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Evolving Jurisdiction Under the Federal Power Act: Promoting Clean Energy Policy

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ABSTRACT

In response to an emerging electricity sector, Congress passed the Federal Power Act (FPA) in 1935 and enshrined a division of jurisdiction between the federal government and the states. Federal jurisdiction would control wholesale electricity and transmission while state jurisdiction would control retail electricity. While Congress intended to establish a jurisdictional bright line, uncertainties in applying this division lie at the heart of some of today's most important state and federal renewable energy policy challenges. Significant regulatory, structural, and technological changes since the FPA's passage have tested the adaptability and coherence of this jurisdictional division. To explore the underlying areas of tension that have emerged, I examine two state policies aimed at promoting renewable energy, net metering and feed-in tariffs, and one federal policy, the integration of demand response into wholesale electricity markets. These examples reveal how a strict reading of the retail-wholesale jurisdictional division is ill-suited for the modern electricity sector. They also show how strategic efforts by the Federal Energy Regulatory Commission (FERC), together with state legislatures and public utility commissions, have stretched the limits of the FPA in order to promote clean energy policies. Together these considerations demonstrate that clarifying jurisdictional lines will involve unexpected tradeoffs in substantive policy. This Comment builds on existing literature in several important ways. Some scholars have examined the jurisdictional tensions that underlie individual policies such as net metering, feed-in tariffs, and demand response. Others have considered the congruence of jurisdictional authority, institutional capacity, and political exigency among diverse levels of decisionmaking. This Comment converges these lines of scholarship to provide a thorough account of contemporary challenges confronting the FPA's jurisdictional division and how they implicate clean energy policy at both state and federal levels. This account is particularly relevant today, given the U.S. Supreme Court's recent decision in *FERC v. Electric Power Supply Association* condoning a pragmatic and functional understanding of FERC's exercise of federal authority over demand response resources.

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INTRODUCTION

Beginning with the Federal Power Act of 1935 (FPA),[1] the U.S. Congress has sought "to draw a bright line easily ascertained, between state and federal [regulatory] jurisdiction" in the electricity sector.[2] This jurisdictional divide endures despite needing to confront and respond to dramatic changes in the electricity sector. This Comment seeks to describe these tensions as they arise in three salient, contemporary challenges in federal and state electricity policy. Confronting the regulatory, structural, and technological changes to the electricity sector has tested the adaptability and continued viability of this jurisdictional line and further obfuscated its division. While logical for many decades, this divide is increasingly difficult to maintain. This is especially the case when considering the demands of climate change and the need to significantly decarbonize the electricity sector, which will require innovative state and federal policies.

For most of the twentieth century, the electricity sector has been dominated by vertically integrated, investor-owned utilities (IOUs).[3] These IOUs provide bundled electricity service, controlling electricity generation, transmission, and retail distribution.[4] In 1935, Congress passed the FPA and explicitly delineated areas for federal and state jurisdiction. Specifically, it charged the Federal Power Commission (the agency that preceded the Federal Energy Regulatory Commission (FERC)) with federal authority over interstate wholesale sales of electricity and electricity transmission in interstate commerce.[5] Thus, the grant of authority in the FPA codified a jurisdictional separation between federal authority over wholesale markets and state authority over retail markets.

Since then, there have been significant developments in the electricity sector including a reconceptualization of the regulatory approach, technological advancement, and growth in renewable energy generation requiring integration into the market.[6] The vertically integrated market structure when the FPA was enacted began to erode with the passage of the Public Utility Regulatory Policies

1. Federal Power Act, ch. 687, 49 Stat. 863 (1935) (codified as amended at 16 U.S.C. §§ 791–828c (2012)).
2. Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 215 (1964).
3. *See* William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1628–29 (2014).
4. *Id.* at 1628.
5. 16 U.S.C. § 824(a) (2012).
6. Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 43 (2014).

Act of 1978 (PURPA),[7] which began the transition to competition in electricity markets.[8] The Energy Policy Act of 1992[9] furthered restructuring and laid the foundation for FERC to issue Order 888 in 1996,[10] establishing competitive wholesale electricity markets.[11] Breaking apart the vertically integrated utility structure with competitive wholesale markets dramatically increased the importance of federal regulatory authority in those areas of the country that embraced competition. Technological advances have also enabled dramatic growth in electricity generation from renewable sources—including distributed generation[12]—altering the supply mix. For instance, the share of electricity generation from renewable sources, excluding hydroelectric, has grown from just 2.1 percent in 1990[13] to 6.2 percent in 2013,[14] and renewable sources, including hydroelectric, accounted for around 13 percent of total generation in 2014.[15] In many ways, concerns over greenhouse gas emissions and climate change have increasingly begun to influence and shape federal and state policies to decarbonize the electricity sector.

These regulatory, structural, and technological changes have tested the adaptability and coherence of the FPA's jurisdictional division. To explore the underlying areas of tension that have emerged, I examine two state policies aimed at promoting renewable energy, net metering and feed-in tariffs, and one federal policy, the integration of demand response into wholesale electricity markets.

7. Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (1978) (codified as amended in scattered sections of 7 U.S.C., 15 U.S.C., 16 U.S.C., 30 U.S.C., 42 U.S.C., and 43 U.S.C. (2012)) [hereinafter PURPA].
8. Freeman & Spence, *supra* note 6, at 45.
9. Energy Policy Act of 1992, Pub L. No. 102-486, 106 Stat. 2776 (codified as amended in scattered sections of 12 U.S.C., 16 U.S.C., 25 U.S.C., 26 U.S.C., 30 U.S.C., 42 U.S.C. (2012)).
10. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities (*Order 888*), 61 Fed. Reg. 21,540, 21,552 (May 10, 1996) (to be codified at 18 C.F.R. pts. 35, 385) (requiring functional unbundling of utilities, separation of transmission and electricity sales operations, but not corporate or legal unbundling).
11. Freeman & Spence, *supra* note 6, at 45–46.
12. *See* AM. PUB. POWER ASS'N, DISTRIBUTED GENERATION: AN OVERVIEW OF RECENT POLICY AND MARKET DEVELOPMENTS 5 (2013), http://www.publicpower.org/files/PDFs/Distributed%20Generation-Nov2013.pdf.
13. *See* ENERGY INFO. ADMIN., U.S. DEP'T. OF ENERGY, ELECTRIC POWER ANNUAL 2001 12 tbl.1.1 (2003), http://www.eia.gov/electricity/annual/archive/03482001.pdf [hereinafter ELECTRIC POWER ANNUAL 2001].
14. *See* ENERGY INFO. ADMIN., U.S. DEPT. OF ENERGY, ELECTRIC POWER ANNUAL 2013 tbl.1.1 (2015), http://www.eia.gov/electricity/annual/pdf/epa.pdf [hereinafter ELECTRIC POWER ANNUAL 2013].
15. *How Much U.S. Electricity Is Generated From Renewable Energy?*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/energy_in_brief/article/renewable_electricity.cfm [http://perma.cc/C5JP-88XD] (last updated June 12, 2015).

These are contemporary policy challenges in which state and federal governments have been forced to contend with adapting this jurisdictional division to emerging conditions. They show how the "bright line" has become blurred and difficult to maintain.[16] Yet they also show how this adaptation has been strategic. For net metering and feed-in tariffs, FERC has attempted to limit its own jurisdiction in order to allow more robust state policies promoting renewable energy. Conversely, in the context of demand response FERC has sought to exercise more expansive federal authority in the face of limited action by states on the issues of rate design and retail demand response, thereby impinging on state jurisdiction over retail sales.

Net metering complicates this jurisdictional line by allowing retail customers to be both purchasers and producers of electricity through distributed generation technology, such as rooftop photovoltaic systems. Retail customers purchase electricity from utilities—an activity within the domain of state jurisdiction—while simultaneously acting akin to wholesale producers (albeit small-scale ones) by supplying electricity back to the grid—an activity within the domain of federal jurisdiction. In its two principal decisions addressing the jurisdictional questions created by net metering,[17] FERC has maintained that it will not assert federal jurisdiction as long as there is no net sale of electricity by a customer over the relevant billing period.[18] There is some evidence, however, that courts may view this regulatory abdication as problematic[19] and as a matter of principle it is difficult to justify predicating jurisdiction on the length of the netting period.[20]

Similarly, application of the FPA's jurisdictional divide has shaped state efforts to promote renewable energy generation through price support mechanisms such as feed-in tariffs. Popularized by their successful implementation in Germany,[21] feed-in tariffs provide renewable energy generators with a fixed or

16. Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 215 (1964).
17. *See* Sun Edison L.L.C., 129 FERC ¶ 61,146 (2009); MidAmerican Energy Co., 94 FERC ¶ 61,340 (2001) .
18. *Sun Edison L.L.C.*, 129 FERC at 61,620; *see also* Steven Ferrey, *Solving the Multimillion Dollar Constitutional Puzzle Surrounding State "Sustainable" Energy Policy*, 49 WAKE FOREST L. REV. 121, 130 (2014).
19. *See generally* Calpine Corp. v. Fed. Energy Regulatory Comm'n, 702 F.3d 41 (D.C. Cir. 2012); S. Cal. Edison Co. v. Fed. Energy Regulatory Comm'n, 603 F.3d 996 (D.C. Cir. 2010). In both of these opinions, the D.C. Circuit addressed FERC's jurisdiction over the netting of station power (electricity used by a generator for activities on-site such as heating, lighting and air conditioning). Since FERC only has jurisdiction over wholesale electricity sales and station power concerns retail sales, the court maintained that FERC lacks jurisdiction over netting practices. *See Calpine*, 702 F.3d at 50.
20. *See infra* Part II.A.
21. *See generally* Lincoln L. Davies & Kirsten Allen, *Feed-In Tariffs in Turmoil*, 116 W. VA. L. REV. 937 (2014); Katherine D. Kelly, Note, *Don't Hide Behind Statutory Roadblocks: How the United*

predetermined price that offers a premium above the market price of electricity.[22] Thus the primary mechanism of a feed-in tariff implicates wholesale electricity prices of renewable energy, which lie squarely within federal jurisdiction. FERC initially held that states could only implement feed-in tariffs to the extent they are integrated into a state's determination of avoided costs under PURPA.[23] This is because PURPA modified the jurisdictional division by granting states the authority to determine wholesale rates for qualifying facilities, equal to avoided costs, in the first instance. FERC then elaborated that states could use "a multi-tiered avoided cost rate structure" that takes into account public policy requirements such as renewable portfolio standards.[24] Thus FERC recognized the opportunity for states to structure feed-in tariffs, through setting avoided costs with a rate premium, to support renewable energy generation within the confines of PURPA.[25] In so doing, however, FERC has strained the limits of the avoided costs statutory requirement under PURPA[26] and partially surrendered its backstop authority under the FPA to ensure all rates are "just and reasonable."[27]

Mirroring the jurisdictional challenges posed by state net metering policies, FERC confronted the limitations of its wholesale jurisdiction by attempting to integrate demand response providers into wholesale electricity markets. As a way to decrease electricity demand, demand response offsets or displaces

States Can Resolve Conflicts to Implementing the German Feed-In Tariff Model and Contribute to International Efforts to Control Climate Change, 50 COLUM. J. TRANSNAT'L L. 726 (2012); Brad A. Kopetsky, Comment, *Deutschland Über Alles: Why German Regulations Need to Conquer the Divided U.S. Renewable-Energy Framework to Save Clean Tech (and the World)*, 2008 WIS. L. REV. 941 (2008); Bradley Motl, Comment, *Reconciling German-Style Feed-In Tariffs With PURPA*, 28 WIS. INT'L L.J. 742 (2011).

22. Michael Dorsi, *Clean Energy Pricing and Federalism: Legal Obstacles and Options for Feed-In Tariffs*, 35 ENVIRONS: ENVTL. L. & POL'Y J. 173, 180 (2012); Kaylie E. Klein, Comment, *Bypassing Roadblocks to Renewable Energy: Understanding Electricity Law and the Legal Tools Available to Advance Clean Energy*, 92 OR. L. REV. 235, 260 (2013).
23. Cal. Pub. Utils. Comm'n, 132 FERC ¶ 61,047, 61,338 (2010) (order on petitions for declaratory order), *reh'g denied*, 133 FERC ¶ 61,059 (2010).
24. Cal. Pub. Utils. Comm'n, 133 FERC ¶ 61,059, 61,266 (2010).
25. Kelly, *supra* note 21, at 762.
26. *See, e.g.*, Robert F. Shapiro, *Federal Energy Regulatory Commission Opens the Door to Feed-In Tariffs in the United States*, CHADBOURNE (Nov. 2011), http://www.chadbourne.com/FERC_Feed-In_Tariffs_projectfinance [http://perma.cc/5ZBD-6D5J] ("In other words, if the state says that a utility has to buy 10% geothermal power under PURPA, the avoided costs of a utility do not have to include the alternative costs of other technologies. Even FERC recognized that it is stretching on this one, so, for good measure, it overruled the Southern California Edison decision to the extent that it 'can be read' to require all sources in the determination of an avoided cost rate.").
27. 16 U.S.C. § 824d(a) (2012) (requiring that "[a]ll rates and charges made, demanded, or received by any public utility for or in connection with the transmission or sale of electric energy subject to the jurisdiction of the Commission . . . be just and reasonable").

generation of electricity, especially from high-polluting sources during peak times, through reduced electricity use.[28] The question of how demand response implicates jurisdiction is complex because, just as net metering allows retail customers to become wholesale generators, demand response allows retail customers to provide services (through reducing their electricity use) that are a direct substitute to wholesale generation. FERC first simply required regional operators (ISOs and RTOs) to "[a]ccept bids from demand response resources," permitting demand response aggregators to bid on behalf of a group of retail customers.[29] This effectively opened the door to demand response providers participating in wholesale power markets to receive compensation for changing electricity demand to balance loads.[30] FERC then created a mechanism to compensate demand response providers at "the locational marginal price"[31] of electricity, the price traditionally used to compensate wholesale electricity generators.[32] FERC initially confronted its jurisdictional limits when the D.C. Circuit invalidated its efforts to essentially connect the retail and wholesale markets, finding Order 745 beyond FERC's statutory authority.[33] But the U.S. Supreme Court ultimately reversed this decision.[34]

These policy innovations show the many ways in which the jurisdictional division of the FPA poses serious challenges for regulating the electricity sector of the twenty-first century. As an initial matter, they at least suggest that a strict reading of the retail-wholesale division should be rethought, and possibly replaced, with jurisdictional architecture that is clear, coherent, delineated, and attune to modern realities. Yet these policy challenges also show how FERC, state legislatures, and public utility commissions have partnered, sometimes adversarially and sometimes cooperatively, to stretch and reshape jurisdictional limits and areas of overlap. This has promoted the development of renewable generation and implemented clean energy policies. States and FERC have

28. Freeman & Spence, *supra* note 6, at 60–61.
29. Wholesale Competition in Regions With Organized Electric Markets (*Order 719*), 73 Fed. Reg. 64,100, 64,101 (Oct. 28, 2008) (to be codified at 18 C.F.R. pt. 35).
30. Freeman & Spence, *supra* note 6, at 61.
31. Demand Response Compensation in Organized Wholesale Energy Markets (*Order 745*), 76 Fed. Reg. 16,658, 16,659 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35).
32. J. Porter Wiseman, *D.C. Circuit Vacates FERC's Controversial Demand Response Rule*, AKIN GUMP STRAUSS HAUER & FELD LLP (May 23, 2014), http://www.akingump.com/en/experience/industries/energy/speaking-energy/d-c-circuit-vacates-ferc-s-controversial-demand-response-rule.html [http://perma.cc/ZV36-XRW7].
33. Elec. Power Supply Ass'n v. Fed. Energy Regulatory Comm'n, 753 F.3d 216, 225 (D.C. Cir. 2014), *rev'd*, 136 S. Ct. 760 (2016).
34. Fed. Energy Regulatory Comm'n v. Elec. Power Supply Ass'n (*EPSA*), 136 S. Ct. 760, 773–82 (2016).

pushed forward on certain issues depending on where jurisdiction, institutional capacity, and exigency reside. These divergent considerations indicate that further delineating jurisdictional lines—rather than enhance efforts to move swiftly to a decarbonized grid—could involve unexpected tradeoffs. Attempts to reestablish a "bright line" dividing realms of state and federal jurisdiction might preclude the policy and experimentation benefits that flow from overlapping authority in a federalist system.[35] In the context of demand response, the Supreme Court recently decided to enter this fray. By endorsing FERC's adaptation of its jurisdiction to changed circumstances the Court abandoned a strict textual reading of the FPA.[36] Instead, its functionalist approach significantly cabins the area of exclusive state jurisdiction and leaves ample room in the middle for the benefits and consequences of state-federal jurisdictional overlap.[37]

This Comment builds on existing literature in a few important ways. Some scholars have acknowledged and examined the jurisdictional tensions that underlie individual policies such as net metering,[38] feed-in tariffs,[39] and demand

35. *E.g.*, Robert A. Schapiro, *From Dualism to Polyphony*, *in* PREEMPTION CHOICE 33, 42–44 (William W. Buzbee ed., 2009) [hereinafter Schapiro, *From Dualism to Polyphony*] (discussing polyphonic federalism and the value of state and federal regulatory overlap); Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 161 (2006) (arguing that "broad, overlapping authority between levels of government may be essential to prompting regulatory activity at the preferred level of government"); Robert A. Schapiro, *Toward a Theory of Interactive Federalism*, 91 IOWA L. REV. 243, 252 (2005) [hereinafter Schapiro, *Interactive Federalism*] (discussing the merits of "polyphonic federalism" which "rejects the attempts to allocate regulatory authority to state or federal governments").

36. *E.g.*, Matthew R. Christiansen, FERC v. EPSA: *Functionalism and the Electricity Industry of the Future*, 68 STAN. L. REV. ONLINE (forthcoming 2016) (manuscript at 2), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2728764.

37. *See EPSA*, 136 S. Ct. at 776 ("[A] 'Platonic ideal' of strict separation between federal and state realms cannot exist." (quoting Oneok, Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1601 (2015))); *see also id.* at 775 n.7 (rejecting the notion that there is some "undefined category of other electricity sales falling within neither FERC's or the States' regulatory authority").

38. *See, e.g.*, Steven Ferrey, *Nothing but Net: Renewable Energy and the Environment,* MidAmerican *Legal Fictions, and Supremacy Doctrine*, 14 DUKE ENVTL. L. & POL'Y F. 1 (2003) [hereinafter Ferrey, *Nothing but Net*]; Steven Ferrey, *Virtual "Nets" and Law: Power Navigates the Supremacy Clause*, 24 GEO. INT'L ENVTL. L. REV. 267, 304–17 (2012) [hereinafter Ferrey, *Virtual "Nets" and Law*]; David B. Raskin, *The Regulatory Challenge of Distributed Generation*, 4 HARV. BUS. L. REV. ONLINE 38, 40–46 (2013); Linda L. Walsh, *Can FERC's Policy Disclaiming Jurisdiction Over Net Meter Sales of Distributed Generation Survive Analysis Under the Subdelegation Doctrine?*, 28 ELECTRICITY J. 11, 12 (2015).

39. *See, e.g.*, David Bloom et al., *State Feed-In Tariffs: Recent FERC Guidance for How to Make Them FIT Under Federal Law*, 24 ELECTRICITY J. 26 (2011); David Grinlinton & LeRoy Paddock, *The Role of Feed-In Tariffs in Supporting the Expansion of Solar Energy Production*, 41 U. TOL. L. REV. 943, 944 (2010); Ivan Lieben & Ian Boisvert, *Making Renewable Energy FiT: A Feed-In-Tariff Certifying Body Could Accelerate Renewable Energy Deployment in the United States*, 52 NAT. RESOURCES J. 157, 189 (2012); David P. Yaffe, *Are State Renewable Feed-In Tariff Initiatives Truly Throttled by Federal Statutes After the FERC California Decision?*, 23 ELECTRICITY J. 9

response.[40] Others have considered the congruence of jurisdictional authority, institutional capacity, and political exigency among diverse levels of decisionmaking.[41] This Comment converges these lines of scholarship to provide a thorough account of contemporary challenges confronting the FPA's jurisdictional division and how they implicate clean energy policy at both state and federal levels. It also challenges the story that providing FERC with more expansive jurisdictional authority is unambiguously the right solution to the jurisdictional quagmire. Part I of this Comment introduces the FPA, including its history and structure, and outlines the jurisdictional division it first established. Part I also traces the statutory amendments that have occurred since passage of the FPA as well as the dramatic regulatory, structural, and technological changes to the electricity sector more broadly. Part II contextualizes the tensions created by this jurisdictional division through specific examples. Parts II.A and II.B examine state net metering and feed-in tariffs while Part II.C considers federal policies integrating demand response resources into wholesale electricity markets. Part III first describes alternative jurisdictional structures to the FPA's retail-wholesale distinction before considering the relationship between jurisdiction and substantive clean energy policy outcomes.

I. BACKGROUND

The enduring jurisdictional division between wholesale and retail electricity markets can be traced to early regulatory efforts by municipal and state governments as well as U.S. Supreme Court jurisprudence, all in response to emerging electricity generation and transmission technologies. The Federal Power Act of 1935 responded to the regulatory challenges faced by states and sought to clarify

(2010); Kelly, *supra* note 21; Kopetsky, *supra* note 21; Motl, *supra* note 21; John Perkins, Comment, *Overcoming Jurisdictional Obstacles to Feed-In Tariffs in the United States*, 40 GOLDEN GATE U. L. REV. 97 (2009).

40. *See, e.g.*, Joel B. Eisen, *Who Regulates the Smart Grid?: FERC's Authority Over Demand Response Compensation in Wholesale Electricity Markets*, 4 SAN DIEGO J. CLIMATE & ENERGY L. 69, 98 (2013); Sharon B. Jacobs, *Bypassing Federalism and the Administrative Law of Negawatts*, 100 IOWA L. REV. 885, 894–96 (2015); Jon Wellinghoff & David L. Morenoff, *Recognizing the Importance of Demand Response: The Second Half of the Wholesale Electric Market Equation*, 28 ENERGY L.J. 389, 393 (2007).

41. *See, e.g.*, Jonathan H. Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, at 131–32 (2005) (arguing that regulatory jurisdiction often does not align with the actor most able and motivated to push forward environmental values, and coining this jurisdictional mismatch); Jacobs, *supra* note 40, at 938; Charles G. Stalon & Reinier H.J.H. Lock, *State-Federal Relations in the Economic Regulation of Energy*, 7 YALE J. ON REG. 427 (1990).

the roles of federal and state governments.[42] While the basic statutory structure enshrined in the FPA has persisted in the ensuing years, the electricity sector has undergone extensive technological and regulatory transformation. In particular, the Public Utility Regulatory Policies Act of 1978 (PURPA) and the restructuring of the industry in the 1990s and 2000s to create competitive wholesale electricity markets have made federal jurisdiction ever more important.

A. Traditional Public Utilities and the FPA

Since generation and distribution systems were first built in the late 19th century, vertically integrated private companies have characterized the electricity sector. Some municipalities initially began to offer private utilities an exclusive franchise in a specific geographic area,[43] exerting limited regulatory authority through periodic review and renewal.[44] Alternatively, other municipalities opted for public ownership of electric utilities.[45] It was not until after the turn of the century that widespread state regulation of electric utilities began to emerge.[46] Responding to the uncertain and varying demands of municipalities as well as local political corruption, private utilities sought greater uniformity in state law.[47] New York and Wisconsin led the way, creating state commissions to regulate electric utilities, and many states quickly followed suit.[48] The result was a patchwork of state regulations, though a relatively uniform regulatory approach.[49] In return for an exclusive franchise to provide retail electricity service in a particular geographic area, investor-owned utilities (IOUs) submitted to cost-of-service rate regulation by states.[50]

42. Federal Power Act, ch. 687, 49 Stat. 863 (1935) (codified as amended at 16 U.S.C. §§ 791–828c (2012)).
43. JOEL B. EISEN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT 77–79 (Robert C. Clark et al. eds., 4th ed. 2015).
44. *Id.*
45. *See* Boyd, *supra* note 3, at 1640 ("By 1930, every state but Delaware had a public utility statute that charged some type of administrative entity with responsibility for regulating public utilities such as water, gas, and electricity.").
46. *Id.*
47. *See* EISEN ET AL., *supra* note 43, at 78; William K. Jones, *Origins of the Certificate of Public Convenience and Necessity: Developments in the States, 1870–1920*, 79 COLUM. L. REV. 426, 432 (1979).
48. *See* Boyd, *supra* note 3, at 1640.
49. *See id.* at 1640 n.91.
50. *E.g.*, EISEN ET AL., *supra* note 43, at 455–56; Paul L. Joskow, *Regulatory Failure, Regulatory Reform, and Structural Change in the Electrical Power Industry*, *in* BROOKINGS PAPERS: MICROECONOMICS 125, 129 (1989).

Despite this authority now residing at the state level, economies of scale and improved long-distance transmission spurred the organization of local utilities into large holding companies operating across state borders.[51] This "provided a means of escaping rate regulation by states."[52] In 1927 the U.S. Supreme Court created the *Attleboro* Gap, holding that the dormant commerce clause prevented states from regulating interstate sales of electricity.[53] Since there were no federal regulations in place at the time to cover such interstate transactions, without action by Congress this decision excluded interstate electricity markets from the purview of any individual state's regulatory authority—effectively exempting interstate markets from rate regulation entirely.

In response to these large networks of holding companies and the *Attleboro* Gap,[54] in 1935 Congress enacted the Public Utility Holding Company Act[55] to restrain the geographic expansion of holding companies,[56] and the Federal Power Act[57] to grant regulatory authority to the Federal Power Commission over interstate electricity markets and transmission. Specifically, the FPA established a jurisdictional "bright line"[58] between state and federal regulatory jurisdiction. Congress granted the FPC regulatory authority over "the transmission of electric energy in interstate commerce and the sale of such energy at wholesale in interstate commerce,"[59] charging it to ensure "just and reasonable"[60] and nondiscriminatory[61] rates. Delineating this jurisdictional grant, Congress

51. *See* Boyd, *supra* note 3, at 1629.
52. *Id.*
53. Pub. Utils. Comm'n v. Attleboro Steam & Elec. Co., 273 U.S. 83, 90 (1927); *see also* Boyd, *supra* note 3, at 1629 n.42; Frank R. Lindh & Thomas W. Bone Jr., *State Jurisdiction Over Distributed Generators*, 34 ENERGY L.J. 499, 503 (2013); Everest Schmidt, Note, *A Call for Federalism: The Role of State Government in Federally Controlled Energy Markets*, 65 RUTGERS L. REV. 573, 581–82 (2013).
54. *See* Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 213 (1964) ("The premise [of passing the FPA (and the Natural Gas Act)] was that constitutional limitations upon state regulatory power made federal regulation essential if major aspects of interstate transmission and sale were not to go unregulated.").
55. Public Utility Holding Company Act of 1935, ch. 687, tit. 1, 49 Stat. 803 (1935) (repealed 2005).
56. Paul G. Mahoney, *The Public Utility Pyramids*, 41 J. LEGAL STUD. 37, 38 (2012).
57. Federal Power Act, ch. 687, 49 Stat. 863 (1935) (codified as amended at 16 U.S.C. §§ 791–828c (2012)).
58. *S. Cal. Edison Co.*, 376 U.S. at 215.
59. 16 U.S.C. § 824(a) (2012).
60. *Id.* § 824d(a) (requiring that "[a]ll rates and charges made, demanded, or received by any public utility for or in connection with the transmission or sale of electric energy subject to the jurisdiction of the Commission . . . be just and reasonable").
61. *Id.* § 824d(b) (prohibiting public utilities from (1) conferring "any undue preference or advantage to any person or subject[ing] any person to any undue prejudice or disadvantage, or (2) maintain[ing] any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service").

specified that the "'sale of electric energy at wholesale' . . . means a sale of electric energy to any person for resale"[62] and defined electric energy in interstate commerce as "electric energy . . . transmitted from a State and consumed at any point outside thereof."[63]

Historically under the traditional model of rate regulation, there was little need for wholesale sales of electricity,[64] and therefore limited space for federal jurisdiction. Since IOUs and municipal utilities sold a bundled service to customers, owning generation, transmission, and distribution infrastructure, they rarely needed to purchase wholesale electricity, with the exception of periodic shortages.[65] To respond to these shortages, utilities relied on voluntary associations called "power pools" in order to informally coordinate wholesale transactions when necessary.[66] This left few instances for the exercise of federal jurisdiction over wholesale power markets. But the passage of PURPA in 1978, and later efforts to restructure the industry in the 1990s and 2000s, dramatically expanded the importance of wholesale power markets, and brought with it the need for federal regulatory oversight.

With the interconnected nature of the modern electricity grid, the seemingly limited grant of federal jurisdiction in the FPA has essentially created federal authority over almost all wholesale sales of electricity.[67] For instance, in *Federal Power Commission v. Florida Power & Light Co.* the Court considered the exercise of federal jurisdiction over the state's largest electric utility with generation and transmission infrastructure wholly confined to Florida.[68] It had no direct line connecting its operations to those of companies in neighboring states.[69] Yet as a member of the Florida Power Pool, Florida Power & Light Company had exchanged power with the Florida Power Corporation, which in turn regularly exchanged power with Georgia Power Company across the state border.[70] The Court found it sufficient that Florida Power & Light Company power had entered the point of interconnection between Florida Power & Light

62. *Id.* § 824(d) (2012).
63. *Id.* § 824(c) (2012).
64. *See* Emily Hammond & David B. Spence, *The Regulatory Contract in the Marketplace*, 69 VAND. L. REV. 141 (2016).
65. *Id.*
66. *Id.*
67. *See, e.g.*, Fed. Power Comm'n v. Fla. Power & Light Co., 404 U.S. 453, 466 (1972) ("The elusive nature of electrons renders experimental evidence that might draw the fine [jurisdictional] distinctions required by this case practically unobtainable."); Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205 (1964).
68. *Fla. Power & Light Co.*, 404 U.S. at 456.
69. *Id.*
70. *Id.* at 456–57.

Company and Florida Power Corporation at the same moment that power had left this point of interconnection for out-of-state destinations.[71] By comingling its power with Florida Power Corporation, Florida Power & Light Company appropriately came under federal jurisdiction.[72] Thus, with an increasingly interconnected grid, FERC's jurisdiction over "the sale of [electric] energy at wholesale in interstate commerce"[73] became much more significant, essentially extending federal jurisdiction to any wholesale sale by an electric utility that is part of an interstate network.[74] It would be the move to competition, however, that would establish wholesale markets and further expand federal authority.

B. Unbundling and the Move to Competition

While the jurisdictional divide established by the FPA has demonstrated underlying tensions from its inception,[75] regulatory developments beginning in 1978 with the passage of PURPA[76] and continuing with the restructuring of the electricity sector have shifted its application and importance. Specifically, PURPA laid the preliminary foundation for competitive wholesale markets.[77] Congress built on this and the regulatory efforts of FERC with the Energy Policy Act of 1992. Subsequently, in 1996 FERC fully endorsed the transition to restructured, competitive markets by issuing Orders 888 and 889. Finally, Congress updated the statutory framework in order to accommodate restructured markets in the Energy Policy Act of 2005, but did little to clarify the jurisdictional division.

71. *Id.* at 460–61.
72. *See* Lindh & Bone, *supra* note 53, at 512.
73. 16 U.S.C. § 824(a) (2012).
74. This is most important for utilities that are connected to the Western Interconnection or the Eastern Interconnection. Most of Texas is connected only to the Texas Interconnection and therefore mainly avoids federal regulation. *See Fla. Power & Light Co.*, 404 U.S. at 471.
75. *See, e.g.*, Fed. Power Comm'n v. Conway Corp., 426 U.S. 271 (1976); *Fla. Power & Light Co.*, 404 U.S. at 466; Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205 (1964); Conn. Light & Power Co. v. Fed. Power Comm'n, 324 U.S. 515 (1945); Jersey Cent. Power & Light Co. v. Fed. Power Comm'n, 319 U.S. 61 (1943).
76. PURPA, Pub. L. No. 95-617, 92 Stat. 3117 (1978) (codified as amended in scattered sections of 7 U.S.C., 15 U.S.C., 16 U.S.C., 30 U.S.C., 42 U.S.C., and 43 U.S.C. (2012)).
77. But there is some evidence this was not intentional or foreseen. *See, e.g.*, RICHARD F. HIRSH, POWER LOSS: THE ORIGINS OF DEREGULATION AND RESTRUCTURING IN THE AMERICAN ELECTRIC UTILITY SYSTEM 119 (1999) (describing the move away from the traditional model as unintended consequences of PURPA).

Responding to the energy crises of the 1970s,[78] Congress enacted PURPA to increase energy security and independence, by promoting demand side conservation and domestic production.[79] PURPA established the qualifying facility (QF) program to target domestic renewable and cogeneration sources.[80] Once a cogeneration and renewable energy facility meets certain criteria for QF status, the law requires utilities to purchase power generated by these facilities at the utility's "avoided costs"—essentially the utility's marginal cost.[81] In doing so, PURPA and its implementing regulations provide exemptions from various provisions of the FPA[82] and give states the primary authority to determine avoided costs with FERC oversight,[83] the one instance in which states are able to set wholesale rates.[84] By charging states with determining each utility's avoided costs, the QF program essentially exempted a class of wholesale transactions from direct rate regulation by FERC in the first instance.[85] The QF program created an avenue for non-utility generators to sell electricity, marking the beginning of wholesale competition.[86] This dramatically reduced the barriers to entry in the electricity generation market.[87]

With these policies in place, the electricity sector began to undergo change. Utilities' share of total electricity generation in the United States declined from its high of 97 percent in 1979 to 91 percent in 1991.[88] In other words, in 1991 non-utility generators were responsible for 9 percent of total electricity generation—up from 3 percent in 1979. Similarly, the number of QFs grew significantly

78. *See* Steven R. Miles, *Full-Avoided Cost Pricing Under the Public Utility Regulatory Policies Act: "Just and Reasonable" to Electric Consumers?*, 69 CORNELL L. REV. 1267, 1267 (1984); Schmidt, *supra* note 53, at 585.
79. *See* Miles, *supra* note 78.
80. PURPA, Pub. L. No. 95-617 § 202, 92 Stat. 3117 (1978) (codified at 16 U.S.C. § 824i).
81. *Id.* Under this scheme, FERC exercises authority over granting QF status to facilities while states determine what constitutes a utility's "[a]voided costs." 18 C.F.R. § 292.101(b)(6) (2012) ("Avoided costs means the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source.") (emphasis omitted). *See generally id.* § 292.
82. *See* PURPA § 210(e)(1); 18 C.F.R. § 292.601.
83. *See, e.g.*, Linda M. Szuhy, Note, *Enforcing Energy Efficiency Standards After* Independent Energy Producers Ass'n v. California Pub. Utils. Comm'n, 17 ENERGY L.J. 217, 227 (1996).
84. See discussion *infra* Part II.B regarding how state feed-in tariffs fit within this statutory structure.
85. This key feature of PURPA is crucial to the discussion *infra* Part II.B of state policies that touch wholesale rates such as feed-in tariffs.
86. *See* Schmidt, *supra* note 53, at 585–86.
87. *See id.* at 586.
88. ENERGY INFO. ADMIN., U.S. DEPT. OF ENERGY, THE CHANGING STRUCTURE OF THE ELECTRIC POWER INDUSTRY: AN UPDATE 111 (1996).

and in 1992 independent generators added more new generating capacity than utilities for the first time.[89]

Despite these changes ushered in by PURPA and FERC's implementing regulations, requirements in the Public Utility Holding Company Act[90] and limited access to transmission services continued to stifle robust wholesale competition.[91] Congress passed the Energy Policy Act of 1992[92] (EPAct 1992) to provide exemptions from the Public Utility Holding Company Act[93] and strengthen FERC's authority to increase access to transmission services by ordering wheeling,[94] forcing a utility to allow its "system's transmission facilities to transmit power produced by another utility to a third party."[95] As a result, this new class of wholesale generators grew.

To fully endorse the separation of utility monopoly power over transmission and generation, FERC promulgated Orders 888 and 889 in 1996.[96] Order 888 required non-discriminatory transmission tariffs so independent generators could transmit their electricity on a non-discriminatory basis[97] and functional

89. *Order 888*, 61 Fed. Reg. 21,540, 21,545 (May 10, 1996).
90. Public Utility Holding Company Act of 1935, ch. 687, tit. 1, 49 Stat. 803 (1935) (repealed 2005).
91. *Order 888*, 61 Fed. Reg. at 21,546.
92. Energy Policy Act of 1992, Pub L. No. 102-486, 106 Stat. 2776 (codified at 42 U.S.C. § 13201 (2012)).
93. *Id.* § 711. These were known as exempt wholesale generators (EWGs). *See id.*
94. *Id.* § 722 (modifying section 212 to read: "An order under section 211 shall require the transmitting utility subject to the order to provide wholesale transmission services at rates, charges, terms, and conditions which permit the recovery by such utility of all the costs incurred in connection with the transmission services and necessary associated services, including, but not limited to, an appropriate share, if any, of legitimate, verifiable and economic costs, including taking into account any benefits to the transmission system of providing the transmission service, and the costs of any enlargement of transmission facilities. Such rates, charges, terms, and conditions shall promote the economically efficient transmission and generation of electricity and shall be just and reasonable, and not unduly discriminatory or preferential. Rates, charges, terms, and conditions for transmission services provided pursuant to an order under section 211 shall ensure that, to the extent practicable, costs incurred in providing the wholesale transmission services, and properly allocable to the provision of such services, are recovered from the applicant for such order and not from a transmitting utility's existing wholesale, retail, and transmission customers."); *see also Order 888*, 61 Fed. Reg. at 21,546.
95. Stalon & Lock, *supra* note 41, at 442 n.67.
96. The purpose of Order 888 was "to remove impediments to competition in the wholesale bulk power marketplace and to bring more efficient, lower cost power to the Nation's electricity consumers." *Order 888*, 61 Fed. Reg. at 21,540. Similarly, Order 889 was issued "in tandem with" Order 888. Open Access Same-Time Information System (Formerly Real-Time Information Networks) and Standards of Conduct (*Order 889*), 61 Fed. Reg. 21,737, 21,738 (May 10, 1996) (to be codified at 18 C.F.R. pt. 37).
97. *Order 888*, 61 Fed. Reg. at 21,540.

unbundling of utilities to separate transmission from generation activities.[98] It also allowed utilities to recover certain stranded costs.[99] Order 889 further required utilities that operated transmission systems to publicize information regarding "available transmission capacity [and] prices"[100] and stipulated standards of conduct to ensure the efficacy of functional unbundling.[101]

The rise of regional governance of transmission constituted another key development in the move towards unbundling and competition. FERC recognized and encouraged, but did not require, the formation of independent systems operators (ISOs) in Order 888.[102] In Order 2000-A,[103] FERC went further and actually required utilities to either file a proposal for a regional transmission organization (RTO)[104] or describe efforts in attempting to join an RTO and the reasons for not doing so. Under these nonprofit regional governance organizations,[105] utilities ceded authority to ISOs or RTOs to control and operate their transmission lines[106] and to administer a single open access transmission

98. *Id.* at 21,551–52. Functional unbundling is less severe or complete than corporate unbundling, which amounts to divestiture and would require "selling generation or transmission assets to a non-affiliate." *Id.* at 21,551. Functional unbundling requires the following:

> (1) A public utility must take transmission services (including ancillary services) for all of its new wholesale sales and purchases of energy under the same tariff of general applicability as do others;
> (2) A public utility must state separate rates for wholesale generation, transmission, and ancillary services;
> (3) A public utility must rely on the same electronic information network that its transmission customers rely on to obtain information about its transmission system when buying or selling power.

Id. at 21,552.

99. *Id.* at 21,540.

100. *Order 889*, 61 Fed. Reg. at 21,737.

101. *Id.* FERC viewed these standards of conduct as "vital . . . to ensure that the utility does not use its access to information about transmission to unfairly benefit its own or its affiliates' sales." *Id.* at 21,740.

102. *See Order 888*, 61 Fed. Reg. at 21,591–97. Specifically, Order 888 set forth certain principles that FERC would use in assessing proposals for ISO formation. *Id.* at 21,595–97.

103. Regional Transmission Organizations (*Order 2000-A*), 65 Fed. Reg. 12,088 (Mar. 8, 2000) (to be codified at 18 C.F.R. pt. 35); *see also* Regional Transmission Organizations (*Order 2000*), 65 Fed Reg. 810 (Jan. 6, 2000) (to be codified at 18 C.F.R. pt. 35).

104. Note, "ISOs and RTOs are essentially the same—RTOs are simply those organizations approved by FERC under the year 2000 standards, as opposed to the 1999 standards" for ISOs. EISEN ET AL., *supra* note 43, at 652; *see also* 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, 551–57 (2007) (discussing the difficulty of defining and characterizing RTOs).

105. EISEN ET AL., *supra* note 43, at 652; *see also* Boyd, *supra* note 3, at 1663 n.193 ("There is no legal prohibition on RTOs operating as for-profit entities, but to date all RTOs and ISOs operate as non-profit entities.").

106. *Order 2000-A*, 65 Fed. Reg. at 12,088.

tariff.[107] In many ways, FERC has turned towards regional governance as a way to administer, coordinate, oversee, and manage electricity transmission, dispatch and scheduling of electricity, and wholesale electricity markets as well as ancillary services.[108]

While the dramatic changes to the electricity sector since 1992 were mainly creatures of regulation by FERC, Congress did step in by passing the Energy Policy Act of 2005[109] (EPAct 2005). Perhaps most importantly, EPAct 2005 included provisions allowing for the certification of Electric Reliability Organizations (EROs) by FERC to establish and enforce mandatory and expansive reliability standards for interstate wholesale markets.[110] EPAct 2005 also included language giving FERC federal backstop authority over the siting of interstate electric transmission lines[111] but court decisions have largely rendered this authority meaningless.[112]

With these robust statutory and regulatory changes implemented by Congress and FERC, a sizeable group of states planned to fully transition to competition in both wholesale and retail electricity markets.[113] But the California energy crisis in 2000 and 2001, along with other factors, precipitated a reversal of course.[114] Three different regulatory models exemplify the electricity sector in the United States today.[115] About fifteen states still have traditional cost-of-service

107. *Order 2000*, 65 Fed Reg. at 876–77 (discussing the "requirement that the RTO be the sole provider of transmission service and sole administrator of its own open access tariff" and noting that "the RTO ha[s] the sole authority for the evaluation and approval of all requests for transmission service including requests for new interconnections").

108. *See* Boyd, *supra* note 3, at 1663 (discussing the key functions of RTOs and ISOs); *see also Order 2000*, 65 Fed Reg. at 841–911 (specifying the key functions of RTOs); *Order 2000-A*, 65 Fed. Reg. at 12,088–89.

109. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005) (codified as amended in scattered sections of 5 U.S.C., 7 U.S.C., 15 U.S.C., 16 U.S.C., 25 U.S.C., 30 U.S.C., and 42 U.S.C. (2012)) [hereinafter EPAct 2005].

110. *See id.* § 1211; *see also* EISEN ET AL., *supra* note 43, at 670.

111. *See* EPAct 2005 § 1221 (granting federal authority to approve construction permits in designated national interest electric transmission corridors if the state has withheld approval for over a year).

112. *See, e.g.*, Cal. Wilderness Coalition v. U.S. Dep't of Energy, 631 F.3d 1072 (9th Cir. 2011); Piedmont Envtl. Council v. Fed. Energy Regulatory Comm'n, 558 F.3d 304, 310 (4th Cir. 2009); *see also* Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801, 1819 (2012).

113. Paul L. Joskow, *The Difficult Transition to Competitive Electricity Markets in the United States*, *in* ELECTRICITY DEREGULATION: CHOICES AND CHALLENGES 31, 32 (James M. Griffin & Steven L. Puller eds., 2005); William Boyd & Ann E. Carlson, *Accidents of Federalism: Rate Design and Policy Innovation in Public Utility Law*, 63 UCLA L. REV. 810 (2016).

114. *See* Joskow, *supra* note 113, at 32; Boyd & Carlson, *supra* note 113.

115. The states with the traditional cost-of-service model include: Alabama, Alaska, Colorado, Florida, Georgia, Hawai'i, Idaho, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Utah, Washington, and Wyoming. The states with the hybrid model include: Arizona, Arkansas, California, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Montana, North Dakota,

model of vertically integrated public utilities that have monopoly franchises.[116] Around twenty states have a hybrid of competitive wholesale markets run by regional governance organizations and cost-of-service regulation for retail service provided by IOUs.[117] Fifteen states and the District of Columbia have competitive wholesale markets run by regional governance organizations and retail competition for electricity consumers.[118]

C. The Practical Expansion of Federal Jurisdiction

While the Court's holding in *Florida Power & Light*[119] essentially gave FERC authority over almost any wholesale sale by an electric utility connected to an interstate transmission network, the move towards competitive wholesale markets dramatically expanded the application of this holding.[120] The Court decided *Florida Power & Light* in 1972 during an ongoing scholarly debate over the merits of traditional cost-of-service regulation for natural monopoly industries such as electricity.[121] This occurred well before the passage of PURPA, EPAct 1992, FERC Orders 888 and 889, and EPAct 2005. At the time, the dominance of vertically integrated public utilities operating under monopoly franchises constrained the significance of the Court's holding to the extent public utilities owned their own generation facilities and did not engage in wholesale transactions.[122] That is no longer the case.

Nebraska, Nevada, New Mexico, Oklahoma, South Dakota, Virginia, Vermont, West Virginia, and Wisconsin. The states with the fully-restructured model include: Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, and Texas, and the city of Washington, D.C. *See Status of Electricity Restructuring by State*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html [http://perma.cc/3P3A-MSK5] (last updated Sept. 2010); *see also Regional Transmission Organizations (RTO)/Independent System Operators (ISO)*, FED. ENERGY REGULATORY COMM'N, http://www.ferc.gov/industries/electric/indus-act/rto.asp [https://perma.cc/KT2A-KYDG] (last updated Jan. 21, 2016) [hereinafter *RTO/ISO*]. It is somewhat difficult to precisely categorize states since some utilities in traditional cost-of-service model states have joined RTOs and ISOs; if this covers significant territory, the state is included in the hybrid category. *See* Boyd & Carlson, *supra* note 113.

116. *See supra* note 115.

117. *See supra* note 115.

118. *See supra* note 115.

119. Fed. Power Comm'n v. Fla. Power & Light Co., 404 U.S. 453 (1972).

120. *See* discussion *supra* Part I.A.

121. *See* Boyd, *supra* note 3, at 1651–58 (discussing various critiques of public utility regulation in the 1960s and 1970s, mainly by economists, historians, and legal scholars).

122. *See* Joskow, *supra* note 50, at 131–32. Joskow discusses two broad categories of wholesale transactions by IOUs: (1) voluntary contract transactions or coordinated transactions to ensure economical and reliable dispatch by interconnected utilities; and (2) requirements transactions for selling electricity sufficient to meet part or all of the demand by municipal and cooperative utilities

Unbundling and the rise of robust, competitive wholesale electricity markets have augmented the importance of FERC's jurisdiction. While non-utility generators produced just 3 percent of electricity generation in 1979,[123] that figure rose to 9 percent in 1991,[124] over 16 percent in 2000,[125] and just over 40 percent in 2010.[126] More recently, non-utility generator electricity generation has continued to hover between 41 and 42 percent.[127] Moreover, competitive wholesale electricity markets serve around two-thirds of the total U.S. population in the states that currently have such markets under either a fully restructured or hybrid model.[128] This growth in competitive wholesale markets and non-utility generation since *Florida Power & Light* means that FERC's jurisdiction now plays an evermore important role.[129] Unbundling and the move to competition have unveiled an entire segment of transactions that were previously only touched by state regulation of bundled retail rates. Moreover, FERC's exercise of jurisdiction over wholesale markets directly affects retail rates, which remain within state jurisdiction.[130] Despite this dramatic growth in the importance of federal jurisdiction, the jurisdictional divide established by the FPA remains in force, continuing to guide how FERC and the states are able to exercise shared regulatory authority in this field.

located within the geographic territory of an IOU. *Id.* at 130–32. Requirements transactions constitute around ten percent of electricity generation by IOUs. *Id.* at 132.

123. ENERGY INFO. ADMIN., *supra* note 88, at 111.

124. *Id.*

125. *See* ELECTRIC POWER ANNUAL 2001, *supra* note 13.

126. *See* ENERGY INFO. ADMIN., ELECTRIC POWER ANNUAL 2011 tbl.1.1 (2013), http://www.eia.gov/electricity/annual/archive/03482011.pdf.

127. *See* ELECTRIC POWER ANNUAL 2013, *supra* note 14.

128. FED. ENERGY REGULATORY COMM'N, ENERGY PRIMER: A HANDBOOK OF ENERGY MARKET BASICS 58 (2015), http://www.ferc.gov/market-oversight/guide/energy-primer.pdf; *see Status of Electricity Restructuring by State*, *supra* note 115, and accompanying text; *see also RTO/ISO*, *supra* note 115.

129. Boyd & Carlson, *supra* note 113; *see also* Pub. Util. Dist. No. 1 of Snohomish Cty. Wash. v. Fed. Energy Regulatory Comm'n, 471 F.3d 1053, 1066 (9th Cir. 2006), *aff'd in part, rev'd in part sub nom.* Morgan Stanley Capital Grp. Inc. v. Pub. Util. Dist. No. 1 of Snohomish Cty. Wash., 554 U.S. 527 (2008) ("[O]ne crucial result of these energy market regulatory reforms has been 'a massive shift in regulatory jurisdiction from the states to the FERC.' . . . The 1996 FERC reforms opened up local monopolies to competition among suppliers in the wholesale power market, resulting in a sharp increase in wholesale power sales—subject to FERC's exclusive jurisdiction—as utilities shopped among suppliers." (quoting Carmen L. Gentile, *The* Mobile-Sierra *Rule: Its Illustrious Past and Uncertain Future*, 21 ENERGY L.J. 353, 373 (2000))).

130. *Pub. Util. Dist. No. 1 of Snohomish Cty. Wash.*, 471 F.3d at 1067 (noting that state regulators now have less of a role since wholesale costs are taken as a given in regulating retail rates whereas FERC's role has been significantly expanded since by regulating wholesale markets, FERC "largely determine[s] the rates ultimately charged to the public").

II. JURISDICTIONAL TENSIONS: FERC AND THE STATES

Part I elaborated on the "bright line"[131] between state and federal jurisdiction established by the FPA and detailed the expansion of FERC's jurisdiction given the move to competitive wholesale electricity markets. In Part II, I now describe the ways in which these changes have tested workability of the jurisdictional divide. I begin with two state policies, net metering and feed-in tariffs, before considering one federal policy, the integration of demand response resources into wholesale electricity markets. These examples illustrate the attempts by FERC and the states to adapt the FPA's jurisdictional divide to changed conditions in a manner responsive to the challenges of decarbonizing electricity generation.[132] But doing so has stretched the meaning and significance of the jurisdictional line established by Congress. These examples show that distinguishing between federal authority over wholesale markets and state authority over retail markets is losing coherence.

A. State Net Metering Policies and Distributed Generation

Net metering is the most widespread state policy to promote generation of electricity from renewable sources.[133] Pioneered by Minnesota in 1981 as a policy response to implement PURPA, thirty states had net metering policies by the year 2000.[134] Today, forty-four states, Washington, D.C. and four U.S. Territories have mandatory net metering policies, two states have voluntary policies that allow some utilities to offer net metering, and only four states have no net metering in any form.[135] While there is some disagreement over the actual importance of these policies,[136] it suffices to say that they constitute a primary feature of state

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

132. *See* Ferrey, *supra* note 18, at 122 (noting the five primary regulatory policies that states have implemented to support renewable energy, two of which are considered here: net metering and feed-in tariffs).

133. *Id.* at 128; Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 268.

134. Steven Ferrey, *Nothing But Net*, *supra* note 38, at 52, 54.

135. DSIRE, NET METERING (2015), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2015/04/Net-Metering-Policies.pdf.

136. *Compare* Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 268–70 (arguing that net metering is the "most utilized state incentive for renewable power nationwide" compared to renewable portfolio standards, renewable trust funds, carbon emission regulations, and feed-in tariffs), *and* Ferrey, *Nothing But Net*, *supra* note 38, at 118 ("Net metering and billing policy is the most important of four national policies supporting the renewable energy industry initiatives in the United States."), *with* Jeremiah I. Williamson & Matthias L. Sayer, *Federalism in Renewable Energy Policy*, 27 NAT. RESOURCES & ENV'T 19, 20 (2012) (arguing that while state net metering policies are common "their overall effect on renewable [energy] growth . . . has been marginal in comparison to RPS programs").

support for renewable energy. Specifically, net metering targets distributed generation,[137] in particular solar photovoltaic technology given its dominance in distributed generation systems.[138] The United States alone had four gigawatts of distributed generation capacity in 2011, including the photovoltaic systems of around 200,000 residential customers.[139] It is projected that worldwide installed distributed generation capacity will more than double from 2014 to 2023.[140]

As an actual policy, net metering is fairly uncomplicated, essentially amounting to an accounting mechanism that allows a customer's electric meter to run in either direction, forward or backward.[141] Thus, a customer with a distributed generation system, such as rooftop photovoltaic, can remain connected to the grid yet also send any on-site net generation of electricity (beyond individual consumption at any moment in time) back to the grid, running the meter in reverse.[142] Typically over the course of a billing period, a net-metered customer is only billed for net consumption of electricity (total consumption minus total generation on-site).[143] But by simply running a bidirectional meter in reverse, net metering compensates a customer's generation at the full retail rate of electricity.[144] Compensation at this level amounts to a subsidy since the retail

137. Melissa Powers, *Small Is (Still) Beautiful: Designing U.S. Energy Policies to Increase Localized Renewable Energy Generation*, 30 WIS. INT'L L.J. 595, 635 (2012) (describing net metering as "the dominant tool to promote distributed generation"). For a regulatory definition of distributed generation see, for example, 7 C.F.R. § 1794.6 (2013) (defining distributed generation as "[t]he generation of electricity by a sufficiently small electric generating system as to allow interconnection of the system near the point of service at distribution voltages or customer voltages").

138. *See* Shannon Baker-Branstetter, *Distributed Renewable Generation: The Trifecta of Energy Solutions to Curb Carbon Emissions, Reduce Pollutants, and Empower Ratepayers*, 22 VILL. ENVTL. L.J. 1, 7–8 (2011) (discussing the importance of net metering policies for distributed generation generally but also specifically for solar photovoltaic systems); AM. PUB. POWER ASS'N, *supra* note 12, at 3 (noting that solar accounts for "[m]ore than 90 percent of installed distributed generation in the United States").

139. *See* AM. PUB. POWER ASS'N, *supra* note 12, at 6 (noting that some projections estimate as much as nine gigawatts of distributed generation capacity by 2016 and twenty gigawatts by 2020).

140. *The Annual Installed Capacity of Distributed Generation Is Expected to Double by 2023*, NAVIGANT RES. (Dec. 5, 2014), http://www.navigantresearch.com/newsroom/the-annual-installed-capacity-of-distributed-generation-is-expected-to-double-by-2023 [https://perma.cc/3GXG-BYLR] ("[T]he worldwide installed capacity of distributed generation is expected to more than double in the next 9 years, growing from 87,300 megawatts annually in 2014 to more than 165,000 megawatts in 2023.").

141. *See* Ferrey, *Nothing But Net*, *supra* note 38, at 15–16; *see also* Ferrey, *supra* note 18, at 128; Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 273.

142. *E.g.*, Ferrey, *Nothing But Net*, *supra* note 38, at 15.

143. *Id.* at 16.

144. *See* Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 273.

rate includes more than just the cost of electricity, such as reliability, transmission, and distribution services.[145]

Despite its relative simplicity as a concept, state policies implementing net metering vary considerably.[146] For instance, some states specify the size limits and eligible technologies for distributed generation systems, the classes of customers that may take advantage of net metering, how generation is credited and the longevity of those credits, whether credits are transferrable, and whether and at what rate net generation by a customer is compensated.[147] Notably, a provision in EPAct 2005 requires utilities to offer net metering to customers who request it.[148] The statute's text does not make clear whether net metering requires compensation at the full retail rate, and therefore is essentially subsidized, or whether it simply requires bidirectionality in some form—regardless of whether generation is credited at the full retail rate, avoided costs, or wholesale prices.[149] If the statute requires full compensation, there is substantial noncompliance by states.[150]

145. *See* David Raskin, *Getting Distributed Generation Right: A Response to "Does Disruptive Competition Mean a Death Spiral for Electric Utilities?"*, 35 ENERGY L.J. 263, 276 (2014) (discussing the various unbundled components that make up the bundled retail rate for electricity service: (1) energy service, (2) reliability services, (3) transmission and distribution services, and (4) public policy services); *see also* Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 303 ("In Massachusetts, for example, the retail rate includes a transmission charge, distribution charge, transition charge, and default service charge."). *But see* Powers, *supra* note 137, at 652–53 (outlining the components of retail rates as well as the various advantages and cost savings for utilities of distributed generation, which might call into question the actual extent of the subsidy provided by net metering).

146. Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 274–88 (describing the different primary features of state net metering laws).

147. By this I mean when a customer's generation is greater than consumption so the bill would be negative. Ferrey, *Virtual "Nets" and Law*, *supra* note 35, at 274, 280. Ferrey groups different state net metering laws into the following four categories:

- A flat limit on the size of the net-metered unit that can be installed;
- A limit on the unit size as a percentage of the customer's annual power usage (e.g. one hundred twenty percent), so the unit remains scaled to the customer's consumption of power;
- Forfeiture of unused net metered credits after an amount of months; or . . .
- Liberal credit transfer or 'virtual' net metering is unrelated to the physical connection of the net-metered source.

Id.

148. *See* EPAct 2005, Pub. L. No. 109-58, § 1251, 119 Stat. 594 (2005) (codified at 16 U.S.C. § 2621) ("NET METERING.—Each electric utility shall make available upon request net metering service to any electric consumer that the electric utility serves. For purposes of this paragraph, the term 'net metering service' means service to an electric consumer under which electric energy generated by that electric consumer from an eligible on-site generating facility and delivered to the local distribution facilities may be used to offset electric energy provided by the electric utility to the electric consumer during the applicable billing period.").

149. *See* Raskin, *supra* note 38, at 42.

150. *See* Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 268, 271, 274, 322.

Most important for purposes of this Comment is how net metering blurs the jurisdictional "bright line"[151] by allowing retail customers to essentially become wholesale generators of electricity. Under the jurisdictional divide of the FPA, states retain jurisdiction over retail customers. However, when these retail customers also become generators of electricity, adding power to the grid and receiving compensation for their generation, either in the form of bill credits or actual compensation, they are no longer the retail customers originally envisioned by the FPA. They now are potentially subject to both state jurisdiction as retail customers and federal jurisdiction as wholesale generators. Under the jurisdictional scheme, the primary domain of federal jurisdiction resides in the upstream processes, namely wholesale generation and transmission in interstate commerce, while the primary domain of state jurisdiction resides in the downstream processes, namely retail distribution. However, distributed generation, enabled by net metering, essentially connects these two domains,[152] blurring this jurisdictional divide and complicating efforts to maintain a meaningful distinction.[153]

Whether and to what degree distributed generation is subject to federal jurisdiction under the FPA has significant implications. While the underlying accounting mechanism at work is not implicated, the rate at which distributed generation customers are compensated for their generation rests on this jurisdictional question. If distributed generation falls under federal jurisdiction, then the FPA requires that rates paid for electricity generated be "just and reasonable."[154] Retail electricity rates include many bundled services besides just the price of electricity so there is a considerable price differential between retail rates of electricity and the price of wholesale electricity.[155] So the "just and reasonable"

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

152. Demand response has a very similar effect and is explored *infra* in Part II.C.

153. *Compare* Raskin, *supra* note 145, at 275–76 ("The growth of distributed generation and demand response, which produce an expanded use of electric distribution systems for two-way energy transfers, are likely to make the traditional jurisdictional separation between federal and state regulators even more complex and difficult to maintain in the future."), *and* Walsh, *supra* note 38, at 12 ("With the advent of new electricity products and regulatory schemes, such as demand response and distributed generation, the dividing line has gotten even more complicated."), *with* John V. Barraco, *Distributed Energy and Net Metering: Adopting Rules to Promote a Bright Future*, 29 J. LAND USE & ENVTL. L. 365, 386 (2014) (stating that "FERC lacks jurisdiction to regulate intrastate aspects of electricity (and net metering is inherently an intrastate issue)"), *and* Lindh & Bone, Jr., *supra* note 53, at 500–02 (arguing that under the FPA, states should retain jurisdiction over sales of electricity on local grids, essentially giving states the authority to adopt feed-in tariffs for localized distributed generation).

154. 16 U.S.C. § 824d(a) (2012).

155. Raskin, *supra* note 145, at 276; *see also* Raskin, *supra* note 38, at 41 ("[T]he average residential price of electricity (the average bundled rate) is currently around 12.5 cents per kWh. According to

requirement of the FPA would likely preclude compensation at the full retail rate and jeopardize the subsidy that now provides for distributed generation. FERC has attempted to walk this fine line by finding no wholesale sale of electricity to have occurred when generation and consumption average out over the course of a billing cycle such that there is no net generation.[156] Nevertheless, it is this jurisdictional tension created by distributed generation and net metering, as well as the policy implications of where proper jurisdiction lies, that have animated efforts by FERC to accommodate state net metering policies while not running afoul of the demands of the FPA.

Given the origin of net metering laws with state implementation of PURPA, it is no surprise that FERC first had to confront a related issue regarding what utilities were obligated to purchase from Qualifying Facilities under PURPA.[157] QFs not only generate electricity but also consume some electricity for on-site operations (auxiliary station power).[158] It was unclear whether QFs would sell all the electricity they generated at avoided costs and pay for any consumption at retail rates or sell only net generation, subtracting any consumption for auxiliary station power.[159] FERC decided that QFs were only able to sell net power production as calculated on an hourly basis.[160] This distinction was of particular importance in states with generous rules on avoided costs since a QF would be better off selling all of its generation at avoided costs and then purchasing back any electricity needed on-site, at a rate less than avoided costs.[161] This same emphasis on net generation provided the underlying rationale for FERC's later decisions directly confronting the issues of distributed generation and net metering in *MidAmerican Energy Co.*[162] and *Sun Edison L.L.C.*[163]

While the procedural history of *MidAmerican Energy Co.* is somewhat complex,[164] it began when "two individuals and a school district sought a ruling from

published data as of November 2013, the market price of energy from grid-connected generators is averaging, in most locations, between 2 and 3 cents per kWh during off-peak periods and between 4 and 5 cents per kWh during on-peak periods.") (citations omitted).

156. *See, e.g.*, Sun Edison L.L.C., 129 FERC ¶ 61,146, 61,620 (2009).
157. *See* Ferrey, *Nothing but Net*, *supra* note 38, at 45.
158. Conn. Valley Elec. Co., Inc. v. Wheelabrator Claremont Co., L.P., 82 FERC. ¶ 61,116, 61,418–20 (1998).
159. *Id.* See Ferrey, *Nothing but Net*, *supra* note 38, at 45–48 for a more detailed discussion of this net versus gross distinction.
160. *Conn. Valley Elec. Co.*, 82 FERC at 61,420.
161. *See* Ferrey, *Nothing but Net*, *supra* note 38, at 45.
162. MidAmerican Energy Co., 94 FERC ¶ 61,340 (2001); *cf.* Ferrey, *Nothing but Net*, *supra* note 38, at 80–108 (generally criticizing FERC's decision).
163. Sun Edison L.L.C., 129 FERC ¶ 61,146 (2009).
164. *See* Ferrey, *Nothing but Net*, *supra* note 38, at 66–80 (generally describing the procedural history of the litigation and administrative proceedings).

the Iowa Utilities Board (IUB) compelling MidAmerican Energy Company (MEC), the local monopoly retail utility, to allow them to interconnect their small electric generation facilities with the utility's power grid and to enter into net billing arrangements with them."[165] After litigation in state court, MidAmerican ultimately sought review by FERC. It argued that by ordering net metering for alternative energy production facilities under Iowa law, which may or may not have QF status, the Iowa Utilities Board would require compensation in excess of avoided costs for QFs, preempted by PURPA, and would set the rates for wholesale sales of electricity for non-QFs, preempted by the FPA.[166] FERC explicitly characterized the issue as "how to measure the transaction between MidAmerican and those entities that have installed generation on their premises."[167] In its reasoning, FERC specifically relied on its prior decision addressing the treatment of station power and held that "no sale occurs when an individual homeowner or farmer (or similar entity such as a business) installs generation and accounts for its dealings with the utility through the practice of netting."[168] FERC further elaborated that over the netting period there can either be net consumption or net generation by the customer.[169] In the instance of net generation, the sale must adhere to the requirements of the FPA if the facility does not have QF status and to avoided costs if the facility is a QF.[170] Lastly, FERC deferred to the state in its decision to use the monthly billing period for the relevant netting interval.[171]

More recently, FERC confronted this issue again[172] given the rise of third-party ownership of residential photovoltaic systems.[173] Since a company owns the distributed generation system and sells the electricity generated to the customer and homeowner, it was unclear whether this would fall under the jurisdiction of the FPA. Under this structure, the owner of the distributed generation system, SunEdison, sells electricity to the customer, who then participates in net

165. *Id.* at 67.
166. *MidAmerican Energy Co.*, 94 FERC at 62,261.
167. *Id.* at 62,262.
168. *Id.* at 62,263. FERC cites to its prior decision, *PJM Interconnection, L.L.C.*, 94 FERC ¶ 61,251 (2001). *Id.*
169. *MidAmerican Energy Co.*, 94 FERC at 62,263.
170. *Id.*
171. *Id.* at 62,263–64.
172. Sun Edison L.L.C., 129 FERC ¶ 61,146 (2009).
173. *See generally* Easan Drury et al., *The Transformation of Southern California's Residential Photovoltaics Market Through Third-Party Ownership*, 42 ENERGY POL'Y 681 (2012); Samuel Farkas, Comment, *Third-Party PPAs: Unleashing America's Solar Potential*, 28 J. LAND USE & ENVTL. L. 91 (2012).

metering.[174] In its decision, FERC affirmed the basic holding in *MidAmerican* that no sale occurs unless there is net generation over the applicable netting period.[175] The decision further elaborated that "where there is no net sale over the applicable billing period to the local load-serving utility by the end-use customer that is the purchaser of SunEdison's solar-generated electric energy, SunEdison is likewise not making a sale 'at wholesale.'"[176] Crucial to note from both of these decisions is the fundamental requirement that to prevent federal jurisdiction, generation must not exceed use over the netting period.[177] Given these clear requirements, some state net metering policies are nonconforming.[178]

Despite FERC's efforts to implement a coherent way to define when a sale occurs in order to prevent federal jurisdiction from attaching and thereby retain state net metering policies, its rationale is likely vulnerable to legal attack and "hard to reconcile [with the FPA], either as a matter of principle or practice."[179] FERC based its initial decision in *MidAmerican* on its analogous treatment of station power. But that rationale is not on sure footing. The D.C. Circuit reviewed FERC's station power netting rules and held they exceeded its jurisdiction by seeking to prescribe when a retail sale has occurred.[180] The court also noted that basing a jurisdictional determination on the length of the netting period "seems rather arbitrary and unprincipled."[181] In the distributed generation context, the length of the netting period becomes the primary consideration since a distributed generation customer can still be a net consumer of electricity over

174. *Sun Edison L.L.C.*, 129 FERC at 61,620.
175. *See id.* at 61,621.
176. *Id.*
177. This means that the overall net flow of electricity must always be from the utility to the customer. But FERC has explicitly noted that this allows room for "portions of the day or portions of the billing cycle [where] it may produce more electricity than it can use itself." Standardization of Generator Interconnection Agreements and Procedures, 69 Fed. Reg. 15,932, 15,998 (Mar. 26, 2004) (to be codified at 18 C.F.R. pt. 35); *see* Sharon B. Jacobs, *Consumer Generation*, 43 ECOLOGY L.Q. (forthcoming 2016) (manuscript at 27), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2662924 (describing FERC's treatment of net metering as a "convenient fiction").
178. *See* Ferrey, *Virtual "Nets" and Law*, *supra* note 38, at 310–14 (describing certain legal challenges to state net metering laws after FERC's *Sun Edison* decision).
179. John S. Moot, *Subsidies, Climate Change, Electric Markets and the FERC*, 35 ENERGY L.J. 345, 365–68 (2014) (criticizing FERC's policy choice on principle, given the jurisdictional line drawn in the FPA, and in terms of its practical effects); *see id.* at 365 (noting that FERC's decision in *MidAmerican* in part rested on its policy with respect to netting of station power which was invalidated by *Southern California Edison*); Raskin, *supra* note 38, at 44–45 (describing how the decisions by the D.C. Circuit in *Southern California Edison* and *Calpine* may jeopardize FERC's policy with respect to net metering); *see also* Calpine Corp. v. Fed. Energy Regulatory Comm'n, 702 F.3d 41 (D.C. Cir. 2012); S. Cal. Edison Co. v. Fed. Energy Regulatory Comm'n, 603 F.3d 996 (D.C. Cir. 2010).
180. *S. Cal. Edison Co.*, 603 F.3d at 999.
181. *Id.* at 1000.

the course of a month, avoiding federal jurisdiction, while being a net generator over smaller intervals within that month, such as an hour. If the netting interval were hourly instead, jurisdiction would attach in these instances. States thereby have some discretion to manipulate the netting period and avoid federal jurisdiction. When forced to confront the fact that distributed generation enables retail customers to also become electricity generators, FERC has sought to allow state net metering policies and prevent federal jurisdiction over distributed generation.

B. State Feed-In Tariffs

In order to support generation of electricity from renewable sources, a number of states have also adopted feed-in tariffs.[182] Originating in Germany, feed-in tariffs essentially amount to a price support or "consumer funded subsidy" for renewable energy.[183] A feed-in tariff requires utilities to enter long-term power purchase agreements with renewable generators at a fixed or predetermined price that offers a premium above the market price of electricity.[184] This is calculated to ensure full recovery of investment and a rate of return,[185] in a similar manner to the traditional utility regulation model. By guaranteeing a rate of return, feed-in tariffs provide certainty to investors, which is important for encouraging investment.[186] Electricity customers end up paying this premium in the form of higher retail rates.[187] Like net metering, feed-in tariffs have been used to support the development of distributed generation technologies like solar photovoltaic.[188] While the subsidy of net metering is implicit, feed-in tariffs explicitly specify a premium and provide greater certainty regarding cost recovery given their design.[189]

Feed-in tariffs have been favored in Europe[190] but renewable portfolio instruments—which require utilities to purchase or generate a certain percentage of electricity from renewable sources—have seen much more widespread

182. *See* Ferrey, *supra* note 18, at 122, tbl.1 (identifying feed-in tariffs as one of five primary regulatory policies that states have implemented to support renewable energy).
183. *See supra* note 21 and accompanying text; s*ee also* Lieben & Boisvert, *supra* note 39, at 161.
184. Dorsi, *supra* note 22, at 180; Ferrey, *supra* note 18, at 124.
185. Powers, *supra* note 137, at 641–42.
186. *See id.*
187. *See* Grinlinton & Paddock, *supra* note 39, at 944, 946.
188. *See* Powers, *supra* note 137, at 634.
189. *See id.* at 641–42.
190. *See* Bloom et al., *supra* note 39, at 26; Lincoln L. Davies, *Reconciling Renewable Portfolio Standards and Feed-In Tariffs*, 32 UTAH ENVTL. L. REV. 311, 313 (2012); Steven Ferrey et al., *Fire and Ice: World Renewable Energy and Carbon Control Mechanisms Confront Constitutional Barriers*, 20 DUKE ENVTL. L. & POL'Y F. 125, 169 (2010).

implementation in the United States.[191] Whereas feed-in tariffs focus on the price of renewable electricity generation and offer a subsidy, renewable portfolio standards focus on the quantity or percentage of renewable electricity generation.[192] While still subject to some debate,[193] feed-in tariffs typically demonstrate "greater potential to encourage the development of renewable generation than [renewable portfolio standards]."[194] These two policy instruments are often seen as mutually exclusive alternatives;[195] however, in many ways they are more appropriately complementary.[196] The focus on renewable portfolio standards in the United States is understandable given the provisions of the FPA and PURPA "which operate to limit the feasibility of, if not entirely preempt, state-level [feed-in tariffs]."[197] But some states have turned toward feed-in tariffs or considered enacting feed-in tariff programs in part to augment renewable portfolio standards, which tend to promote large utility scale generation.[198] In doing so, these statutory hurdles have required an elaborate dance between FERC and the states to design feed-in tariff policies that do not run afoul of federal law. Today, six states have feed-in tariff programs in place.[199]

The legitimacy of state feed-in tariffs remains unclear given federal preemption[200] but FERC's response to California's attempt to enact a feed-in tariff

191. *See* Ferrey, *supra* note 18, at 122, tbl.1. Indeed, twenty-nine states and Washington, D.C. have renewable portfolio standards and eight additional states have nonbinding renewable portfolio goals. *See* DSIRE, RENEWABLE PORTFOLIO STANDARD POLICIES (2015), http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2015/11/Renewable-Portfolio-Standards.pdf.

192. *See* Bloom et al., *supra* note 39, at 26–27; Davies, *supra* note 190, at 313; Kopetsky, *supra* note 21, at 957–60, 978–80. By specifying a target quantity or percentage of renewable electricity generation, renewable portfolio standards leave the cost of achieving this target unknown, whereas by specifying a premium or price support, feed-in tariffs leave the total quantity of generation unknown.

193. *See* Davies, *supra* note 190, at 313.

194. Bloom et al., *supra* note 39, at 27.

195. *See* Davies, *supra* note 190, at 312.

196. *See id.* at 313 ("Renewable portfolio standards and feed-in tariffs complement—not foreclose—each other.").

197. Williamson & Sayer, *supra* note 136, at 20; *see also* Davies, *supra* note 190, at 315.

198. *See* Davies, *supra* note 190, at 313–14 (describing how feed-in tariffs and renewable portfolio standards complement each other to provide more complete support for renewable generation); *see also* Ferrey et al., *supra* note 190, at 176–80 (noting states that have considered enacting feed-in tariff programs); *Programs*, DSIRE, http://programs.dsireusa.org/system/program?type=92& [http://perma.cc/SS2K-2RPK?] (last visited Apr. 5, 2016) (listing states or localities that have adopted feed-in tariffs).

199. *See Programs*, *supra* note 198. These states include: California, Hawaii, Indiana, Michigan, Vermont, and Washington. *See id.*

200. *See* Kelly, *supra* note 21, at 749–53 (outlining arguments for and against the constitutionality of state feed-in tariffs); *see also* SCOTT HEMPLING ET AL., NAT'L. RENEWABLE ENERGY LAB., RENEWABLE ENERGY PRICES IN STATE-LEVEL FEED-IN TARIFFS: FEDERAL LAW

brought some clarity with respect to FERC's position on the issue. After California passed its climate change legislation,[201] the state legislature passed the Waste Heat and Carbon Emissions Reduction Act,[202] which enacted a feed-in tariff to support small, newly-built, efficient, combined heat and power cogeneration facilities in the state.[203] Essentially, this legislation required public utilities "to offer to purchase, at a price to be set by the [California Public Utilities Commission], electricity that is generated by certain [combined heat and power] generators and delivered to the grid."[204] It was the California Public Utilities Commission's (CPUC) position that the relevant combined heat and power generators may or may not have QF status under PURPA.[205] In implementing this legislation, the CPUC petitioned FERC for a declaratory order that the FPA, PURPA, or FERC regulations did not preempt the state's feed-in tariff program.[206] Specifically, the CPUC argued, among other things,[207] that under the statute the state did not seek to set the price of wholesale sales of electricity but instead "requir[ed] California utilities under its jurisdiction to offer to purchase electricity at a CPUC-set price intended to encourage development of highly efficient [combined heat and power] generators in order to reduce greenhouse gas emissions."[208] This argument seems to unravel since the express purpose of the statute was to "dramatically advance the efficiency of the state's use

CONSTRAINTS AND POSSIBLE SOLUTIONS v–viii (2010), http://www.nrel.gov/docs/fy10osti/47408.pdf; Ferrey et al., *supra* note 190, at 127–28.

201. California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2007).

202. CAL. PUB. UTIL. CODE §§ 2840–2845 (West 2010).

203. *See id.* §§ 2840.2, 2841.

204. Cal. Pub. Utils. Comm'n (*CPUC I*), 132 FERC ¶ 61,047, 61,326 (2010), *order clarified and reh'g denied*, 133 FERC ¶ 61,059 (2010), *reh'g denied*, 134 FERC ¶ 61,044 (2011).

205. *CPUC I*, 132 FERC at 61,330.

206. *Id.* at 61,326.

207. *See id.* at 61,327, 61,331 (noting that the CPUC argued there was no preemption "given the legal authority that states already have over the resource portfolios and procurement of utilities, and due to the different purposes of the environmental protection objectives of AB 1613, compared to the economic objectives of the FPA and PURPA" and responded to the arguments put forward by the joint utilities (Southern California Edison Company, Pacific Gas & Electric Company, and San Diego Gas & Electric Company) by asserting that "(1) the CPUC's regulation of what the utility must offer in a contract to a CHP generator does not constitute regulation of the seller in the wholesale market; (2) the FPA and PURPA do not occupy the field of environmental regulation; and/or alternatively (3) to the extent that PURPA is implicated, the modifications in the AB 1613 Rehearing Order clarify that the CPUC's feed-in tariff does not exceed the Joint Utilities' long-term avoided costs").

208. *Id.* at 61,326–27; *see also* HEMPLING ET AL., *supra* note 200, at vii, 23–29 (asserting this same argument).

of natural gas by capturing unused waste heat"[209] through a special tariff "price determined by the [CPUC]."[210]

In reaching its initial decision, FERC squarely rejected the CPUC's argument characterizing the requirements as merely an offer price.[211] But the decision notes that to the extent that the statute is a state implementation of PURPA, in that the relevant combined heat and power generators obtain QF status with FERC and the feed-in tariff does not exceed avoided costs, it is not preempted by federal law.[212] FERC held that for combined heat and power generators that are not QFs, the CPUC cannot set wholesale rates but can require "utilities to purchase capacity and energy from certain resources."[213] The decision cryptically left open the possibility of a state feed-in tariff program fitting within the flexibility that PURPA grants states in determining avoided costs.[214]

This is the precise matter on which the CPUC requested clarification from FERC, namely the flexibility for states to determine avoided costs (the level at which QFs are compensated under PURPA for wholesale generation).[215] Specifically, the CPUC asked FERC whether "(1) the CPUC can require retail utilities to consider different factors in the avoided cost calculation in order to promote development of more efficient [combined heat and power] facilities; and (2) 'full avoided cost' need not be the lowest possible avoided cost and can properly take into account real limitations on 'alternate' sources of energy imposed by state law."[216] In clarifying its prior decision, FERC explicitly endorsed a "multi-tiered avoided cost rate structure" as consistent with avoided costs.[217] FERC noted that determining avoided costs begs the question of what cost the utility avoids and outlined how this may depend on whether a state requires a certain percentage of electricity to be procured from renewable sources, such as under a renewable

209. CAL. PUB. UTIL. CODE § 2840.6(a) (West 2009).
210. *Id.* § 2841(b)(2).
211. *See CPUC I*, 132 FERC at 61,337.
212. *Id.* at 61,338.
213. *Id.*
214. *See* Signal Shasta Energy Co., 41 FERC ¶ 61,120, 61,295 (1987) (noting that "states are allowed a wide degree of latitude in establishing an implementation plan for section 210 of PURPA, as long as such plans are consistent with [FERC's] regulations" and that FERC's "role is generally limited to ensuring that the state regulatory authority's implementation plan is consistent with section 210 of PURPA and with [FERC's] regulations"); *see also* LG&E-Westmoreland Hopewell, 62 FERC ¶ 61,098, 61,712 (1993); Am. REF-FUEL Co. of Hempstead, 47 FERC ¶ 61,161, 61,533 (1989).
215. *See* Cal. Pub. Utils. Comm'n (*CPUC II*), 133 FERC ¶ 61,059, 61,262 (2010).
216. *Id.*
217. *Id.* at 61,265.

portfolio standard.[218] In doing so FERC stated that "where a state requires a utility to procure a certain percentage of energy from generators with certain characteristics, generators with those characteristics constitute the sources that are relevant to the determination of the utility's avoided cost for that procurement requirement."[219] Procurement requirements enshrined in a renewable portfolio standard can be used to limit the relevant sources for purposes of determining avoided costs. This means that states can set avoided costs for certain classes of sources, such as renewables, without reference to the wholesale market price that is often determined by natural gas generation.[220] This decision also allows states to incorporate "adders"[221] into avoided costs for certain combined heat and power generators that are in transmission-constrained areas, and would therefore prevent costs for transmission and distribution line construction or upgrade.[222] FERC subsequently denied a petition for rehearing of the prior clarification order.[223]

While this decision by FERC gives some hope to proponents of state feed-in tariffs as effective policies to promote renewable electricity generation, FERC provided only general guidance regarding the possibility of a multi-tiered avoided cost structure; it did not review an actual state policy implementing a multi-tiered avoided cost structure.[224] Some view FERC's insistence that a state feed-in tariff fit within the exemptions to the FPA enshrined in PURPA's avoided cost provisions as placing significant limitations on the ability of states to appropriately implement robust feed-in tariffs[225] while others have seen this as acquiescence that allows perhaps minimal but quite significant flexibility in designing state policies

218. *See id.* at 61,265, 61,267 ("[I]f a state required a utility to purchase 10 percent of its energy needs from renewable resources, then a natural gas-fired unit, for example, would not be a source 'able to sell' to that utility for the specified renewable resources segment of the utility's energy needs, and thus would not be relevant to determining avoided costs for that segment of the utility's energy needs.").

219. *Id.* at 61,267.

220. *See* Powers, *supra* note 137, at 645.

221. An adder inflates the avoided cost calculation in order to reflect an additional benefit that a specific resource or class of resources provides. For instance, in a transmission constrained area, an adder could reflect the "expected costs of upgrades to the distribution or transmission system that the QFs will permit the purchasing utility to avoid." *CPUC II*, 133 FERC ¶ 61,059, 61,268 (2010).

222. *See id.* at 61,267–68; *see also* Powers, *supra* note 137, at 645.

223. *See* Cal. Pub. Utils. Comm'n (*CPUC III*), 134 FERC ¶ 61,044, 61,044 (2011).

224. *See* Bloom et al., *supra* note 39, at 30.

225. *See, e.g.*, Steven Ferrey, *Follow the Money! Article I and Article VI Constitutional Barriers to Renewable Energy in the U.S. Future*, 17 VA. J.L. & TECH. 89, 116–117 (2012); Powers, *supra* note 137, at 645 (offering a mixed review since this requires states to pass other policies to justify higher avoided costs); Shapiro, *supra* note 26; Yaffe, *supra* note 39, at 10; Kelly, *supra* note 21, at 763; Motl, *supra* note 21, at 762–63 (offering a mixed review given what states can and cannot take into account in calculating avoided costs).

to promote renewable electricity generation that include feed-in tariffs.[226] The ability to target smaller, emerging producers instead of favoring large, utility-scale generation like a renewable portfolio standard is seen as a significant advantage of feed-in tariffs.[227] But renewable portfolio standards could feasibly be similarly targeted by "specify[ing] the particular renewable or cogeneration technologies that [a state] want[s] to constitute a percentage of the wholesale energy supply."[228] Yet relying on a feed-in tariff within a more general renewable portfolio standard avoids the need to modify the renewable portfolio standard to be more specific and detailed, especially as technologies change. States may need to do just that in order to take advantage of the flexibility provided by FERC's guidance.[229]

C. Demand Response

While net metering and state feed-in tariffs are policies aimed specifically at renewable generation, or the electricity supply side, increasing attention has also focused on the potential of conservation, efficiency, and other demand side management policies.[230] This focus began in the 1970s and has continued with subsequent legislative enactments related to electricity,[231] including the EPAct 2005[232] and the Energy Independence and Security Act of 2007.[233] Demand response is a policy innovation that demonstrates great

226. *See, e.g.*, Bloom et al., *supra* note 39, at 30; Dorsi, *supra* note 22, at 187–89; Grinlinton & Paddock, *supra* note 39, at 966; Klein, *supra* note 22, at 258–59.
227. *See* Davies, *supra* note 190, at 314.
228. *Cf.* Ferrey, *supra* note 225, at 117.
229. *See id.*
230. *See* EISEN ET AL., *supra* note 43, at 890 ("'Demand-side management' (DSM) is the umbrella term for programs and initiatives aimed at reducing energy consumption and/or moving it from peak to off-peak periods.").
231. *Id.* at 891; Jacobs, *supra* note 40, at 907–912.
232. EPAct 2005 § 1252(f) states:

> It is the policy of the United States that time-based pricing and other forms of demand response, whereby electricity customers are provided with electricity price signals and the ability to benefit by responding to them, shall be encouraged, the deployment of such technology and devices that enable electricity customers to participate in such pricing and demand response systems shall be facilitated, and unnecessary barriers to demand response participation in energy, capacity and ancillary service markets shall be eliminated. It is further the policy of the United States that the benefits of such demand response that accrue to those not deploying such technology and devices, but who are part of the same regional electricity entity, shall be recognized.

Pub. L. No. 109-58, 119 Stat. 594 (2005).
233. Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007) (codified as amended at 42 U.S.C. §§ 17001–17386 (2012)). Section 1301 reads:

potential but has also proven controversial. Analogous to distributed generation and state net metering laws, one type of demand response allows retail customers to assume a role similar to wholesale generators, though selling curtailment instead of generation services in wholesale markets.

Due to the nature of the electricity grid, supply and demand must be balanced in real time, all the time.[234] This means that as consumption changes throughout the day, electricity demand is met by generation from a changing mix of sources, some that run all the time and others that can more efficiently ramp up and down to balance fluctuations in demand.[235] Ensuring there is sufficient generation capacity to meet annual peaks in demand requires the use of relatively expensive generation sources that are only used for a very small portion of the year.[236] Since a gap between demand and supply can either be met by these adjustments to generation or, alternatively, by a controlled change in consumption, demand response thus offers a demand-side tool for load balancing. By 2012 demand response resources totaled almost 72,000 megawatts, which amounts to 9.2 percent of peak demand.[237] The sector is also estimated to grow nearly 8 percent per year and become a $2.9 billion industry by 2023.[238]

FERC defines demand response as "a reduction in the consumption of electric energy by customers from their expected consumption in response to an increase in the price of electric energy or to incentive payments designed to induce lower consumption of electric energy."[239] Accordingly, this outlines

> It is the policy of the United States to support the modernization of the Nation's electricity transmission and distribution system to maintain a reliable and secure electricity infrastructure that can meet future demand growth and to achieve each of the following, which together characterize a Smart Grid: . . .
> (4) Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.

Id. (codified at 42 U.S.C. § 17381).

234. *See, e.g.*, *Order 745*, 76 Fed. Reg. 16,658, 16,667 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35).

235. EISEN ET AL., *supra* note 43, at 67.

236. *See* Wellinghoff & Morenoff, *supra* note 40, at 393.

237. FED. ENERGY REGULATORY COMM'N, ASSESSMENT OF DEMAND RESPONSE AND ADVANCED METERING: STAFF REPORT 1 (2012), http://www.ferc.gov/legal/staff-reports/12-20-12-demand-response.pdf; *see also* Jacobs, *supra* note 40, at 924.

238. Mike Munsell, *Ruling Against FERC Order Could Cost US Demand Response Market $4.4B in Revenue*, GREENTECH MEDIA (Sept. 18, 2014), http://www.greentechmedia.com/articles/read/Ruling-Against-FERC-Order-Could-Cost-US-Demand-Response-Market-4.4B-in-Rev [http://perma.cc/7ZWV-5HZF].

239. 18 C.F.R. § 35.28(b)(4) (2010). A similar definition is presented in U.S. DEP'T OF ENERGY, BENEFITS OF DEMAND RESPONSE IN ELECTRICITY MARKETS AND RECOMMENDATIONS FOR ACHIEVING THEM: A REPORT TO THE UNITED STATES CONGRESS PURSUANT TO SECTION 1252 OF THE ENERGY POLICY ACT OF 2005, at xi (2006), http://energy.gov/

the two general types of demand response policies: those focused on (1) retail rate design and (2) load management.[240] In some sense, both of these give consumers more accurate price information regarding electricity use to thereby decrease peak demand.[241] Rate design options make retail rates vary with time in order to reflect, with varying degrees of accuracy, the marginal cost of electricity generation.[242] Load management programs, the primary focus of this Subpart, provide incentive payments for consumers to curtail their usage during peak demand or congestion.[243] Thus, consumers receive compensation to refrain from using electricity, or sell negative watts ("negawatts").[244] Since less than two percent of households in the United States face time variant pricing programs[245] and there are considerable social and political barriers to more widespread adoption,[246] load management demand response is even more important. Further, rate design demand response falls squarely within state jurisdiction given its focus on retail rates,[247] whereas load management demand response implicates wholesale power markets and accordingly FERC has attempted to assert jurisdiction.[248]

FERC has used its regulatory jurisdiction over wholesale power markets to gradually integrate and promote demand response resources.[249] This began in 2007 with Order 890,[250] which sought to provide an avenue for demand response

sites/prod/files/oeprod/DocumentsandMedia/DOE_Benefits_of_Demand_Response_in_Electricity_Markets_and_Recommendations_for_Achieving_Them_Report_to_Congress.pdf.

240. *See* Jacobs, *supra* note 40, at 897; *see also* EISEN ET AL., *supra* note 43, at 922 (referring to both price-mediated demand response and load management demand response). These are also referred to as retail demand response and wholesale demand response. *See* Elec. Power Supply Ass'n v. Fed. Energy Regulatory Comm'n, 753 F.3d 216, 219–20 (D.C. Cir. 2014).

241. *See* Ahmad Faruqui et al., *The Power of 5 Percent*, 20 ELECTRICITY J. 68, 68–69 (2007).

242. These include time-of-use pricing, critical peak pricing, and real time pricing. *See* EISEN ET AL., *supra* note 43, at 904, 922; Richard J. Pierce, Jr., *A Primer on Demand Response and a Critique of FERC Order 745*, 3 GEO. WASH. J. ENERGY & ENVTL. L. 102, 106 (2012).

243. EISEN ET AL., *supra* note 43, at 904, 922; Jacobs, *supra* note 40, at 897.

244. *See* Amory B. Lovins, *Saving Gigabucks With Negawatts*, 115 PUB. UTIL. FORT. 19, 19 (1985); *see also* Jacobs, *supra* note 40, at 887 n.3.

245. Ahmad Faruqui et al., *Smart by Default: Time-Varying Rates From the Get-Go—Not Just by Opt-In*, PUB. UTIL. FORT. (Aug. 2014), http://www.fortnightly.com/fortnightly/2014/08/smart-default [https://perma.cc/9VHP-LX4D].

246. *See* Eisen, *supra* note 40, at 98; Ahmad Faruqui & Jennifer Palmer, *Dynamic Pricing and Its Discontents*, 34 REG. 16, 17 (2011).

247. *See* Jacobs, *supra* note 40, at 898.

248. *See Order 745*, 76 Fed. Reg. 16,658, 16,559 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35); *Order 719*, 73 Fed. Reg. 64,100 (Oct. 28, 2008) (to be codified at 18 C.F.R. pt. 35). Nevertheless, some states have affirmatively "prohibit[ed] aggregators from bidding retail customer demand response into wholesale markets." *See also* Jacobs, *supra* note 40, at 906.

249. *See* Jacobs, *supra* note 40, at 913.

250. Preventing Undue Discrimination and Preference in Transmission Service (*Order 890*), 72 Fed. Reg. 12,266 (Mar. 15, 2007) (to be codified at 18 C.F.R. pts. 35, 37).

resources to participate in transmission planning,[251] and Order 693,[252] which essentially mandated that demand response resources be considered as a tool for managing reliability.[253] FERC then undertook more direct action in Orders 719[254] and 745.[255] The main requirement of Order 719 is that ISOs and RTOs "[a]ccept bids from demand response resources in [their] markets for certain ancillary services on a basis comparable to other resources."[256] It further required ISOs and RTOs to "permit an aggregator of retail customers . . . to bid demand response on behalf of retail customers directly into the organized energy market."[257] Collectively these provisions effectively opened the door for demand response providers to participate in wholesale power markets in order to be compensated for changing electricity demand to balance loads.[258] But Order 719 also included an exception for when "the laws or regulations of the relevant electric retail regulatory authority do not permit a retail customer to participate."[259] FERC could have left out this exception and preempted prohibitory state laws and regulations in Order 719.[260] Instead, by asserting jurisdiction only in the face of state inaction and not state action to the contrary, FERC avoided a direct jurisdictional conflict.[261]

Order 719 did not resolve the question of how much demand response providers would be compensated in wholesale power markets;[262] that required

251. *Id.* at 12,326 ("[W]here demand resources are capable of providing the functions assessed in a transmission planning process, and can be relied upon on a long-term basis, they should be permitted to participate in that process on a comparable basis.").
252. Mandatory Reliability Standards for the Bulk-Power System (*Order 693*), 72 Fed. Reg. 16,416 (Apr. 4, 2007) (to be codified at 18 C.F.R. pt. 40).
253. *See id.* at 16,476; *see also* Jacobs, *supra* note 40, at 913.
254. *Order 719*, 73 Fed. Reg. at 64,101.
255. *Order 745*, 76 Fed. Reg. at 16,559.
256. 73 Fed. Reg. at 64,101.
257. *Id.* (citation omitted).
258. *See* Freeman & Spence, *supra* note 6, at 61.
259. 73 Fed. Reg. at 64,104, 64,107, 64,119, 64,165.
260. *See, e.g.*, Wellinghoff & Morenoff, *supra* note 40, at 396–412 (identifying five potential sources of authority for FERC to assume jurisdiction over demand response).
261. *See* Jacobs, *supra* note 40, at 913. FERC similarly avoided direct jurisdictional conflict in Order 888. *See* New York v. Fed. Energy Regulatory Comm'n, 535 U.S. 1, 23–24, 28 (2002) (upholding FERC's decision in Order 888 to assert jurisdiction only over unbundled and not bundled transmission services).
262. Prior to Order 745, significant barriers to demand response resources remained despite the requirements of Order 719. *See Order 745*, 76 Fed. Reg. 16,658, 16,667–68 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35) (identifying various barriers including the "lack of a direct connection between wholesale and retail prices, lack of dynamic retail prices (retail prices that vary with changes in marginal wholesale costs), the lack of real time information sharing, and the lack of market incentives to invest in enabling technologies that would allow electric customers and aggregators of retail customers to see and respond to changes in marginal costs of providing electric

another order.[263] In Order 745, FERC set forth the net benefits test that it requires ISOs and RTOs to use in order to determine when it is cost-effective to rely on demand response resources for load balancing as opposed to generation.[264] It further specified that when a demand response resource is cost-effective and available to offset generation, it must be compensated at "at the market price for energy, referred to as the locational marginal price."[265] Thus, under Order 745 demand response providers who bid into wholesale power markets are compensated in the same manner as wholesale generators.[266]

Perhaps not surprisingly, these last steps by FERC to promote demand response quickly spurred a legal challenge[267] mounted by the Electric Power Supply Association (EPSA), the national trade association that represents independent wholesale power generators.[268] On review, the D.C. Circuit vacated Order 745, finding it to be ultra vires agency action given its "direct regulation of the retail market."[269] FERC has explicitly recognized that demand response "lies at the confluence of State and Federal jurisdiction"[270] yet argued that Order 745 focused only on wholesale demand response or incentive payments, leaving retail or rate design demand response for individual states to address.[271] FERC could not solely anchor Order 745 in its jurisdiction over wholesale sales since demand response does not actually involve a wholesale sale of electricity.[272] Instead, FERC sought to use its statutory duty to ensure "just and reasonable"[273]

service as those costs change") (citation omitted). Perhaps most important was the routine undercompensation of demand response resources. *See id.* at 16,668.

263. *See* Jacobs, *supra* note 40, at 915.

264. *Order 745*, 76 Fed. Reg. 16,658.

265. *Id.* at 16,659. The debate over how demand response providers should be compensated was quite contentious. Indeed, many have argued that locational marginal price (LMP) overcompensates demand response resources compared to generation resources. *See, e.g.*, *id.* at 16,663, 16,668; *id.* at 16,679–82 (Moeller, Comm'r, dissenting); Pierce, *supra* note 242, at 108.; *see also* Bernard S. Black & Richard J. Pierce, Jr., *The Choice Between Markets and Central Planning in Regulating the U.S. Electricity Industry*, 93 COLUM. L. REV. 1339, 1360–61 (1993). Specifically, LMP does not account for the fact that by curtailing usage demand response, providers also benefit from not paying the retail price for that electricity; accounting for this benefit would dictate compensation at LMP-G. *See Order 745*, 76 Fed. Reg. at 16,668. This overcompensation issue is somewhat analogous to net metering where distributed generation receives the full retail rate.

266. Wiseman, *supra* note 32.

267. *See* Elec. Power Supply Ass'n v. Fed. Energy Regulatory Comm'n, 753 F.3d 216 (D.C. Cir. 2014), *rev'd*, 136 S. Ct. 760 (2016).

268. *History*, ELEC. POWER SUPPLY ASS'N, https://www.epsa.org/about/index.cfm?fa=history [http://perma.cc/2EM3-SCYE] (last visited Apr. 5, 2016).

269. 753 F.3d at 225. This decision was subsequently reversed by the U.S. Supreme Court.

270. *Order 745*, 76 Fed. Reg. at 16,676.

271. *Elec. Power Supply Ass'n*, 753 F.3d at 220.

272. *See id.* at 221.

273. 16 U.S.C. § 824d(a) (2012).

and nondiscriminatory[274] rates,[275] arguing that demand response "directly affects wholesale rates."[276] The D.C. Circuit panel opinion acknowledged that there is a "direct link between wholesale and retail markets."[277] It then asserted, in a somewhat conclusory fashion, that FERC's rationale provided no limiting principle to restrain its exercise of jurisdiction.[278] Because the FPA only extended federal jurisdiction "to those matters which are not subject to regulation by the States,"[279] the court found the FPA to unambiguously foreclose FERC's ability to regulate demand response without reaching step two of *Chevron*[280] deference.[281]

This decision dramatically changed the outlook for a growing demand response industry, leaving a lot of uncertainty in its wake.[282] One of the major RTOs proposed an approach to continue including demand response resources in energy and capacity markets yet leaving additional incentives for individual states to address.[283] There were also some initial efforts in Congress to explicitly grant FERC authority.[284] Moreover, widespread and diverse support for demand response and Order 745 may have helped persuade the Supreme Court to grant certiorari.[285] This support came from state public utility

274. *Id.* § 824d(b) (prohibiting public utilities from (1) conferring "any undue preference or advantage to any person or subject[ing] any person to any undue prejudice or disadvantage, or (2) maintain[ing] any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service").

275. *See Elec. Power Supply Ass'n*, 753 F.3d at 221.

276. *Order 745*, 76 Fed. Reg. 16,658, 16,676 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35); *see also Elec. Power Supply Ass'n*, 753 F.3d at 221.

277. *Elec. Power Supply Ass'n*, 753 F.3d at 221.

278. *See id.* ("Without boundaries, §§ 205 and 206 could ostensibly authorize FERC to regulate any number of areas, including the steel, fuel, and labor markets.").

279. 16 U.S.C. § 824(a) (2012).

280. Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc., 467 U.S. 837 (1984).

281. *Elec. Power Supply Ass'n*, 753 F.3d at 224. Even if FERC did have jurisdiction, the court also found Order 745's pricing mechanism to be "arbitrary and capricious." *Id.* at 224.

282. *See, e.g.*, Robert Walton, *Demand Response in PJM Markets: 'A World of Great Uncertainty'*, UTIL. DIVE (Oct. 29, 2014), http://www.utilitydive.com/news/demand-response-in-pjm-markets-a-world-of-great-uncertainty/326803 [http://perma.cc/2B6U-QQVN].

283. *See id*; *see also* PJM INTERCONNECTION, THE EVOLUTION OF DEMAND RESPONSE IN THE PJM WHOLESALE MARKET 5 (2014), http://www.pjm.com/~/media/documents/reports/20141007-pjm-whitepaper-on-the-evolution-of-demand-response-in-the-pjm-wholesale-market.ashx.

284. *See* Robert Walton, *New Senate Bill Aims to Solve Legal Wrangling Over FERC Order 745: New Mexico Senator Wants FERC to Regulate Demand Response*, UTIL. DIVE (Dec. 2, 2014), http://www.utilitydive.com/news/new-senate-bill-aims-to-solve-legal-wrangling-over-ferc-order-745/339329 [http://perma.cc/6LWK-23X2].

285. *See* Katherine Tweed, *Supreme Court Will Hear FERC Order 745 Demand Response Case*, GREENTECH MEDIA (May 4, 2015), http://www.greentechmedia.com/articles/read/supreme-court-will-hear-ferc-order-745-demand-response-case [http://perma.cc/KMT9-EC78]; *see also* EnerNOC, Inc. v. Elec. Power Supply Ass'n, 135 S. Ct. 2049 (2015) (granting certiorari).

commissions,[286] the solicitor general,[287] various environmental and consumer advocacy groups,[288] as well as industrial companies[289] and demand response providers.[290] It also reflected the magnitude of what was at stake; if the Supreme Court had affirmed, it would have "cost the American demand response market [an estimated] $4.4 billion in unrealized revenue opportunity over the next ten years."[291]

Instead, in an opinion by Justice Kagan, the Supreme Court departed from a strict textual reading of the FPA and reversed the lower court's decision.[292] The opinion showcases the Court's grasp of the complex economic forces at play and its recognition that "the wholesale and retail markets in electricity are inextricably linked."[293] To determine whether FERC had statutory authority under the FPA for Order 745, in a two-part holding the Court concluded that demand response is a rule or practice directly affecting wholesale rates, and federal regulation of demand response does not impinge on exclusive state jurisdiction over retail rates.[294] For the first part, the Court used a "common-sense" and "non-hyperliteral reading" to construe FERC's jurisdiction under the FPA, extending it to rules and practices that directly affect wholesale rates.[295] The Court viewed this reading as necessary "to prevent the statute from assuming near-infinite

286. *See* Joint State Brief in Support of Petitions for Writ of Certiorari, Fed. Energy Regulatory Comm'n v. Elec. Power Supply Ass'n, 136 S. Ct. 760 (2015) (No. 14-840), http://sblog.s3.amazonaws.com/wp-content/uploads/2015/03/30798-pdf-Dorman.pdf.

287. *See* Reply Brief for the Petitioner, *Elec. Power Supply Ass'n*, 136 S. Ct. 760 (2015) (No. 14-840), http://www.justice.gov/sites/default/files/osg/briefs/2015/04/17/14-840_ferc_cert_reply.pdf.

288. *See* Brief for Del. Div. of the Pub. Advocate et al. as *Amici Curiae* in Support of Petitioners, *Elec. Power Supply Ass'n*, 136 S. Ct. 760 (2015) (No. 14-840), http://sblog.s3.amazonaws.com/wp-content/uploads/2015/03/EPSA-Amicus-Brief-As-Filed.pdf.

289. *See* Brief for Fourteen Utils. Including Consol. Edison Co. of N.Y. & Affiliates; Nat. Grid USA & Affiliates; & Ne. Util. DBA Eversource Energy & Affiliates as *Amici Curiae* in Support of Certiorari, *Elec. Power Supply Ass'n*, 136 S. Ct. 760 (2015) (No. 14-840), http://sblog.s3.amazonaws.com/wp-content/uploads/2015/03/Con-Ed-Eversource-National-Grid-FERC-v.-EPSA-Amicus-Br.-ISO-Certiorari-FINAL.pdf.

290. *See* Brief for Electricity Consumers & Demand Response Providers as Amici Curiae in Support of Petitioners, *Elec. Power Supply Ass'n*, 136 S. Ct. 760 (2015) (No. 14-840), http://www.edf.org/sites/default/files/content/enernoc_et._al.pdf.

291. Munsell, *supra* note 238.

292. *EPSA*, 136 S. Ct. 760, 784 (2016). The Court found sufficient statutory authority for Order 745, *id.* at 773–82, and upheld the compensation formula as not arbitrary and capricious, *id.* at 782–84.

293. *Id.* at 766. For example, there was significant disagreement over the importance of opportunity costs in characterizing the effect of FERC's demand response rules on retail markets. *Compare id.* at 777–78 (majority opinion) (arguing that the retail rate is just "the price paid, not the price paid *plus* the cost of a forgone economic opportunity"), *with id.* at 786–87 (Scalia, J., dissenting) (arguing that the inclusion of opportunity costs is an "elementary economic conclusion").

294. *Id.* at 773–82 (majority opinion).

295. *Id.* at 774.

breadth," such as over indirect or tangential impacts on electricity markets from other industries.[296]

But the question whether Order 745 overstepped this authority by impinging on state regulation of retail rates was arguably the more contentious issue. In this portion of its opinion the Court adopted a pragmatic and functionalist understanding of the relationship between wholesale and retail electricity markets as well as the supposed "bright line" that Congress intended to draw.[297] The Court noted that "wholesale and retail markets . . . are not hermetically sealed from each other" and implicitly rejected the "bright line" by asserting that the "'Platonic ideal' of strict separation between federal and state realms cannot exist."[298] But, conversely, the Court also adopted a strict textual understanding of exclusive state jurisdiction and confined its ambit to the actual setting of retail rates, which, of course, Order 745 does not.[299] In this regard, the Court relied in part on the very purpose of the FPA: to eliminate regulatory gaps.[300] Since the program would be "extinguish[ed] . . . in its entirety" if FERC were unable to regulate demand response in wholesale electricity markets.[301] The Court also applauded "FERC's notable solicitude toward the States" by granting veto power over wholesale demand response within each jurisdiction.[302]

The decisions in *EPSA* by the D.C. Circuit and the Supreme Court demonstrate how FERC's efforts to promote demand response have somewhat stretched and strained its jurisdiction under the FPA.[303] In this regard, the ease with which the Supreme Court reached its holding belies the true complexity of the case. The decisions in fact exemplify the challenges of applying a statute, formulated to regulate vertically integrated utilities, to an industry that has seen dramatic change with restructuring and the move to competition. Indeed, under the FPA federal jurisdiction resides in upstream processes while state jurisdiction resides in downstream processes. But the development of demand response resources that can bid into wholesale power markets for load balancing directly connects these domains and blurs the FPA's jurisdictional

296. *Id.*
297. *See, e.g.*, Christiansen, *supra* note 36.
298. *Id.* at 776. The Court also recognized that "when [FERC] takes virtually any action respecting wholesale transactions [] it has some effect, in either the short or the long term, on retail rates." *Id.*
299. *Id.* at 777; *see also* Christiansen, *supra* note 36.
300. *Id.* at 780 (noting that the FPA "makes federal and state powers 'complementary' and 'comprehensive,' so that 'there [will] be no 'gaps' for private interests to subvert the public welfare'"). For a discussion of the *Attleboro* Gap, see also *supra* note 53–57 and accompanying text.
301. *Id.* at 781.
302. *Id.* at 779–80 (arguing that this delivered "the finishing blow to both of EPSA's arguments").
303. *See* Elec. Power Supply Ass'n v. Fed. Energy Regulatory Comm'n, 753 F.3d 216, 225 (D.C. Cir. 2014), *rev'd*, 136 S. Ct. 760 (2016).

divide. Thus, demand response truly does lie "at the confluence of State and Federal jurisdiction."[304] In the face of limited action by states on the issue of rate design or retail demand response,[305] FERC has instead attempted to assert federal jurisdiction to promote wholesale demand response.[306] As a normative matter, some see this as a second-best policy solution that could also disincentivize congressional action.[307] Nevertheless, "by inviting retail customers into the wholesale markets"[308] in Orders 719 and 745 FERC essentially helped create this jurisdictional confrontation.

III. CONFRONTING JURISDICTIONAL TENSIONS

The specific examples highlighted in Part II collectively tell a story with a few, somewhat conflicting, facets. In one sense, the story seems to demonstrate the many ways in which the jurisdictional divide of the FPA is outdated, ill-suited for the challenge of regulating the modern electricity sector given its lack of adaptability. The retail-wholesale division should be replaced with something more clear and coherent. However, in another sense the story showcases the ways in which federal and state policies have stretched jurisdictional limits to promote the development of renewable generation and decarbonize the electricity sector—an approach recently condoned by the Supreme Court. This has pushed forward discrete renewable energy policies depending on where political urgency and willingness to act reside along two different axes: state versus federal, and administrative agency versus state legislatures or Congress. Hence, changing and clarifying jurisdictional lines necessarily involves tradeoffs and could ultimately have unintended consequences on efforts to decarbonize the electricity sector. To ensure progressive clean energy policy, jurisdiction must align with political exigency at different levels of government.[309]

304. *Order 745*, 76 Fed. Reg. 16,658, 16,676 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35).
305. *See* Faruqui et al., *supra* note 245, at 24; Jacobs, *supra* note 40, at 915.
306. *See* Jacobs, *supra* note 40, at 915 ("[T]he impact of FERC's efforts in Orders 719 and 745 cannot be overstated. In the space of just a few years, FERC has created a new, lucrative market for retail demand response providers, effectively bypassing the FPA's statutory constraints.").
307. *See, e.g.*, Eisen, *supra* note 40, at 100; Jacobs, *supra* note 40, at 917.
308. *See* Opposition to Petitions for Writ of Certiorari at 2, Fed. Energy Regulatory Comm'n v. Elec. Power Supply Ass'n, 136 S. Ct. 760 (2015) (No. 14-840), http://sblog.s3.amazonaws.com/wp-content/uploads/2015/04/2015-03-19-EPSA-BIO-FINAL.pdf.
309. *See* Adler, *supra* note 41, at 131–32 (arguing that regulatory jurisdiction often does not align with the actor most able and motivated to push forward environmental values and calling this jurisdictional mismatch); Jacobs, *supra* note 40, at 938.

A. Challenging the FPA's Division of Jurisdiction

It is easy to conclude from Part II that the FPA's jurisdictional division between state and federal authority simply no longer makes sense for regulating the electricity sector of the twenty-first century. The grid is often conceptualized as one giant machine,[310] where supply and demand must be balanced in real time, all the time.[311] With restructuring and the move towards competition, there is increasing regional governance through ISOs and RTOs, organizations not constrained by state borders.[312] This supports an intuitive argument that consequential decisions should be made on a different level than state governments, given the increasing interdependence and national character of electricity. A unified, coherent regulatory approach for the entire nation is required.

Modern policy developments have rendered the FPA's distinction between wholesale and retail difficult to maintain. Even when Congress first drafted the language of the FPA in the 1930s, the interdependence between wholesale and retail sales was likely apparent. Yet this interdependence was of little consequence given limited wholesale transactions and no real competitive wholesale markets to speak of. Now, not only do wholesale markets help determine retail prices[313] but distributed generation and demand response technologies have allowed retail customers to affect and participate in wholesale markets, assuming roles akin to merchant generators.[314] Even if the FPA prevents robust state feed-in tariff programs, states remain free to specify detailed and stringent renewable portfolio standards. These can similarly affect wholesale prices, even if not dictating them directly.[315] Wholesale and retail markets are no longer just somewhat connected—rather, they are intimately related.[316]

310. *See* PHILLIP F. SCHEWE, THE GRID: A JOURNEY THROUGH THE HEART OF OUR ELECTRIFIED WORLD 1 (2007) ("Taken in its entirety, the grid is a machine, the most complex machine ever made."); Boyd, *supra* note 3, at 1622 (describing the grid "as the most complex machine ever built").

311. *See Order 745*, 76 Fed. Reg. 16,658, 16,667 (Mar. 24, 2011) (to be codified at 18 C.F.R. pt. 35).

312. *See RTO/ISO*, *supra* note 115.

313. *See generally* Fed. Power Comm'n v. Conway Corp., 426 U.S. 271 (1976) (considering the boundary of federal jurisdiction given the relationship between wholesale and retail rates).

314. *See supra* Parts II.A, II.C.

315. In regards to renewable portfolio standards and feed-in tariffs, the line drawn by the FPA that essentially allows states to control the percentage of generation from renewable sources but not dictate a price premium for certain types of generation (at least outside of the limits of avoided costs) makes little sense if the goal of the jurisdictional line is to preserve federal authority over wholesale markets. It is akin to permitting states to enact cap-and-trade programs (a quantity-based policy), but not a carbon tax (a price-based policy).

316. *EPSA*, 136 S. Ct. 760, 766 (2016).

But if the retail-wholesale boundary is not the jurisdictional line, where else should it be drawn? One alternative would be for Congress to grant greater preemptive federal authority where FERC essentially oversees both wholesale and retail markets in a unified and comprehensive manner. Expanding the federal role in this way can be grounded in Congress' commerce power, as electricity is a quintessential example of interstate commerce.[317] Feasible as a constitutional matter and appealing in terms of conceptual clarity, this option is unlikely as a political reality.[318] If the political considerations around transmission siting authority and any efforts to expand the federal role in that domain are an indication, states would be incredibly reluctant to relinquish their authority over retail markets.[319] While a theoretical possibility, complete federal regulatory authority can be set aside as an unrealistic option. Also, while it might clarify jurisdictional issues, centralizing federal power would have uncertain effects on renewable generation and decarbonizing the grid. There has been a complete failure at the federal level to establish a uniform, national policy to promote renewable generation. Congress has instead relied on discrete and stopgap measures for certain technologies or areas while states and their public utility commissions have played key roles on policy issues such as net metering, renewable portfolio standards, and feed-in tariffs.[320] Moreover, centralizing federal power would make renewable energy policy more dependent on the political preferences of the executive and on the composition of FERC leadership.

The dual roles of state and federal regulators could also be maintained through different federalism governance such as federal floor or ceiling preemption.[321] Floor preemption has been a crucial point in the debate around federal climate legislation and whether more stringent state policies would survive federal legislation.[322] It would give both federal and state governments overlapping regulatory authority, albeit with states acting within federal boundaries. But the preemptive effect of federal laws and regulations presumes federal authority in the

317. *See* U.S. CONST. art. I, § 8, cl. 3; Fed. Energy Regulatory Comm'n v. Mississippi, 456 U.S. 742, 757 (1982) ("[I]t is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and every commercial or manufacturing facility. No State relies solely on its own resources in this respect.").

318. *See* Jacobs, *supra* note 40, at 942.

319. *See* Klass & Wilson, *supra* note 112, at 1859–65.

320. *See* Steven Weissman, *Effective Renewable Energy Policy: Leave It to the States?*, 3 SAN DIEGO J. CLIMATE & ENERGY L. 345, 346–49 (2011–12).

321. *See* Jim Rossi & Thomas Hutton, *Federal Preemption and Clean Energy Floors*, 91 N.C. L. REV. 1283, 1331–39 (2013) (arguing for federal floor preemption in certain areas under the FPA). *See generally* William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007).

322. *See* ERIN RYAN, FEDERALISM AND THE TUG OF WAR WITHIN 174–75 (2011).

first instance. This approach of limiting or targeting preemption could make an expansion of federal control over both wholesale and retail markets more politically palatable. In some ways it has already been implemented in specific areas, such as FERC's interpretation of when a wholesale sale occurs for net metering or what constitutes avoided costs for state feed-in tariffs.

Another alternative is for Congress to amend the jurisdictional provisions of the FPA to include specific reservations for net metering, feed-in tariffs,[323] and demand response.[324] If politically feasible, this approach would ameliorate the underlying jurisdictional tensions with respect to these discrete policy issues now confronting federal and state regulators. But it would not ensure a durable and adaptive jurisdictional scheme able to address future policy challenges. And given the recent changes in the electricity sector, those will surely come. Deciding how to tailor these reservations would also be a hurdle. For instance, in the context of net metering, would the proposal simply grant states the authority to regulate as long as generation is less than or equal to consumption? Is the relevant netting period monthly or annually? Or could states allow retail customers to benefit from compensation at the full retail level even if they are net generators on average? In the context of feed-in tariffs, would there be any limits on the price premium states can require? Would feed-in tariffs only apply to certain renewable technologies or could some states enact them for natural gas generators? For demand response, would FERC remain free to require compensation of demand response resources using the locational marginal pricing mechanism? Or should Congress address the issue of overcompensation raised by the challengers to Order 745 in *EPSA* and other cases?

Another option, of course, is to maintain the status quo. While Part II highlighted the ways in which the division between wholesale and retail jurisdiction has restrained more robust state and federal regulatory policies, it is also remarkable that this division has endured. It has remained largely static since 1935 though current technological and regulatory realities were probably unimaginable to the drafters of the FPA.[325] The "growing incongruity between the emergence of electricity as a national product and the jurisdictional limits of the FPA"[326] is increasingly evident. Yet some see Congress as conspicuously absent from the debate regarding how state and federal jurisdiction should interact

323. *See* Motl, *supra* note 21, at 766–67; Perkins, *supra* note 39, at 112.
324. *See* Weissman, *supra* note 320, at 360–61 (proposing specific authorization by Congress of state feed-in tariff programs).
325. *See* Freeman & Spence, *supra* note 6, at 63.
326. Jacobs, *supra* note 40, at 942.

in the modern electricity sector.[327] It is safe to assume that Congress is unlikely to make sweeping changes to state and federal jurisdictional lines, so the status quo is likely the reality with which we must cope.[328] And, indeed, the Supreme Court's decision in *EPSA* breathed new life into this division.

But the status quo jurisdictional scheme could also assume an alternate embodiment more closely aligned with the statute's text. The way FERC, states, and the courts have extended the jurisdictional line to net metering, feed-in tariffs, and demand response is arguably unfaithful to the text of the FPA. FERC's determination of a wholesale sale for net metering strains conceptual coherence. Given Congress's intent to give states latitude in determining avoided costs, the CPUC order,[329] for example, stands on slightly firmer ground but still pushes the limits of that discretion. The breadth of retail practices that affect wholesale rates and thereby become subject to FERC's regulatory reach was the central question in *EPSA*. Some would advocate for greater judicial scrutiny in these areas.[330] Under strict adherence to the FPA, FERC should regulate sales by distributed generators, even absent net generation during the relevant billing period. Even though states do have flexibility in setting avoided costs, the FPA's just and reasonable requirements should still preclude state feed-in tariffs. And as the D.C. Circuit held, FERC's wholesale jurisdiction should not be allowed to swallow states' retail jurisdiction.[331] But courts have not strictly construed jurisdiction under the FPA in this manner, with the exception of the D.C. Circuit's opinion in *EPSA*.[332] Indeed, on review the Supreme Court's decision sanctioned this

327. *See generally* Freeman & Spence, *supra* note 6 (discussing how polarization and gridlock in Congress have prevented new legislation, forcing federal agencies to adapt old, outdated statutes to confront the new regulatory challenges they face).

328. *See* Jacobs, *supra* note 40, at 940 ("[A] comprehensive legislative reassessment of the jurisdictional boundaries of the FPA is unlikely . . . .").

329. *CPUC II*, 133 FERC ¶ 61,059 (2010).

330. *See* Freeman & Spence, *supra* note 6, at 62–63 (discussing the interplay of an old statute, robust agency action, and judicial review).

331. *But cf.* Joel B. Eisen, *FERC's Expansive Authority to Transform the Electric Grid*, 49 U.C. DAVIS L. REV. (forthcoming 2016) (conducting a historical analysis and arguing that FERC has "ample authority" for Order 745 and other aggressive measures).

332. See Justin M. Gundlach, EPSA v. FERC—*the End of Wholesale Demand Response?*, 42 ECOLOGY L.Q. 699, 746–61 (2015) for a discussion of what FERC could have done in the wake of an adverse decision by the Court. It is also noteworthy that the Supreme Court has never directly reviewed the question whether competitive electricity markets comply with the FPA's just and reasonable requirements. *See* Morgan Stanley Capital Grp. Inc. v. Pub. Util. Dist. No. 1 of Snohomish Cty., Wash., 554 U.S. 527, 538 (2008) ("We have not hitherto approved, and express no opinion today, on the lawfulness of the market-based-tariff system, which is not one of the issues before us."); *see also* Pub. Citizen, Inc. v. Fed. Energy Regulatory Comm'n, 133 S. Ct. 26 (2012) (denying certiorari in *Montana Consumer Counsel v. Federal Energy Regulatory Commission*, 659 F.3d 910 (9th Cir. 2011)).

expanded federal jurisdiction while severely limiting the realm of exclusive state jurisdiction.[333]

Setting aside the jurisdictional division between retail and wholesale would create coherence and clarity. It would reduce confusion and allow state and federal regulators to more readily discern where jurisdiction lies. Companies with an interest in distributed generation and states like California would not have to petition FERC to clarify jurisdictional questions such as what qualifies as a wholesale sale or whether states can implement feed-in tariff programs. Surely other gray areas would emerge under any of the alternative approaches but they might not strike at the heart of the jurisdictional line in the way that contemporary clean energy policy challenges like net metering, feed-in tariffs, and demand response challenge the retail-wholesale distinction. But these alternatives are not created equal. If clarity is the measure, a preemptive, comprehensive federal regulatory approach is preferred. A well-conceived federalism scheme would likely be next. Explicit reservations for state jurisdiction over net metering and feed-in tariffs and federal jurisdiction over demand response would follow; this would preserve the retail-wholesale distinction but fail to address the inevitable challenges that will arise in the future as the electricity sector becomes even more integrated. But this begs the question of whether jurisdictional clarity is the only, or most important, goal.

B. The Tradeoffs of Jurisdictional Clarity

Amending jurisdictional lines under the FPA would necessarily affect the promotion of renewable generation and efforts to decarbonize the grid. Congressional tinkering comes with real risks. It would require changing the allocation of regulatory authority among dissimilar government institutions. There is variation along two axes: level of government (state versus federal) and type of government actor (administrative agency versus state legislatures or Congress). These institutions have different capacities and commitments to specific issues. Congress has played a limited role and has generally not been a strong leader on renewable energy policy.[334] Constrained by the FPA, and most significantly by the just and reasonable requirement, FERC has partnered with states to push forward certain policies and reforms. Recognizing the variation among states, some state legislatures and public utility commissions have been vital drivers of renewable energy policy innovation.[335] These institutions' characteristics

333. *See EPSA*, 136 S. Ct. 760, 773–82 (2016); Christiansen, *supra* note 36.
334. *See* Freeman & Spence, *supra* note 6, at 8; Weissman, *supra* note 320, at 346.
335. *See* Boyd & Carlson, *supra* note 113.

and prior history indicate that changing the allocation of jurisdiction would have substantive consequences for clean energy policy as a whole.

Under the current jurisdictional scheme, the partnership between FERC and state legislatures and public utility commissions has been collaborative, at times adversarial, but most importantly, strategic.[336] The FPA's division of jurisdiction has been adapted and stretched to allocate regulatory authority to the institution that will act. The just and reasonable requirements of the FPA prohibit FERC from incentivizing renewable generation through wholesale prices. So FERC has attempted to abstain from triggering its statutory obligations, preserving some flexibility for states to implement policies like net metering and feed-in tariffs. Nearly all fifty states have enacted net metering programs[337] and a smaller but growing group has implemented feed-in tariffs.[338] But states also have been reticent to employ widespread rate design demand response. So FERC saw the vacuum and "invit[ed] retail customers into the wholesale markets"[339] to push forward wholesale demand response. FERC has shrewdly abdicated regulatory authority to make room for states and expanded regulatory authority to preempt states. And the Supreme Court majority emphatically endorsed this approach.

If Congress established preemptive federal regulatory authority over wholesale and retail markets without changing the FPA's just and reasonable requirements or enacting federal price- or quantity-based policies to promote renewable generation, this would be a significant regression for clean energy policy. State net metering and feed-in tariff programs would be no more and the FPA would continue to restrict FERC's discretion. Clarifying the jurisdictional line in this way would frustrate existing efforts by states. Instead, Congress could limit preemptive authority to establish a federal floor or cabin state jurisdiction in some other way. By refraining from full preemptive authority this approach could retain robust state policies in specific areas, such as state net metering and feed-in tariffs.

If Congress amended the FPA to allocate state authority over net metering and feed-in tariffs and federal authority over demand response, jurisdiction would potentially be aligned with institutional exigency. Extrapolating from current dynamics, individual states legislatures are more likely than Congress to

336. *See* Freeman & Spence, *supra* note 6, at 58–62.
337. *See* DSIRE, *supra* note 135.
338. *See Programs*, *supra* note 198; *see also* Grinlinton & Paddock, *supra* note 39, at 969 (stating that Vermont, California, Oregon, and Hawai'i have implemented "mandatory feed-in tariff legislation").
339. *See* Opposition to Petitions for Writ of Certiorari, *supra* note 308.

maintain robust net metering and feed-in tariff programs yet FERC is more likely than states to adopt strong demand response. While detailing the contours of these reservations would be difficult and this approach leaves future jurisdictional challenges entirely unresolved, it offers significant potential for more robust renewable energy policies in these three discrete areas. No longer forced to fit feed-in tariffs into the tiered avoided cost structure outlined by FERC, states would have the freedom to decide between renewable portfolio standards and feed-in tariffs.

Maintaining but adhering more faithfully to the FPA's jurisdictional division would have a similar outcome to the option of full preemption without supplemental federal policies. FERC would regulate distributed generators so compensation would reflect wholesale market prices. While states have discretion in determining avoided costs, the tiered structure promoted by FERC might stretch beyond those limits. Consistent with the D.C. Circuit's interpretation of the FPA, FERC would not be able to commandeer state jurisdiction over retail markets. Yet beyond these effects on clean energy policies, faithful adherence to the FPA would also accentuate its limitations, limitations that have been masked by strategic adaptation of its jurisdictional division. In the context of demand response, Sharon Jacobs has referred to FERC's path as "bypassing federalism."[340] This type of agency action that stretches the limits of statutory authority "can mask the existence of disconnects between statutory jurisdictional allocations and modern exigencies" thereby "muting signals to Congress that legislative intervention is needed."[341] Choosing between principled adherence to the FPA and policy outcomes that support renewable energy, FERC and the states have focused on the latter. But it is impossible to know if and how this has postponed legislative action.[342]

The Supreme Court's foray into this jurisdictional puzzle reinvigorated the FPA's division of authority and demonstrated how it might be adapted through a functionalist lens to respond to modern realities.[343] Yet reading the majority opinion instills a false sense of certainty regarding the clarity of jurisdictional lines and obscures the risks of its approach to jurisdictional conflicts. In condoning FERC's expansion of federal authority over demand response, the Court confined the realm of exclusive state jurisdiction to a strict textual reading

340. Jacobs, *supra* note 40, at 890.
341. *Id.* at 940.
342. *See id.* at 940–44.
343. *See, e.g.*, Christiansen, *supra* note 36 (arguing that the Supreme Court's decision in *EPSA* was "deeply functionalist" and concluding that it "go[es] a long way toward ensuring that the FPA's basic jurisdictional framework remains vibrant and can accommodate the fundamental changes that will come").

of the FPA.[344] This approach showcases a radically different understanding of the FPA's jurisdictional division from that of a "bright line." Rather it presents a continuum, or almost a Venn diagram, that rejects a rigid division of authority. Instead, exclusive state and federal domains reside at the extremes and there is ample room in the middle for concurrent state-federal jurisdictional overlap. This is an appealing vision for the FPA and not without its benefits.[345] But the Court only decided half of this picture. It limited exclusive state jurisdiction over retail sales in the face of encroaching federal regulations. This was in the name of "cooperative federalism" since FERC preserved a role for states vis-à-vis their veto power.[346] But would the Court similarly limit exclusive federal jurisdiction over wholesale sales in the face of encroaching state regulations? Or does *EPSA* simply indicate a dramatic enlargement of federal authority at the expense of state authority? The most recent decision in *Hughes v. Tallen Energy Marketing* suggests it is likely the latter.[347] Thus, it remains to be seen how the Court might address future jurisdictional challenges to robust state policies promoting renewable energy, like net metering and feed-in tariffs. In these areas FERC has attempted to limit its own jurisdiction to allow for state experimentation. But that may change. The Court's appreciation for the interdependence of retail and wholesale electricity markets in *EPSA* could similarly apply to state net metering and feed-in tariffs. These policies surely impact wholesale rates that FERC has a statutory duty to ensure are "just and reasonable"[348] and nondiscriminatory.[349]

CONCLUSION

This Comment has explored some of the contemporary areas of conflict that confront the divide between state and federal regulatory jurisdiction over the electricity sector established by the FPA.[350] What should be "a bright line easily ascertained"[351] is increasingly muddled and challenged by the changes, both regulatory and technological, that have occurred since 1935. Many current policies and policy debates concern the line between these two spheres of jurisdiction. State net metering implicates wholesale markets and federal demand response

344. *EPSA*, 136 S. Ct. 760, 777 (2016); *see also* Christiansen, *supra* note 36.
345. *See, e.g.*, Schapiro, *From Dualism to Polyphony*, *supra* note 35, at 42–44; Engel, *supra* note 35, at 161; Schapiro, *Interactive Federalism*, *supra* note 35, at 252.
346. 136 S. Ct. at 780. It is unclear if the Court would have reached a different conclusion had FERC not demonstrated this solicitude and appreciation for federalism.
347. Hughes v. Talen Energy Mktg., No. 14-614 (U.S. Apr. 19, 2016).
348. 16 U.S.C. § 824d(a) (2012).
349. *Id.* § 824d(b).
350. Federal Power Act, ch. 687, 49 Stat. 863 (codified as amended at 16 U.S.C. §§ 791–828c (2012)).
351. Fed. Power Comm'n v. S. Cal. Edison Co., 376 U.S. 205, 215 (1964).

rules infringe on retail markets. Where there is a lack of political will for a federal feed-in tariff program, states have sought to fill the void, implicating federal authority over wholesale rates. While wholesale and retail markets are conceptually distinct, dividing jurisdiction along a line that has become less and less clear in practice causes confusion and imposes costs on policy innovation.

One conclusion is that the difficulty of dividing federal and state jurisdiction along current lines requires a reconceptualization of how we regulate the electricity sector. Even discounting considerations of political feasibility, reallocating regulatory jurisdiction entails substantive changes and considerable risks for clean energy policy. Complete federal preemption would provide the greatest jurisdictional clarity yet would likely supplant robust state policies without an adequate replacement. Conversely, explicit reservations allocating jurisdiction over net metering and feed-in tariffs to states and demand response to FERC would provide only a stopgap measure, failing to address the inevitable jurisdictional challenges of the future. Yet it would likely enable robust clean energy policies by more fully aligning jurisdiction and political exigency. Redrawing jurisdiction is not just about coherence and clarity. It entails substantive policy implications. Yet strategically adapting the FPA's current jurisdictional division and departing from a faithful interpretation of its text comes with its own costs as well. It risks obscuring the underlying tensions and muting their effects, forestalling congressional action. Recognizing these tradeoffs leaves a choice: We can faithfully adhere to the FPA and hope Congress addresses the "growing incongruity between the emergence of electricity as a national product and the jurisdictional limits of the FPA"[352] or we can continue to adapt and test those jurisdictional boundaries with full knowledge that doing so may prolong its tenure. The Supreme Court opted for the latter. Its decision does a great deal towards adapting the FPA's jurisdictional division to the modern electricity sector. But it also may have put us on a path towards increasing federalization of regulatory authority without a full appreciation for all that entails.

352. Jacobs, *supra* note 40, at 942.