Governing the Grid: Reforming Regional Transmission Organizations on the Heels of Order No. 841

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Order No. 841—an attempt to force Regional Transmission Organizations (RTOs) to fairly accommodate electric storage providers—has been heralded as one of the Federal Energy Regulatory Commission's (FERC) landmark green initiatives. Since its 2018 enactment, however, it has seen limited impact. Many RTOs have had trouble implementing the Order. This Note takes a deeper look at the specific kinds of problems each RTO has had. It then shifts its attention to the governance structures of each of these organizations. By comparing the two analyses, this Note finds a rough correlation: The more taxing a given RTO's implementation of Order No. 841, the more likely that its governance structure gives undue political power to traditional fossil-fuel players at the expense of alternative resources. To remedy this, FERC should revise RTOs to better protect boards of directors from undue stakeholder influence, distribute alternative resource interests across a wide variety of sectors, and defer to states so long as they promote fair competition. Unfortunately, courts have held that FERC has no authority to directly alter these structures. However, given evolving technologies, shifting jurisprudence, and the threat of climate change, it may be time to challenge this precedent.

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INTRODUCTION

The Federal Energy Regulatory Commission (FERC or "the Commission") has, in the past several years, boldly released a slew of new orders that will help integrate green technologies with the national energy grid.[1] Under the guise of ensuring low market rates, the Commission has knocked down barriers that had prevented green technology's access to the wholesale market.[2] This indirect method of decarbonization provides a valuable federal floor for states that are dragging their feet in enacting green energy policies. However, these efforts are also being sabotaged by the very entities that FERC helped to create: Regional Transmission Organizations (RTOs). While some RTOs are more cooperative than others, many have been recalcitrant to incorporate FERC's recent orders.

This Note uses FERC's Order No. 841—an order mandating that RTOs update their participation models to fully accommodate electric storage resources—as an example of both FERC's progressive efforts and corresponding RTO resistance to those efforts. This Note diagnoses the problem underlying RTO resistance to be, in part, the freewheeling governance of RTOs and their vulnerability to regulatory capture. Now, especially with the rise of the technical and definitional difficulties of implementing storage and other distributed energy resources, there are too many ways in which vested interests can stymie the integration of alternative resources. Instead, FERC must try again to revise the governance structures of RTOs so that they are more responsive to emerging technologies and less stuck on incumbent polluters. Otherwise, the environment will never realize the full benefits of orders like 841.

To forward this argument, this Note proceeds as follows: Part I offers a general background on the energy grid, federal and state jurisdiction, and the creation and development of RTOs. Part II then explains how FERC has recently used these RTOs to decrease rates in the wholesale electricity market, and, in the process, has helped decarbonize the U.S. electricity grid by breaking down barriers to market access for alternative resources, such as electric storage and small, renewable energy sources. Part II uses electric storage as a case study on this front and discusses FERC's related, recent litigation. Then, Part III carefully examines each RTO's implementation of Order No. 841, noting where some were more successful than others. Part IV delves deeper into the governance structures of RTOs. It evaluates the RTOs individually, dissecting their boards, stakeholder memberships, and filing right systems. Finally, Part V compares each RTO's implementation of Order No. 841 to its stakeholder membership

1. *See FERC Issues Final Rule on Electric Storage Participation in Regional Markets*, FERC (Feb. 15, 2018), https://www.ferc.gov/news-events/news/ferc-issues-final-rule-electric-storage-participation-regional-markets; *FERC Opens Wholesale Markets to Distributed Resources Landmark Action Breaks Down Barriers to Emerging Technologies, Boosts Competition*, FERC (Sept. 17, 2020), https://www.ferc.gov/news-events/news/ferc-opens-wholesale-markets-distributed-resources-landmark-action-breaks-down.

2. *See id.*

system. This analysis suggests that, generally, the more exposed a given membership system is to perverse interests, the more problematic that RTO's implementation of the order was. Based on this, Part V argues that FERC should directly reform the RTOs. Namely, RTOs should shore up their decisions from undue stakeholder interests, broadly distribute the voting power of alternative resources across voting blocs, and only defer to states without extensive track records of suppressing energy competition. Finally, this Note concludes that reform can ride on the winds of three current trends in the energy sector: an evolution in grid technologies and practices, a divergence in the Supreme Court's approach to jurisdiction, and the threat of climate change.

I. A BRIEF HISTORY OF RTOS

A. The Energy Grid and Its Governance

The U.S. energy grid is generally composed of three elements: generation (the creation of energy), transmission (the transportation of energy across large distances), and distribution (the localized allocation of energy to end users). Unlike most other conventional resources, electricity is difficult to store.[3] This presents a practical problem: Without an economically feasible way to stockpile electricity, suppliers must both constantly and instantaneously meet the national demand for electricity.[4] Generators accomplish this in part by using interstate transmission infrastructure to even out localized needs.[5]

Naturally, the way that transmission infrastructure cuts through state lines raises federalism questions.[6] Enter the Federal Power Act (FPA).[7] In the early twentieth century, Congress attempted to delineate between energy rates that fell under state jurisdiction and under federal jurisdiction. Under the FPA, states retained control over the generators and distributors within their borders.[8] Moreover, they exercised jurisdiction over electricity rates, so long as that electricity did not cross into national markets and was instead sold retail. However, the FPA left governance of interstate transmission systems and

3. *See* U.S. DEP'T OF ENERGY, SPOTLIGHT: SOLVING CHALLENGES IN ENERGY STORAGE 2–3 (2019).

4. *See* JOSEPH P. TOMAIN, ENERGY LAW IN A NUTSHELL 376–77 (3d ed. 2017).

5. *See id.* at 377.

6. Prior to 1927, local governments regulated transmission lines that fell under their jurisdiction, even when those lines were connected to other jurisdictions. *See* Matthew R. Christiansen & Joshua C. Macey, *Long Live the Federal Power Act's Bright Line*, 134 HARV. L. REV. 1360, 1371–72 (2021). This presented a governance problem, as transmission infrastructure operates as one continuous whole. Moreover, the Supreme Court would come to find this troubling practice unconstitutional, as the dormant commerce clause forbids states from regulating the transactions of electricity providers in other states. *See Pub. Utils. Comm'n v. Attleboro Steam & Elec. Co.*, 273 U.S. 83, 84, 90 (1927). The federal government would need to fill this void in jurisdiction, referred to by the courts as the "Attelboro gap." *See* Christiansen & Macey at 1371–72.

7. *See* 16 U.S.C. § 12.

8. *See id.* § 824(b)(1) (stating that states exercised authority over "facilities used for the generation of electric energy" and for "local distribution").

electricity sold wholesale[9] entirely to FERC.[10] Under sections 205 and 206 of the FPA, an essential power of FERC is to ensure "just and reasonable rates."[11] The Supreme Court clarified FERC's role in the early 2000s, noting that FERC had absolute authority over "two separate activities"—transmitting energy in interstate commerce and selling energy at wholesale.[12]

This distinction—wholesale versus retail and transmission versus generation and distribution—is the crux of understanding the energy federalism debate. The Supreme Court has referred to the divide as a "bright line,"[13] but, as we will see, many believe this bright line to be both dimming and blurring.[14]

As the twentieth century ended, FERC saw a shift in its governance from a regulatory-based approach toward a more market-based one.[15] In a market regime, these separate spheres of jurisdiction posed a problem: With such a complicated system that must constantly respond to national energy demand, how does one seamlessly close the gulf between federal and state jurisdiction?[16] The solution came in the form of a perplexing quasi-governmental intermediary known as the RTO.[17]

B. The Creation of RTOs

In the late 1990s, FERC issued several orders that would eventually change the landscape of federal energy governance. FERC Orders Nos. 888,[18] 889,[19] and 2000[20] sought to stamp out discriminatory transmission practices. Before

9. In wholesale markets, generators sell electricity to utilities, who in turn, resell the electricity to consumers. Conversely, the latter transactions are collectively referred to as the retail electricity market. *See* Matthew R. Christiansen, *FERC v. EPSA Functionalism and the Electricity Industry of the Future*, 68 STAN. L. REV. ONLINE 100, 102 (2016), https://www.stanfordlawreview.org/online/ferc-v-epsa/.

10. *See* 16 U.S.C. § 824(b)(1) (stating that the federal government has authority over rates for "the sale [and transmission] of electric energy at wholesale in interstate commerce").

11. *Id.* § 824d(a).

12. *New York v. FERC*, 535 U.S. 1, 19–20 (2002).

13. *Fed. Power Comm'n v. S. Cal. Edison Co.*, 376 U.S. 205, 215 (1964).

14. *See infra* Part II.A.

15. *See* Charles H. Koch Jr., *Control and Governance of Transmission Organizations in the Restructured Electricity Industry*, 27 FLA. ST. U. L. REV. 569, 570 (2000).

16. *See* Shelley Welton, *Rethinking Grid Governance for the Climate Change Era*, 109 CALIF. L. REV. 209, 222 (2021) ("[Creating RTOs] was a more nuanced form of outsourcing, where a new, private intermediary was created to interface between traditional public utilities and their federal regulator.").

17. Technically, two forms of these entities exist: the RTO and the Independent System Operator (ISO). The differences, while important to some, are generally irrelevant for the purposes of this Note. Therefore, except where otherwise needed, "RTO" refers to both. *See, e.g.*, *id.* at 212 n.8.

18. Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996) (codified at 18 C.F.R. pts. 35, 385) [hereinafter Order 888].

19. Open Access Same-Time Information System (Formerly Real-Time Information Networks) and Standards of Conduct, 75 F.E.R.C. ¶ 61,078 (1996) (codified at 18 C.F.R. pts. 35, 37) [hereinafter Order 889].

20. Regional Transmission Organizations, 89 F.E.R.C. ¶ 61,285 (1999) (codified at 18 C.F.R. pt. 35) [hereinafter Order 2000].

these reforms, monopolistic transmission owners freely overcharged competing generators who, without any alternative, used their transmission lines.[21]

FERC solved this problem by "functionally unbundl[ing]"[22] rates, otherwise known as "tariffs," for generation and transmission. In essence, FERC required utilities to state separate rates for generation and transmission, rather than charging them as a lump sum service. FERC further forbade transmission owners from setting discriminatory transmission rates and creating "open access tariffs."[23]

In the same action, FERC also encouraged grid operators to come together to form regional, self-governing entities—RTOs.[24] To qualify as an RTO under the order, FERC proposed four minimum characteristics: (1) independence from market players; (2) appropriate regional scope; (3) control over all facilities in the RTO's governance; and (4) "[e]xclusive authority to maintain short-term reliability."[25]

An agreed-upon description of RTOs stops there, as the concept remains nebulous even two decades since its inception.[26] The Commission offered no recommendations for the RTOs' regional boundaries, organization, or the role of integrating state governance.[27] As such, a motley group of six RTOs (also known as Independent Service Operators, or ISOs) emerged, all of which remain today.[28] Four are multistate RTOs: ISO New England (ISO-NE), Midcontinent Independent System Operator (MISO), Pennsylvania-New Jersey-Maryland Interconnection (PJM),[29] and Southwest Power Pool (SPP).[30] The remaining two are single-state ISOs: California ISO (CAISO) and New York ISO

21. *See* Christiansen & Macey, *supra* note 6, at 1374–75.

22. Order 888, *supra* note 18, at 21,577.

23. *Id.* at 21,543. The development of open access tariffs would mature with Order 890 in 2007, which further demystified the process with which RTOs planned tariffs and calculated costs. *See* Preventing Undue Discrimination and Preference in Transmission Service, 72 Fed. Reg. 12,265, 12,294, 317 (2007).

24. *See* Order 888*, supra* note 18, at 21,666; Order 2000, *supra* note 20, at 2–3 (explaining that regional institutions could "(1) [i]mprove efficiencies in transmission grid management; (2) improve grid reliability; (3) remove remaining opportunities for discriminatory transmission practices; (4) improve market performance; and (5) facilitate lighter handed regulation"); *see also* Koch, *supra* note 15, at 585 (explaining that these five benefits support three arguments: (1) regional organization offers the most efficient market; (2) regional organization enables self-regulation in which government regulators withdraw to a position of monitoring the private regulation; and (3) regional organization enhances the growth and reliability of the electricity market).

25. Order 2000, *supra* note 20, at 63.

26. *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, 552 (2007) ("Despite reams of paper describing RTOs (and their precursors, ISOs), these organizations elude clear definition, perhaps because of the multitude of tasks many of them perform.").

27. *See generally* Order 2000, *supra* note 20.

28. *See Electric Power Markets*, FERC, (Jul. 20, 2021), https://www.ferc.gov/electric-power-markets.

29. Despite its name, PJM actually comprises thirteen states on the eastern seaboard, Appalachia, and the Midwest.

30. *See Electric Power Markets*, *supra* note 28.

(NYISO).[31] To function as federal-state government intermediaries in the way that FERC had envisioned, however, these RTOs needed updating.

C. RTO Maintenance

With such a bare scaffold of minimum requirements, FERC refined its quasi-governmental creations in the late 2000s. The Commission addressed and modified four untreated areas of RTO structure in Order No. 719.[32] Among the modifications included in this Order, and most importantly for this Note, was the Commission's adjustment to stakeholder involvement. FERC enacted Order No. 719 in response to directives set forth in the Energy Policy Act of 2005, which sought to dismantle "unnecessary barriers to demand response participation in energy, capacity and ancillary service markets."[33] Thus, these adjustments to stakeholder involvement can be understood as, in part, a means of shoring up fair market opportunities for what were then fringe renewable energy sources.[34]

"Responsiveness"[35] was the key goal of these adjustments. Mainly, FERC was concerned that the bodies governing RTOs would freely ignore the concerns and recommendations of their customers and stakeholders.[36] Instead, these governing bodies would be made to address FERC's concerns of inclusiveness, fairness, and representation of minority generators. The reforms ensured a direct line of communication between RTO directors and their stakeholders, especially those stakeholders with underrepresented interests.[37]

Still, FERC's direct influence was limited. Importantly, the reforms never mandated that RTOs cater to these underrepresented parties, only that they keep an open ear.[38] Doing any more would have run up against existing precedent. Indeed, in *California Independent System Operator Corp. v. FERC* (*CAISO*),[39] the D.C. Circuit ruled that excessive tampering with the governance structures of RTOs exceeded the Commission's authority.[40] With this holding, the court effectively eliminated FERC's ability to directly alter RTO governance structures.

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31. *See id.* The Electric Reliability Council of Texas, better known as ERCOT, does not operate under federal jurisdiction. Researchers typically exclude it from these types of analyses, and, as such, it will not be discussed here. *See* Mark James et al., *How the RTO Stakeholder Process Affects Market Efficiency*, 112 R ST. POL'Y STUDY NO. 1, 1 n.2 (2017).

32. *See* Wholesale Competition in Regions with Organized Electricity Markets, 73 Fed. Reg. 12,576 (Feb. 22, 2008) (codified at 18 C.F.R. pt. 35) [hereinafter Order 719]; Joel B. Eisen, *FERC's Expansive Authority to Transform the Electric Grid*, 49 U.C. DAVIS L. REV. 1783, 1841 (2016).

33. Energy Policy Act of 2005, Pub. L. No. 109-58, § 1252(f), 119 Stat. 594, 966 (2005).

34. *See* Welton, *supra* note 16, at 242.

35. Order 719, *supra* note 32, at 12,608.

36. *See id.*

37. *See id.*; James et al., *supra* note 31, at 3 (summarizing the four components of the revised stakeholder responsiveness structure).

38. *See generally* Order 719, *supra* note 32.

39. Cal. Indep. Sys. Operator Corp. v. FERC (*CAISO*), 372 F.3d 395 (D.C. Cir. 2004); *see infra* Part VI.C.2.

40. *See id.* at 400.

CAISO's legacy lives on. The modern delineation of FERC's jurisdiction in managing wholesale rates now rests on whether the Commission's rules "directly" affect wholesale rates.[41] However, unlike with governance structures, the Commission would come to use this rule to great effect in decarbonizing the grid.

II. FERC'S PUSH TO KNOCK DOWN MARKET BARRIERS FOR GREEN TECHNOLOGIES

A. The Lead Up to Order No. 841

In recent years, the Commission has been able to generally work around its jurisdictional limitations to lower barriers to renewable energy and energy-mitigating practices, such as demand response. After all, the Commission has had to contend with the reality that the U.S. electric grid is broadly decarbonizing[42] while the American public is ever more demanding of a 100 percent renewable grid.[43] This is a surprising and welcome trend, as FERC has no mandate to consider environmental impacts or public wellbeing in its oversight of transmission.[44]

In 2016, the Commission kicked off the modern era of green federal energy policy with Order No. 745.[45] Attempting to level the playing field for demand response, FERC's Order enabled electricity *users* to be paid for the energy they do not use during peak electricity demand. Order No. 745 sought to compensate these users for the energy they saved at the same rate that generators were compensated for producing energy.[46] But in *FERC v. Electric Power Supply Association* (*EPSA*), several electricity suppliers challenged this rule.[47] The suppliers claimed that FERC lacked the authority to regulate demand response.[48] The Supreme Court disagreed.[49] Regulating wholesale demand response, the Court held, "directly affect[ed]"[50] wholesale rates because incentivizing

41. *Id.* at 403; *see, e.g.*, *FERC v. Elec. Power Supply Ass'n* (*EPSA*), 577 U.S. 260, 278 (2016) (holding that ordering RTOs to compensate providers of demand response at the same rate as generators was a rule that directly affected wholesale rates).

42. *See* ASHLEY LAWSON, CTR. FOR CLIMATE & ENERGY SOLUTIONS, DECARBONIZING U.S. POWER 1, 3 (2018) (finding a three percent decrease in fossil-based energy per year since 2008).

43. *See* Joseph Zeballos-Roig & Angela Wang, *Americans Really Want the US to Adopt Renewable Energy Like Wind and Solar Power, While Rejecting Fossil Fuels Like Coal*, INSIDER (Oct. 1, 2019), https://www.businessinsider.com/americans-really-want-the-us-adopt-renewable-energy-sources-2019-10.

44. *See* John S. Moot, *Subsidies, Climate Change, Electric Markets and the FERC*, 35 ENERGY L. J. 345, 358 (2014).

45. Demand Response Compensation in Organized Wholesale Energy Markets, 137 F.E.R.C. ¶ 61,215 (2011).

46. *Id.* at 2.

47. *See EPSA*, 577 U.S. 260, 265 (2016).

48. *See id.*

49. *See id.* at 279.

50. *Id.*

consumers to use less energy eased the pressure on suppliers during peak demand periods when electricity rates are highest.[51]

To many scholars, the *EPSA* decision fell squarely into the Supreme Court's new approach to energy federalism—a jettison of the "bright line" divide that had ruled energy jurisprudence since the inception of the FPA.[52] Some have interpreted *EPSA* and two of its contemporary energy cases[53] as reflecting the Court's shift to a regime of conflict preemption and solving unclear disputes on a case-by-case basis.[54] This seems a natural consequence of the relevant technology: demand response.[55] It sits awkwardly on both sides of the wholesale-retail divide. The energy saved by a demand response provider may be purchased via retail, but is subsequently counted as a demand reduction in the wholesale market.[56] Still, interpretations of the Court's ruling show that despite its unique characteristics, demand response falls unambiguously under FERC's jurisdiction.[57]

The climate stands to benefit from this change. The rise of economically competitive green technologies and the Commission's commitment to market fairness resonate well with its seemingly expanding powers.[58] Indeed, many in the green energy movement have praised FERC's recent attempts to lower rates,

51. *See id.*

52. *See* Jim Rossi, *Energy Federalism's Aim*, 134 HARV. L. REV. F. 228, 235 (2021); Joseph H. Margolies, *Powerful Friends EPSA, Hughes, and Cooperative Federalism for State Renewable Energy Policy*, 118 COLUM. L. REV. 1425, 1441 (2018); Christiansen, *supra* note 9, at 101; Jim Rossi, *The Brave New Path of Energy Federalism*, 95 TEX. L. REV. 399, 433–34 (2016); Robert R. Nordhaus, *The Hazy "Bright Line" Defining Federal and State Regulation of Today's Electric Grid*, 36 ENERGY L. J. 203, 211 (2015); *but see* Christiansen & Macey, *supra* note 6, at 1395–98.

53. *See* Oneok, Inc. v. Learjet, Inc., 575 U.S. 373 (2015); Hughes v. Talen Energy Mktg., L.L.C., 578 U.S. 150 (2016).

54. *See, e.g.*, Rossi, *supra* note 52, at 230, 234–38 (arguing that the Supreme Court has been disassembling the bright line approach since the 1980s and moving toward a doctrine of conflict preemption when applicable and rely on case-specific inquiries when not).

55. *See, e.g., id.* at 233 (citing demand response as a factor diminishing the usefulness of a bright line approach).

56. *See* Nordhaus, *supra* note 52, at 331 ("Distributed generation, net metering, and demand response programs defy the notion that there is a clear distinction between wholesale and retail markets: Retail purchasers of electricity sell electricity at wholesale.").

57. *See* MATTHEW R. CHRISTIANSEN, NYU SCHOOL OF LAW GUARINI CENTER ON ENVIRONMENTAL, ENERGY, & LAND USE LAW, CASE UPDATE: THE SUPREME COURT UPHOLDS FERC ORDER NO. 745 (2016).

58. Some in the field go even further, suggesting that the standards set forth in *EPSA* will allow FERC to directly regulate carbon in wholesale markets. *See, e.g.*, Eisen, *supra* note 32, at 1788 (suggesting that FERC "can even take an 'environmental' action— such as addressing climate change through a carbon adder—if it has a direct relationship to wholesale rates").

as they have also challenged incumbent fossil fuel generators.[59] It is in this context that Order No. 841—the subject of this Note—was developed.[60]

B. Order No. 841

Riding the adjudicatory success of demand response reforms, the Commission turned its sights on liberating energy storage resources (ESRs) in 2018.[61] Before Order No. 841, RTOs had discretion to create "participation models," which dictate the technical specifications for energy technologies in each RTO's purview.[62] These participation models have typically lagged behind new technologies.[63] For that reason, they perniciously cater to traditional energy sources rather than ESRs.[64] An ESR, as defined by FERC, is "a resource capable of receiving electric energy from the grid and storing it for later injection of electric energy back to the grid."[65] Without participation models built to accommodate this unique technology, many RTOs had effectively barred ESRs from the national energy market.[66] Naturally, this exclusion limited competition and inflated rates in the wholesale energy market.[67]

With Order No. 841, FERC forced RTOs to better accommodate ESRs.[68] The Commission ordered the organizations to update their participation models "to provide all capacity, energy, and ancillary services that [they are] technically

59. *See* Kathrine Tweed, *Order 745 Raises Payments—and Questions—for Demand Response*, GREENTECH MEDIA (Oct. 26, 2012), https://www.greentechmedia.com/articles/read/order-745-raisespayments-and-questions-for-demand-response; Robert Walton, *In Supreme Court's Second Power Case of 2016, Renewable Energy Advocates are on Edge*, UTIL. DIVE (Mar. 24, 2016), https://www.utilitydive.com/news/in-supreme-courts-second-power-case-of-2016-renewable-energy-advocates-ar/416128/.

60. *Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, 84 Fed. Reg. 23,902 (May 23, 2018) (codified at 18 C.F.R. pt. 35) [hereinafter Order No. 841]; *Participation of Distributed Energy Res. Aggregations in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, 172 FERC ¶ 61,247 (2020) [hereinafter Order No. 2222].

61. *See* Order No. 841, *supra* note 60, at 23,902.

62. *See* Nat'l Ass'n of Regulated Util. Comm'rs v. FERC (*NARUC*), 964 F.3d 1177, 1182 (D.C. Cir. 2020).

63. *See* Apurba Sakti et al., *Review of Wholesale Markets and Regulations for Advanced Energy Storage Services in the United States Current Status and Path Forward*, 120 ENERGY POL'Y 569, 578 (2018). For example, at the time of Order No. 841's announcement, most RTOs had nothing or very little in their participation models to allow ESRs to compete in their capacity markets. *See id.* at 577–78. Moreover, flexible ramping products—short-term markets that help smooth out demand shocks—are essential to a more renewable and diversified grid. *See id.* ESRs are particularly well suited to work in flexible ramping products. However, only CAISO and MISO developed these markets, and only the former allowed ESRs to participate. *See id.*

64. *See id.*

65. Order No. 841, *supra* note 60, at 23,903.

66. *Id.* at 23,902, 23,912.

67. *See NARUC*, 964 F.3d at 1181–82.

68. *See* Order No. 841, *supra* note 60.

capable of providing in the RTO/ISO markets."[69] Moreover, FERC explicitly prohibited RTOs from opting out of accommodating ESRs.[70]

C. NARUC v. FERC

In 2020, the National Association of Regulatory Utility Commissions (NARUC) and a group of local utility petitioners challenged Order No. 841 in the D.C. Circuit.[71] Writing in a unanimous decision, Judge Wilkins rejected the petitioners' arguments and ultimately denied this request for review.[72]

First, the petitioners once again contested FERC's jurisdiction to effectively prohibit states from barring local ESR participation in RTOs.[73] The D.C. Circuit addressed this argument by applying the framework set up in *EPSA*. Applying the test, the court held that FERC's actions must (1) directly affect wholesale rates, (2) not regulate state-regulated facilities, and (3) align with the FPA's core purposes of "curb[ing] prices and enhanc[ing] reliability in the wholesale electricity market."[74] The court easily determined that the first and third elements were met, as increasing competition in the energy market obviously affected wholesale rates. Thus, the action aligned with FERC's legislative purpose under the FPA.[75]

Second, NARUC appealed to the anti-commandeering principle, arguing that denying an opt-out infringed on the States' administrative authority.[76] Effectively, Order No. 841 attempted to regulate access to the gates of the federal market, a function statutorily left to the states.[77] The court distinguished FERC's order from this function, though.[78] It found that merely incentivizing ESR participation in the federal market was "the type of permissible effect of direct regulation of federal wholesale sales that the FPA allows."[79] That states retained discretion to bar ESRs from participating in interstate and intrastate markets simultaneously was material.[80] Under the Commerce and Supremacy Clauses,[81] Congress's direct oversight over interstate commerce preempted the states' ability to enact laws that interfered with participation in the federal market.[82] This preemption, the court found, narrowly aligned with Congress's intent in

69. *Id.* at 23,903.
70. *See id.*
71. *NARUC*, 964 F.3d at 1182.
72. *See id.*
73. *See id.*
74. *EPSA*, 577 U.S. 260, 276–77 (2016).
75. *See NARUC*, 964 F.3d at 1186, 1189.
76. *See id.* at 1188.
77. *See* 16 U.S.C. § 824(b)(1).
78. *See NARUC*, 964 F.3d at 1187.
79. *Id.*
80. *See id.* at 1188.
81. *See id.* at 1187.
82. *See id.*

enacting the FPA, and therefore was a permissible exercise of Congress's Article II power.[83]

Finally, the local utility petitioners contended that denying an opt-out for states was "arbitrary and capricious" under the Administrative Procedure Act.[84] But the court rejected this too.[85] To succeed under this standard, an agency's decision does not have to be "the best regulatory decision possible."[86] Instead, the agency must have "examined the relevant considerations and articulated a satisfactory explanation for its action, including a rational connection between the facts found and the choice made."[87] The local utility petitioners based their argument on the fact that the Supreme Court found a previous FERC order constitutional when that order included a state opt-out option.[88] While the D.C. Circuit agreed, it did not find an opt-out option necessary for a FERC order to pass the arbitrary and capricious test.[89] To rule otherwise would be a "substitut[ion of the court's] own judgment for that of [FERC]."[90]

Moreover, the court found FERC's decision was supported by practical considerations.[91] FERC justified Order No. 841 by explaining that preempting participation of ESRs within the federal energy market raises prices for consumers while stunting the development of new electric storage technologies.[92] In exchange for lowering these prices, the court found, it was reasonable that the states bear additional administrative burdens, such as managing a grid in which energy flows both to and from the end consumer.[93] While not without drawbacks, the decision was not arbitrary and capricious.[94]

D. What Order No. 841 Means for the United States

The D.C. Circuit's ruling protected FERC's monumental step toward a decarbonized United States. Storage is *the* fundamental problem that dogs

83. *See id.* at 1188–89.
84. *See id.*; 5 U.S.C. § 706(2)(A).
85. *See NARUC*, 964 F.3d at 1189.
86. *Id*.
87. *EPSA,* 577 U.S. 260, 291 (2016).
88. *See id.* at 274.
89. *See NARUC*, 964 F.3d at 1189–90.
90. *Id.* at 1190 (internal quotation omitted).
91. *See id.*
92. *See* Order No. 841, *supra* note 60.
93. *See NARUC*, 964 F.3d at 1190. Though it was ultimately unnecessary, some commentators have found it puzzling that FERC's counsel did not mention *Transmission Access Policy Study Group v. FERC* (*TAPS*) during litigation. 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom.* New York v. FERC, 535 U.S. 1 (2002). In *TAPS*, the Court greenlit FERC's complete authority over wholesale *distribution* facilities. Because ESR management falls within the interconnection of wholesale distribution and wholesale transmission, FERC has complete authority in this domain, regardless of the costs imposed on states. *See* Jennifer Key, *Order No. 841 Oral Argument Analysis Has Everyone Forgotten TAPS v. FERC?*, STEPTOE PURPA & DISTRIBUTED ENERGY RESOURCES BLOG (May 9, 2020), https://www.steptoepurpablog.com/2020/05/order-no-841-oral-argument-analysis-has-everyone-forgotten-taps-v-ferc/.
94. *See NARUC*, 964 F.3d at 1190.

renewable resources. This is because renewable energy is intermittent: solar photovoltaics only provide power when the sun is shining, and wind energy is inconsistent and unpredictable. These fluctuations never conform neatly with national demands for power.[95] In past years, states have mandated the adoption of these renewable technologies, often ambitiously.[96] However, without appropriate means of storing energy during lulls in renewable generation, states will not be able to shift from fossil fuels to carbon-free generation.[97]

Indeed, everyone from academic commentators to FERC commissioners have described Order No. 841 as the "single most important act" in achieving a renewable future.[98] Commissioner Richard Glick stated that FERC has done particularly well incorporating climate concerns in its oversight of transmission lines.[99] Despite not having a mandate to consider greenhouse gas emissions, he felt that FERC has done "a better job" than in areas for which the Commission is not required to address climate change.[100] Order No. 841 has also set into motion even more ambitious federal energy storage projects. Since the order, the Department of Energy has pushed to lower the cost of long-term electric storage—technologies capable of holding renewably generated energy for over ten hours—by 90 percent within a decade.[101] The order also helped lay the foundation for Order No. 2222, a monumental mandate that knocked down barriers not just for ESRs but all distributed energy resources.[102] Finally, the way

95. *See* William A. Braff et al., *Value of Storage Technologies for Wind and Solar Energy*, 6 NATURE CLIMATE CHANGE 964, 964–65 (2016).

96. *See, e.g.*, Sen. Bill 100, 2017–2018 Reg. Sess. (Cal. 2018) (committing California to 100% green energy by 2045); H. Bill 623, 28th Leg. (Haw. 2015) (committing Hawaii to 100% green energy by 2045); Sen. Bill S6599, 2019–2020 Leg. Sess. (N.Y. 2020) (committing New York to carbon-free electricity by 2040).

97. *See* FINAL 2019 INTEGRATED ENERGY POLICY REPORT, CAL. ENERGY COMM'N 15–18 (2020), (explaining CAISO's need for electric storage to minimize the disparity created by high solar output during the day and high energy use at night).

98. Andy Colthorpe, *FERC Order 841 US About to Take Most Important' Step Towards Clean Energy Future*, ENERGY STORAGE NEWS (July 13, 2020), https://www.energy-storage.news/ferc-order-841-us-about-to-take-most-important-step-towards-clean-energy-future/; *see also* Jeff St. John, *Enormous Step' for Energy Storage as Court Upholds FERC Order 841, Opening Wholesale Markets*, GREENTECH MEDIA (July 10, 2020), https://www.greentechmedia.com/articles/read/court-upholds-ferc-order-841-opening-wholesale-markets-to-energy-storage.

99. *See* David Roberts, *This Federal Agency is Quietly, Profoundly Shaping Climate Policy*, VOX (May 22, 2010), https://www.vox.com/energy-and-environment/2019/5/22/18631994/climate-change-renewable-energy-ferc.

100. *Id.*

101. Press Release, U.S. Dep't of Energy, Secretary Granholm Announces New Goal to Cut Costs of Long Duration Energy Storage by 90 Percent (July 14, 2021), https://www.energy.gov/articles/secretary-granholm-announces-new-goal-cut-costs-long-duration-energy-storage-90-percent.

102. Order No. 2222 is a subsequent and even more daring order. It is FERC's attempt to create a level playing field for distributed energy resources—a catchall term for small-scale, typically alternative generation facilities located behind the meter. These technologies broadly democratize the ability to renewably contribute to the grid. *See* CHRISTOPHER CLACK ET AL., VIBRANT CLEAN ENERGY, WHY LOCAL SOLAR FOR ALL COSTS LESS: A NEW ROADMAP FOR THE LOWEST COST GRID (2020) (finding that increasing the number of DERs is essential for cheaper electric grid with lower health costs and environmental justice concerns). Unlike 841, Order No. 2222's litigation is still ongoing.

that Order No. 841 decreased operational costs for storage providers will incentivize existing players to deploy more storage and new players to enter the market.[103]

Even with enough storage capacity in the United States, Order No. 841 provides organizational benefits to the disparate ESRs that would otherwise have problems with conglomerating and wielding market power. Streamlining participation models for ESRs encourages ESR aggregation, thus avoiding the distribution costs associated with managing many small inputs of electricity.[104]

But storage suppliers are not the only players that stand to benefit. Order No. 841 provides important services for RTOs themselves. For some, the largest benefits will come in the form of energy arbitrage, the stockpiling of electricity during periods of low demand and selling off when prices are high.[105] Other RTOs will benefit most from frequency regulation. The U.S. electric grid runs a frequency of sixty hertz with only a vanishingly small buffer for deviations, lest the system become too unstable to continue operating.[106] Should this happen, ESRs can bring the frequency back into this working zone much faster than traditional power sources. In the PJM market, for example, one study found that an ESR discharging twenty megawatt-hours would earn the RTO nearly $5 million a year from its frequency regulation services.[107]

III. IMPLEMENTATION PROBLEMS AND RTO RESISTANCE

Not all commentary on Order No. 841 has been rosy. A common criticism considers the Order's effects since the decision in *NARUC*.[108] Even without FERC's intervention, state policies, market forces, and technological improvements have worked in concert to deploy new energy storage methods. Critics contend that Order No. 841 has done comparatively little.[109] Its popularity and perceived importance, so goes the argument, have drawn attention

103. Kathryne Cleary & Karen Palmer, *Forward Thinking How FERC's Order on Distributed Energy Resources Could Help Modernize the Grid*, RESOURCES (Oct. 1, 2020), https://www.resources.org/common-resources/forward-thinking-how-fercs-order-on-distributed-energy-resources-could-help-modernize-the-grid/.

104. David Copp et al., *Energy Storage Systems in Emerging Electricity Markets Frequency Regulation and Resiliency*, at 3 (proposed for presentation at 2019 IEEE Power and Energy Society General Meeting, 2019), https://www.osti.gov/biblio/1592273.

105. *See* Raymond H. Byrne et al., *Opportunities for Energy Storage in CAISO Day-Ahead and Real-Time Market Arbitrage*, 2018 International Symposium on Power Electronics, Electrical Drives, Automation and Motion (2018), at 68.

106. *See* Joel Achenbach, *The 21st Century Grid*, 2181 NAT'L GEOGRAPHIC 118, 120 (2010).

107. Raymond H. Byrne et al., *Estimating Potential Revenue from Electrical Energy Storage in PJM*, 2016 IEEE Power and Energy Society General Meeting 4–5 (2016).

108. Sean Baur, *Going Beyond Order 841 to More Meaningful FERC Storage Policy*, UTIL. DIVE (Sept. 1, 2020), https://www.utilitydive.com/news/going-beyond-order-841-to-more-meaningful-ferc-storage-policy/584129/.

109. *See id.* ("[D]espite Order 841 being heralded as the start of an energy storage revolution, projects being deployed and announced today are driven by policies completely unrelated to the order.")

away from the fact that total implementation of ESRs has not yet been achieved on a national level.[110]

This position, however, blames the wrong party. It is the RTOs themselves that have effectively dodged Order No. 841 by revising their participation models in ways that reflect neither the technical mandates nor the spirit of the order. Of course, not all players are acting in bad faith, but some RTOs have proposed changes that should ring alarm bells. This behavior is most apparent in the RTOs' compliance filings—the reports that RTOs send to FERC outlining their plans for implementing orders.[111] Those filings have proved to be fertile ground to hide pernicious policy. This Part examines these compliance filings and then demonstrates how most RTOs have resisted FERC.

A. CAISO

Unsurprisingly, California has cooperated with Order No. 841. Before the order was enacted, CAISO was well positioned to fully integrate ESRs into its grid.[112] In 2021, state utilities achieved their 2013 goal of adding over a gigawatt of electric storage to the grid.[113] Last year, utilities planned to more than double that number in anticipation of a deluge of renewable capacity.[114] In a sense, Order No. 841 was slow on the draw in California, which already had a mandate to fully incorporate ESRs into state policy.[115] These existing plans to integrate ESRs into markets had aligned the interests of California and FERC well before the order.[116]

Given this trajectory, CAISO needed little convincing to fully integrate storage into transmission under its oversight. It nonetheless slipped in two

110. *See id.* ("Order 841 . . . was not poised to be a radical push for more storage deployment. Less attention is being paid to the new barriers that have been erected elsewhere by FERC since the order.").

111. *See generally* JESSICA R. BELL & HAMPDEN T. MACBETH, THE STATE ENERGY & ENV'T IMPACT CTR, NYU SCHOOL OF LAW, ARE WE THERE YET? GETTING DISTRIBUTED ENERGY RESOURCES TO MARKETS (2021).

112. *See* Raymond Richards, *Preemption, I Think Not Evaluating California's Stored Energy Procurement Law Against FERC Order 841*, 36 PACE ENV'T L. REV. 229, 259–60 (2019).

113. *See* John Fitzgerald Weaver, *California Breaks 1 GW Energy Storage Milestone (and Looks to a Future' 1.21 GW Moment)*, PV MAGAZINE (July 15, 2021), https://pv-magazine-usa.com/2021/07/15/california-breaks-1-gw-energy-storage-milestone-and-looks-to-a-future-1-21-gw-moment/; Cal. Pub. Utils. Comm'n, D.13-10-040 at 11-14 (2013) (committing the state to 1.3 GW of storage); CAL. PUB. UTIL. CODE §§ 2838.2-2838.3 (2019) (committing the state to an additional 500 MW of behind-the-meter storage).

114. *See* Kavya Balaraman, *PG&E Proposes 6.4 GWh Battery Storage Plan in Response to California's 11.5 GW Procurement Order*, UTIL. DIVE (Jan. 25, 2022), https://www.utilitydive.com/news/pge-proposes-64-gwh-battery-storage-plan-in-response-to-californias-115/617646.

115. Decision Adopting Energy Storage Procurement Framework and Design Program at 2, Order Instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems, Decision 13-10-040, Oct. 17, 2013; *see* Richards, *supra* note 112, at 252.

116. *See* Richards, *supra* note 112, at 259–60; Levi McAllister & Arjun Ramadevanahalli, *Comparing Grid Operators' Energy Storage Market Proposals*, LA 360 (Jan 23, 2019), https://www.law360.com/articles/1121056/comparing-grid-operators-energy-storage-market-proposals.

technical areas. FERC found that, in implementing the order, CAISO failed to describe the metering technologies that it would use for accurately measuring the energy produced by ESRs.[117] While accurate metering is crucial for incorporating storage, sloppy metering practices are not a barrier for ESRs attempting to connect to CAISO. FERC also found that CAISO failed to account for ten characteristics unique to ESRs when calculating its tariff.[118] Though CAISO had listed these characteristics in its practice guidelines, it had failed to translate them to its tariff.[119] Still, the Commission broadly approved CAISO's compliance filing in late 2019, requiring the RTO fix the issues within sixty days.[120]

B. ISO-NE

ISO-NE's compliance filings seemed to generally disfavor electric storage. FERC took issue with the RTO's implementation of the unique characteristics of ESRs.[121] ISO-NE left these characteristics out of the day-ahead participation models for ESRs.[122] In contrast to the real-time market that responds to the current demand for electricity, the day-ahead market consists of the preemptive buying and selling of electricity to avoid price volatility.[123] Unlike traditional power generation, there is less assurance that ESRs charged by renewables will have enough capacity the next day to discharge.[124] This means that, without certain adjustments, electric storage is greatly disfavored in the day-ahead market.[125] ESRs do not confront this problem in the real-time market, which is, curiously, the only place where ISO-NE meaningfully updated its participation models.[126] Instead of updating its participation models for the day-ahead market, the RTO simply limited ESRs to only a single discharge and a single charge each day.[127] That way, ISO-NE reasoned, ESRs will assuredly be able to discharge the next day after participating in the day-ahead market. FERC did not approve. It found this solution at odds with Order No. 841, as it did not enable ESRs to "provide all of the services that they are technically capable of providing."[128]

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117. Cal. Indep. Sys. Operator Corp., 169 F.E.R.C. ¶ 61,126, at P 159 (2019).
118. *Id.* at P 99.
119. *Id.*
120. *Id.* at P 166.
121. *See* Katherine O'Konski & Russell Kooistra, *FERC Conditionally Accepts CAISO, MISO, and ISO-NE Order No. 841 Energy Storage Participation Proposals*, TROUTMAN ENERGY REP. (Nov. 26, 2019), https://www.troutmanenergyreport.com/2019/11/ferc-conditionally-accepts-caiso-miso-and-iso-ne-order-no-841-energy-storage-participation-proposals/.
122. *See ISO New England Inc.*, 169 FERC ¶ 61,140, at P 149 (2019).
123. *Day-Ahead and Real-Time Energy Markets*, ISO-NEW ENGLAND, https://www.iso-ne.com/markets-operations/markets/da-rt-energy-markets (last visited Mar. 14, 2022).
124. *See* Brandon Mauch et al., *Can a Wind Farm with CAES Survive in the Day-Ahead Market?*, 28 ENERGY POL'Y 584, 593 (2012).
125. *See id.*
126. *See ISO New England*, *supra* note 122.
127. *See id.* at P 150.
128. *Id.*

FERC also took issue with the RTO's approach to measuring charging energy from retail distributors. ISO-NE initially omitted standards that helped prevent charging ESRs from incurring both the retail and the wholesale rate simultaneously.[129] In response, FERC ordered that the RTO update its tariff to include safeguards for storage facilities to avoid exorbitantly high charging costs. It also rejected ISO-NE's argument that a promise to correct distributors was sufficient insulation for ESRs.[130]

ISO-NE's compliance filings did not completely disfavor electric storage, however. Under Order No. 841-A, the energy that ESRs draw from the grid to charge must, like all other users, be subject to transmission charges.[131] Contrary to the Commission's wishes, ISO-NE had allowed storage facilities to draw power from the grid without these extra tariffs, forcing FERC to reject part of its compliance filing.[132]

C. MISO

The midwestern RTO put up some of the fiercest resistance to implementing Order No. 841. MISO was poised to be the last RTO to update its participation models to accommodate ESRs. Unlike most of the other RTOs,[133] MISO filed for a deferral with FERC to extend the date of compliance.[134] It claimed that December 2019 was too short a deadline to develop the necessary software.[135] In this filing, it also proposed troublesome implementation schemes. For example, MISO excluded ESRs from qualifying as fast-start resources,[136] generators that can respond quickly to deliver power in times of need, because its existing definition of the term categorically excluded fuel-limited resources from qualifying.[137] MISO essentially bound its own wrists and then claimed its hands were tied. This move was especially perplexing given that ESRs are particularly well suited to act as fast-start resources.[138] Trouble in this area may have been expected. A 2020 report found that MISO maintains one of the least

129. *See id.* at P 221.
130. *See id.*
131. Order No. 841-A, 167 FERC ¶ 61,154, at P 121 (2019).
132. *See ISO New England*, *supra* note 122, at P 194.
133. *See generally* BELL & MACBETH, *supra* note 111.
134. *See Midcontinent Indep. Sys. Operator, Inc.*, 169 FERC ¶ 61,137, at P 268.
135. *See id.*
136. Fast start resources are particularly valuable for "blackstarts," emergency repowering of the grid after partial or complete shutdowns. *See* JAMES G. O'BRIEN, ET AL., PAC. NW. NAT'L LAB'Y, ELECTRIC GRID BLACKSTART: TRENDS, CHALLENGES, AND OPPORTUNITIES 7–8 (2020).
137. *See Midcontinent Indep. Sys. Operator, Inc.*, *supra* note 134, at P 104.
138. *See Benefits of Battery Storage-Based Black-Start Capability*, POWER MAGAZINE (May 1, 2020), https://www.powermag.com/benefits-of-battery-storage-based-black-start-capability/ (last visited Oct. 15, 2021).

sophisticated energy and capacity markets in the country for implementing storage.[139]

In 2021, MISO filed a second deferral request, seeking a new compliance date of 2025.[140] In effect, this was a petition to delay the implementation of Order No. 841 until after MISO worked out its other priorities.[141] Meanwhile, many RTOs had already achieved compliance with Order No. 841 for over a year.[142] As expected, public interest groups attacked MISO for deliberately dragging its feet.[143] At the time, MISO already had a dearth of planned investments in storage, as the region expected 135 times more capacity in renewable energy generation than in storage by 2040.[144] Advocates feared that further delays in implementation would only widen this gulf.[145] The Commission ultimately rejected the request for deferral, drawing praise from environmental organizations and energy storage groups alike.[146]

D. NYISO

NYISO falls into the bin of RTOs that favored ESRs in response to Order No. 841. When FERC found fault with NYISO's practices, it was typically because the RTO had been too accommodating to electric storage. For example, NYISO sought to exempt new ESRs from price floor rules designed to prevent incumbent energy producers from lowering their prices dramatically to

139. Arunika Chandra et al., FERC Order 841: Analysis of Actions by Wholesale Market Operators to Incorporate Energy Storage 59 (April 24, 2020) (MEM project, Duke University Nicholas School of the Environment), https://dukespace.lib.duke.edu/dspace/handle/10161/20484.

140. *See Midcontinent Indep. Sys. Operator, Inc.*, 175 FERC ¶ 61,120 (2021).

141. *See id.*

142. *See* BELL & MACBETH, *supra* note 111, at 8.

143. For example, one public interest coalition contended that the circumstances under which MISO requested this unnecessary delay "cannot result in a good faith request to extend." *See* Objections of the Public Interest Organizations on the Motion of the Midcontinent Independent System Operator, Inc. for Extension of Order No. 841 Implementation, F.E.R.C., Docket No. ER19-465-000 (2021). MISO would go on to make a similar argument to FERC in the implementation of Order No. 2222. *See* Motion of the Midcontinent Independent System Operator, Inc. for Extension of Order No. 2222 Initial Compliance Requirement, F.E.R.C., Docket No. RM18-9-000 (2021).

144. *See* Letter from John R. Bear, CEO, Midcontinent Indep. Sys. Operator, Inc. to FERC (May 10, 2021), https://cdn.misoenergy.org/FERC%20Ltr%20RE%20841%20051021549488.pdf.

145. *See* Jason Plautz, *FERC Rejects MISO's Bid to Extend Storage Order Compliance Deadline, Dismissing Reliability Concerns*, UTIL. DIVE (May 19, 2021), https://www.utilitydive.com/news/ferc-rejects-misos-bid-to-extend-storage-order-compliance-deadline-dismis/.

146. *See* Andy Colthorpe, *FERC Denies Grid Operator MISO's Request to Delay Distributed Energy Storage Market Participation*, ENERGY STORAGE (May 18, 2021), https://www.energy-storage.news/ferc-denies-grid-operator-misos-request-to-delay-distributed-energy-storage-market-participation/; Rao Konidena, *FERC Should Reject MISO Extension Request for Electric Storage Resource*, RENEWABLE ENERGY WORLD (Apr. 9, 2021), https://www.renewableenergyworld.com/blog/ferc-should-reject-miso-extension-request-for-electric-storage-resource/.

manipulate the market.[147] FERC denied this exemption, claiming that ESRs should "participate in the market similar to any other resource."[148]

NYISO was the first RTO to voluntarily allow ESRs to compete in both wholesale markets and retail markets simultaneously.[149] This kind of dual participation allows ESRs to access greater revenue streams by choosing the most profitable market for any given sale.[150] Allowing dual participation also goes above and beyond FERC's requirements.[151] Initially, when it was unclear whether FERC had authority to mandate simultaneous participation, the Commission denied a NYISO compliance filing when the RTO forced storage facilities to choose their market.[152] Yet both entities would come to reverse their positions. The next year, the D.C. Circuit held that mandating dual participation was out of the scope of FERC's jurisdiction.[153] That same year, NYISO would begin voluntarily offering dual participation in the wholesale and retail market.[154] Once again, the RTO was met with the praise of watch groups.[155]

E. PJM

PJM achieved compliance quickly, but not without several hiccups.[156] For instance, when setting minimum run-time requirements, PJM initially proposed a "ten-hour rule" for most ESRs—that is, PJM would only count a facility's capacity if it could be maintained for at least ten hours.[157] FERC rejected this standard, finding it unduly discriminatory for most battery storage providers,[158] as many would not be able to meet this standard in practice.[159] Compounding

147. *See* New York State Pub. Serv. Comm'n & New York State Energy Rsch. & Dev. Auth. v. New York Indep. Sys. Operator, Inc., 170 F.E.R.C. ¶ 61,119, at P 38 (2020).

148. *Id.*

149. *See* Press Release, New York Indep. Sys. Operator, NYISO Implements Industry-Leading Rules for Energy Storage Resources (Sept. 8, 2020), https://www.nyiso.com/-/press-release-7c-nyiso-implements-industry-leading-rules-for-energy-storage-resources.

150. *See* Chandra et al., *supra* note 139, at 44.

151. *See NARUC*, 964 F.3d at 1182.

152. *See New York Indep. Sys. Operator, Inc.*, 169 F.E.R.C. ¶ 61,225, at P 207 (2019).

153. *See NARUC*, 964 F.3d at 1182.

154. *See* Press Release, New York Indep. Sys. Operator, *supra* note 149.

155. *See* Jeff J. John, *New York is Breaking New Ground in Allowing Batteries to Play in Multiple Markets*, GREENTECH MEDIA (Sept. 11, 2020), https://www.greentechmedia.com/squared/dispatches-from-the-grid-edge/new-yorks-new-rules-for-opening-markets-to-energy-storage.

156. The RTO received a conditional stamp of approval from FERC in December 2019, a feat matched only by CAISO. *See* BELL & MACBETH, *supra* note 111, at 8.

157. *See* PJM Interconnection, L.L.C., 175 F.E.R.C. ¶ 61,084, at P 115 (2021).

158. *See* PJM Interconnection, L.L.C., 169 F.E.R.C. ¶ 61,049 (2019); *see PJM Interconnection, L.L.C.*, 169 F.E.R.C. ¶ 61,142 (2019); *see also Regional FERC Order 841 Implementations*, POWER SETTLEMENTS (May 17, 2019), https://powersettlements.com/4112/blog/regional-ferc-order-841-implementations ("A 10-hour discharge requirement for storage to participate in the region's capacity market has also been proposed, though it has drawn heavy criticism. To participate, most resources would need to significantly derate capacity, but this would not prove to be cost-effective for participation.").

159. *See* Andy Colthorpe, *Landmark' FERC Order 841 Compliance Approved, but PJM Has to Answer Duration Questions*, ENERGY STORAGE (Oct. 18, 2019), https://www.energy-storage.news/landmark-ferc-order-841-compliance-approved-but-pjm-has-to-answer-duration-questions/.

the problem, PJM still exercises its ability to deny dual participation to ESRs for fear of overcompensating certain suppliers.[160]

PJM addressed FERC's concerns around the discriminatory ten-hour rule by proposing to measure effective load carrying capacity (ELCC), a method of assessing the capacity of generators against the probability that they will not be able to meet demand.[161] The RTO reached this proposal after polling its stakeholders. Two groups suggested the ELCC approach while a third recommended a four-hour rule, instead.[162] Notably, none of these stakeholders revealed their identities publicly.[163] Still, PJM's compliance filings were rejected when FERC found an element of the ELCC implementation "unjust and unreasonable and unduly discriminatory."[164] This element, a class rating floor for certain ELCC resources, would disfavor future ESRs over incumbent ones.[165]

F. SPP

The southwestern RTO displayed varying, but not overwhelmingly troubling, levels of cooperation. In SPP's first compliance filing, FERC had minor bones to pick with the way that the RTO defined tariff rates for ESRs. The Commission also took issue with the ambiguity in SPP's proposal around metering ESRs.[166] Because ESRs are unique entities, FERC believes they should be given specific metering parameters, lest they are not reliably charged the competitive rates.[167] Eschewing those practices "significantly affect[s] rates, terms, and conditions."[168]

But the RTO's most suspect proposal came in its 2020 compliance filing. In it, SPP included a provision requiring some ESRs to certify that their participation in wholesale markets was not barred by any "relevant electric retail regulatory authority."[169] But Order No. 841 and the court in *NARUC* explicitly denied retail authorities the ability to prevent access to wholesale markets.[170] So, making ESRs reaffirm this fact themselves would likely discourage many would-be storage providers from entering the wholesale market. Indeed, FERC found

160. *See* PJM Interconnection, L.L.C., 167 F.E.R.C. ¶ 61,114, at P 33 (2019).

161. *See id.* at P 1.

162. *See PJM, Stakeholders Consider Alternatives to 10-Hour Capacity Rule for Storage*, PJM INSIDE LINES (Feb. 3, 2020), https://insidelines.pjm.com/pjm-stakeholders-consider-alternatives-to-10-hour-capacity-rule-for-storage/.

163. *See Capacity Market Capability of Energy Storage Resources Issue Details,* PJM, https://www.pjm.com/committees-and-groups/issue-tracking/issue-tracking-details.aspx?Issue=%7b9345784D-C023-457C-897E-A91C39FB4486%7d (last visited Mar. 10, 2022).

164. PJM Interconnection, L.L.C., 167 F E.R.C. ¶ 61,114, at P 17.

165. *See id.* at P 108.

166. *See* Sw. Power Pool, Inc., 169 F.E.R.C. ¶ 61,048, at PP 130, 178 (2019).

167. *See id.* at P 170.

168. *Id.*

169. Sw. Power Pool, Inc., 172 F.E.R.C. ¶ 61,053, at P 25 (2020).

170. *See* Order No. 841, *supra* note 60; Nat'l Ass'n of Regulated Util. Comm'rs v. FERC, 964 F.3d 1177, 1184 (D.C. Cir. 2020).

that this smokescreen provision "could be [mis]interpreted to include an opt-out."[171] Still, SPP quickly resolved these issues and earned FERC's approval,[172] so its approach was broadly correct.

IV. THE JUMBLED ARRAY OF RTO GOVERNANCE STRUCTURES

A. What They Have in Common

This Part digs deeper into what these RTOs actually are and how they function. But because RTOs have been left to form themselves, answering these inquiries invariably ends in "it depends." For simplicity's sake, this Part summarizes the common threads between the governance structures of all RTOs except CAISO, whose unique scheme is rightfully treated as an outlier.[173] For the purposes of this Note, there are three such threads worth discussing: the board of directors, the stakeholder sectors, and the distribution of FPA section 205 filing rights.

1. Boards of Directors

Nine to eleven elected individuals make up a board that is ultimately responsible for the performance of the entire organization.[174] As RTOs are often run like corporations, these boards are analogous to senior boards at more traditional organizations.[175] That is, they carry out high-level planning, strategizing, and policy making. FERC has guided RTOs to organize themselves such that board members are insulated from influence by regional players or members of its body.[176]

In reality, board members are often beholden to the industry stakeholders that nominated them.[177] And as this Note explores later, stakeholder groups often have ways of burying certain interests while buttressing others.[178] This phenomenon perverts one of the core functions of the boards: accountability to

171. *Id.*

172. *See* Sw. Power Pool, Inc., 169 F.E.R.C. ¶ 61,048, at P 2.

173. *See, e.g.*, E4THE FUTURE, INC., REGIONAL ENERGY MARKETS: DO INCONSISTENT GOVERNANCE STRUCTURES IMPEDE U.S. MARKET SUCCESS? 10 (2016) ("There is no official membership structure in CAISO and there are no limitations on who can be a stakeholder.").

174. *See* CHRISTOPHER A. PARENT ET AL., EXETER ASSOCIATES, INC., GOVERNANCE STRUCTURE AND PRACTICES IN THE FERC JURISDICTIONAL ISOS/RTOS, at ES-5 (2021). In late 2021, ISO-NE added a temporary eleventh spot on its board. *See* Jason York, *ISO-NE Elects 2021 Board of Directors Slate*, RTO INSIDER (Sept. 23, 2021), https://www.rtoinsider.com/articles/28707-iso-ne-2021-board-of-directors-slate.

175. *See* NAT'L ASS'N OF STATE UTIL. CONSUMER ADVOCS., MODEL CORPORATE GOVERNANCE FOR REGIONAL TRANSMISSION ORGANIZATIONS AND INDEPENDENT SYSTEM OPERATORS 5 (2009), https://nasuca.org/wp-content/uploads/2009/01/Model-RTO-.pdf.

176. *See* Order 2000, *supra* note 20, at 709 (maintaining that the decisions of RTO boards of directors should be "independent of any market participant").

177. *See* Dworkin & Goldwasser, *supra* note 26, at 563–64.

178. *See infra* Part IV.B.

stakeholders. In practice, RTOs become too accountable to *specific* stakeholders, which commensurately lowers the boards' accountability to stakeholders with interests at odds with the favored few.[179] Other sources contaminate the boards' motives, as well.[180] Since directors bear the RTO's life on their shoulders, they may be too concerned with keeping the organization afloat and maintaining low prices to think about integrating new players.[181] This is good for stability, but bad for adaptability. Additionally, although the boards nominally control the budgets of their respective RTOs, funds are not bullet-proofed from stakeholder control.[182]

2. Stakeholder Sectors

RTOs divide their members, also known as stakeholders, into sectors based on their positions on the grid. The most common sectors are transmission owners, generators, transmission users, distributors, end-use consumers, and a conglomeration of state and environmental organizations.[183] Besides this last group, sectors are, importantly, not organized based on their specific interests in how the grid is managed.

The functions of these stakeholder sectors vary between organizations. Stakeholders either individually vote to elect board members or are allocated single votes by sector to cast in board elections.[184] For issues before the board, individual votes are typically weighted by sector, or entire sectors vote according to a specified threshold level of agreement between their individual constituent members.[185] As stakeholder sectors are based on their function, minority interests should experience diminished voting power when they are placed into sectors dominated by adverse interests. For instance, an RTO may group energy storage participants into its generation sector, where their interest will almost certainly be trumped by the relatively large number of traditional generators. This spawns a positive feedback cycle. The dilution of votes in the stakeholder sector discourages alternative generators from entering the market, ensuring that existing alternative generators will never gather enough voters to truly reflect their weight.[186] This result runs counter to one of the early guiding principles of Order No. 719, which was to prevent the incumbent powers that ran RTOs from

179. *See* Dworkin & Goldwasser, *supra* note 26, at 563–64.

180. *Id.* at 561–63.

181. *See id.* at 562.

182. *See, e.g.*, *id.* (explaining that in ISO-NE, FERC's budget reviewing system allows a parallel body of stakeholders to exert its influence before the Board of Directors even submits a budget).

183. *See* Welton, *supra* note 16, at App. A.

184. *See* PARENT ET AL., *supra* note 174, at ES-6.

185. *See id.*

186. *See* CHRISTINA SIMEONE, PJM GOVERNANCE: CAN REFORMS IMPROVE OUTCOMES?, KLEINMAN CTR. FOR ENERGY POL'Y 33 (2017) (finding that the greatest vote dilution in PJM's stakeholder sector has occurred within the Generation and Other Suppliers sectors); Christina E. Simeone, *Reforming FERC's RTO/ISO Stakeholder Governance Principles*, 34 ELEC. J. 4 (2021) (suggesting PJM's dilution could exist in other RTOs).

failing to ensure that "customers and other stakeholders have . . . access" to the boards.[187]

3. Section 205 Filing Rights

Under section 205 of the FPA, RTOs must give FERC and the public sixty days' notice for any proposed changes in the rates, terms, or conditions of their services.[188] RTOs typically use these proposals to modify energy, ancillary services, and capacity markets.[189] Governance of transmission itself stays with the owners of those transmission assets, but those owners still rely on RTO heads for consultation.[190] Any change must meet FERC's "just and reasonable" standard.[191]

This is the Commission's principal means of controlling the RTOs, as all operational adjustments must pass through this bottleneck. Those who submit section 205 proposals can frame changes in ways that benefit themselves, so those rights become a major point of control. Theoretically, a party that exercises filing rights may stack on changes until they have developed one regime of governance into another.[192] Most commonly, the RTOs give their boards of directors outsized control in this domain; however, all vary in how they give either stakeholders the ability to influence their boards' section 205 filings or propose alternative filings to FERC.[193]

B. Where They Drift Apart

Having explained what the RTOs have in common, this Note now explores how RTOs have departed from the general model. Particularly, it will focus on rules and structures that operate to the detriment (though sometimes to the benefit) of alternative resources. It is important to note that this is not a wholesale indictment of certain RTOs. Instead, it is a limited critique of policies that affect the implementation of FERC orders like 841. Before getting into how the standard RTO tweaks these rules, this Note will examine the biggest rule breaker of them all: CAISO.

187. Order 719, *supra* note 32.
188. 16 U.S.C. § 824.
189. *See* James et al., *supra* note 31, at 4.
190. *See id.*
191. 16 U.S.C. § 824.
192. *See* James et al., *supra* note 31, at 3–4 (explaining the power and importance of effectively wielding section 205 filing rights within an RTO).
193. PJM and SPP have their filing rights split between their boards, who oversee issues like transmission tariffs and reliability, and state and stakeholder groups that oversee other issues. *See* Welton, *supra* note 16, at App. A. MISO and ISO-NE employs a slightly different system, but with state and stakeholder groups able to file proposals in the alternative to the board. *See id.* CAISO exercises total control over the rights. *See id.*

1. CAISO, the Outlier

Exploring CAISO's governance structure is important because, while it notably diverges from the prevailing model, it has also remarkably succeeded in implementing Order No. 841. The most dramatic difference is that CAISO lacks any formal membership structure.[194] Indeed, it operates more like a government agency than a corporation.[195] The public, acting as CAISO's stakeholders, can attend meetings and voice opinions on any matter.[196] Unlike other RTOs, this system does not silo minority interests into predefined voting blocs.[197] CAISO's stakeholders have no ability to vote and are instead limited to comment.[198] Voting power resides solely with the board of directors, which is appointed by the governor of California.[199]

The five members of CAISO's board have final say on all CAISO matters.[200] Unlike most other RTOs, there is no voting scheme or parallel process that stakeholders can use to stall the board's decision or take section 205 filing rights into their own hands.[201] This seems to rebut the "responsiveness" requirement of Order No. 719, and, to a degree, it does. The fundamental dilemma of RTO governance is that organizational independence is inherently in tension with the ability to cater to specific stakeholders.[202] But CAISO *is* responsive to stakeholder needs, just not in the way that other RTOs are. Board members listen to both proponents and opponents of proposals before any change in policy—twice in the proposal stage, once during the drafting, and at least three times during implementation.[203] Moreover, because there are no sectors that stakeholders are grouped into, the barriers to commenting are extremely low.

Finally, because CAISO is one of the few RTOs that represents a single state, it is naturally more intertwined with state policy and state entities than other, truly regional RTOs. While this may give outsized influence to utility

194. *See* E4THE FUTURE, INC., *supra* note 173, at 11.

195. *See RTO/ISO Governance*, ENERGY FREEDOM COLORADO, https://energyfreedomco.org/governance.php (making comparisons between CAISO as an administrative agency and MISO as a corporation) (last visited Mar. 15, 2022).

196. *See Understanding and Participating in California ISO (CAISO) Processes*, FERC, https://www.ferc.gov/understanding-and-participating-california-iso-caiso-processes (last visited Nov. 7, 2022).

197. *See* E4THE FUTURE, *supra* note 173, at 10.

198. *See id.*

199. *See* Welton, *supra* note 16, at App. A.

200. *See id.*

201. *See id.* For example, ISO-NE, NYISO, and PJM all allow stakeholders to directly influence the section 205 filing rights of their RTO, whether through an alternative, parallel filing process or by vetoing the decisions of the board. *See* E4THE FUTURE, *supra* note 173, at 7–8. CAISO has no such system. *See id.* at 6–7.

202. *See* FERC, COMMENTS OF RTOGOV RESEARCHERS, Docket No. AD21-9-000 (2021), at 15, https://nicholasinstitute.duke.edu/sites/default/files/publications/OPP-FERC-Comments-RTO-RESEARCHER-FINAL_1.pdf.

203. *See Policy Initiatives*, CAISO, https://stakeholdercenter.caiso.com/StakeholderInitiatives (last visited Mar. 15, 2022).

players like the California Public Utility Commission, it also satisfies the state's considerable appetite for decarbonization.[204]

2. ISO-NE

ISO-NE gives an inordinate amount of deference to its stakeholders, which, all things considered, is unexpectedly problematic. Six sectors come together to form the New England Power Pool (NEPOOL), an organization entirely independent from ISO-NE except for ISO-NE's right to organize it.[205] NEPOOL retains its own set of section 205 filing rights.[206] In practice, this means that ISO-NE effectively competes with its stakeholders for approvals by FERC, as NEPOOL can submit its own proposals to the Commission if at least 60 percent of its members disapprove of the board's proposal.[207] When this happens, it is known as a "jump ball" filing.[208] Jump ball filings force ISO-NE into a defensive position: it must now explain to the Commission why its proposal deserves approval despite the protest of a majority of its stakeholders.

The issue then becomes one of membership composition. ISO-NE organizes stakeholders into six sectors of equal weight, except for one: alternative resources. Because of its diminished numbers, the alternative resources sector does not enjoy the same voting power as generation owners, transmission owners, municipal power companies, end users, or suppliers.[209] As all green energy providers are siloed into this one diminished voting bloc, NEPOOL's organization likely works as a gerrymandered stakeholder process. Generation owners and power companies presumably have little incentive to cast their votes in different directions. And since NEPOOL retains the unique power to file its own proposals with FERC, one would expect traditional utilities to be awarded disproportionately greater influence at the expense of smaller ones. Finally, in contrast to the transparency of CAISO, NEPOOL prohibits public participation or press access during its meetings.[210]

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204. *See* WESTON BERG ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., THE 2019 STATE ENERGY EFFICIENCY SCORECARD ix (2019), https://www.aceee.org/sites/default/files/publications/researchreports/u1908.pdf.

205. *See Navigating ISO-NE*, SUSTAINABLE FERC PROJECT, https://sustainableferc.org/navigating-iso-ne/ (last visited Mar. 15, 2022).

206. *See* E4THE FUTURE, *supra* note 173, at 4.

207. *See* ISO New England, Inc. et al., PARTICIPANTS AGREEMENT § 11.1.5 (2011), *available at* https://www.iso-ne.com/static-assets/documents/2015/10/parts_agree.pdf; *see, e.g.*, New England Power Pool Participants Comm., 170 F.E.R.C. ¶ 61,034, 61,181 (2020).

208. *See id.* (using the term "'jump ball' filing").

209. *See* Welton, *supra* note 16, at App. A.

210. *See* RTO Insider L.L.C. v. New England Power Pool Participants Committee, 170 F.E.R.C. ¶ 61,035; New Jersey Energy Assocs., A Ltd. P'ship, 170 F.E.R.C. ¶ 61,185 (2020). FERC denied review of NEPOOL's policy as it claimed to lack jurisdiction over the matter. Commissioner Glick, in concurrence, voiced concern that these policies negatively affect the public interest. *See id.* 209 at 61,186. Congressman Joe Kennedy from Massachusetts lamented that this rule makes it so the public has "no idea who makes decisions and how they are made." Michael Brooks, *FERC Probed on RTO Governance*, RTO

3. MISO

Whereas ISO-NE is quite liberal in permitting members to shape its proposals to FERC, MISO is more conservative. Control of MISO's section 205 filing rights is kept out of reach of the stakeholders.[211] While MISO is better insulated from stakeholder influence, however, its structure is particularly deferential to the fifteen states in which it operates.[212] The Organization of MISO States is the only other holder of filing rights in the region, albeit with filings limited to cost allocation.[213] Should two-thirds of its members protest an allocation of costs proposed by MISO, the RTO must either allow FERC to consider the alternative proposal or explain to FERC why it has rejected the alternative.[214] Though this influence appears slight, it works in the states' favor.[215] Scholars have found that budgetary concerns exert undue pressure on RTO matters.[216] Furthermore, setting aside SPP, this setup makes MISO the RTO most connected to its vertically integrated utility companies.[217] From one point of view, the oversight of state entities aligns with the idealized conception of RTOs as "policy-takers."[218] But from another, the states' deep roots in MISO make it hard for federal authorities to exercise control over the RTO.

Even without this wrinkle, MISO's ten-member board is subject to state influence. Board candidates are nominated by a combination of existing board members and members of MISO's Advisory Committee.[219] Within this committee, the largest allocation of votes goes to state regulatory authorities.[220] Alone, it is weighted at 16 percent, the largest of any stakeholder sector.[221] Moreover, as MISO runs a voluntary capacity market that allows utilities to

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INSIDER (June 12, 2019), https://www.rtoinsider.com/articles/22231-ferc-probed-on-rto-governance-market-issues.

211. *See* Welton, *supra* note 16, at App. A.

212. *See id.*

213. *See* NAT. RES. DEF. COUNCIL, MAKING SENSE OF POTENTIAL WESTERN ISO GOVERNANCE STRUCTURES: THE ROLE OF THE STATES 3 (2016).

214. *See id.* at 5.

215. *See id.* at 4 ("However, the existence of heightened influence for OMS [the Organization of MISO States] has proved effective at influencing outcomes in MISO processes related to cost allocation.").

216. *See* Dworkin & Goldwasser, *supra* note 26, at 562.

217. *See* Travis Kavulla, *Problems in Electricity Market Governance An Assessment*, 180 R ST. POL'Y STUDY 1, 6 (2019).

218. *See* Welton, *supra* note 16, at 239; 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, 229 (2016) (quoting a MISO employee explaining that the RTO's job is not to create policy but interpret it as it is handed down).

219. *See* Welton, *supra* note 16, at App. A.

220. MIDCONTINENT INDEP. SYS. OPERATOR, INC., STAKEHOLDER GOVERNANCE GUIDE 9 (2021), https://cdn.misoenergy.org/Stakeholder%20Governance%20Guide105455.pdf.

221. *Id.*; *see also* JENNIFER CHEN & GABRIELLE MURNAN, DUKE UNIV. NICHOLAS INST. FOR ENV'T POL'Y SOLUTIONS, STATE PARTICIPATION IN RESOURCE ADEQUACY DECISIONS IN MULTISTATE REGIONAL TRANSMISSION ORGANIZATIONS, 232 (2019) (finding this heavy weighting in favor of states to contribute to their influence on MISO).

acquire new capacity without RTO oversight, the composition of other MISO voting blocs becomes skewed by big players with state interests.[222] At least as of 2014, these weights have not been updated and therefore may not reflect the current landscape of storage and alternative power generation and supply.[223] This unfortunate reality diminishes many benefits of grouping alternative resources into their own voting sector while retaining the disadvantages.

MISO does, however, exceed expectations on a few fronts. In some areas, it can be argued that MISO is a particularly progressive RTO in its consideration of alternative interests. Take, for example, its bold inclusion of environmental and public consumer groups in its voting system. MISO allows twenty-eight of these alternative interest entities to participate in board elections despite non-member status.[224] Considering the delays in implementing Order No. 841,[225] it is still questionable whether this system translates into a more responsive system than the other RTOs, at least where alternative resources are concerned.

4. NYISO

NYISO organizes its alternative resources stakeholder sectors by their placement on the energy grid rather than by their shared interest.[226] This can be good and bad: It allows alternative resources to span their influence across multiple sectors, but also may erase the voices of the alternative resources providers if they are not represented adequately in their sectors. NYISO's structure manifests both qualities. Wind and solar energy are included in the generation sector, while resources like demand response and storage are considered "other suppliers."[227] Both sectors enjoy a sizeable 21.5 percent of the vote.[228] So, while alternative resources may experience some degree of voting dilution, the enormity of these sectors might leave them powerless if given a specialized alternative resources bloc.

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222. *See* Welton, *supra* note 16, at 232.

223. *See* CAISO, TABLE OF STAKEHOLDER COMMITTEES OF OTHER ISOS AND RTOS 16–17 (2014), https://www.caiso.com/Documents/ISO-RTO_CommitteeStructures-Oct2014.pdf; *see* Jordan Bakke et al., "Evolution of the Grid in MISO Region" (presentation at Minn. Power Systems Conference, Nov. 7, 2017) (showing MISO's capacity mix growing from zero percent renewables in 2005 to 8% in 2017); *see The Road to Resilience; MISO and Renewables*, AMERICA'S POWER (Apr. 16, 2021), https://www.americaspower.org/the-road-to-resilience-miso-and-renewables/ (showing MISO's current generation mix at 13% wind energy). MISO has also announced plans to increase from 13% to 30% by 2026. *See* Garrett Hering, *MISO Foresees Transformational Change' of Grid, Majority Renewable Power*, S&P GLOBAL (Feb. 10, 2021), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/miso-foresees-transformational-change-of-grid-majority-renewable-power-62598981.

224. MIDCONTINENTAL INDEP. SYS. OPERATORS, INC., STAKEHOLDER GROUP PARTICIPATION (2021), https://cdn.misoenergy.org//Stakeholder%20Group%20Participation95902.pdf; Welton, *supra* note 16, at App. A.

225. *See* BELL & MACBETH, *supra* note 111, at 9–10.

226. James et al., *supra* note 31, at 7–8.

227. NEW YORK INDEP. SYS. OPERATOR, INC., NYISO GOVERNANCE: FREQUENTLY ASKED QUESTIONS (FAQS) 5 (2021), https://www.nyiso.com/documents/20142/1408883/NYISO-Governance-FAQ.pdf/.

228. *Id.*

NYISO's board system also checks and balances power between board members and stakeholders. Its board is insulated from undue stakeholder influence by allowing previous board members to elect new ones.[229] As a check against potential corruption by this self-perpetuating ingroup, the board shares section 205 filing rights with its stakeholders.[230] These decisions must be approved by a subset of stakeholders with a mere 58 percent[231] of the vote.[232] Still, the board can temporarily strong-arm its proposals through, effecting its decision without stakeholder approval for 120 days; however, this is only permissible under "exigent circumstances."[233] The board also feels pressure exerted from the other direction by its Environmental Advisory Council, which directs the RTO on the environmental consequences of its market design and system operations.[234] The council is free of stakeholder encumbrance and able to directly present issues to the board.[235]

5. PJM

PJM's size and scope yield a mixed bag of policies. While some policies promote alternative technologies, others behave to resist progress altogether. PJM, like MISO, suffers from an outdated model for its stakeholder sectors. Generation owners, other suppliers, transmission owners, electric distributors, and end-use consumers are all afforded equal weight in voting, and this pattern has gone unchanged since PJM's inception more than two decades ago.[236] At 20 percent per group, this rough estimation of the relative sectors is alarming, considering renewable energy generation in the United States has doubled since 2008 alone.[237] Moreover, the relative paucity of sectors leads to PJM packing an enormous number of members in each group. The "other suppliers" and "generation owners" sectors, for instance, contain 512 and 347 stakeholders,

229. *See* Welton, *supra* note 16, at App. A.

230. *See id.*

231. NYISO's stakeholder Management Committee is weighted in the following way: Generation Owners: 21.5%; Other Suppliers: 21.5%; Transmission Owners: 20%; End-use Consumers: 20%; and Public Power/Environmental Parties: 17%. *See id*. Thus, the 58% threshold for approval seems to be a deliberate check on the powers of non-generating groups. When aggregated, Transmission Owners, End-use Consumers, and the Public Power sectors fall narrowly short of approving a board action. No board action can take place without the approval of Generation Owners or Other Suppliers.

232. James et al., *supra* note 31, at 8.

233. New York Indep. Sys, Operator, Inc., By-Laws, Article II § 6(b).

234. NEW YORK INDEP. SYS. OPERATOR, INC., ENVIRONMENTAL ADVISORY COUNCIL MISSION STATEMENT (2014), https://www.nyiso.com/documents/20142/1397146/mission_statement.pdf.

235. *See* Dworkin & Goldwasser, *supra* note 26, at 598.

236. *See* PJM Interconnection, L.L.C, Amended and Restated Operating Agreement, § 8.1.1 (2020); Simeone, *supra* note 186, at 3.

237. *See U.S. Renewable Electricity Generation has Doubled Since 2008*, U.S. ENERGY INFO. ADMIN. (Mar. 19, 2019), https://www.eia.gov/todayinenergy/detail.php?id=38752; *but see Transforming PJM is the Key to a Clean Energy Grid*, SUSTAINABLE FERC PROJECT (July 14, 2020), https://sustainableferc.org/transforming-pjm-is-the-key-to-a-clean-energy-grid/ (finding that PJM invests comparatively little in renewable development and builds more fossil fuel generators than other parts of the country).

respectively.[238] By comparison, the average voting sector size for all other RTOs is twenty-two.[239] At PJM's numbers, and without a dedicated alternative resource sector, concerns about diluting voter voice become substantial. As one energy researcher explained, the setup "complicates caucusing, inhibits the ability to reflect the needs of new entrant groups, and results in significant per firm vote dilution."[240]

Still, PJM has protections in place for this problem. For example, energy efficiency providers are permitted to enter whichever of three stakeholder sectors they prefer, allowing for these alternative resources to strategically join voting blocs and influence outcomes.[241] Additionally, PJM has a process that elevates high-priority issues to the forefront of stakeholder awareness.[242] The Enhanced Liaison Committee provides a direct means of communication between any representatives from any sector and the board if the board fails to reach consensus or deems the issue particularly contentious.[243] This is important. Prior to establishing the committee, stakeholders were overwhelmed by the torrent of responsibility, allowing only the most well-resourced members to juggle the influx of changes.[244] This power dynamic put fledgling alternative resources at a competitive disadvantage. Finally and perhaps most importantly, PJM supports minority interests by allowing five or more members to collectively form a User Group.[245] If three-quarters of a User Group agrees, it may submit a proposal to the primary stakeholder committee for consideration.[246] Then, if the stakeholder committee rejects the User Group's proposal, the group may bring the issue directly to the board of directors upon receiving 90 percent internal consensus.[247] From there, the board may advance the issue directly to FERC.[248] Few contemporary RTO policies allow small players such an outsized voice.[249]

238. *Member List*, PJM, https://www.pjm.com/about-pjm/member-services/member-list (last visited Mar. 15, 2022).

239. *See* Welton, *supra* note 16, at App. A.

240. *See* Simeone, *supra* note 186, at 3 (quantifying the vote dilution in the generation and other supplier sectors over time).

241. E4THE FUTURE, *supra* note 173, at 6.

242. *See* PARENT, ET AL., *supra* note 174, at 6–7.

243. *See id.*

244. *See* Simeone, *supra* note 186, at 5.

245. *See* E4THE FUTURE, *supra* note 173, at 6.

246. *See id.*

247. *See id*.

248. *See id*.

249. For example, ISO-NE and NYISO have closed meeting agendas set by board members but, do not have a system comparable to User Groups. *See* Stephanie Lenhart & Dalten Fox, *Participatory Democracy in Dynamic Contexts A Review of Regional Transmission Organization Governance in the United States*, 83 ENERGY RSCH. & SOC. SCI. 102,345 (2022). Even then, RTOs with more open schemes for stakeholders—such as CAISO and SPP—are limited to input and lack a formalized fast track of board access to small groups of likeminded stakeholders. *See id.*

6. SPP

Like PJM, SPP exhibits several governance structures to avoid. And, like MISO, SPP is deeply ingrained within the public utility companies of the fourteen states it presides over.[250] SPP's section 205 filing rights are split between the board and a committee of state entities that handles the planning and pricing of future transmission.[251] Membership voting is also bifurcated. Members are classified as either transmission owners or transmission users.[252] To approve an action, the average of the two groups must surpass 66 percent.[253] In practice, because state agencies and investor-owned utilities can count themselves in both camps, these separate voting blocs likely entrench state influence even more.[254] Meanwhile, state influence in voting is further bolstered by there being fewer than one hundred stakeholders in SPP.[255] This small stakeholder count is understandable: SPP charges members that leave the RTO a "withdrawal fee" of roughly $1 million.[256] Naturally, this scheme dissuades would-be stakeholders from joining SPP, especially if they are relatively new entrants that cannot risk the fee. Still, SPP's open stakeholder process allows nonmembers to provide input into decision making.[257] This openness serves as an important check against a membership structure that is difficult to break into and predisposed to certain interests. And while member and nonmember stakeholders are limited to advisory positions, the board must send proposed changes back through the stakeholders for further input.[258] This heavy reliance on input in a sense mimics the successful model of CAISO, though without the strong insulation of board members.[259] Nevertheless, while effectiveness is uncertain, SPP helps lead the way in deference to stakeholder input.[260]

V. THE RTOS MUST BE RESTRUCTURED

A. Poor Implementation Correlates with Poor Governance Structure

Having summarized each RTO, both in terms of its implementation of Order No. 841 and its relevant governance structure, it is time to compare results. The trend runs in the expected direction: The more vulnerable an RTO is to

250. *About Us*, SW. POWER POOL, https://www.spp.org/about-us/ (last visited Mar. 17, 2022).
251. *See* Welton, *supra* note 16, at App. A.
252. *See id.*
253. Sw. Power Pool, Inc., By-Laws, § 3.9.1 (2020).
254. *See* E4THE FUTURE, *supra* note 173, at 9.
255. *Members & Market Participants*, SW. POWER POOL, https://www.spp.org/about-us/members-market-participants/ (last visited Oct. 24, 2021). For comparison PJM has 335 generation owners in a single of its sectors. *Member List*, PJM, https://www.pjm com/about-pjm/member-services/member-list (last visited Oct. 24, 2021).
256. E4THE FUTURE, *supra* note 173, at 9.
257. *Id.*
258. James et al., *supra* note 31, at 4.
259. *See supra* Part IV.B.1.
260. *See supra* Part IV.B.

incumbent interests, the more likely it is to have given FERC a difficult time in its compliance filings. CAISO, noticeably, has both one of the best governance structures for alternative resources and some of the best implementations of ESRs. Still, it is an imperfect correlation. Take MISO, for example, which has been arguably the most resistant RTO, yet is not the least amenable to alternative resources. That distinction belongs to ISO-NE, whose compliance filings at one point attempted to limit ESRs to one discharge a day.[261] Given this spread, the areas of concern appear to be as follows.

1. Boards Should Be Insulated from Members

Protecting boards from undue stakeholder influence seems to universally benefit the proper integration of alternative resources. CAISO and NYISO do a good job here and have effectively implemented Order No. 841.[262] Both exhibit strong protections—CAISO requires appointment from the California governor, and NYISO's internal elections create a self-perpetuating ingroup.[263] ISO-NE, on the other hand, has ineffectively integrated ESRs into its participation models[264] and is forced to compete against its own stakeholders for filing rights.[265] Moreover, NEPOOL holds sway over the ISO-NE board of directors, as stakeholder endorsement is a prerequisite for election.[266]

This correlation is counterintuitive. Insulating boards from stakeholder interests, in theory, counteracts the responsiveness that FERC envisioned when it reformed the RTOs. The source of this paradox is likely a lesser-of-two-evils phenomenon. FERC can better develop relations with a small, accountable board than it can with a large, diverse, and intractable body of stakeholder interests. Finding the right balance between these two bodies may be key. NYISO seems to do well with an insulated board with light checks on its power.[267] Nevertheless, better insulation from stakeholder influence generally results in boards that better implement orders benefitting alternative resources.

2. Alternative Resource Stakeholders Should Be Broadly Distributed

Interestingly, alternative resources seem to benefit the most when stakeholder sectors are designed to integrate them with other types of generation. Siloing them into a specialized sector, on the other hand, seems to diminish their influence and hinder implementation. For example, both MISO and ISO-NE put solar and wind generation in relatively small membership blocs. In ISO-NE, the

261. *See ISO New England*, *supra* note 122; *Domtar Wisconsin Dam Corp.*, 169 FERC ¶ 62,126-27 (2019).
262. *See supra* Part III.A, D.
263. *See supra* Parts IV.B.1, 2.
264. *See supra* Part III.B.
265. *See supra* Part IV.B.2.
266. *See id.*
267. *See supra* Part IV.B.4.

alternative resources sector is the smallest of all voting groups.[268] Likewise, MISO cordons off independent resources in a separate sector which possesses only 12 percent of the total stakeholder voting power.[269] RTOs with these dedicated sectors saw worse outcomes for implementing alternative resources on the heels of Order No. 841.[270]

Alternatively, NYISO allows its alternative resources to distribute and integrate with its large stakeholder sectors. Presumably, this structure allows further communication and integration of renewable resources with other interests, increasing the likelihood of a cooperative outcome. It also may guard against gerrymandering alternative interests by diminishing their impact in a small sector that will never wield influence. As such, alternative resources do best in a regime where they can strategically choose the sector that will allow them, in aggregate, to exert pressure on the RTO. PJM allows a version of this with energy efficiency providers, but more can be done.

RTOs should be careful not to allow this integration to go unchecked, however. PJM employs a superficially similar system to NYISO, but differs regarding the immense size of its "Generation Owners" and "Other Suppliers" sectors. When these voting blocs reach many hundreds of participants, alternative resources begin to experience heavy vote dilution.[271] The benefits of integrating alternative interests within sectors become overshadowed by the influence of traditional generation interests within those sectors. If PJM is to preserve its large membership, it should consider adjusting the weights of its equally divided voting structure.[272] For example, if PJM augmented the weight of its sizable generation sector,[273] the influence of alternative interests within that sector would grow relative to other sectors. And the change would not be biased in favor of particular generators; traditional interests in that sector would also experience a boost in influence. Indeed, all RTOs should periodically update the weights of their stakeholder sectors in a way that accurately reflects the current landscape of interests.

A few other features can buttress a broadly distributed stakeholder system. Withdrawal fees, such as those employed in SPP,[274] should be eliminated to prevent discouraging smaller players from entering the RTO. RTOs should also establish systems that allow small players to make proposals directly to the

268. *See supra* Part IV.B.2.

269. *See supra* Part B.3.

270. *See supra* Parts III.B, C. MISO suffers from other problems in its implementation of alternative resources, notably dropping nearly all of its five gigawatts of planned renewable projects in the last two years. *See* Jeff St. John, *Midwest Grid Operators Seek to Unlock Clean Energy Transmission on the Seam'*, GREENTECH MEDIA (Sept. 15, 2020), https://www.greentechmedia.com/articles/read/midwest-grid-operators-seek-to-unlock-clean-energy-transmission-on-the-seam.

271. *See* Simeone, *supra* note 186, at 3.

272. *See supra* Part IV.B.5.

273. "Generation owners" contains 512 members. *Id.*

274. *See supra* Part IV.B.6.

board, such as SPP's User Group model.[275] Of course, an extreme solution is to eliminate all impediments to board access, as is the case with CAISO.[276] There, any interest can advise the board without compromising its integrity by directly imposing changes. Thus, heads of the RTOs are forced to engage with low-level technical issues, which some scholars have acknowledged is essential to a workable RTO.[277]

3. State Interests Should Be Deferred to on a Case-by-Case Basis

Whether alternative resources will benefit from the integration of an RTO's purview with that of the states depends on the disposition of those states. In other words, RTOs are more likely to support alternative resources if their constituent states also support alternative resources. Therefore, state interests must be incorporated only to the extent that they create competitive rates.

For example, CAISO, MISO, and SPP are the RTOs most integrated with state interests and utilities, yet CAISO leads the way in integration of ESRs while MISO and SPP rank toward the bottom. This divergence is predictable. California, the only state within CAISO's boundaries, consistently ranks among the states most aggressively implementing green energy.[278] Conversely, MISO's immense boundaries cover Louisiana, Mississippi, and North Dakota, all of which are in the bottom 20 percent of states embracing of green energy.[279] SPP has an even harder time in this regard, covering the most fossil-fuel-dependent continuous stretch of states in the nation.[280] RTOs in these areas would do better to shore up their governance structures from high levels of state and utility influence. This is why some scholars' arguments about increasing RTO responsiveness to state policy preference[281] require more nuance. The solution depends on the unique nature of each region. Deference to states in the footprints of RTOs like MISO and SPP may not create truly competitive environments.

Protection from state influence may also increase efficiency in RTOs that cover wide swaths of the country. In general, the oversight provided by a single RTO eliminates many transmission problems between the states.[282] Coordination problems likely correlate with the number of states represented. Indeed, scholarship has suggested that MISO suffers from attempting to cater to the desires of its fifteen member states.[283] Maintaining a balanced level of state

275. *See id.*
276. *See id.* at B 1.
277. *See* Koch, *supra* note 15, at 599.
278. *See* BERG ET AL., *supra* note 204.
279. *Id.* at vii.
280. *Id.* at vii.
281. *See, e.g.*, Michael Panfil & Rama Zakaria, *Uncovering Wholesale Electricity Market Principles*, 9 MICH. J. ENV'T & ADMIN. L. 145, 178 (2019) (rejecting policies that mitigate state public policy preferences in RTOs).
282. Richard J. Pierce, *Realizing the Process of Restructuring the Electricity Market*, 40 WAKE FOREST L. REV. 451, 493–94 (2005).
283. *See* James et al., *supra* note 31, at 12.

influence in RTO structure will only become more important as single-state RTOs consider expanding.[284]

B. Why are RTOs Arranging Themselves in a Way Hostile to Alternative Resources?

RTOs are ultimately the brainchildren of FERC.[285] And, like FERC, the "just and reasonable rates" mandate transitively imbues their DNA, pushing RTOs to pursue low costs and competitive markets as a preeminent goal. As noted,[286] RTO board members and FERC itself are generally concerned with fair and efficient markets.[287] It is therefore perplexing that these entities sometimes avoid integrating technologies that have the potential to lower rates.[288] This suggests that RTOs' resistance to integration[289] is a bottom-up phenomenon. To be clear, the problem is not that members' influence in RTOs stymies implementation of electric storage in the grid. Rather, the poorly constructed membership systems within some RTOs have resulted in the displacement of FERC's market-based mandate. The RTOs, which were conceptualized as organizations that *take* policy,[290] begin to *make* policy of their own. This dilemma is made more troubling by the fact that RTOs are not truly "independent of any market participant" in the way that courts expect them to be.[291]

This result was inevitable. Because they operate in a unique space between private organizations and government administrations, RTOs have little political accountability and few internal or external checks on their power.[292] This flaw does not directly lead to poor governance structure; however, it makes it likelier that problems become entrenched as incumbent powers tweak rules in their favor and then use the resulting windfalls to again further their influence. Indeed, the fossil fuel industry holds a strong grip over RTOs across the nation.[293] Without adequate oversight, it is far-fetched to imagine that many RTOs will concern

284. *See* David Roberts, *California's Huge Energy Decision Link its Grid to its Neighbors, or Stay Autonomous?*, VOX (Aug. 23, 2018), https://www.vox.com/energy-and-environment/2018/7/31/17611288/california-energy-grid-regionalization-caiso-wecc-iso (examining how CAISO has considered expanding to other states and noting how experts view the future of RTOs as inevitably headed toward regionalization).

285. *See generally supra* Part I.B.

286. *See supra* Parts II.A, V.A.1.

287. *See* Scott Hempling, *Inconsistent with the Public Interest FERC's Three Decades of Deference to Electricity Consolidation*, 39 ENERGY L. J. 233, 268–69 (2018).

288. *See, e.g.*, Copp et al., *supra* note 104 (showing how storage aggregation can help RTOs save costs and improve reliability with energy arbitrage and frequency regulation).

289. *See supra* Part III.B, C, F.

290. *See* Welton, *supra* note 16, at 239; Stafford & Wilson, *supra* note 218, at 229.

291. *Neb. Pub. Power Dist. V. FERC*, 957 F.3d 932, 935 (8th Cir. 2020).

292. *See* Panfil & Zakaria, *supra* note 281, at 182.

293. *See* Danny Cullenward & Shelley Welton, *The Quiet Undoing How Regional Electricity Market Reforms Threaten State Clean Energy Goals*, 36 YALE J. ON REG. 106, 120 (2018) ("RTOs have decided that protection of investor interests—in other words, the assurance of certain levels of profit for fossil fuel generators that might have prevailed in the absence of state preferences for clean energy—trumps respect for democratically determined state requirements for clean air and climate safety.").

themselves with true competition, let alone value diversity of energy sources.[294] Of course, the consequences of these failures are not limited to Order No. 841. Take, for example, PJM's 2020 redesign of its capacity market, which attempted to stymie competition by making it harder for state-supported resources to enter the market. PJM carefully defined this exclusion to encompass subsidized renewable resources, but not subsidized fossil fuel resources.[295]

For these reasons, a pragmatic solution must abandon the possibility that RTOs may solve their problems by themselves. The disparity between FERC's limited authority to govern RTOs[296] and the influence of incumbent energy providers is too great. Closing this gap will not entirely resolve the issue, either. Apart from stakeholder influence, RTOs have an intrinsic institutional bias toward self-preservation. Their concerns over reliability, rate stabilization, and maintaining good relationships with various players often stand in the way of integrating alternative technologies.[297] Moreover, RTOs' principal function as transmission overseers may supersede the dutiful implementation of transmission-adjacent technologies, such as energy demand management resources and ESRs. As Professor Shelley Welton explained, RTO employees may have vanishingly little expertise with non-transmission alternatives, even when they are not skeptical of them.[298]

These predispositions are likely intractable. If RTOs continue to exist,[299] they will always act in their own self-interest. In that case, there is all the more reason to cleanse the RTOs of the prejudice against alternative resources and fair competition that is crystalized in their governance practices. Only then will RTOs truly embody the "just and reasonable" mantra of FERC. And restructuring may go even further. Although FERC has no mandate to order RTOs to consider climate change,[300] RTOs, when reworked to better accommodate different interests, may consider it on their own. Some scholarship has asserted that RTOs have the legal authority to approve these changes.[301]

Increasing membership diversity, transparency, and permeability for non-stakeholders may diminish the prejudice against renewables and fair competition to some degree.[302] However, the central nervous systems of RTOs reside in their

294. *See* Emily Hammond & David B. Spence, *The Regulatory Contract in the Marketplace*, 69 VAND. L. REV. 141, 212 (2016).

295. *See* Calpine Corp., Dynegy Inc. v. PJM Interconnection, 171 F.E.R.C. ¶ 61,034 (2020); Welton, *supra* note 16, at 246–47.

296. *See supra* Part I.C.

297. *See* Dworkin & Goldwasser, *supra* note 26, at 562.

298. Shelley Welton, *Non-Transmission Alternatives*, 39 HARV. ENV'T. L. REV. 457, 490 (2015).

299. Some scholarship has explored the possibility of either abandoning RTOs or severely limiting their influence. *See, e.g.*, Welton, *supra* note 16, at 256–66 (positing that the energy grid may benefit from reducing RTO oversight in capacity markets and from eliminating RTOs altogether).

300. *See* Rich Glick & Matthew Christiansen, *FERC and Climate Change*, 40 ENERGY L. J. 1, 46 (2019).

301. *See* Ari Peskoe, *Easing Jurisdictional Tensions by Integrating Public Policy in Wholesale Electricity Markets*, 38 ENERGY L. J. 1, 19–20 (2017).

302. *See* James et al., *supra* note 31, at 19.

structures. Scholarship has shown that governance structures of a given RTO ripple through every decision that the organization makes.[303] It is time for FERC to take control of this fulcrum.

C. Why it Might Be a Good Time for FERC to Try Reorganizing the RTOs Again

Given this landscape, FERC has its work cut out for it. It should push against the 2004 decision in *CAISO v. FERC* by attempting a direct restructuring of RTOs.[304] This is no easy undertaking. The D.C. Circuit interpreted FERC's inability to mandate RTO governance structure with the damning phrase "crystal clear."[305] However, trends and forces distinguish the current moment from 2004. The practical realities of current technologies, changing legal postures, and the existential threat of climate change have created an environment much more in need of heightened FERC authority. *CAISO v. FERC* may be ripe for overruling.

1. The Technology Has Changed

The imperative begins with the fact that the energy grid shows little indication of remaining tied to traditional generation, like coal. The FPA is a century-old document that attempted to sensibly delineate power in a world dominated by coal and relatively rudimentary forms of generation and transmission.[306] Since then, the energy sector has seen dramatic changes. There is an argument to be made that the energy sector has changed just as radically since 2004's *CAISO v. FERC* decision. Over the last decade, the growth of renewable energy generators has outpaced that of natural gas generation by a factor of twenty-five.[307] Spending on demand management programs like demand response reached $10 billion in 2014.[308] Companies like Google have proliferated consumer products that react live to peak hours on the grid and allow consumers to draw from clean energy sources at will,[309] blurring the lines as to which end of the energy market holds the reins of supply. On the opposite end,

303. Simeone, *supra* note 186, at 1 ("The RTO/ISO governance system has the potential to influence almost every aspect of the organization's functioning. . . . The degree to which different stakeholder interests are considered and balanced in such processes can influence what is recommended to FERC and eventually implemented.").

304. *CAISO,* 372 F.3d 395, 400 (D.C. Cir. 2004).

305. *Id.*

306. *See Energy Sources Have Changed Throughout the History of the United States*, U.S. ENERGY INFO. ADMIN. (Jul. 3, 2013), https://www.eia.gov/todayinenergy/detail.php?id=11951.

307. Mark Haggerty, *The Evolution of U.S. Electricity Generation Capacity*, HEADWATERS ECONS. (April 22, 2020), https://headwaterseconomics.org/economic-development/evolution-electricity-generation/.

308. Clark W. Gellings, *Evolving Practice of Demand-Side Management*, 5.1 J. MOD. POWER SYS. & CLEAN ENERGY 1, 3 (2017).

309. *See* Jennifer Pattison Tuohy, *Nest Thermostats Get New Energy Management Tricks*, THE VERGE (Oct. 6, 2021), https://www.theverge.com/2021/10/6/22711307/google-nest-renew-nest-thermostat-service.

large scale energy planners ambitiously hope to create a "smart grid" that fully integrates all players and consumers in the energy sector into one efficient and communicative whole.[310] Needless to say, these developments raise novel and potentially intractable questions for the current division of state and federal jurisdiction.

Let us return to the ESRs at issue in Order No. 841. Despite being disparate and small scale, behind-the-meter[311] energy resources make up more than half of the United States' storage capacity.[312] And, as both renewables and the need for blackout-tolerant datacenters grow, behind-the-meter ESRs become only more important.[313] Yet they are difficult for RTOs to properly account for.[314] These ESRs are positioned at points on the energy grid once considered completely out of reach for energy providers.[315] Reinjecting energy back into the market poses hard questions for what is considered wholesale and what is considered retail.[316] As this energy crosses back through the transmission lines of RTOs, it calls into question what the RTO is actually regulating.[317] No longer is the RTO an overseer of purely wholesale energy. Thus, no longer is the RTO operating within FERC's limited jurisdiction.[318] For FERC to continue keeping its hands off the wheel is for it to relinquish its duty as overseer of just and reasonable rates. Instead, that power goes to the undemocratically elected and politically unaccountable RTO. FERC would be wise to reel these entities more squarely into its oversight.

Moreover, new technologies create new opportunities for deception. As technology continues to develop, RTOs will respond to novel alternative

310. *See Grid Modernization and the Smart Grid*, OFF. OF ELEC., https://www.energy.gov/oe/activities/technology-development/grid-modernization-and-smart-grid (last visited Mar. 15, 2022).

311. "Behind-the-meter" resources refer to electricity generators that supply a single building, facility, or campus. *See* Islam Safak Bayrama & Taha Selim Ustunb, *A Survey on Behind the Meter Energy Management Systems in Smart Grid*, 72 RENEWABLE & SUSTAINABLE ENERGY REVS. 1208, 1208 (2017). Their namesake comes from the fact that they are for private use and not metered by utilities. *See id.*

312. *See* Gavin Bade, *US Energy Storage Market Expected to More Than Double in 2019, Report Says*, UTIL. DIVE (Mar. 6, 2019), http://www.utilitydive.com/news/us-energy-storage-market-expected-to-more-than-double-in-2019-report-says/549890/.

313. *See* Yuanxiong Guo & Yuguang Fang, *Electricity Cost Saving Strategy in Data Centers by Using Energy Storage*, 24.6 INST. OF ELEC. & ELECTRONICS ENGS. 1149, 1149 (2013) ("With the popularity of cloud computing, more and more data centers are envisioned to be built in the future in order to meet the growing demand for large-scale computing resources. . . . [A] largely ignored factor is the existence of energy storage facilities within data centers, which can provide further cost saving if utilized intelligently in combination of the previous techniques.")

314. *See* Jeff St. John, *Game-Changer' FERC Order Opens Up Wholesale Grid Markets to Distributed Energy Resources*, GREENTECH MEDIA (Sept. 17, 2020), https://www.greentechmedia.com/articles/read/ferc-orders-grid-operators-to-open-wholesale-markets-to-distributed-energy-resources (quoting FERC Commissioner Richard Glick, who noted that RTOs currently lack visibility into behind-the-meter distributed energy resources).

315. *See id.*

316. *See* Christiansen & Macey, *supra* note 6, at 1378–79.

317. *See id.*

318. *See id.*

resources with ever more complex compliance filings.[319] Few individuals will have the expertise to evaluate these filings.[320] In this technical and nearly impenetrable area, anticompetitive policies and simple implementation will presumably become more difficult to distinguish. The solution is to correct the root of the problem: the entities that enact these changes. Ensuring good governance structure is necessary when only the writers of a compliance filing can truly understand its implications.

Similar issues are on the horizon. Implementation of the even more ambitious Order No. 2222 is underway, yet encumbered by the myriad technical problems associated with integrating a suite of new technologies into the grid. Order No. 2222 is similar to 841 but instead aims to integrate *all* distributed energy resources,[321] an umbrella term that includes ESRs. Private solar arrays, windfarms, and microturbines also fall under this category.[322] Like the legal problems with implementing Order No. 841,[323] distributed energy resources disturb clear notions of jurisdiction.[324] Even bigger reforms await after Order No. 2222. FERC recently announced an initiative to rethink the cost allocation for transmission infrastructure as it is replaced in anticipation of the smart grid.[325] Hopefully, these ambitious moves will incite a total overhaul of the system.

2. The Legal Landscape Has Changed

The need for structural reform also coincides with a sea change in the Supreme Court's jurisprudence on federal and state jurisdiction. As noted earlier,[326] recent decisions indicate that the Supreme Court is abandoning the clear, delineated approach of the past. Prior to the 2010s,[327] the Court sharply distinguished between electricity sales meant for resale and those meant to be used by the immediate buyer.[328] This "bright line" approach allowed no

319. *See* Lucille Flinchbaugh & Jane Rueger, Perkins Coie, *FERC Plants the Seeds for DER Aggregators' Participation in the RTO/ISO Markets Work Must Be Done to See What Will Grow*, JD SUPRA (Sept. 24, 2020), https://www.jdsupra com/legalnews/ferc-plants-the-seeds-for-der-23685/ (referring to the inevitably "complex and contentious" compliance filings RTOs will submit to comply with Order No. 2222 and integrate distributed energy resources).

320. *See Energy and Water Development Appropriations for 2006 Hearings Before the H. Subcomm. on Energy and Water Dev. Of the H. Comm. on Appropriations,* 119th Cong. 329 (2005) (FERC, FY 2006 CONG. PERFORMANCE BUDG. REQUEST) ("RTOs are in a unique position to understand the grid's technical requirements and market needs.").

321. *See* Order No. 2222, *supra* note 60, at P 1.

322. *See id.*

323. *See supra* Part III.

324. *See* Christiansen & Macy, *supra* note 6, at 1380–81.

325. *See FERC Begins Reform Process to Build the Transmission System of the Future*, FERC (July 15, 2021), https://www.ferc.gov/news-events/news/ferc-begins-reform-process-build-transmission-system-future.

326. *See supra* Part II.A.

327. *See* Rossi, *supra* note 52, at 231.

328. *See* Christiansen & Macy, *supra* note 6, at 1372.

exceptions, even if practical realities made a ruling awkward to implement.[329] Moreover, the Court deemed this line crossed if a policy "aim[ed] at" influencing markets in another jurisdiction.[330]

The Court, however, has seemingly replaced this approach with one of conflict preemption. This case-by-case approach is triggered when state and federal law are completely irreconcilable with one another. In this instance, courts rule narrowly on the facts of the case to determine if the proposal fits with a bill's legislative intent. If federal jurisdiction is valid, it trumps state law.[331] This method is incompatible with the plenary jurisdiction of the past.[332] Conflict preemption offers courts more discretion to approve actions appropriate for the facts. This is the light in which *CAISO v. FERC* should be reconsidered.

In *CAISO*, FERC attempted to replace the governing board selection of CAISO with a new, federally mandated process.[333] The D.C. Circuit halted this attempt.[334] It justified its limited reading of FERC's authority on a textualist reading of the term "practice." The court held that the agency's authority to find "any rule, regulation, *practice*, or contract affecting [an unreasonable wholesale] rate"[335] did not allow FERC to reform CAISO's governance structure.[336] Instead, the court found that Congress's intent to limit "practices" was clear.[337] Thus, FERC's action failed to satisfy the first step of the two-part *Chevron* review.[338] Moreover, ruling otherwise would allow FERC to regulate an "infinitude of practices affecting rates and service."[339] Judge Sentelle, writing for the court, criticized the potentially drastic implications of FERC's attempted reorganization. He noted that this power would allow FERC to exercise control over "whatever one might imagine."[340]

However, in a world of conflict preemption between state and federal actors, worry regarding FERC's expansive authority is less relevant. The bright line no longer serves as the final word. Judges may delineate the boundaries of FERC's authority by comparing competing statutes and vacancies in power to check for preemption.[341] The D.C. Circuit's concern over FERC's jurisdiction expanding

329. *See id.*; Panhandle E. Pipe Line Co. v. Pub. Serv. Comm'n, 332 U.S. 507, 517 (1947).
330. *See* Christiansen & Macy, *supra* note 6, at 1373.
331. *See* Gade v. Nat'l Solid Wastes Mgmt. Ass'n, 505 U.S. 88, 98 (1992)
332. *See* Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 215–16 (1964).
333. *See CAISO*, 372 F.3d 395, 397–98 (D.C. Cir. 2004).
334. *See id.* at 404.
335. 16 U.S.C. § 824e(a) (emphasis added).
336. *See CAISO*, 372 F.3d at 400.
337. *Id.*
338. *See* City of Arlington, Tex. v. F.C.C., 569 U.S. 290, 296 (2013). *Chevron* doctrine proceeds with two questions. First, under ordinary tools of statutory interpretation, the court must ask whether Congress has "spoken to the precise question at issue." *Id*. (quoting *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842 (1984)). If it has not, the court must ask whether the agency's action is based on a reasonable, "permissible construction of the statute." *Chevron*, 467 U.S. at 842.
339. *CAISO*, 372 F.3d at 401.
340. *Id.* at 403.
341. *See* Rossi, *supra* note 52, at 230, 246.

infinitely—not to mention the "parade of horribles"[342] that would follow—is a red herring when those boundaries will be mapped in detail by conflict preemption. The doctrine has effectively added grip to this once slippery slope. If FERC attempts to revise RTOs again, the court's reasoning should no longer hold.

Moreover, the D.C. Circuit did not leave its interpretation of "practices" under step one of *Chevron* review as the final word on FERC's authority. It acknowledged that courts vest other federal agencies, such as the Securities and Exchange Commission, with the power to regulate corporate structures.[343] The reason for this different approach to *Chevron*, the court concluded, is "expertise in matters corporate."[344] But here the court showed its hand. If relevant expertise is all that is needed to overcome the first step of *Chevron*, it is not an impossible burden for FERC to overcome. This rings even more true in an era of changing regimes of jurisprudence.

At the very least, the recent shift in energy jurisprudence calls for a reexamination of FERC's previously conceived limits. Each application of preemption doctrine is rooted in the specific facts that create tension between federal and state regulation. The approach is new, as are the facts themselves. *EPSA* demonstrated that the FPA is a living document meant to evolve with the state of the grid.[345] That state is currently defined by disparate and emergent technologies in need of a level playing field and a centralizing force. It is also defined by "systemic anticompetitive behavior" that FERC has historically had authority to stamp out.[346]

Understandably, RTOs may feel threatened by a regime of conflict preemption and shifting jurisprudence. They exist partly to meld state and federal authority into a coherent workable whole.[347] Conflict preemption, to some degree, displaces this responsibility. It relegates RTOs to a role of managing transmission and wholesale rates instead of acting as an ad hoc decision maker, like many have assumed. Courts now recognize the "steady flow of jurisdictional disputes" that arises from the "inextricable link[]" between wholesale and retail markets.[348] By tackling these problems as they arise, litigation has presumably absorbed some of the responsibility previously held by RTOs. It is therefore unsurprising that not all have conceded to FERC's newfound powers. Regardless, they, like all players in the energy grid, must adapt to the new approach of the courts.

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342. *Id.*

343. *See id.* at 404.

344. *Id.*

345. *See* Eisen, *supra* note 32, at 1788 ("*FERC v. EPSA* highlights a resilient statute: the FPA's terms are not frozen in amber, as the statute has adapted to changing market realities.").

346. Transmission Access Pol'y Study Grp. v. FERC, 225 F.3d 667, 685 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

347. *See* Welton, *supra* note 16, at 222.

348. *EPSA,* 577 U.S. 260 (2016).

3. The Level of Existential Threat Has Changed

Finally, as with many issues adjacent to energy, the situation is framed by climate change. Here, too, climate change must inform a new approach to regulating RTOs. The stifling stakeholder structures of many RTOs may buckle under the influx of new alternative resource members appearing in response to climate change.[349] Moreover, as public support for decarbonization rallies amid a more noticeably changing climate,[350] environmental groups will likely grow only more emboldened to change aspects of the electric grid. This environment makes it difficult for RTOs to justify discriminatory practices founded on the interests of subsidized, geriatric generators. The only realistic option for mitigating this problem is for FERC to directly intervene into RTO practices. Courts, hopefully sympathetic to the existential problems of climate change, may reconsider the boundaries set by CAISO and allow FERC to more expansively decarbonize the grid.

If courts do, they should seize the moment by allowing FERC to reform RTOs and thus actualize its progress in the fight against climate change. The FPA does not require that FERC consider the climate when regulating rates.[351] Moreover, Congress has made no efforts to amend the FPA to include, for example, a mandate that the Commission consider the externalities of fossil fuels in its calculation of fair market rates. It is unlikely that it will.[352] Given the enormity of the U.S. wholesale energy market, it is tragic to think about the level of decarbonization not being realized without such a mandate. Therefore, the Commission will have to continue making strides with only its "just and reasonable" rates standard. That is what makes FERC's recent actions so remarkable and important. It was not a given that the Commission's mandate for low prices would open the gates for green technology to proliferate. It would be a shame to see these benefits truncated. Instead, FERC should capitalize on shifting tides.

CONCLUSION

This Note set out to evaluate the implementation problems surrounding Order No. 841 as they relate to the governance structures of RTOs. It argued that, in RTOs, poor implementation of the order roughly correlates with governance structures that prop up traditional energy interests to the detriment of alternative resources. FERC can and should tackle these problems by directly restructuring RTOs. It should protect boards of directors from undue stakeholder influence,

349. *See* Lenhart & Fox, *supra* note 249, at 11–12 ("Today, interests are more heterogeneous making traditional sectors less relevant, and the necessity for innovation suggests a need for venues that enable dialogue among stakeholders that understand the capabilities and constraints of new technologies, as well as the preferences of consumers and communities.")

350. *See* Cary Funk & Brian Kennedy, *The Politics of Climate*, PEW RSCH. CTR. 53 (Oct. 14, 2016).

351. *See* 16 U.S.C. § 824d.

352. *See* Hammond & Spence, *supra* note 294, at 193–94.

distribute alternative resource interests across a wide variety of sectors, and defer to states so long as they promote fair competition. By doing so, FERC will help the United States realize the gains in efficiency and emissions reduction made possible by a financially competitive electricity market. Doing otherwise would be a missed opportunity with potentially catastrophic consequences. Regardless, the stage is set, and legislatures are taking note of the problem.[353] In equal measures, it is a matter of time and action.

353. *See* Peter Maloney, *The Flip Side of FERC's Landmark Storage Order A Call for States to Take Action*, UTIL. DIVE (Mar. 6, 2018), https://www.utilitydive.com/news/the-flip-side-of-fercs-landmark-storage-order-a-call-for-states-to-take-a/518497/.

We welcome responses to this Note. If you are interested in submitting a response for our online journal, *Ecology Law Currents*, please contact cse.elq@law.berkeley.edu. Responses to articles may be viewed at our website, http://www.ecologylawquarterly.org.