 115, 121–22, (Michael W. Dowdle ed., 2006) (contrasting political accountability with accountability through market competition); Moe, *supra* note 74, at 290 (contrasting "entrepreneurial" and "constitutionalist" viewpoints on hybrid organizations). Some even hoped that new governance could simultaneously promote "economic efficiency and democratic legitimacy." See Lobel, *supra* note 55, at 344.

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.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.”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.²⁷² Of the voting sectors in PJM, only end-use customers have a strong incentive to favor demand-reducing technologies.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).²⁷⁴ Accordingly, it proves relatively easy to muster supermajority support for incumbent-supply-enhancing proposals within RTO governance processes.²⁷⁵

270. See *supra* Part II.B.1 and Welton, Appendix A, *supra* note 14 (summarizing voting sectors in each RTO).

271. See *Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design*, 67 Fed. Reg. 55,452, 55,521 (Aug. 29, 2002) (codified at 18 C.F.R. pt. 35 (2019)).

272. See Vandenberg & Rossi, *supra* note 209, at 1531.

273. See *supra* Part II.B.1.

274. See Welton, Appendix A, *supra* note 14 (showing consumer advocate weighted votes by region).

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); Cramton, *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.²⁸¹ 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.²⁸² 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.²⁸³

The most frequently proposed solution to these governance flaws is internal governance reform.²⁸⁴ 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.²⁸⁵ In that case, all firms have reciprocal incentives to engage in fair dealing.²⁸⁶ But for climate change policies to succeed, certain companies—most notably, those that have invested in coal and natural gas infrastructure—must lose money and market share.²⁸⁷ 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

281. See Letter from ISO New England, to Kimberly D. Bose, Sec’y, Fed. Energy Regul. Comm’n, Revisions to ISO New England Transmission, Markets and Services Tariff Related to Competitive Auctions with Sponsored Policy Resources, Docket No. ER18-619-000, at 27 n.88–89 (Jan. 8, 2018); Transmittal Letter re: Capacity Repricing or in the Alternative MOPR-Ex Proposal: Tariff Revisions to Address Impacts of State Public Policies on the PJM Capacity Market at 41, PJM Interconnection, LLC, FERC Docket No. ER18-1314-000 (Apr. 9, 2018).

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.²⁸⁸ 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.²⁸⁹ 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.²⁹⁰ 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.²⁹¹ 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.²⁹² 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)”).

292. See, e.g., Lawrence Delevingne, *Private Equity Bets on Energy ‘Revolution’—in Oil and Gas*, CNBC (Nov. 17, 2014, 2:34 PM), <https://www.cnbc.com/2014/11/17/energy-in-25-years-private-equity-bets-on-energy-revolutionin-oil-and-gas.html> [<https://perma.cc/6LZD-K69F>]; Naureen S. Malik & Brian Eckhouse, *Private Equity’s Big Bet on Cheap Gas-Fired Plants Has Gone Awry*, BLOOMBERG (May 23, 2018, 10:40 AM), <https://www.bloomberg.com/news/articles/2018-05-23/private-equity-s-big-bet-on-cheap-gas-fired-plants-has-gone-awry> [<https://perma.cc/WK2P-E4GD>]; Elena Millerman, Christopher Richardson & Ariel Oseasohn, *Developments in Midstream Oil and Gas Finance in the United States*, WHITE & CASE (Apr. 10, 2020), <https://www.whitecase.com/publications/article/developments-midstream-oil-and-gas-finance-united-states> [<https://perma.cc/2PF7-J8GN>].

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.

294. See 16 U.S.C. § 824(b)(1) (2018).

295. *Elec. Power Supply Ass'n v. Star*, 904 F.3d 518, 518 (7th Cir. 2018) (upholding Illinois legislation supporting nuclear power); *Coal. for Competitive Elec., Dynergy Inc. v. Zibelman*, 906 F.3d 41, 46 (2d Cir. 2018), *cert. denied sub nom Elec. Power Supply Ass'n v. Rhodes*, 139 S. Ct. 1547 (2019) (upholding New York legislation supporting nuclear power); *Allco Fin. Ltd. v. Klee*, 861 F.3d 82, 99 (2d Cir. 2017) (upholding Connecticut's state contracting program for renewable energy).

296. Compare *Coal. for Competitive Elec.*, 906 F.3d at 46 (describing the FPA as a “collaborative scheme”), *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 780 (2016) (describing FERC's rule as creating a “program of cooperative federalism”), and *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1300 (2016) (Sotomayor, J., concurring) (describing the FPA as a “collaborative federalism” statute) with *Fed. Power Comm'n v. S. Cal. Edison Co.*, 376 U.S. 205, 215 (1964) (“Congress meant to draw a bright line easily ascertained, between state and federal jurisdiction . . .”). Several scholars have written in detail about this shift. See sources cited *supra* note 27.

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.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.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.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.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 “[disincentivize] states from providing subsidies in the first instance.”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,³⁰³ and Maryland has indicated its interest

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 . . .”).

299. See *supra* note 192 and accompanying text.

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).

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.

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).

303. See Order Initiating Proceeding at 1, In the Matter of BPU Investigation of Res. Adequacy Alternatives, N.J. Bd. Pub. Utils., No. EO20030203 (Mar. 27, 2020), <https://www.nj.gov/bpu/pdf/boardorders/2020/20200325/3-27-20-2H.pdf> [<https://perma.cc/YR74-QQCK>]. Note that PJM has a unique mechanism allowing for a utility to remain in the RTO while exiting the capacity market, through opting to use a “Fixed Resource Requirement” plan in lieu of capacity market participation. See *PPL Energyplus, LLC v. Nazarian*, 974 F. Supp. 2d 790, 808 (D. Md.

in a similar move.³⁰⁴ Connecticut has threatened to go further by withdrawing from ISO-NE altogether.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.³⁰⁶ Whether the eastern RTOs' aggressive recent actions finally prompt any states to follow through on withdrawal remains to be seen.³⁰⁷ Even so, these withdrawals would scarcely be a clean energy victory, given the benefits that broad regionalization offers clean energy.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,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.³¹⁰ But jurisdictional concerns aside, states have largely supported

2013), *aff'd* 753 F.3d 467 (4th Cir. 2014), *aff'd sub nom.* Hughes v. Talen Energy Mktg., LLC, 136 S. Ct. 1288 (2016) (explaining this option).

304. See Morehouse, *supra* note 245.

305. See ARI PESKOE, HARV. ELEC. L. INITIATIVE, ISO-NEXIT: EXPLORING PATHWAYS FOR A UTILITY'S WITHDRAWAL FROM NEW ENGLAND'S REGIONAL TRANSMISSION ORGANIZATION 1 (2020) (citing remarks from Connecticut's head of Department of Energy and Environment to this effect).

306. 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").

307. 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).

308. See *infra* Part V.

309. See, e.g., Leah C. Stokes, *While the Planet Overheats, Ohio's Coal Industry Gets a Bailout*, GUARDIAN (July 28, 2019, 10:39 AM), <https://www.theguardian.com/commentisfree/2019/jul/28/planet-overheats-ohios-coal-industry-gets-a-bailout> [<https://perma.cc/VT9U-JS9N>] (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.

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 Mkts., 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. Mkts., FERC Docket Nos. RM07-19-000 & AD07-7-000 (Nov. 14, 2008); Emily Holden, *States Unhappy with Order 1000 Implementation*, CQ ROLL CALL (July 25, 2013).

FERC-led efforts to reduce costs in RTOs by including more resources.³¹¹ 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.³¹² 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.³¹³

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.³¹⁴ 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.³¹⁵ 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.

311. Most recently, states proved supportive of Order 841's broad goal of removing barriers to participation by electric storage resources in wholesale markets: California, the New England States Committee on Electricity, Massachusetts, Connecticut, Delaware, the Organization of Midcontinent System Operator States, and Ohio all issued statements of support for the order's goals in their filings. *See* Notice of Intervention and Comments of the California Public Utilities Commission at 3, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 13, 2017); Comments of the New England States Committee on Electricity at 3, 13, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 13, 2017); Comments of the Massachusetts Department of Public Utilities at 8–9, FERC Docket No. 16-23-000 (Feb. 13, 2017); Connecticut's Comments Regarding NOPR on Energy Storage at 1, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 10, 2017); Comments of the Delaware Public Service Commission at 2, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 13, 2017); Comments of the Organization of MISO States at 1–2, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 13, 2017); Comments Submitted on Behalf of the Public Utilities Commission of Ohio at 2–3, Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators, FERC Docket Nos. RM16-23-000 et al. (Feb. 13, 2017).

312. *See* sources cited *supra* note 249.

313. *See, e.g.*, Letter from New England States Comm. on Elec. to ISO New England at 1 (July 16, 2019) (requesting ISO-NE dedicate resources to “support states and stakeholders in analyzing and discussing potential future market frameworks that contemplate and are compatible with the implementation of state energy and environmental laws”); Letter from John R. Rosales, President, Org. of PJM States, Inc. (OPSI), to Howard Schneider, Chairman, PJM Bd. of Managers (Feb. 7, 2018) (opposing capacity market reforms); Letter from New England States Comm. on Elec. to ISO New England (Feb. 15, 2018) (questioning the weak assumptions made about state renewable energy development and suggesting that fuel security risks are consequently overblown); Org. of PJM States, Inc., OPSI Resolution 2017-01: Demand Side Resource Participation in PJM Markets (Oct. 5, 2017) (asking for more steps to be taken on demand response); Org. of PJM States, Inc., OPSI Resolution 2016-3: Demand Response and Capacity Markets (July 25, 2016) (similar).

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; Osofsky & 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.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.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.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.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.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.”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

316. There is an ongoing scholarly conversation on the broader propriety of federal agencies mediating federalism disputes. See, e.g., Brian Galle & Mark Seidenfeld, *Administrative Law’s Federalism: Preemption, Delegation, and Agencies at the Edge of Federal Power*, 57 DUKE L.J. 1933 (2008); Nina A. Mendelson, *A Presumption Against Agency Preemption*, 102 NW. U. L. REV. 695 (2008); Gillian E. Metzger, *Federalism and Federal Agency Reform*, 111 COLUM. L. REV. 1, 4 (2011).

317. See *supra* Part III.B.

318. See Vandenberg & 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”).

321. See 16 U.S.C. § 824e(e)(4)(a) (2018).

statutory authority.³²² 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.³²³ 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.³²⁴ 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.³²⁵ 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.³²⁶ 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.”³²⁷

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.³²⁸ So what does private governance have to do with this challenge?

322. See *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842–43 (1984). See also Kent Barnett & Christopher J. Walker, *Chevron Step Two’s Domain*, 93 NOTRE DAME L. REV. 1441, 1462 (2018) (finding agency win rates under *Chevron* steps one and two of 77.4% and 93.8%, respectively).

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).

328. Gavin Bade, *How McConnell’s Coal Guy Is Helping Trump Remake Federal Energy Policy*, POLITICO (Aug. 5, 2019, 6:00 PM), <https://www.politico.com/story/2019/08/05/neil-chatterjee-mcconnell-coal-federal-energy-policy-1634304> [<https://perma.cc/7QVW-QTNK>]; 16 U.S.C. §§ 824d–824e (2018).

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.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.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.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.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.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.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 markets³³⁵—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 McNamee 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.

334. As noted in a 2017 letter signed by numerous senators, “FERC has a long tradition of bipartisanship . . . most Commission votes are unanimous.” Letter from U.S. Senate Comm. on Energy & Nat. Res. to President Donald J. Trump (Mar. 8, 2017), <https://www.energy.senate.gov/services/files/B7A6782D-D984-4D77-9C63-6340B5934390> [<https://perma.cc/CRH8-BTJE>].

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.³³⁶ 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.³³⁷ 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 Eng. 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, JOSH CONSTANTI, FRANZ HOCHSTRASSER & 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

Grid at a Crossroads, *supra* note 233, at 1945–46 (proposing that RTOs be given authority for transmission siting).

338. See H.B. 958, 2019–2020 Gen. Assemb., Sess. 2019 (N.C. 2019); S.J. Res. 998, 2019–2020 Gen. Assemb., 123d Sess. (S.C. 2020); RONALD J. BINZ, CONSIDERATIONS IN ESTABLISHING A WESTERN REGIONAL SYSTEM OPERATOR 4 (2016) (“Designing a governing structure for a new western Regional System Operator (RSO) that is acceptable to the various interests is as important as it is difficult.”); Kristi E. Swartz, *Legislative Push to Create N.C. Grid Operator Begins*, E&E NEWS (Apr. 26, 2019), <https://www.eenews.net/energywire/stories/1060220039?t=https%3A%2F%2Fwww.eenews.net%2Fstories%2F1060220039> [https://perma.cc/GY6Y-5BBY]; Kristi E. Swartz, *Talk of Forming Grid Operator Erupts in Regulated Carolinas*, E&E NEWS (Apr. 24, 2019), <https://www.eenews.net/stories/1060208513> [https://perma.cc/TG9U-YUUH].

339. See William Boyd, *Just Price, Public Utility, and the Long History of Economic Regulation in America*, 35 YALE J. ON REGUL. 721, 722 (2018) (“[C]ompetitive markets, when functioning properly, can be powerful instruments for protecting consumers and facilitating fairness in exchange.”).

340. See Blumsack, *supra* note 50, at 148 (“With the introduction of RTO markets, the generation resources over a number of utility control areas are cost-optimized and dispatched jointly.”); Osofsky & Wiseman, *supra* note 28, at 10, 53–55 (celebrating the “hybridity” of RTOs for their ability to harness private expertise).

341. See *supra* Part III.C.

authority in resource adequacy determinations.³⁴² 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.³⁴³ 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).³⁴⁴ 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.³⁴⁵

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.³⁴⁶ 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.³⁴⁷ 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.³⁴⁸

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.³⁴⁹ Nevertheless, this move alone will not solve all governance challenges. Already, there are controversies over how RTOs determine “price

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. David Roberts, *This Federal Agency Is Quietly, Profoundly Shaping Climate Policy*, VOX (May 22, 2019, 10:00 AM), <https://www.vox.com/energy-and-environment/2019/5/22/18631994/climate-change-renewable-energy-ferc> [https://web.archive.org/save/https://www.vox.com/energy-and-environment/2019/5/22/18631994/climate-change-renewable-energy-ferc] (quoting Commissioner Glick expressing “serious reservations about mandatory capacity markets”). See also Chen & Murnan, *supra* note 30 (advocating for greater state authority in resource adequacy).

347. See 16 U.S.C. § 824e(e)(4)(a) (2018).

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.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.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).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.

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.³⁵³ Nevertheless, O’Connell suggests that these shifts are most likely where “the benefits of more political control . . . increase compared to the costs.”³⁵⁴ As this Article has traced, climate change places grid governance in

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.

351. See James et al., *supra* note 30, at 18 (suggesting that FERC should be less deferential to proposals coming from RTOs).

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”).

353. See O’Connell, *supra* note 58, at 873.

354. *Id.* at 893.

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

355. *What Are We Doing to Green the Grid?*, CAL. ISO, <http://www.aiso.com/informed/Pages/CleanGrid/default.aspx> [<https://perma.cc/W78P-5R4S>].

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 & Muman, *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.³⁶⁰ 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.³⁶¹ 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.”³⁶² 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.³⁶³ Or

360. Comments of the Pennsylvania Public Utility Commission, at 11, Reg’l Transmission Orgs., FERC Docket No. RM99-02-000 (Aug. 20, 1999) (citing as potential precedents the “Susquehanna River Basin Commission, the Delaware River Basin Commission and the Joint Pipeline Office which regulates the Trans-Alaska Pipeline System”). *See also* Initial Comments of the Nine State Commissions Representing the East-Central/Midwest/Southwest (ECMS) Region at 7, Reg’l Transmission Orgs., FERC Docket No. RM99-2-000 (Aug. 23, 1999); Comments of the Illinois Commerce Commission at 23–24, Reg’l Transmission Orgs., FERC Docket No. RM99-2-000 (Aug. 11, 1999); Smith, *supra* note 119, at 191–93 (describing legal pathways allowing for this sort of arrangement).

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 *Chevron* deference to preferred agency solutions.³⁶⁷

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

See also Order Accepting Revisions to Transmission Owners Agreement, Midwest Indep. Transmission Sys. Operator, Inc. & the Miso Transmission Owners, 143 FERC ¶ 61,165, 62,210 (May 23, 2013) (accepting a MISO tariff amendment that gives the Organization of MISO States filing rights regarding transmission cost allocation methodologies).

364. See Welton, Appendix A, *supra* note 14 for more on ISO-NE “jump ball” filings.

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

366. See, e.g., *Morgan Stanley Capital Grp. Inc. v. Pub. Util. Dist. No. 1*, 554 U.S. 527, 531–32 (2008) (discussing history of FERC deference to electricity “rates” under section 205).

367. See Barnett & Walker, *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."³⁶⁸ The agency's current practice is governed by a Merger Policy Statement, which FERC itself could amend.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.³⁷⁰ Alternatively, FERC might place conditions on mergers that limit RTO stakeholder participation when the merger could create opportunities for self-interested voting.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.³⁷² More work needs to be done to understand the full implications of utility merger activity unleashed in 2005.³⁷³

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.³⁷⁴ The theory animating this

368. 16 U.S.C. § 824b(a)(4) (2018).

369. See FERC Order No. 592, Inquiry Concerning the Commission's Merger Policy Under the Federal Power Act; Policy Statement, 61 Fed. Reg. 68,595-01, 68,598 (Dec. 18, 1996) (codified at 18 C.F.R. pt. 2 (2019)) [hereinafter Order 592]. Indeed, FERC has recently contemplated amendments to this policy. See Notice of Inquiry, Modifications to Comm'n Requirements for Rev. of Transactions Under Section 203 of the Fed. Power Act and Mkt-Based Rate Applications Under Section 205 of the Fed. Power Act, FERC Docket No. RM16-21-000, 156 FERC ¶ 61,214 (Sept. 22, 2016) [hereinafter RM 16-21].

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).

371. See 16 U.S.C. § 824b(b) (2018) (granting FERC the authority to place "necessary or appropriate" conditions on mergers).

372. See Hempling, *supra* note 173, at 238, 279 (explaining how diversification poses risks in a landscape with regulated and unregulated markets).

373. *Id.* at 240 (observing dearth of studies on "long-term effects of the industry's consolidation").

374. See Vaheesan, *supra* note 28.

immunization is that FERC's review of utilities' filed rates obviates the need for judicial antitrust scrutiny.³⁷⁵ 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,³⁷⁶ and the Supreme Court recently reaffirmed the applicability of state antitrust laws to FERC-regulated natural gas pipelines.³⁷⁷ 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.³⁷⁸ 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.”³⁷⁹ 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.³⁸⁰ 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.³⁸¹ Exploration of

375. See Jim Rossi, *Lowering the Filed Tariff Shield: Judicial Enforcement for a Deregulatory Era*, 56 VAND. L. REV. 1591, 1593–94 (2003).

376. See *id.* at 1592, 1597; Vaheesan, *supra* note 28, at 921.

377. See *Oneok, Inc. v. Learjet, Inc.*, 575 U.S. 373, 376 (2015).

378. *Ass’n of Am. R.R.s. v. U.S. Dep’t of Transp.*, 821 F.3d 19, 27–29 (D.C. Cir. 2016).

379. *Id.* at 31.

380. Cf. *The Green New Deal*, BERNIE, <https://berniesanders.com/en/issues/green-new-deal> [<https://perma.cc/2K78-RMET>] (calling for creation of a new Power Marketing Administration to build out U.S. renewable energy infrastructure to achieve “100 percent sustainable energy for electricity and transportation by no later than 2030”).

381. See, e.g., David Roberts, *We’ve Been Talking About a National Grid for Years. It Might Be Time To Do It.*, VOX (Aug. 3, 2018, 7:00 AM) <https://www.vox.com/energy-and-environment/2018/8/3/17638246/national-energy-grid-renewables-transmission> [<https://perma.cc/7G4T-CPWX>] (collecting studies and explaining, “[v]irtually every scenario that has

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,³⁸² Public Citizen urged FERC to create “three publicly-owned non-profit transmission companies (public transcos) [that would] own and operate the transmission systems”³⁸³ These public transcos would have “no affiliates and no subsidiaries,” and would be run by a “publicly-accountable board of directors”³⁸⁴ 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.³⁸⁵ 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.³⁸⁶

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.³⁸⁷ It is, however, unclear whether the federal courts would be willing to sanction such profound industry restructuring under longstanding statutory authority.³⁸⁸ 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”).

382. Comments of Public Citizen at 3–4, Reg’l Transmission Orgs., FERC Docket No. RM99-2-000 (Aug. 16, 1999).

383. *Id.* at 5.

384. *Id.* at 6.

385. See Jean-Michel Glachant & Dominique Finon, *A Competitive Fringe in the Shadow of a State Owned Incumbent: The Case of France*, 26 ENERGY J. 181, 183–85 (2005) (describing French system); Høgne Lerøy Sataøen, Ole Andreas Brekke, Susana Batel & Martin Albrecht, *Towards a Sustainable Grid Development Regime? A Comparison of British, Norwegian, and Swedish Grid Development*, 9 ENERGY RSCH. & SOC. SCI. 178, 181–82 (2015) (describing the Norwegian and Swedish systems).

386. See *supra* Part II.B.2.

387. See 16 U.S.C. § 824d (2018).

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.³⁸⁹ 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.³⁹⁰ 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.³⁹¹ 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

389. See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1160 (2009); Stephen M. Gardiner, *A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption*, 15 ENV'T VALUES 397, 397 (2006); Robert R.M. Verchick, *Culture, Cognition, and Climate*, 2016 U. ILL. L. REV. 969, 973–75; Robert Gifford, *The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation*, 66 AM. PSYCH. 290, 290 (2011); Barton H. Thompson, Jr., *Tragically Difficult: The Obstacles to Governing the Commons*, 30 ENV'T L. 241, 242 (2000); Jeffrey J. Rachlinski, *The Psychology of Global Climate Change*, 2000 U. ILL. L. REV. 299; Cass R. Sunstein, *On the Divergent American Reactions to Terrorism and Climate Change*, 107 COLUM. L. REV. 503 (2007).

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.