Bypassing Federalism and the Administrative Law of Negawatts

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ABSTRACT: Presidential unilateralism has become a defining feature of the executive branch. But a related and equally important phenomenon has been largely ignored: federal agency efforts to circumvent statutory federalism boundaries. This move, which the Article calls "bypassing federalism," involves using existing jurisdictional authority to work de facto, rather than de jure, reallocations of power. The Article explores agency bypassing through the lens of the Federal Energy Regulatory Commission's ("FERC's") promotion of demand response in electricity markets. Demand response refers to customer sales of negative watts, or "negawatts," back to the electrical grid. FERC, eager to promote demand-side management programs but stymied by the jurisdictional limitations in the Federal Power Act of 1935, recently adopted a strategy that bypasses these federalism boundaries by setting up demand response programs in wholesale markets, which are under its control, to parallel state and local programs.

Although the strategy has boosted demand response program participation, the Article ultimately concludes that bypassing is an insalubrious administrative innovation. While it allows agencies to further national objectives without challenging jurisdictional boundaries head on, the strategy has significant downsides. First, statutory constraints may limit an agency's options in a way that results in the promotion of second-best over first-best policies. Second, even de facto jurisdictional adjustments raise federalism questions that we might prefer be addressed through the legislative process. Third, bypassing can be a costly strategy to the extent that it creates animosity between federal agencies and their state counterparts and fails to head off judicial showdowns. Finally, by making a dysfunctional statutory scheme workable, bypassing threatens to delay legislative solutions.

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INTRODUCTION

The exercise of unilateral executive authority is well-studied, but until recently, the focus has been almost exclusively on the President's foreign affairs power.[1] Increasingly, however, federal agencies are addressing gaps between statutory authority and present realities on their own initiative. In some cases, they are doing so by circumventing statutory federalism boundaries to promote favored programs in the face of state, rather than congressional, intransigence. In these efforts to "bypass federalism," agencies themselves may be the drivers of policy rather than the White House.

This Article analyzes this growing phenomenon through the Federal Energy Regulatory Commission's ("FERC's") regulation of consumer demand for electricity. Specifically, it focuses on FERC's efforts to promote demand response programs in electricity markets. Demand response refers to a retail customer's reduction of energy consumption in response to a price signal or incentive payment.[2] This commitment not to consume has been described as a sale of negative watts, or "negawatts," back to the electrical grid.[3] While utilities and regulators have experimented with energy efficiency since the oil crises and resulting energy price spikes of the 1970s, demand response programs are a relatively recent innovation. Only in the last decade have advances in energy metering and communications technologies made

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1. *See, e.g.*, JACK GOLDSMITH, POWER AND CONSTRAINT: THE ACCOUNTABLE PRESIDENCY AFTER 9/11 (2012) (identifying a long-term trend of expanding executive power and arguing that this expansion has preserved balance within the federal government); ERIC A. POSNER & ADRIAN VERMEULE, THE EXECUTIVE UNBOUND: AFTER THE MADISONIAN REPUBLIC (2010) (concluding that a strong executive is a modern necessity); Curtis A. Bradley & Martin S. Flaherty, *Executive Power Essentialism and Foreign Affairs*, 102 MICH. L. REV. 545 (2004) (challenging, on both textual and historical grounds, the idea that the Vesting Clause bestows broad unenumerated powers on the President); Eric A. Posner & Cass R. Sunstein, Chevron*izing Foreign Relations Law*, 116 YALE L.J. 1170 (2007) (arguing that the court should defer to executive interpretations of ambiguous statutory provisions even where those interpretations are inconsistent with the comity doctrine).

Comparatively less attention has been paid to the executive's authority to accomplish domestic agendas without the aid of new legislation. For examples of recent treatments with a domestic focus, see Jody Freeman & David B. Spence, *Old Statutes, New Problems* , 163 U. PA. L. REV. 1 (2014); Richard J. Lazarus, Howard & Katherine Aibel Professor of Law, Harvard Law Sch., Chair Lecture: Environmental Lawlessness (Apr. 10, 2013). More recently still, Daphna Renan has suggested that the executive can enlarge his or her unilateral policymaking authority through the manipulation of administrative structures. Daphna Renan, *Pooling Powers*, 115 COLUM. L. REV. (forthcoming 2015).

2. For a more detailed definition of demand response, see 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 6 (2006) [hereinafter 2006 DOE REPORT].

3. Credit for coining the term "negawatt" generally goes to physicist and energy policy expert Amory Lovins. Amory B. Lovins, *Saving Gigabucks with Negawatts*, PUB. UTIL. FORT. Mar. 21, 1985, at 19.

widespread deployment of demand response programs possible.[4] Properly implemented, demand response programs can prevent electricity price spikes, enhance reliability, and produce environmental benefits. For these reasons, FERC believes that demand response is an essential component of a "smarter" energy policy.[5]

While there is a significant economics literature on demand-side management and demand response,[6] *legal* commentators have paid much less attention to demand response programs.[7] More attention is warranted, however, for three reasons. First, demand response programs are already widespread and will only grow in importance as enabling technologies continue to develop. The programs are increasingly being touted as a solution to such diverse problems as integrating more renewable resources into the grid and the Texas energy market's thin reserve margins.[8] Demand response might also be used to comply with the Environmental Protection Agency's ("EPA's") proposed limitations on carbon pollution from existing power plants.[9]

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4. *See* Marc Lipski, *Demand Response—Technology for the Smart Grid*, ELECTRICITY TODAY, May 2011, for a discussion of the relationship between demand response and its enabling technologies.

5. FERC maintains that effective demand response "can help reduce electric price volatility, mitigate generation market power, and enhance reliability." *See, e.g.*, Fed. Energy Regulatory Comm'n, *Demand Response*, http://www.ferc.gov/industries/electric/indus-act/demand-response.asp (last visited Jan. 19, 2015).

6. *See, e.g.*, Robert Borlick, *Paying for Demand-Side Response at the Wholesale Level: The Small Consumers' Perspective*, ELECRICITY J., Nov. 2011, at 8; Hung-po Chao, *Price-Responsive Demand Management for a Smart Grid World*, ELECTRICITY J., Jan.–Feb. 2010, at 7; William W. Hogan, *Demand Response Compensation, Net Benefits and Cost Allocation: Comments*, ELECTRICITY J., Nov. 2010, at 19.

7. Three exceptions are 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 (2012–2013) (defending FERC's Order 745 and the participation of aggregators in demand response programs); Richard J. Pierce, Jr., *A Primer on Demand Response and a Critique of FERC Order 745*, 3 GEO. WASH. J. ENERGY & ENVTL. L. 102 (2012) (providing a brief overview of demand response and arguing that the compensation level set by FERC is inefficiently high); and 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 (2007) (defending the federal role in demand response markets). There is also some discussion of demand response in Michael Vandenbergh and Jim Rossi's recent article on financial incentives for net demand reduction. *See* Michael P. Vandenbergh & Jim Rossi, *Good for You, Bad for Us: The Financial Disincentive for Net Demand Reduction*, 65 VAND. L. REV. 1527 (2012) (arguing that new financial incentives for electric distribution utilities are needed if net demand reductions are to exert meaningful downward pressure on carbon emissions).

8. *See infra* Part I.B.1. On the Texas reserve margins, see Terrence Henry, *Meet the Answer to Texas' AC Problem: Demand Response*, STATEIMPACT (Jan. 30, 2014, 6:00 AM), http://stateimpact.npr.org/texas/2014/01/30/why-texas-power-demand-is-slowing-meet-demand-response/; Jim Malewitz, *Demand Response Could Factor in Grid Debate*, TEX. TRIB. (Jan. 24, 2014), http://www.texastribune.org/2014/01/24/demand-response-could-factor-grid-debate/preview/.

9. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830, 34,850 (June 18, 2014) (to be codified at 40 C.F.R. pt. 60).

Second, as this growth occurs, it is important not to let enthusiasm for demand response blind regulators to program weaknesses and the values trade-offs they create. In order for demand response programs to deliver the peak load reductions they promise, effective measurement and verification strategies must be in place to prevent system gaming. Furthermore, demand response, if not coordinated with energy efficiency and other conservation strategies, threatens to alleviate peak load problems at the expense of overall conservation and environmental goals.

Third, demand response presents an ideal case study through which to understand the shifting federalism dynamics in energy law. In pursuing expansion of demand response programs, FERC has run up against the jurisdictional limitations of the Federal Power Act of 1935 ("FPA").[10] The FPA gave the federal government new control over interstate transmission and wholesale sales of electricity, while states retained their traditional jurisdiction over generation, as well as intrastate transmission and distribution and retail sales.[11] With few exceptions, those lines have not been updated since the FPA's passage, 78 years ago. Meanwhile, national energy policy has become increasingly ambitious, particularly with respect to demand-side innovations. Consider, for example, President Obama's call to the nation to "cut in half the energy wasted by our homes and businesses over the next twenty years."[12] Or consider Congress's statement in the Energy Independence and Security Act of 2007 ("EISA") that "[i]t is the policy of the United States to . . . achieve . . . [d]evelopment and incorporation of demand response, demand-side resources, and energy-efficiency resources."[13] Federal actors' increased emphasis on energy policy has only served to highlight the widening gap between national ambition and what the federal government can accomplish under the FPA.[14]

This Article describes FERC's efforts to accomplish broad statutory goals for controlling electricity demand in the face of a federalism structure that places primary responsibility in the hands of state and local regulators. It introduces FERC's creative approach to the problem, which the Article calls "bypassing federalism." Bypassing involves the use of clear jurisdictional authority to achieve policy aims without challenging jurisdictional boundaries head on. An agency seeking to bypass federalism allocations is thus attempting

10. Federal Power Act of 1935, 16 U.S.C. §§ 791–828c (2012).

11. *Id.*

12. *Obama's 2013 State of the Union Address*, N.Y. TIMES (Feb. 12, 2013), http://www.nytimes.com/2013/02/13/us/politics/obamas-2013-state-of-the-union-address.html. President Obama acknowledged the limits of federal power to make that goal a reality when he offered the states an incentive to improve energy efficiency in businesses. *Id.*

13. Energy Independence & Security Act of 2007, Pub. L. No. 110-140, § 1301, 121 Stat. 1492, 1784 (codified as amended in scattered sections of 42 U.S.C.).

14. The problem of statutory lags is, of course, not unique to energy law—it is endemic to the legislative process. In energy law, however, the problem is unusual in that it presents as a federalism question.

to work a de facto, rather than a de jure, reallocation of power. It does so by maximizing its influence within its designated sphere, hoping that its actions will have effects beyond the area of its immediate control.[15] In the case of demand response, FERC has "bypassed" the federalism boundaries in the FPA by setting up demand response programs in wholesale markets, which are under FERC's control, to parallel state and local programs. This strategy has allowed FERC to further national objectives for demand reduction programs without the need for formal jurisdictional challenges.[16]

The Article proceeds in three parts. Part I introduces demand response programs and explains their benefits, as well as potential downsides if programs are poorly designed or poorly coordinated with other energy demand strategies. It also offers a brief overview of electricity regulation in the United States to situate demand response programs in historical perspective. Part II explores the existing regulatory approach to demand response in more detail. Early regulation was experimental and largely sub-federal. More recently, the federal government has attempted more significant interventions, but these interventions have run up against limits on federal jurisdiction in the FPA. Rather than accept these limitations, FERC has responded by setting up demand response programs in wholesale markets, which it controls, to compete with state-regulated programs.

Part III concludes that bypassing is a problematic method of achieving greater federal control over the demand side of the energy equation. It brackets the larger question of whether greater federal control over electricity regulation is desirable, assuming, for the sake of argument, that federalization is a defensible goal. Nevertheless, it argues that although bypassing federalism can be helpful where, as with demand response, uniformity across programs is desirable, the strategy also has significant downsides. First, statutory constraints may limit an agency's options in a way that results in the promotion of second-best over first-best policies. In the electricity demand context, this has manifested as an emphasis on temporary reductions in the use of electricity through demand response programs, rather than the more permanent reductions that can be achieved through energy efficiency. Second, because bypassing raises central questions about the proper allocation of power between the states and the federal government, we might prefer that any rebalancing be done through the legislative process. Third,

15. There are parallels between FERC's efforts and what Catherine Sharkey and Samuel Issacharoff have called the "quiet federalization" of key areas of law. Samuel Issacharoff & Catherine M. Sharkey, *Backdoor Federalization*, 53 UCLA L. REV. 1353 (2006) (addressing the partial federalization of commercial law subjects traditionally governed by states).

16. FERC's strategy is still being litigated, and a panel of the D.C. Circuit recently invalidated a portion of it on jurisdictional grounds. *See* Elec. Power Supply Ass'n v. FERC, 753 F.3d 216, 235 (D.C. Cir. 2014). However, the court stayed its ruling to allow the government time to petition for a writ of certiorari in the Supreme Court. The government filed for a writ of certiorari in January of this year. Petition for a Writ of Certiorari, FERC v. Elec. Power Supply Ass'n, 753 F.3d 216 (2015).

bypassing may not avoid costly conflicts, judicial or otherwise. Finally, by making a dysfunctional statutory scheme workable, bypassing threatens to defer, perhaps indefinitely, more permanent legislative solutions.

I. THE ELECTRIC GRID AND DEMAND RESPONSE

This Part provides a brief background of United States electricity regulation and describes some of the momentous changes the industry has undergone in the past several decades. Over a relatively short period of time, much of the country has moved from a regulated monopoly structure, in which utilities were granted exclusive service territory in return for agreeing to provide reliable service at regulated rates, to competitive markets, in which power providers compete for business.

Increased competition and the dissemination of disruptive technologies like smart meters have enabled consumers to play an increasingly active role in energy markets.[17] Customers are now able to provide demand-side management services by reducing energy usage at times of peak consumption. Properly implemented, these demand response programs produce important benefits for the electrical grid and electricity markets. They have the potential to lower peak prices, enhance reliability, and, in some cases, produce positive environmental externalities. These benefits will be addressed in the second part of this section.

A. A SHORT HISTORY OF ELECTRICITY REGULATION

To understand demand response, it is first necessary to understand the dramatic shifts that have taken place in the United States electricity markets in the past several decades.[18] The electric power industry was once considered a natural monopoly.[19] Because of the intensity of capital costs involved in building power plants and transmission lines, it was deemed inefficient to have more than one utility serving each geographic region. Thus, utilities were granted monopolies over service territories. These utilities were "vertically integrated" because a single entity owned generation (power plants), transmission (long-distance, higher-voltage transportation of

17. The Department of Energy ("DOE") has explored the relationship between smart grid technologies such as smart meters and active customer participation in the electric power system. *See* NAT'L ENERGY TECH. LAB., SMART GRID PRINCIPAL CHARACTERISTICS: ENABLES ACTIVE PARTICIPATION BY CONSUMERS 9 (2009), *available at* https://www.smartgrid.gov/sites/default/files/doc/files/Smart_Grid_Principal_Characteristics_Enables_Active_Particip_200906.pdf.

18. The genesis of electrical power and the rise of the electric utility in the late nineteenth century is a fascinating story, but one this Article does not have space to do justice. For two versions of this story focusing on the lives of key industry players, see, e.g., FORREST MCDONALD, INSULL: THE RISE AND FALL OF A BILLIONAIRE UTILITY TYCOON (1962); JOHN F. WASIK, THE MERCHANT OF POWER: SAM INSULL, THOMAS EDISON, AND THE CREATION OF THE MODERN METROPOLIS (2006).

19. *See* FRED BOSSELMAN ET AL., ENERGY, ECONOMICS AND THE ENVIRONMENT: CASES AND MATERIALS 53–54 (3d ed. 2010).

energy), and distribution (local, lower-voltage transportation of energy to the end user).[20]

The consequences of the vertically integrated utility model for electricity demand were significant. In exchange for exclusive service territories, public utilities agreed to have retail rates approved by regulators.[21] State public utility commissions set these rates at a level calculated to allow utilities to recover both fixed and variable costs and to provide a reasonable rate of return on investment.[22] One consequence of this rate structure was that when the utility sold more power than projected during a given rate cycle, it made more money. The system thus created an incentive for utilities to sell as much electricity as possible.[23]

Initially, public utilities were subject only to state regulation.[24] Not until 1920 did Congress first move to regulate power production at the federal level through the Federal Water Power Act ("FWPA").[25] The FWPA focused mainly on hydroelectric power, but it also created the Federal Power Commission ("FPC"), the predecessor to FERC. In 1935, the FWPA was renamed the Federal Power Act, and FPC's jurisdiction was expanded to include "transmission of electric energy in interstate commerce and the sale of such energy at wholesale in interstate commerce."[26] However, Congress noted that federal jurisdiction extended "only to those matters which are not subject to

20. Monopoly status came with benefits as well as responsibilities. In exchange for an exclusive service territory, the right to charge regulated retail rates, limits on liability for negligence, and the power of eminent domain, utilities were obligated to serve all customers in their territory, to provide quality service, and to consent to regulation. Scott Hempling, The Changing Fundamentals of Electricity Law (unpublished manuscript) (on file with author).

21. BOSSELMAN ET AL., *supra* note 19, at 46.

22. *Id.* at 65.

23. For information about the ratemaking process and its incentives, see, e.g., *Decoupling in Detail*, CENTER FOR CLIMATE & ENERGY SOLUTIONS, www.c2es.org/us-states-regions/policy-maps/decoupling/detail (last visited Jan. 19, 2015). For alternative interventions designed to shift utility incentives to promote efficiency, see Paul L. Joskow & Richard Schmalensee, *Incentive Regulation for Electric Utilities*, 4 YALE J. ON REG. 1, 1 (1986) (discussing the use by an increasing number of state public utility commissions of rewards or penalties based on utility performance).

24. *See* William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1639–40 (2014).

25. *See* Federal Water Power Act, ch. 285, 41 Stat. 1063 (1920), *amended by* Federal Power Act, 16 U.S.C. §§ 791–828c (2012).

26. Federal Power Act of 1935, 16 U.S.C. §§ 791–828c (2012). In Title I of the Act, better known as the Public Utility Holding Company Act of 1935 ("PUHCA"), Congress broke up the companies that, together, owned nearly three quarters of all U.S. utilities. However, the monopolistic structure at the utility level remained unchanged. Although the Federal Power Commission ("FPC") would not be renamed the Federal Energy Regulatory Commission ("FERC") until 1977, *see* Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565 (1977) (codified as amended at 42 U.S.C. § 7101 (2012)), its five-member, bipartisan commission structure was established in 1930. *What is FERC?*, FED. ENERGY REG. COMMISSION, http://www.ferc.gov/students/whatisferc.asp (last visited Jan. 20, 2015).

regulation by the States."[27] The jurisdictional lines Congress drew in the 1935 Act have remained largely unaltered.

The next major shift in the electric power industry did not occur until the 1970s, when politics and soaring energy prices ignited a movement to deregulate the industry.[28] Proponents of deregulation argued that introducing competition would both lead to lower electricity prices and expand consumer choice.[29] In the Public Utility Regulatory Policies Act of 1978 ("PURPA"), Congress took its first steps toward deregulation, diversifying generation by promoting small renewable energy and cogeneration facilities.[30] Then, in the Energy Power Act of 1992, Congress provided additional incentives for independent power producers, creating increased competition in wholesale markets.[31]

FERC, not Congress, took the next deregulatory step. Utilities were proving reluctant to open up their transmission networks to independent power producers, which limited those producers' ability to get their power to consumers.[32] In Order 888, FERC required utilities to make their transmission lines available to independent producers at non-discriminatory prices.[33] Over the next several years, 24 states made moves to break up their traditional vertically integrated utilities by requiring or permitting utilities to sell off generation assets.[34] After the California energy crisis in 2000, however,

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27. *What is FERC?*, *supra* note 26.

28. BOSSELMAN ET AL., *supra* note 19, at 613–14.

29. *See* Wellinghoff & Morenoff, *supra* note 7, at 391 ("An important principle underlying this industry restructuring is that greater reliance on more competitive markets will bring greater benefits to the country's electricity consumers."). On restructuring generally, see, e.g., Richard D. Cudahy, *Electric Deregulation After California: Down but Not Out*, 54 ADMIN. L. REV. 333, 336–39 (2002); David B. Spence, *The Politics of Electricity Restructuring: Theory vs. Practice*, 40 WAKE FOREST L. REV. 417 (2005).

30. Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended at 16 U.S.C. § 2601 (2012)). Cogeneration facilities are plants that generate electricity and also use the heat created during the generation process for some useful purpose, such as heating water. Congress sought to ensure the viability of these facilities and small, cleaner energy facilities by requiring utilities to purchase power from them at avoided cost (the incremental cost of energy that the utility would have procured from non-renewable sources). According to the Union of Concerned Scientists, "PURPA has been the most effective single measure in promoting renewable energy." *Public Utility Regulatory Policy Act (PURPA)*, UNION OF CONCERNED SCIENTISTS, http://www.ucsusa.org/clean_energy/smart-energy-solutions/strengthen-policy/public-utility-regulatory.html#.VJ8Y4v8JOh (last visited Jan. 20, 2015).

31. Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (codified as amended at 42 U.S.C. 13201 (2012)).

32. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, 61 Fed. Reg. 21,540, 21,541 (May 10, 1996) (to be codified at 18 C.F.R. pts. 35, 385) ("Order 888").

33. *Id.*

34. For a map with state-by-state information on electricity restructuring, see *Status of Electricity Restructuring by State*, U.S. ENERGY INFO. ADMIN., http://www.eia.gov/electricity/policies/restructuring/restructure_elect.html (last updated Sept. 2010).

many states backtracked.[35] As of 2010, 15 states and the District of Columbia had restructured their utilities.[36]

To help coordinate transmission and ensure nondiscriminatory prices in the wake of restructuring, FERC encouraged the creation of Independent System Operators ("ISOs") and Regional Transmission Operators ("RTOs").[37] ISOs and RTOs are independent, non-profit regional institutions that manage transmission across the region. To accomplish this, each RTO or ISO must set its own rules for pricing and managing the transmission of electric energy.[38] There are seven ISO/RTO regions in the United States.[39] Each institution's activities are overseen by an independent market monitor, and the entities themselves are regulated as public utilities by FERC.[40]

In these newly competitive wholesale markets, and in restructured state markets, keeping the price of electricity down and ensuring grid reliability are major concerns. Demand response can help with both.

B. THE RISE OF DEMAND RESPONSE

Competitive energy markets pose new challenges for regulators. In particular, regulators must be especially vigilant in competitive markets to ensure that industry generates adequate supply to meet customer demand.[41] Especially in a competitive energy marketplace, therefore, demand response is an important tool to maintain the balance of supply and demand on the electricity grid. While the term "grid" suggests a static structure, electricity is

35. *See generally* James L. Sweeney, *The California Electricity Crisis: Lessons for the Future*, BRIDGE, Summer 2002, at 23 (explaining the events that led to the California electricity crisis and arguing that California's failed experiment should not deter other states from pursuing retail restructuring of their electricity industries).

36. *See Status of Electricity Restructuring by State*, *supra* note 34. The current numbers depend on the definition of restructuring adopted and range from 13 (plus D.C.) to 16. *See* Severin Borenstein & James Bushnell, *The U.S. Electricity Industry After 20 Years of Restructuring* 23 n.24 (Energy Inst. at Haas Working Paper Series, No. 252, 2014), *available at* http://ei.haas.berkeley.edu/pdf/working_papers/WP252.pdf.

37. Regional Transmission Organizations, 65 Fed. Reg. 810, 810, 812–13 (Jan. 6, 2000) (to be codified at 18 C.F.R. pt. 35).

38. *Id.* at 812.

39. The seven RTO/ISOs are the California ISO ("CAISO"), the Midcontinent Independent System Operator, Inc. ("MISO"), the Southwest Power Pool ("SPP"), the Electric Reliability Council of Texas ("ERCOT"), PJM Interconnection ("PJM"), the New York ISO ("NYISO") and ISO New England ("ISO-NE").

40. *See* Regional Transmission Organizations, 65 Fed. Reg. 810, 815 (Jan. 6, 2000) (to be codified at 18 C.F.R. pt. 35).

41. *See* Paul L. Joskow, *Competitive Electricity Markets and Investment in New Generating Capacity*, *in* THE NEW ENERGY PARADIGM 76 (Dieter Helm ed., 2007), *available at* http://economics.mit.edu/files/1190 (discussing the challenges of resource adequacy in competitive electricity markets).

constantly coursing through the grid's wires at nearly the speed of light.[42] This is necessary because, since our ability to store energy efficiently is minimal, supply and demand must be maintained in perpetual balance.[43] Maintaining this equilibrium and avoiding blackouts is no simple matter—it has been described as "the world's biggest balancing act."[44] The balancing act is made more difficult by the fact that demand for energy is highly variable.[45] It has been estimated that the top 10% of all energy "load" consumed each year is consumed in the top 1% of hours during that year.[46]

Until relatively recently, balance was maintained almost exclusively by regulating the amount of generation supplied at any given time so that it matched demand exactly.[47] In most markets, to ensure that there are enough power plants to meet variations in demand, commitments to supply generation must be obtained by utilities (in retail markets) and by independent grid operators (in wholesale markets) in advance with a comfortable margin of error, called a reserve requirement.[48] In practice, this reserve requirement means that utilities must plan for the construction of plants, called "peaking plants" because they are only run to meet peak demand, that sit idle for most of the year.[49]

The supply-side focus was viable when fossil fuels, the raw material for energy generation, were cheap. However, beginning with the OPEC oil crisis in the early 1970s, during which oil prices quadrupled over just a few years,

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42. *See Transmission*, EDISON ELECTRIC INST., http://www.eei.org/issuesandpolicy/transmission/Pages/default.aspx (last visited Jan. 20, 2015). In fact, the word "energy" has Greek roots that mean "active."

43. Storage technologies have not been developing at a rapid pace. As MIT professor and former Undersecretary of Energy John Deutch put it in 2009, "[p]eople have been calling for advances in batteries ever since I was director of energy research at the U.S. Department of Energy in the mid-1970s, but we've seen essentially none." *Oil Lessons from the 1970s*, INT'L ECON., Fall 2009, at 26, 61, *available at* http://www.international-economy.com/TIE_F09_Yergin JohnstonDeutch.pdf.

44. Christopher Joyce, *Power Grid Must Adapt to Handle Renewable Energy*, NPR (Mar. 12, 2012, 12:01 AM), http://www.npr.org/2012/03/12/148318905/renewable-energy-throws-power-grid-off-balance.

45. This variability is due to both weather variations and human behavior patterns. Some renewable resources, such as solar and wind, compound this problem by introducing variation into the supply side of the equation. Because the sun only shines during the day (and is sometimes filtered by cloud cover) and because the wind blows only intermittently, solar and wind generation facilities do not supply a constant stream of power.

46. AHMAD FARUQUI ET AL., IMPACT EVALUATION OF ONTARIO'S TIME-OF-USE RATES: FIRST YEAR ANALYSIS 2 (2013). This problem was exacerbated by the advent of air conditioners, which account for approximately 5% of all electricity consumed in the United States. *You Asked, We Are Answering: Your Home Efficiency Questions*, U.S. DEP'T OF ENERGY. (Sept. 24, 2012 5:12 PM), http://energy.gov/articles/you-asked-we-are-answering-your-home-efficiency-questions.

47. BOSSELMAN ET AL., *supra* note 19, at 580–81.

48. *See, e.g.*, *Reserve Electric Generating Capacity Helps Keep the Lights On*, U.S. ENERGY INFO. ADMIN. (June 1, 2012), http://www.eia.gov/todayinenergy/detail.cfm?id=6510.

49. BOSSELMAN ET AL., *supra* note 19, at 580.

cost control became a major concern for energy regulators.[50] To that end, they began to focus on the other side of the energy equation: reducing demand as an alternative to expanding supply.

1. Demand Response Programs

The most widely used definition of demand response comes from a 2006 Department of Energy ("DOE") report. DOE explained that demand response means:

> Changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized.[51]

Technological advances are what have made demand response programs possible. These enabling technologies are those we typically associate with a "smarter" grid, including "smart" meters, energy management systems, and other communication technologies.

Traditional utility meters work like a car's odometer, showing only the total energy consumed, and must be read manually. Smart meters, by contrast, are digital and can not only record total consumption but can report usage data to the utility at regular intervals.[52] Demand response programs rely on this information to establish a customer's typical usage and to measure any reductions in electricity consumption. Smart meters can also communicate pricing information to customers. For customers participating in "energy" demand response programs, this pricing information enables them to decide whether it is economically advantageous for them to curtail usage on a given day.

In addition, energy management systems now allow customers to control their electricity-consuming devices using a single program. While it is still possible to reduce electricity usage the old-fashioned way, by turning lights, heating, ventilation, and cooling ("HVAC") systems, and appliances down or

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50. *See* Douglas Martin, *Energy Shortage Eases Materially; Basic Shifts in Consumption Cited*, N.Y. TIMES (Mar. 8, 1982), http://www.nytimes.com/1982/03/08/business/energy-shortage-eases-materially-basic-shifts-in-consumption-cited.html.

51. 2006 DOE REPORT, *supra* note 2, at 6. FERC has also adopted this definition. FED. ENERGY REGULATORY COMM'N, 2008 ASSESSMENT OF DEMAND RESPONSE & ADVANCED METERING: STAFF REPORT C-2 (2008) [hereinafter 2008 FERC ASSESSMENT]. California's definition is similar. Decision Adopting Demand Response Activities and Budgets for 2012–2014 at 2, Application of Pac. Gas & Elec. Co. (U39E) for Approval of Demand Response Programs, Pilots & Budgets for 2012–2014, Decision No. 12-04-045 (Cal. P.U.C. Apr. 19, 2012), *available at* docs.cpuc.ca.gov/PublishedDocs/PUBLISHED/GRAPHICS/165317.pdf ("The Commission broadly defines demand response (DR) as reductions or shifts in electricity consumption by customers in response to either economic or reliability signals.").

52. For a discussion of advanced meters and their penetration, see 2008 FERC ASSESSMENT, *supra* note 51, at 25.

off, energy management systems make the process much simpler.[53] These systems can facilitate energy audits to provide a detailed picture of a customer's energy usage. The audit results can be used to assess how much electrical load the customer could drop if the utility called upon it to do so as part of a demand response program.

There are two major types of demand response programs. First are rate-based programs, including time-of-use pricing plans, which allow the retail price of electricity to fluctuate based on its actual cost. Second are incentive-based programs, where customers receive additional compensation in exchange for energy reductions when the grid is under particular strain and costs are high.[54]

Unlike the incentive-based demand response programs that are the primary focus of this Article, time-of-use ("TOU") pricing plans incentivize changes in customer demand for electricity by making electricity consumption at peak times more expensive than consumption at off-peak times.[55] Depending on the pricing scheme, customers in TOU plans, unlike customers in incentive-based demand response programs, might end up paying more for electricity, on balance, if they consume energy at the "wrong" times.

Critical Peak Pricing ("CPP") is also a change in rate structure, but, in contrast to TOU pricing, CPP focuses only on prices during peak consumption hours, typically from noon through the evening on weekdays.[56] During these periods, customers pay a higher (sometimes significantly

53. Even more advanced systems allow for "direct load control," or remote operation of electricity-consuming systems by a utility or third-party energy provider. Equipment currently eligible for direct load control includes air conditioners, lighting, motors, and pumps. *See, e.g.*, *Contracted Direct Load Control (CDLC)*, WIS. PUB. SERVICE http://www.wisconsinpublicservice.com/business/cdlc.aspx (last visited Jan. 20, 2015). A new generation of smart meters can facilitate this process. *See* Jeff St. John, *The Elusive Smart Meter-Demand Response Combo*, GREENTECHGRID (June 24, 2009), http://www.greentechmedia.com/articles/read/the-elusive-smart-meter-demand-response-combo.

54. *See* CLARK W. GELLINGS, THE SMART GRID: ENABLING ENERGY EFFICIENCY AND DEMAND RESPONSE 141 (2009) (dividing demand response into "incentive-based demand response" and "time-based rates"). There is also an important distinction between demand response, which seeks to shift consumption patterns, and energy efficiency, which seeks to lower overall energy usage. Imprecise use of terminology risks creating confusion on this front. The goal of demand response is to reduce usage of energy at times of *peak consumption*, and it is entirely consistent with a demand response program for customers to continue consuming the same net amount of energy, merely altering the times at which that energy is consumed or the sources from which it comes.

55. *See* Ahmad Faruqui & Jennifer Palmer, *Dynamic Pricing and Its Discontents: Empirical Data Show Dynamic Pricing of Electricity Would Benefit Consumers, Including the Poor,* REGULATION, Fall 2011, at 16, 17.

56. *See* Frank Wolak, *Residential Customer Response to Real-Time Pricing: The Anaheim Critical-Peak Pricing Experiment* (Univ. Cal. Energy Inst. Working Paper Series, No. 151, 2006), *available at* https://escholarship.org/uc/item/3td3n1x1.

higher) price for electricity. CPP can be implemented on its own or combined with TOU pricing.

Some pilot programs have shown that TOU and CPP produce reductions in customer demand at peak times.[57] But roll-out has been slow, primarily because of technological hurdles and customer opposition. TOU programs offer both carrots and sticks—if customers are savvy, they can reduce their overall energy bills, but if they hew closer to normal consumption patterns, they could find themselves paying more. CPP programs, on the other hand, are all stick in that they create a new, more expensive pricing scheme for peak hours.

This Article focuses on the second of the two types of demand response: incentive-based programs. Unlike CPP and TOU programs, incentive-based programs are all carrot in that they offer income opportunities to customers without imposing higher rates. FERC has favored these programs for one practical reason: it has no jurisdiction over retail rates. Therefore, it cannot create retail rate-based programs, and requiring TOU pricing for retail customers is not possible in wholesale markets, which do not supply customers with electricity directly. For that reason, FERC has focused on incentive-based demand response to flatten consumption at times of peak demand.

Customers enrolled in demand response programs that are called upon to reduce electrical load may do so in several ways. First, they might simply use energy management systems to drop load, or they might reduce the load manually. This may, but does not necessarily, result in a net reduction of electricity consumption for that consumer since consumption might simply be shifted to another time of day. For instance, an industrial facility might defer production of widgets until after the emergency period or period of higher prices has passed. Second, facilities might switch to using energy that has been consumed earlier and stored using thermal or other storage systems. Finally, the customer might switch to "behind-the-meter" power—power produced on-site, typically by diesel generators. All of these methods result

57. *See generally* PAT MCAULIFFE & ARTHUR ROSENFELD, CAL. ENERGY COMM'N, RESPONSE OF RESIDENTIAL CUSTOMERS TO CRITICAL PEAK PRICING AND TIME-OF-USE RATES DURING THE SUMMER OF 2003 (2004), *available at* http://sites.energetics.com/MADRI/toolbox/pdfs/pricing/residential_customers.pdf (concluding based on a pilot program in California that customers do respond to price even in the absence of automated controls, but that the response can be improved if utilities can control customer usage through automation); AHMAD FARUQUI ET AL., THE BRATTLE GRP., IMPACT EVALUATION OF ONTARIO'S TIME-OF-USE RATES: FIRST YEAR ANALYSIS (2013), *available at* http://www.brattle.com/system/publications/pdfs/000/004/967/original/Impact_Evaluation_of_Ontario%27s_Time-of-Use_Rates-First_Year_Analysis_Faruqui_et_al_Nov_26_2013.pdf?1386626350 (finding consistent load-shifting behavior by residential customers in response to pricing plans). *But see generally* J.S. PETERS ET AL., ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., POWERCHOICE RESIDENTIAL CUSTOMER RESPONSE TO TOU RATES (2009), *available at* http://drrc.lbl.gov/sites/all/files/lbnl-3870e.pdf (concluding that a pilot time-of-use pricing program by the Sacramento Municipal Utility District for residential customers resulted in only modest shifts in consumption patterns).

in a reduction of power drawn from the grid, although not all reduce the total amount of electricity consumed.

As for the incentive-based demand response programs themselves, they are diverse both in terms of program design and the entities that offer them. In general, demand response programs come in three types. First are "energy" programs, which are voluntary and allow customers to bid their demand reductions into retail or wholesale markets in exchange for a payment linked to the size of the reduction they can offer. Because a standardized terminology is lacking in the demand response space, these programs are sometimes referred to as "price-responsive demand" or "economic load response" programs. Second are "capacity" programs, also known as "emergency load response" or "reliability-based demand response" programs. As discussed above, utilities and grid operators in most parts of the country must ensure that they procure enough energy supply, or capacity, to cover demand at all times.[58] Customers who agree in advance to decrease their demand when the grid is stressed can reduce the amount of capacity that needs to be locked in. In exchange, these customers receive regular payments, whether or not they are ever called on to perform. If called, however, participation is mandatory, with penalties for noncompliance.[59]

Finally, customers participating in demand response programs, also known as "demand response resources" since they are serving as a resource for the grid, are now eligible to participate in some markets for "ancillary services." These are markets for the sale of small amounts of energy in close to real time to keep supply and demand in perfect balance. This is done by making minor adjustments to the amount and frequency of power flowing through transmission lines. Resources in these programs must be able to provide power or, in the case of demand resources, reductions in energy usage, on very short notice.[60]

Program structure and rules also vary within these categories. Each program has its own rules for, among other things, eligibility, participation, measuring compliance, and compensation. All wholesale market programs,

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58. Notably, Texas, which operates on its own grid system, has never implemented a capacity market. For more on the debate, see Edward Klump, *Texas Power Market Debate Poised to Heat Up After Cold Snap*, E&E ENERGYWIRE (Jan. 9, 2014), http://www.eenews.net/stories/1059992597/print.

59. Despite the mandatory participation obligation, these programs are very attractive because they provide a steady income stream and because customers are typically only called "a few hours per year, when wholesale electricity market prices are at their highest or when reserve margins are low due to contingencies such as generator outages, downed transmission lines, or severe weather conditions." 2006 DOE REPORT, *supra* note 2, at 6.

60. In Order 755, FERC required that RTOs and ISOs compensate ancillary services resources based on how well they perform, which means that resources that can be brought online quickly, like demand response, will be compensated more generously. *See generally* Frequency Regulation Compensation in the Organized Wholesale Power Markets, 75 Fed. Reg. 29,531 (May 26, 2010) (to be codified at 18 C.F.R. pt. 35).

and some retail programs, allow the participation of middlemen who aggregate smaller demand response commitments from customers and bid them into the markets as a package. These companies are called Aggregators of Retail Customers ("ARCs") or Curtailment Service Providers ("CSPs"), depending on the market.[61] Demand response has become big business,[62] with aggregators like EnerNOC and Comverge expanding both nationally and internationally, and traditional generation companies like Exelon branching out into demand response services.[63]

Entities offering demand response programs include utilities[64] in the retail markets as well as RTOs and ISOs in the wholesale markets. Even the Tennessee Valley Authority, a federal corporation which provides low-cost power to customers in the southeastern United States, offers demand response programs.[65]

2. Benefits and Costs of Demand Response

Demand response has won influential supporters including recently retired FERC Chairman Jon Wellinghoff.[66] Although the benefits of demand

61. The advantages of this approach are two-fold: (1) it allows smaller customers who would otherwise be excluded from the markets because of minimum size restrictions to participate; and (2) it mitigates the risk of customer nonperformance, since an over-performing customer within an aggregator's territory can make up for another customer's under-performance.

62. PG&E, a Northern California utility, estimates that collective customer revenues since 2006 for participation in the utility's demand response programs exceed $100 million. *Demand Response FAQs*, PG&E, http://www.pge.com/en/mybusiness/save/energymanagement/faq/index.page (click "What incentives have the Demand Response Programs Generated?") (last visited Jan. 20, 2015).

63. Exelon began offering demand response services in 2010 through its acquisition of CPower. *See* Katherine Tweed, *Constellation Wants to Lower Customer Bills with Demand Response*, GREENTECHMEDIA (Feb. 25, 2013), http://greentechmedia.com/articles/read/constellation-offers-demand-response-to-lower-bills.

64. To generalize, these utilities typically come in three varieties. There are investor-owned utilities, such as California's Pacific Gas & Electric Company, Ohio Edison, or Florida Power & Light. There are the approximately 2000 publicly-owned utilities, such as the Marblehead, Massachusetts Municipal Light Department, or the Sacramento Municipal Utilities District in California. Finally, there are rural electricity cooperatives, such as the Minnesota Valley Electric Cooperative and Buckeye Power in Ohio.

65. *See FAQ – Tennessee Valley Authority Demand Response*, ENERNOC, http://www.enernoc.com/our-resources/brochures-faq/faq-tennessee-valley-authority-demand-response (last visited Jan. 20, 2015). The TVA currently operates a year-round emergency load response program. *Id.*

66. *See, e.g.*, Wellinghoff & Morenoff, *supra* note 7, at 389; Interview by Chris Newkumet with Jon Wellinghoff, Chairman, FED. ENERGY REGULATORY COMM'N, in Washington, D.C. (Sept. 9, 2012), *available at* http://www.ferc.gov/media/videos/wellinghoff/2012/09-09-12-wellinghoff-transcript-pt2.pdf. ("[D]emand response . . . [is] important to incorporate into the overall energy markets because we want those markets to be as vibrant as possible and as competitive as possible."). Former FERC Chairman Pat Wood was also a demand response proponent. He testified before Congress in 2002 that "[d]emand response is a crucial element for efficient grid use, as well as an effective deterrent to the exercise of supplier market power." Chris King & Dan Delurey, *Advanced Metering: Policymakers Have the Ball*, PUB. UTIL. FORT., Sept. 15, 2002, at 26.

response can be difficult to quantify,[67] most agree that it has several advantages as a grid-management tool. Foremost among these are its ability to reduce the price of electricity and to improve system reliability. Where programs are correctly designed, demand response can also have environmental advantages over non-renewable generation.

Demand response can put downward pressure on prices in two ways. In deregulated retail markets and in wholesale markets, demand response reduces demand at times of peak consumption. Because energy can be up to twenty times more expensive during such periods,[68] leveling those demand peaks reduces the price of energy.[69] Figure 1 demonstrates how reducing demand for energy lowers the market clearing price for power. The President and CEO of ISO-NE has estimated that "reducing electricity use by five percent during peak hours [through conservation and energy efficiency] would save consumers approximately $580 million per year."[70] Furthermore, because demand response resources compete with traditional energy suppliers in the market, they also reduce those suppliers' market power.[71] Making markets more competitive in this way can also keep prices down because it reduces generators' power to withhold energy or to raise their prices significantly above cost.[72]

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67. 2006 DOE REPORT, *supra* note 2, at xvi ("Even after normalizing results, the estimated gross benefits of demand response vary widely and are driven by the analytical methods used and the assumptions made.") Variables include estimates of customer participation, time horizon, markets, and methods of quantifying benefits and costs. *Id.* at vi–vii; *see also id.* at xvii ("Without standardized and accepted analytical methods to quantify the benefits of demand response, DOE finds that it is not possible to produce a meaningful estimate of the national benefits of demand response.").

68. Richard J. Pierce, Jr., *How Will the California Debacle Affect Energy Deregulation?*, 54 ADMIN. L. REV. 389, 395 (2002) ("It often costs ten to twenty times as much to provide an additional unit of electricity at a time of high demand rather than at a time of low demand."). This increase in cost is largely due to the cost associated with running expensive "peaking plants"—plants that cost more to run but can respond quickly to fluctuations in demand. 2006 DOE REPORT, *supra* note 2, at 70 n.70.

69. According to an open 2007 letter from former FERC Commissioners to policymakers, demand response programs in PJM "saved customers in [the] region more than $650 million—$230 million in a single day." Letter from Vicky A. Bailey et al., Former Comm'rs, Fed. Energy Regulatory Comm'n, to Policy Makers 2 (May 31, 2007), *available at* http://www.energylegalblog.com/files/FormerCommissionersLetter53107.pdf [hereinafter Open Letter to Policy Makers]. The absence of robust demand response has also been cited as a factor contributing to California's energy crisis in 2000–2001, where prices jumped from around $35/kwh to a high of $1400/kwh in less than a year. William A. Borders, *Learning from the Storm: Lessons for Illinois Following California's Experience with Electricity Restructuring*, 77 CHI.-KENT L. REV. 333, 334 (2001).

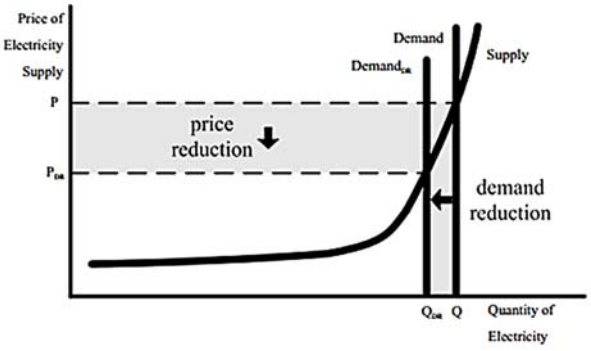
70. ISO NEW ENGLAND, ANNUAL REPORT 2005, at 3 (2005).

71. *See* 2008 FERC ASSESSMENT, *supra* note 51, at 53; *see also Early August Demand Response Produces $650 Million Savings in PJM*, PR NEWSWIRE (Aug. 17, 2006), http://www.prnewswire.com/news-releases/early-august-demand-response-produces-650-million-savings-in-pjm-56192937.html.

72. *See* John Haffner, *Market Power Mitigation in Electricity Markets: A Framework for Making Choices*, 6 J. NETWORK INDUSTRIES 163, 178–79 (2005).

Second, demand response can postpone or eliminate the need to build additional generating units and transmission lines, which puts downward pressure on retail prices since utilities will not need to recoup the costs of those investments in the prices they charge to consumers.

Figure 1. Impact of Demand Response on Vertically Integrated Utility Supply Costs[73]



Demand response can also provide reliability benefits. If a generator or transmission line fails, or if demand surges so that supply reserves shrink, reducing demand can return the grid to balance.[74] Having adequate demand response can thus result in fewer forced system outages.[75] Two events, the California energy crisis of 2000 and 2001 and the East Coast blackouts of 2003, have refocused energy regulators and utilities on system reliability.[76] California's crisis in particular, which was precipitated by a poorly crafted deregulatory process, is generally considered to have been exacerbated by the absence of demand response programs.[77] In a more recent demonstration of the role of demand response in preserving system reliability, regulators in Texas asked customers to reduce demand to avoid blackouts when unusually cold weather coupled with generator outages led to a supply shortage.[78]

73. U.S. DEP'T OF ENERGY, BENEFITS OF DEMAND RESPONSE IN ELECTRICITY MARKETS AND RECOMMENDATIONS FOR ACHIEVING THEM (2006), *available at* http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/DOE_Benefits_of_Demand_Response_in_Electricity_Markets_and_Recommendations_for_Achieving_Them_Report_to_Congress.pdf

74. *See* 2008 FERC ASSESSMENT, *supra* note 51, at 46.

75. *See* 2006 DOE REPORT, *supra* note 2, at 8.

76. *See* Tony Clark & Robin Z. Meidhof, *Ensuring Reliability and a Fair Energy Marketplace*, 25 COLO. NAT. RESOURCES, ENERGY & ENVTL. L. REV. 339, 354 (2014).

77. *See, e.g.*, Michael J. Gergen et al., *Market-Based Ratemaking and the Western Energy Crisis of 2000 and 2001*, 24 ENERGY L.J. 321, 337 n.107 (2003); Pierce, *supra* note 68, at 406 ("The absence of any potential demand response was second only to infrastructure inadequacies as a major cause of the California debacle.").

78. *See* Klump, *supra* note 58.

Finally, demand response is often cited for its environmental benefits.[79] By shifting consumption patterns, demand response can postpone the need for new power plants to meet peak power demand. Demand response can also facilitate the use of intermittent renewable generation such as wind and solar.[80] For example, it has been suggested that California might not have enough quick-starting generation to keep supply and demand in perfect balance once more renewable generation facilities are integrated into the supply mix.[81] Demand response could help make up the deficit, enabling the state to meet its goal of sourcing 33% of energy from renewable sources by 2020.[82]

However, demand response presents challenges as well. "Negawatts" are difficult to price, and economists have hotly debated what price creates the right incentives for program participation without overpaying.[83] Moreover, for demand response to provide pricing and reliability benefits, program participants must be able to perform when called upon and be able to drop as much load as they are committed to providing. For this reason, eligibility,

79. *See, e.g.*, Open Letter to Policy Makers, *supra* note 69, at 2 ("Demand response saves customers money and promotes conservation and energy efficiency.").

80. *See, e.g.*, LeRoy Paddock & Charlotte Youngblood, *Demand Response and Infrastructure Development in the United States*, *in* ENERGY NETWORKS AND THE LAW: INNOVATIVE SOLUTIONS IN CHANGING MARKETS 161, 175 (Martha M. Roggenkamp et al. eds., 2012) (emphasizing the problems associated with generating energy from wind in particular).

81. *See* Bruce W. Perlstein, *Can Demand Response Programs Help Meet the Renewable Energy Integration Challenge?*, BREAKING ENERGY (Aug. 9, 2012, 11:00 AM), http://breakingenergy.com/2012/08/09/can-demand-response-programs-help-meet-the-renewable-energy-inte/.

82. *Id.* Despite Perlstein's optimistic assessment in this article, a Navigant Consulting report, which he co-authored, was more cautious in its evaluation. *See* BRUCE PERLSTEIN ET AL., NAVIGANT CONSULTING, INC., POTENTIAL ROLE OF DEMAND RESPONSE RESOURCES IN MAINTAINING GRID STABILITY AND INTEGRATING VARIABLE RENEWABLE ENERGY UNDER CALIFORNIA'S 33 PERCENT RENEWABLE PORTFOLIO STANDARD 6-1 to -4 (2012), *available at* http://www.calmac.org/publications/7-18-12_Final_White_Paper_on_Use_of_DR_for_Renewable_Energy_Integration.pdf (noting barriers related to program design, technological constraints, and market forces). Nevertheless, the report concluded that, with appropriate modifications to existing programs and/or the creation of new programs, demand response could play a role in facilitating the integration of renewables into the portfolios of California utilities. *Id.* at 8-1.

83. The two poles of the debate are well represented by the late Alfred Kahn, on the one hand, and William Hogan and Robert Borlick, on the other. *Compare* Reply Affidavit of Alfred E. Kahn, Attachment A to Reply Comments of the Demand Response Supporters, Demand Response Compensation in Organized Wholesale Energy Mkts., 134 FERC ¶ 61,187 (2011) (No. RM10-17-000), *available at* http://www.ferc.gov/CalendarFiles/20100913090259-Weishaar,%20Demand%20Response%20Supporters.pdf (arguing that demand response is economically equivalent to generation and should also be compensated at the LMP), *with* WILLIAM W. HOGAN, DEMAND RESPONSE COMPENSATION, NET BENEFITS AND COST ALLOCATION: PRELIMINARY COMMENTS (2010), *available at* http://www.hks.harvard.edu/fs/whogan/Hogan_DR_Tech_Conf_091310.pdf (arguing that paying demand response providers the LMP is inefficient), *and* Response of Robert L. Borlick to Professor Alfred E. Kahn, Demand Response Compensation in Organized Wholesale Energy Mkts., 134 FERC ¶ 61,187 (2011) (No. RM 10-17-000) (arguing that demand response is more like the sale of a call option than the sale of energy and that LMP thus overcompensates demand response resources).

testing, measurement, and verification requirements are particularly important, as are penalties for failures to perform and other violations of program rules. In addition, the net environmental benefits of demand response are contingent on program design and the effective regulation of the diesel back-up generation that many customers use to participate in demand response programs.

II. THE ADMINISTRATIVE LAW OF NEGAWATTS

Until recently, regulation of demand response was almost exclusively the responsibility of sub-federal entities with limited federal oversight. The primary sub-federal regulatory entities are the state public utility commissions, which are responsible for adopting rules that govern utilities within their jurisdictions.[84] The utilities themselves also have a role in regulating demand response: they set the rules (which are subject to regulatory approval) for participation in their own demand response programs. These rules, or "tariffs," set compensation, describe program parameters, explain any testing and eligibility requirements, describe the notice the utility will provide of demand response "events," and explain how a customer's load drop will be calculated.[85]

Congress has been light-handed in this area, with statutes marked by hortatory language but requiring little in the way of action. Meanwhile, states have been slow to adopt and regulate demand response programs of their own. This has left FERC with the problem of ambitious-sounding national goals, on the one hand, and insufficient authority to achieve them, on the other. The FPA is not expansive in its grant of federal power over electricity, at least as compared with other areas of federal regulation. In addition, the statute's so-called "bright-line test" for distinguishing areas of state and federal regulation has been blurred by changes in the electricity grid and technological innovations.[86]

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84. As noted above, in some cases, power is provided by municipal utilities, which are regulated by the municipalities themselves, or cooperative utilities, which are regulated by a cooperative board.

85. This is also known as establishing a customer's "baseline," or the amount of energy a customer would have been consuming had they not been called upon to drop load.

86. *See* Nantahala Power & Light Co. v. Thornburg, 476 U.S. 953, 966 (1986) ("Congress meant to draw a bright line easily ascertained, between state and federal jurisdiction . . . by making FPC jurisdiction plenary and extending it to all wholesale sales in interstate commerce except those which Congress has made explicitly subject to regulation by the States." (quoting FPC v. S. Cal. Edison Co., 376 U.S. 205, 215–16 (1964))). Cases that have not obviously fallen on one side or the other of this line include regulation of sales of energy that has moved in interstate commerce that is bundled with sales of local distribution services, "net metering," the phenomenon of selling some energy produced on-site back to the grid, and, most relevant to this Article, the authority to permit retail customers to bid demand response services into wholesale markets.

FERC has taken a creative approach to this problem. Rejecting both the option of leaving demand response in the hands of state and local regulators and the option of challenging jurisdictional boundaries directly or seeking new statutory authority, FERC has instead charted a middle course. This approach, which might be termed "bypassing federalism," involves the use of FERC's authority over sales of electricity for resale to create and develop demand response programs at the wholesale level. These programs essentially compete with state retail demand response programs and were designed to allow retail customers to participate in either market.

A. SUB-FEDERAL REGULATION

State and local regulators have been uneven in their support for, and regulation of, energy efficiency programs generally and demand response programs in particular. As a report by Columbia's Center for Climate Change Law noted, "there is a great disparity among the [public utility commissions] of various states in the extent to which energy efficiency policies are being pursued."[87] The report noted that 20 states with energy efficiency programs were responsible for 85% of spending in this area.[88]

Utilities' demand response program offerings are also uneven.[89] Each utility determines its own program rules, including eligibility for participation, method of calculating and reporting load drop, compensation, and penalties for non-performance. These rules are included in the utility's tariff (a schedule of the utility's rates and charges) and must be approved by the state public utilities commission or the relevant local regulator.

State regulations for demand response also vary widely, with some states more active than others. California, often a first mover in the energy and environmental space, is ahead of the curve. For example, in 2009, the California Public Utilities Commission set a baseline calculation methodology for demand response by regulation.[90] In April 2012, the Commission issued a decision adopting demand response activities and budgets for 2012 through

87. COLUMBIA LAW SCH. CTR. FOR CLIMATE CHANGE LAW, PUBLIC UTILITY COMMISSIONS AND ENERGY EFFICIENCY: A HANDBOOK OF LEGAL & REGULATORY TOOLS FOR COMMISSIONERS AND ADVOCATES 12 (2012), *available at* http://www.smartgridnews.com/artman/uploads/1/PUC_Handbook_August_2012.pdf.

88. *Id.* (citing Michael Dworkin et al., *A Driving Need, a Vital Tool: The Rebirth of Efficiency Programs for Electric Consumers*, *in* CAPTURING THE POWER OF ELECTRIC RESTRUCTURING 226 (Joey Lee Miranda ed., 2009)).

89. The DOE keeps a list of demand response programs by state. *See Energy Incentive Programs*, U.S. DEP'T OF ENERGY, http://www.energy.gov/eere/femp/energy-incentive-programs (last visited Jan. 21, 2015).

90. Decision Adopting Demand Response Activities and Budgets for 2009 Through 2011 at 2, Application of S. Cal. Edison Co. (U338E) for Approval of Demand Response Programs, Goals & Budgets for 2009–2001, Decision No. 09-08-027 (Cal. P.U.C. Aug. 20, 2009), *available at* http://www.calmac.org/events/106008.pdf.

2014 for the state's three large investor-owned utilities.[91] Also in April 2012, Governor Jerry Brown signed Executive Order B-18-12, directing state agencies to participate in demand response programs so long as they are cost effective.[92] Many states, however, have done very little, and some states have made *negative* progress by prohibiting aggregators from bidding retail customer demand response into wholesale markets.[93]

This decentralized, experimental approach has had concrete advantages. Demand response programs can be put in place relatively quickly by the utilities without the necessity of centralized coordination and review. In addition, utility and RTO/ISO experimentation with program structure and rules have highlighted best practices, as well as pitfalls to avoid.[94] But decentralized experimentation also comes with costs. First, demand response program deployment has been uneven, with some states offering incentives for program creation and others limiting program development. Second, there has been limited opportunity for standardization of technologies and systems with each utility designing its own program rules and participation requirements. Demand response aggregators must learn new rules for each market and cater to those markets' idiosyncrasies. This lack of consistency increases the costs, on the utility side, of program creation and, on the customer side, of program participation. Crucial areas for standardization include communications as well as measurement and verification of load drop. Decentralization without adequate coordination also limits learning from best practices. Third, because demand response can be achieved by substituting behind-the-meter generation for grid power, it can also create unanticipated environmental externalities. To date, the decentralized approach has resulted in uneven regulation of these externalities.

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91. DEMAND RESPONSE MEASUREMENT & EVALUATION COMM., PROCESS EVALUATION PLAN PY 2012–2014(2012), *available at* http://www.cpuc.ca.gov/NR/rdonlyres/7222644F-9FE2-44DA-AD27-09D27313AA82/0/DRMECprocessevaluationplan20122014redacted.pdf. The three major investor-owned utilities in California are Pacific Gas & Electric ("PG&E") in Northern California and Southern California Edison ("SCE") and San Diego Gas & Electric ("SDG&E") in Southern California.

92. *See* Cal. Exec. Order No. B-18-12 (Apr. 25, 2012), *available at* http://gov.ca.gov/news.php?id=17508.

93. *See, e.g.*, Smart Grid Report and Order Continuing Prohibition of ARCs at 2, *In re* PURPA Standards in the Energy Independence & Sec. Act of 2007, No. NOI-08-3 (Iowa Dep't of Commerce Utils. Bd., June 25, 2012), *available at* https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mtqz/~edisp/111780.pdf (prohibiting aggregators from operating in Iowa and prohibiting aggregators or retail customers from bidding retail demand response loads into wholesale markets).

94. For example, PJM learned that a certain baseline calculation methodology it had used in its capacity demand response program did not allow it adequately to predict peak demand in the system and subsequently revised the methodology. *See* Order Conditionally Accepting Compliance Filing, PJM Interconnection, L.L.C., 138 FERC ¶ 61,138 (2012) (No. ER11-3322-001), *available at* http://www.ferc.gov/CalendarFiles/20120224195220-ER11-3322-001.pdf.

B. FEDERAL LEGISLATIVE EFFORTS

Congress has been ambitious in its goals for reducing electricity demand, although it has been reluctant to provide federal agencies with the tools they need to accomplish those goals. Rather than clarifying or altering the existing state-federal balance, Congress has left in place the once-bright-line test in the FPA between state regulation of retail electricity and federal regulation of "wholesale" electricity, or the sale of electricity for resale.[95] Because of this limitation, when it comes to retail demand response programs, Congress has required only that states "consider" various changes to the status quo.[96]

Congress showed little interest of any kind in demand-side management until the 1970s. As so often happens, it took a catastrophe to spur legislation,[97] and in that decade Congress enacted a slew of federal energy bills in the wake of the OPEC oil embargo and ensuing oil crises.[98] In the Energy Policy and Conservation Act of 1975, Congress required the Federal Energy Administrator to set energy efficiency standards for appliances and offered technical and financial assistance to the states to support energy conservation plans.[99] In PURPA, Congress continued to encourage conservation through utility rate structure design, interruptible load programs, and other load-management practices. PURPA also requires state Public Utility Commissions ("PUCs") to "consider" pricing energy based on its actual cost.[100]

Despite the progress of the 1970s, when the oil crisis subsided, Congress refocused its attention on other priorities, and the next federal effort to encourage demand-side management did not come for over ten years. In the

95. 16 U.S.C. § 824(a) (2012).

96. *Id.* § 2621(a). In the Energy Policy Act of 2005, for example, Congress required that states investigate and decide whether to require utilities to adopt metering and communications devices to enable demand response programs. Energy Policy Act of 2005, Pub. L. No. 109-58, § 1252(b)(3), 119 Stat. 594, 965 (codified as amended in scattered titles of U.S.C.). Echoing this approach, DOE's 2006 report to Congress indicated that "[s]tates should consider aggressive implementation of price-based demand response for retail customers as a high priority." 2006 DOE Report, *supra* note 2, at v.

97. I have written elsewhere about the crisis legislation phenomenon in the context of food and drug legislation. *See generally* Sharon B. Jacobs, *Crises, Congress, and Cognitive Biases: A Critical Examination of Food and Drug Legislation in the United States*, 64 FOOD & DRUG L.J. 599 (2009).

98. This legislation included the Emergency Petroleum Allocation Act of 1973, the Geothermal Energy Research, Development and Demonstration Act of 1974, the Solar Heating and Cooling Demonstration Act of 1974, the Energy Reorganization Act of 1974, the Energy Policy and Conservation Act of 1975, the Department of Energy Organization Act of 1977, the Federal Non-Nuclear Energy Research and Development Act, the National Energy Conservation Policy Act of 1978, the Energy Tax Act of 1978, and the National Energy Act of 1978, which included the Natural Gas Policy Act and the Public Utility Regulatory Policies Act ("PURPA").

99. Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, §§ 3, 361(b), 89 Stat. 871, 874, 933 (codified as amended at 42 U.S.C. § 6201 (2012)).

100. *See* 16 U.S.C. § 2621 (2012). The consideration requirement was challenged as a violation of the Tenth Amendment, but was upheld by the Supreme Court in *FERC v. Mississippi*, 456 U.S. 742 (1982), as a permissible exercise of federal power.

Energy Policy Act of 1992, Congress sought to address the incentives for utilities to sell as much energy as possible. It promoted retail electric rate policies that would make investments in conservation at least as profitable for utilities as investments in generation.[101] The Act also continued the trend of providing financial and technical assistance to state PUCs to encourage creative rate design.[102]

The first federal legislative use of the term "demand response" occurred more than a decade later in the Energy Policy Act of 2005.[103] The Act announced that:

> It is the policy of the United States that . . . 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.[104]

Congress also addressed state demand response programs, noting that "[i]t is the policy of the United States to encourage States to coordinate, on a regional basis, State energy policies to provide reliable and affordable demand response services to the public."[105] The Act required state regulatory authorities to investigate whether utilities should provide time-based metering and communications devices to enable demand response programs.[106] The DOE was also tasked with providing technical assistance to states and regional organizations to facilitate increased development of, and participation in, demand response programs,[107] as well as encouraging the deployment of demand response enabling devices.[108] Finally, the Act required the DOE to work with states, utilities, and other stakeholders to identify barriers to demand response programs and to submit a report within six months

101. *See* Energy Policy Act of 1992, Pub. L. No. 102-486, § 111, 106 Stat. 2776, 2795 (codified as amended at 42 U.S.C. 13201 (2012)). The rate structures were also designed to protect the activities of small businesses involved in energy conservation goods and services. *See id.*

102. *See id.* § 112(a).

103. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, § 1252, 119 Stat. 594, 965 (codified as amended in scattered titles of U.S.C.). A 2004 Government Accountability Office report found that the federal government could save millions if federal buildings were to participate in demand response programs, but that active participation in reliability-based programs was "somewhat limited." *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-04-844, ELECTRICITY MARKETS: CONSUMERS COULD BENEFIT FROM DEMAND PROGRAMS, BUT CHALLENGES REMAIN 12 (2004).

104. *See* Energy Policy Act of 2005 § 1252(f).

105. *Id.* § 1252(e).

106. *Id.* § 1252(a)–(b). The Act set a two-year time limit for state regulatory authorities to complete this consideration. *Id.* § 1254(b).

107. *See id.* § 1252(e).

108. *Id.* § 1252(f).

identifying and quantifying the benefits of demand response and making recommendations for how to achieve those benefits.[109] Again, however, the actual decision about whether to pursue demand response programs was left in state hands.

To satisfy its mandate under the Energy Policy Act of 2005, the DOE produced a report in 2006 on the benefits of demand response and how those benefits could be achieved.[110] The report was cautiously optimistic, concluding that reliability-based demand response had begun to mature since 2000 and also noting the increasing success of third-party aggregators.[111] Despite the congressional mandate, the report declined to quantify benefits from demand response, concluding that it was impossible to do so without accepted analytical methods and that benefits would vary by region.[112] Nevertheless, the DOE anticipated that those benefits would be significant, with gross benefits in the range of $1 million to $52 billion.[113]

The report recommended that state regulatory authorities and electric utilities "consider" offering incentive-based programs but stressed the importance of including methods to measure and verify performance, especially for emergency demand response.[114] Similarly, RTO/ISO and utility representatives interviewed that year endorsed growth in demand response programs "provided that [demand response resources] can live up to expectations."[115] This qualification expresses the still-present concerns about whether demand resources can be as reliable as generation resources.

In the Energy Independence and Security Act of 2007, Congress's rhetoric was again more powerful than its actions. The Act stated that "[i]t is the policy of the United States to . . . achieve . . . [d]evelopment and incorporation of demand response, demand-side resources, and energy-efficiency resources."[116] However, the legislation's more specific provisions on demand response primarily authorized research-based projects.[117] Congress

109. *Id.* § 1252(d).

110. *See generally* 2006 DOE REPORT, *supra* note 2.

111. *Id.* at 56, 80–82

112. *Id.* at vii. The relevant regional variables identified in the report included the character of the market (size, competitiveness, geography, the cost of electricity, and price elasticities); a region's peak demand; the demand response mechanism selected; and the time horizon of the benefits evaluation. *See id.* at xv–xvii.

113. *Id.* at 44.

114. *Id.* at 51.

115. Nicole Hopper et al., *The Summer of 2006: A Milestone in the Ongoing Maturation of Demand Response*, ELECTRICITY J., June 2007, at 62, 70.

116. Energy Independence & Security Act of 2007, Pub. L. No. 110-140, § 1301, 121 Stat. 1492, 1784 (codified as amended in scattered titles of U.S.C.)..

117. In addition to the FERC and DOE reporting obligations described in this Part, Congress also gave the National Institute of Standards and Technology ("NIST") responsibility for coordinating interoperability standards for smart grid devices and standards, in part to enable demand-side resources to "contribute to an efficient, reliable electricity network." *Id.* § 1305. Any standards generated, however, would be voluntary. Congress further required the DOE to

directed FERC to undertake a three-step process to study and implement measures to encourage demand response.[118] First, FERC was to conduct a "National Assessment of Demand Response" by June 19, 2009, in which it was to estimate national demand response potential over the coming decade, note any barriers to demand response programs, and provide recommendations for overcoming those barriers.[119] FERC was to follow the Assessment with a "National Action Plan on Demand Response" to identify requirements for technical assistance to the states, design a national communications plan to promote demand response, and develop tools and other support material for use by customers, states, utilities, and demand response providers.[120] Finally, the Act directed FERC and DOE, together, to submit a proposal for implementing the National Action Plan to Congress.[121]

FERC submitted its National Assessment of Demand Response to Congress on June 17, 2009, two days ahead of schedule. The Assessment identified huge potential for expansion of demand response programs, especially for small residential customers, since existing programs were dominated by large commercial and industrial customers.[122] Evaluating four possible scenarios, from business as usual to full participation, FERC concluded that peak load could be reduced by as much as 150 gigawatts ("GW"), which is equivalent to the load from 2000 peaking power plants.[123]

The following year, FERC submitted its National Action Plan ("Action Plan") for Demand Response.[124] Surveying the country, FERC found "little to no influence" of demand response in 40 of the 50 states.[125] FERC therefore identified three main objectives to increase the penetration of demand response. First, FERC recommended "technical assistance to States" to create

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develop smart grid technology that was capable of measuring load reductions for demand response and to study the ability of demand response to provide ancillary grid services. *Id.* § 1304. DOE was also required to undertake smart grid demonstration initiatives that would, among other things, demonstrate the effect of demand response on energy savings and fossil fuel reductions. *Id.*

118. The Energy Independence and Security Act of 2007 also took steps to improve data collection in energy markets, including "data on demand response," by the Energy Information Administration ("EIA"). *Id.* § 805(a)(2)(B).

119. *Id.* § 571(a).

120. *Id.* § 571(b).

121. *Id.* § 571(c). Congress authorized a maximum of $10,000,000 per year for fiscal years 2008, 2009, and 2010 to implement these measures. *Id.* § 571(d)

122. FED. ENERGY REGULATORY COMM'N, A NATIONAL ASSESSMENT OF DEMAND RESPONSE POTENTIAL (2009), *available at* http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf.

123. *Id.* at ix–x.

124. FED. ENERGY REGULATORY COMM'N, NATIONAL ACTION PLAN ON DEMAND RESPONSE (2010) [hereinafter NATIONAL ACTION PLAN], *available at* http://www.ferc.gov/legal/staff-reports/06-17-10-demand-response.pdf. Under the statute, the National Action Plan was to be issued no later than one year after the Assessment. Energy Independence & Security Act of 2007 § 571(b). FERC met this deadline, but only just, issuing the Plan on June 17, 2010. NATIONAL ACTION PLAN, *supra*.

125. NATIONAL ACTION PLAN, *supra* note 124, at 5.

and expand demand response programs, primarily in the form of expert consultations, research support, and grants.[126] Next, FERC recommended the creation of a national communications program for customer education and support.[127] Finally, FERC suggested that the federal government, in cooperation with the states, create a clearinghouse of "analytical tools, information, model regulatory provisions, model contracts, and other support materials for use by customers, States, utilities, and demand response providers."[128] FERC also suggested that communications and signaling infrastructure could be included in this clearinghouse in order to promote standardization across demand response programs.[129]

A year later, FERC and DOE jointly fulfilled EISA's final requirement by filing their Implementation Proposal.[130] Congress anticipated that the Proposal would include "specific proposed assignments of responsibility, proposed budget amounts, and any agreements secured for participation from State and other participants."[131] In contrast to the Assessment and Action Plan, however, the Implementation Proposal was short (the body of the report was only 14 pages long), contained few true proposals, and in general was pessimistic about the federal government's ability to implement the Action Plan.[132] Indeed, the report recognized that "not every element of th[e] plan may be implemented" given the need for cooperation from sub-federal government bodies and private actors.[133]

The Action Plan suggested that federal agencies provide a forum for meetings of a coalition of stakeholders, although FERC and DOE declined to join the coalition.[134] Because they found that there were an adequate number of existing experts on demand response, the agencies saw no need to identify an expert panel as suggested in the National Action Plan.[135] In terms of funding, the Implementation Proposal noted that ARRA had already provided $4 billion for smart grid projects and that no additional federal funding for demand response was necessary.[136] The agencies also saw only a limited federal role in designing and implementing the public communications strategy, suggesting that a private sector coalition should

126. *Id.* at ES-1to -3, 29–32.

127. *Id.* at ES-3 to -4.

128. *Id.* at 2 (internal quotation marks omitted).

129. *Id.* at 65–66.

130. FED. ENERGY REGULATORY COMM'N & U.S. DEP'T OF ENERGY, IMPLEMENTATION PROPOSAL FOR THE NATIONAL ACTION PLAN ON DEMAND RESPONSE (2011) [hereinafter IMPLEMENTATION PROPOSAL], *available at* http://www.ferc.gov/legal/staff-reports/07-11-dr-action-plan.pdf.

131. Energy Independence & Security Act of 2007, Pub. L. No. 110-140, § 571(c), 121 Stat. 1492, 1665 (codified as amended in scattered titles of U.S.C.).

132. *See* IMPLEMENTATION PROPOSAL, *supra* note 130.

133. *Id.* at iii.

134. *Id.* at 3.

135. *Id.* at 9.

136. *Id.* at 9–10.

take the lead in this area.[137] FERC and DOE did, however, pledge to look at maintaining a clearinghouse for standards, tools, and materials related to demand response, but they declined to endorse any of the material supplied.[138]

The only legislative developments since 2007 have related to tax credits and other funding. The 2009 Recovery Act provided $4.5 billion for smart grid investments, "to include demand responsive equipment."[139] Demand response program infrastructure is also eligible for tax incentives such as the investment tax credit for advanced energy manufacturing.[140] Other than these financial incentives, however, Congress has been silent with respect to demand response.

C. BYPASSING FEDERALISM

Notwithstanding the absence of comprehensive federal legislation, FERC has identified demand response as a "major priority."[141] Yet it has become frustrated with what it sees as inadequate state progress in developing demand response programs.[142] FERC is limited in its ability to promote demand response by the jurisdictional divides in the Federal Power Act and the absence of new legislation providing explicit federal authority in this area. Faced with these limits, FERC had several options. First, it could do nothing. Agencies are, after all, creatures of statute, and as faithful agents of the enacting Congress, we might think they should abide by both the letter and the spirit of statutory allocations of jurisdiction (presuming, of course, that those allocations are discernible), even if it prevents them from achieving national goals. At the other end of the spectrum, FERC could seek to adjust federalism boundaries, either by taking more aggressive action than the statute appears to permit and fighting the issue out in court, or by lobbying

137. *Id.* at 10–11.

138. *Id.* at 13–15. The DOE ultimately decided to wrap a clearinghouse for demand response information into its Smart Grid Information Clearinghouse. The Clearinghouse contains a large quantity of information, but its utility as a resource for program designers and regulators is limited by the sheer volume of material and the absence of executive summaries, templates, and model provisions.

139. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115, 138 (codified as amended in scattered titles of U.S.C.). Of the $4.5 billion, approximately $3.4 billion was designated for investment grants, $615 million for demonstration projects, $100 million for worker training, $80 million for regional transmission planning, and $10 million for NIST interoperability standards. *Id.*

140. For program rules, see *Qualifying Advanced Energy Project Credit (section 48C)*, IRS, http://www.irs.gov/Businesses/Qualifying-Advanced-Energy-Project-Credit-section-48C (last updated Feb. 21, 2014).

141. *Energy Bar Association General Counsel Roundtable*, 31 ENERGY L.J. 371, 374 (2010).

142. *See, e.g.*, *Guest Interview with Chairman Jon Wellinghoff (FERC)*, ASS'N FOR DEMAND RESPONSE & SMART GRID, http://www.demandresponsesmartgrid.org/page-1334126 (last visited Jan. 21, 2015) ("It can be frustrating when certain states believe that consumers shouldn't have choices and shouldn't be able to choose to participate in the wholesale DR markets.").

Congress for a legislative fix. FERC's approach fell in between these two poles. Instead of accepting the status quo or pushing aggressively for change, it adopted a middle approach that might be called "bypassing federalism."

"Bypassing federalism" involves using clear jurisdictional authority to achieve policy aims without engaging jurisdictional boundaries directly. An agency seeking to bypass federalism allocations is attempting to work a de facto, rather than a de jure, reallocation of power. It does so by maximizing its influence within its designated sphere in the hopes that its actions will have effects beyond the area of its immediate control.

In the demand response context, FERC has bypassed federalism allocations by exploiting its jurisdiction over wholesale electricity to create and manage incentive-based demand response programs in regional wholesale markets. The creation of these programs has been incremental. In Order 693, FERC required the North American Electric Reliability Corporation ("NERC"), the organization that ensures electric grid reliability, to include demand response resources as tools for the management of emergencies.[143] FERC also clarified the role of demand response in transmission planning in Order 890.[144] FERC then took two more dramatic steps to encourage demand response in wholesale markets in Order 719 and Order 745.[145]

First, relying on its authority under the FPA, rather than the Energy Policy Act of 2005 or EISA,[146] on October 17, 2008, FERC issued Order 719, which required RTOs and ISOs to accept bids from aggregators of retail customer demand response "on a basis comparable to other resources."[147]

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143. Final Rule at 168–69, Mandatory Reliability Standards for the Bulk-Power Systems, 118 FERC ¶ 61,218 (2007) (No. RM06-16-000), *available at* http://energylegalblog.com/files/RM06-16%20Reliability%20Standards%20Order.pdf.

144. *See generally* Final Rule, Preventing Undue Discrimination & Preference in Transmission Service, 118 FERC ¶ 61,119 (2007) (Nos. RM05-17-000, RM05-25-000), *available at* http://www.nerc.com/files/order_890.pdf.

145. *See generally* Final Rule, Demand Response Compensation in Organized Wholesale Energy Markets, 134 FERC ¶ 61,187 (2011) (No. RM10-17-000) [hereinafter Order 745], *available at* http://www.ferc.gov/EventCalendar/Files/20110315105757-RM10-17-000.pdf; Final Rule, Wholesale Competition in Regions with Organized Electricity Markets, 125 FERC ¶ 61,071 (2008) (Nos. RM07-19-000, AD07-7-000) [hereinafter Order 719], *available at* http://www.ferc.gov/whats-new/comm-meet/2008/101608/E-1.pdf.

146. Under the FPA, FERC must ensure that wholesale rates for electricity are just and reasonable and not unduly discriminatory. *See* Order 719, *supra* note 145, at 9 (noting that new rules would result in tariffs that better reflect "the value customers place on electric power" and "remedy any undue discrimination and preference in organized markets" per Commission responsibility under FPA 205 and 206).

147. *Id.* at 2–3. Order 719 also required that RTOs and ISOs accept bids from demand response providers in their ancillary services markets, which deal in sales of small amounts of energy (or, in this case, reductions in demand) in close to real time to balance out any fluctuations in power and voltage that might otherwise disrupt the flow of electricity. *Id.* at 27. The Order further required that RTOs and ISOs study whether eliminating barriers to demand response in wholesale markets required further reforms. *Id.* at 2–3, 51–52.

The Order gave retail customers access to the more lucrative demand response programs in wholesale energy markets. However, this access came with a significant caveat: aggregators could not bid customer demand response into these markets if "the laws or regulations of the relevant electric retail regulatory authority d[id] not permit a retail customer to participate."[148] FERC's approach to the jurisdictional question might best be described as prudent.[149] Under the FPA, FERC arguably has authority to require RTOs and ISOs to accept bids from aggregators of retail customers' demand response services over the objections of state regulators. FERC Commissioner Jon Wellinghoff and FERC Acting General Counsel David Morenoff offered several alternative justifications that would support such authority in a 2007 article.[150] However, Wellinghoff and Morenoff conclude in their article, and FERC concluded in its final rule, that setting up a jurisdictional showdown with the states would not be likely to advance the cause of demand response.[151]

148. *Id.* at 311–12. To mitigate the burden on smaller utilities, FERC prohibited participation by customers of utilities below a certain size threshold unless the relevant regulatory authority affirmatively permitted it, thereby effectively moving from an "opt-out" to an "opt-in" for these customers. Order on Rehearing at 14, Wholesale Competition in Regions with Organized Electricity. Markets, 128 FERC ¶ 61,059 (2009) (No. RM07-19-001), *available at* http://www.ferc.gov/whats-new/comm-meet/2009/071609/E-1.pdf.

149. Indeed, FERC's own justification for this compromise sounds in pragmatism. *See* Order 719, *supra* note 145, at 84–85 ("[W]e find that this action properly balances the Commission's goal of removing barriers to development of demand response resources in the organized markets that we regulate with the interests and concerns of state and local regulatory authorities.").

150. Wellinghoff and Morenoff identify five potential sources of FERC jurisdiction. First, they argue, the Energy Policy Act of 2005 directly authorizes the Commission to promote demand response. Wellinghoff & Morenoff, *supra* note 7, at 397–98. Second, they claim that the Commission must regulate demand response in order to fulfill its mandates under the FPA to ensure that wholesale electricity rates are "just and reasonable" and to prevent "undue discrimination." *Id.* at 396, 399–401, 408–10; *see also* Paddock & Youngblood, *supra* note 80, at 166 ("This non-discrimination concept is today emerging in FERC orders that address requirements to treat demand response in certain circumstances in the same manner as [utilities] would treat conventional generation sources."). Third, they conclude, the FPA gives FERC jurisdiction over any "rule, regulation, practice, or contract affecting [public utility] rate, charge, or classification." 16 U.S.C. § 824e(a) (2012). Demand response could be characterized as such a practice. Wellinghoff & Morenoff, *supra* note 7, at 399–401 (citing 16 U.S.C. § 824e(a) (2000)). Fourth, they argue that demand response's impact on system reliability places it within the Commission's jurisdiction. *Id.* at 401–12. Finally, Wellinghoff and Morenoff argue that, "to the extent that demand response can be characterized as involving [] a wholesale sale of electric energy [in interstate commerce], it would fall within the Commission's jurisdiction under the FPA." *Id.* at 405. Note that, although the Commission made this last argument in 2001 during the California energy crisis, *see* Removing Obstacles to Increased Electric Generation and Natural Gas Supply in the Western United States and Requesting Comments on Further Actions to Increase Energy Supply and Decrease Energy Consumption, 66 Fed. Reg. 15,858 (Mar. 21, 2001) [hereinafter Removing Obstacles], Wellinghoff and Morenoff appeared to distance themselves from it in their article.

151. Although FERC did not extend its authority as far as it might have in Order 719, states and local regulators were still concerned about what they saw as unlawful encroachment on their jurisdiction. In comments on the rule, the National Rural Electric Cooperative Association

In a second, bolder step three years later, FERC sought to make participation in demand response programs more lucrative and therefore more attractive. In Order 745, noting that "a market functions effectively only when both supply and demand can meaningfully participate," FERC ruled that demand response resources in wholesale markets should be paid the market price for energy, also known as the locational marginal price ("LMP").[152] The Order has been a lightning rod for opponents of demand response, and a coalition of power suppliers and cooperatives challenged the rule in the D.C. Circuit.[153] Petitioners contended that FERC exceeded its jurisdiction under the FPA and acted arbitrarily and capriciously under the Administrative Procedure Act when it adopted the compensation scheme.[154] Petitioners further contended that Order 745 over-compensates demand response resources. Those resources, petitioners argue, are in effect being compensated twice: not only do they save the retail cost of energy they chose not to consume, they also receive a payment equal to the market price for that energy.[155]

Notwithstanding a recent D.C. Circuit panel decision vacating and remanding Order 745,[156] the impact of FERC's efforts in Orders 719 and 745 cannot be overstated. In the space of just a few years, FERC created a new, lucrative market for retail demand response providers, effectively bypassing the FPA's statutory constraints. Prior to the D.C. Circuit ruling, the strategy had proven largely successful: between 2010 and 2012, available demand response capacity grew by nearly 13,000 megawatts ("MW").[157] Wholesale

("NRECA") argued that the Order would hurt retail demand response programs because aggregators would "cherry pick" the best loads from retail programs and bid them into the more lucrative wholesale markets. Order 719, *supra* note 145, at 76 (citing NRECA comments). Commenters also raised concerns about possible interference with state resource planning, the burden incumbent on RERRAs to affirmatively opt-out of participation, and the allegedly dangerous precedent the Order set for the expansion of federal power over traditionally state areas of regulation. *See, e.g.*, *id.* at 77 (alleging that the Order "violates the separation of federal and state jurisdiction").

152. Order 745, *supra* note 145, at 1–3. FERC added a caveat, however. Demand resources would only receive the LMP for reductions in consumption when a "net benefits" test, designed to indicate when "the overall benefit from the reduced LMP resulting from dispatching demand response resources exceeds the cost of dispatching and paying LMP to those resources", was met. *Id.* at 4.

153. *See generally* Brief for Petitioners, Elec. Power Supply Ass'n v. FERC, 753 F.3d 216 (D.C. Cir. 2014) (No. 11-1486), 2012 WL 2048483.

154. *Id.* at 22–23.

155. *Id.* at 47–50. Oral argument was held in late September before Judges Edwards and Brown and Senior Judge Silberman. The two questions before the panel were whether FERC exceeded its authority in enacting Order 745 and whether its compensation scheme was arbitrary and capricious. The panel spent the bulk of its time on the first question.

156. *See Elec. Power Supply Ass'n*, 753 F.3d 216.

157. By way of comparison, the wind industry also added 13,000 MW of installed capacity between 2011 and 2012. *See* RYAN WISER ET AL., U.S. DEP'T OF ENERGY, 2012 WIND TECHNOLOGIES

demand response programs were responsible for nearly half of that growth.[158] Uncertainty now exists surrounding the strategy's future, and the panel's ruling may well stymie demand response in wholesale markets. While the D.C. Circuit denied FERC's request for rehearing, the government has opted to petition the U.S. Supreme Court for a writ of certiorari.[159] Even if the D.C. Circuit's ruling stands, FERC's efforts over the past several years have had a lasting impact on the development of demand response in this country. By stimulating a market for demand response, FERC contributed to the development of a mature industry for demand response services and better understanding of the trade-offs involved in demand response program implementation. Together, those contributions may result in more robust demand response programs at the state level.

III. EVALUATING BYPASSING

By "bypassing" federalism, FERC has been able to promote and develop demand response programs without the necessity of statutory amendment. In today's era of divided government, in which Congress legislates rarely and consensus is difficult to achieve, we should not be surprised that federal agencies are turning to creative ways of accomplishing objectives where old statutes stand in the way of solving new problems.[160] The need is especially great when the states fail to exercise their own residual authority, resulting in a regulatory gap.

The academic literature on federalism is both broad and deep.[161] Unlike the existing literature, however, this Article is concerned neither with

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MARKET REPORT 3 (2013), *available at* http://www1.eere.energy.gov/wind/pdfs/2012_wind_technologies_market_report.pdf.

158. *See* FED. ENERGY REGULATORY COMM'N, 2012 ASSESSMENT OF DEMAND RESPONSE & ADVANCED METERING 21–25 (2012).

159. *Elec. Power Supply Ass'n*, 753 F.3d at 225. The D.C. Circuit has stayed the issuance of its mandate in *Elec. Power Supply Ass'n* pending the outcome of the government's petition for a writ of certiorari in the Supreme Court. Petition for a Writ of Certiorari, *supra* note 16.

160. For additional examples of this phenomenon, see generally Freeman & Spence, *supra* note 1 (coining the phrase "Old States, New Problems").

161. The literature may be roughly divided into works on structural federalism (what our federalism actually looks like and the wisdom of its design) and policy or "values" federalism (given a range of constitutionally permissible choices, how authority *should* be allocated between various levels of government). Articles in the former category tend to focus on the Constitution and on judicial doctrine interpreting its edicts. *See, e.g.*, Akhil Reed Amar, *Of Sovereignty and Federalism*, 96 YALE L.J. 1425 (1987) (exploring the Constitutional origins of federalism and explaining federalism's role in the protection of individual rights); Herbert Wechsler, *The Political Safeguards of Federalism: The Role of the States in the Composition and Selection of the National Government*, 54 COLUM. L. REV. 543 (1954) (inspiring a mini-literature of its own). Pieces in the latter category tend to focus more on specific policymaking domains and on the values implicated by particular allocations of authority. Again, the examples are too numerous to catalog, but they include works such as William L. Cary, *Federalism and Corporate Law: Reflections upon Delaware*, 83 YALE L.J. 663 (1974) (calling for uniform federal standards in regulation of corporations to avoid forum shopping and ultra-lax state regulation); Richard L. Revesz, *Rehabilitating Interstate Competition:*

investigating the essential structural features of our federalist system nor with identifying the "best" allocation of power between the states and the federal government in the area of electricity regulation. Rather, this Article accepts as given FERC's determination to assert greater federal control over demand response programs and evaluates the particular strategy it used to accomplish this goal.

There are several reasons to conclude that bypassing is a troubling strategy, both as a general matter and in the specific context of electricity demand reduction programs. First, bypassing can result in the promotion of a solution that might not have emerged as a legislative winner. Like all federalization strategies that substitute a unified approach for a more decentralized one, bypassing risks crowding out useful experimentation by states. But bypassing poses greater problems in this regard than does statutory preemption: while Congress may choose from a broad menu of policies when it legislates, federal agencies seeking to proceed within the constraints of existing legislation have more limited options. This problem has plagued FERC's efforts to regulate electricity demand. Although bypassing has been helpful in standardizing elements *within* demand response programs, it has also had the less salutary effect of crowding out programs that encourage permanent, rather than temporary, demand reductions.

Second, any reallocation of power by a federal agency might be characterized as an unacceptable end run around the legislative process. This objection is strengthened in the federalism context, where we might be particularly concerned that Congress and the President decide jurisdictional questions through legislation. Unlike actual federal-state preemption, of course, the bypassing strategy works no de jure legal intrusion on state

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Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation, 67 N.Y.U. L. REV. 1210 (1992) (questioning the theory that interstate competition will always lead to sub-optimally weak regulatory control and that federal regulation is preferable). A sub-category of policy federalism explores and evaluates innovative power arrangements. *See, e.g.*, Jessica Bullman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009) (exploring state use of delegated federal authority to challenge federal programs from within).

For exploration of federalism questions in the context of energy law, see generally Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801 (2012) (discussing the pathologies of state control over transmission siting and suggesting solutions including limited federal preemptive authority and greater regional coordination); Hari M. Osofsky & Hannah J. Wiseman, *Dynamic Energy Federalism*, 72 MD. L. REV. 773 (2013) (describing energy governance as "fractured" and identifying regional governance mechanisms as the most promising solution); David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431 (2013) (concluding that traditional federalism considerations support the regulation of hydraulic fracturing at the state level); Amy L. Stein, *The Tipping Point of Federalism*, 45 CONN. L. REV. 217 (2012) (arguing that states have retained authority over the siting of electric generation facilities because federal interests are adequately represented in the process).

prerogatives.[162] However, the de facto effects of bypassing raise functional federalism concerns.

Third, bypassing strategies might not avoid costly court battles if agencies are too aggressive in implementing them. While FERC largely avoided problematic legal challenges to Order 719, which allowed retail participation in wholesale demand response programs, it has been drawn into a protracted legal battle over Order 745's pricing scheme for economic demand response. More problematic still for FERC is that the D.C. Circuit panel reviewing Order 745 also took the opportunity to invalidate the jurisdictional basis for the pricing scheme. While the immediate effects of the order are only on the market for economic demand response products rather than emergency or capacity products, and while FERC is seeking review of the order by the Supreme Court, its aggressive stance on pricing may ultimately have put its larger demand response strategy in jeopardy.

Finally, bypassing can actually create a disincentive for congressional action since, by making archaic statutory provisions more functional, it masks the need for legislative amendment. Although Congress is unlikely to adjust the federalism boundaries in the FPA any time soon, FERC's strategy might be postponing less radical legislative solutions such as increased federal support for energy efficiency programs.

A. SECOND-BEST SOLUTIONS

Were demand response programs the only option for regulating electricity consumption, FERC's approach would be less problematic. This is because more uniformity *within* demand response programs is desirable to improve the quality of those programs and to make participation more straightforward. However, demand response programs are not the only way to incentivize demand-side reductions. Ideally, these programs should be part of an "all of the above" strategy that includes incentives for energy efficiency and time-of-use pricing. However, in part due to its unique jurisdictional position, FERC has focused mainly on demand response, effectively crowding out these other approaches. Bypassing has thus resulted in the selection of a policy that might not have emerged as a legislative winner, especially in light of the fact that demand response's conservation and environmental impacts are less straight-forward than they are for energy efficiency programs.

1. Uniformity Within Demand Response

There are several reasons to think that more coordination *within* demand response programs is desirable. We have over a decade of experience with some of these programs and an increasing comfort level with the technologies

162. In expanding its demand response programs in wholesale markets, FERC has been scrupulously careful not to challenge jurisdictional boundaries directly. *See supra* notes 141–45 and accompanying text.

involved. Further, experimentation at the sub-federal level has yielded sufficient information about regulatory strategies to identify best practices that could inform a more comprehensive approach to demand response.

The generic term "demand response" papers over the fact that "the real-world business of demand response is a highly fragmented affair, ranging from cutting-edge . . . automation and communication technologies to old stand-bys of pager messages, phone calls, emails and price lists posted on public websites."[163] Greater uniformity is desirable in three areas. First, terminology and communications should be standardized. Second, program rules including testing requirements and methods for measuring and verifying a customer's load drop should adhere to best industry practices. Finally, penalties for violations should be strict enough to deter gaming and to ensure that only serious customers with actual performance capability participate in the market.

First, decentralized experimentation has produced a bewildering array of different demand response programs, rules, and standards. FERC has acknowledged that "[t]he rapid evolution of demand response programs, rules, and names increases confusion among respondents and staff alike."[164] The sheer variety of programs and the accompanying diversity of program terminology is an impediment to efficiencies in demand response. There are ongoing efforts to develop a standardized communications language between utilities and their customers that can be used to signal changes in the price of electricity, the onset of a demand response event, and customer usage information.[165] However, to date, this effort has been purely voluntary.

Another key area for standardization is the method for calculating "negawatts" themselves (or, in other words, how much electrical load a customer has actually dropped). Measurement and verification of a customer's load drop is crucial to establish eligibility for demand response programs, to confirm that a customer has dropped its load for purposes of providing compensation, and to use as a basis for the program operator's forecasting and planning.[166] Load drop is measured from a "baseline" of how much energy the customer would have been consuming were it not called

163. Jeff St. John, *Demand Response: The Standards Race Begins?*, GREENTECHGRID (Nov. 12, 2009), http://www.greentechmedia.com/articles/read/demand-response-the-standards-race-begins.

164. FED. ENERGY REGULATORY COMM'N, 2010 ASSESSMENT OF DEMAND RESPONSE & ADVANCED METERING 23 (2011).

165. One platform for automated demand response, OpenADR, has been adopted by California's three large investor-owned utilities. Press Release, OpenADR Alliance, Leading Utilities Embrace OpenADR 2.0 (Dec. 3, 2012), *available at* http://www.openadr.org/index.php?option=com_content&view=article&id=68:leading-utilities-embrace-openadr-2-0&catid=21:press-releases& Itemid=121.

166. MIRIAM L. GOLDBERG & G. KENNEDY AGNEW, MEASUREMENT AND VERIFICATION FOR DEMAND RESPONSE at viii (2013), *available at* http://emp.lbl.gov/sites/all/files/napdr-measurement-and-verification.pdf.

upon to reduce its usage.[167] But coming up with this number has proven difficult.[168]

Many customers have a variable load, which means that they consume different amounts of electricity depending on such factors as the time of day, weather, and activities at the facility. For these customers, it can be difficult to demonstrate how much energy they would have been using but for their participation in the demand response program. A variety of methods to establish baseline are used in wholesale and retail markets, including averaging usage in the hours immediately before and after a demand response event, using a historical average usage on similar days, and measuring the amount of back-up generation used during the event. Within each of these categories, safeguards can be put in place and adjustments made to maximize accuracy and minimize the potential for gaming.

PJM, the transmission coordinator for the mid-Atlantic region, was one of the earliest adopters of demand response programs and has led the field in measurement and verification ("M&V"). It proposed several modifications to the M&V protocols for its economic demand response program in 2008 after concluding that its existing baseline rules were "susceptible to gaming."[169] PJM also produced a comprehensive empirical analysis of demand response baseline methods in 2011.[170] However, although understanding of baseline calculation methodologies has evolved considerably and certain pitfalls to avoid have been identified, there are no baseline calculation requirements that cut across retail and wholesale demand response programs. Thus, many

167. *See* Decision Adopting Demand Response Activities and Budgets for 2012–2014 at 2, Application of Pac. Gas & Elec. Co. (U39E) for Approval of Demand Response Programs, *supra* note 51, at 57. The importance of determining the correct customer baseline cannot be overstated. *Id.* at 59. "An accurate baseline calculation helps determine the success of a DR program. Overestimation leads to overpayment, but underestimation could potentially lead to customer withdrawal from a DR program." *Id.*; Chao, *supra* note 6, at 8 (warning that if these baseline problems are not properly addressed, demand response programs could be counterproductive and deter "the development of efficient price-responsive demand," likely making "the cure . . . worse than the disease").

168. This problem, in some ways, parallels the "additionality" problem in calculating reductions in carbon offset policy. There, as here, the problem is in establishing a baseline: what reductions in emissions would have been achieved under a business-as-usual scenario? There is widespread agreement that only additional savings beyond that baseline should be counted as bona fide reductions. The question is how to define business-as-usual. *See, e.g.*, Kirsten H. Engel, *Harmonizing Regulatory and Litigation Approaches to Climate Change Mitigation: Incorporating Tradable Emissions Offsets into Common Law Remedies*, 155 U. PA. L. REV. 1563, 1598 n.106 (2007) (noting the problem of additionality and citing guidelines developed to determine business-as-usual baseline).

169. Order Accepting Tariff Revisions, Subject to Conditions at 1–2, PJM Interconnection, L.L.C.,123 FERC ¶ 61,257 (2008) (No. ER08-824-000).

170. KEMA, PJM EMPIRICAL ANALYSIS OF DEMAND RESPONSE BASELINE METHODS (2011). The analysis considered 11 different baseline methodologies in use across wholesale markets and concluded that certain baseline methodologies were demonstrably more accurate than others. *Id.* at 5.

markets still do not benefit from our collective experience with these programs.[171]

There has been some progress in standardization at the wholesale level. FERC adopted model standards issued by the North American Energy Standards Board ("NAESB") for measurement and verification in 2010 and updated those standards in February of last year.[172] It noted that the use of uniform standards would "improve the methods and procedures for measuring accurately the performance of demand response resources and assist in monitoring demand response services for potential manipulation."[173] However, these standards apply only to wholesale markets administered by RTOs and ISOs.[174] Thus, the gains that FERC identifies that will flow from standardization, including facilitating participation in demand response markets, reducing transaction costs, and better evaluating resources' performance, do not extend to retail demand response programs.[175]

Further, retail baseline standards vary in method and in specificity.[176] This diversity of baseline calculation methodologies was more appropriate

171. FED. ENERGY REGULATORY COMM'N, *supra* note 122, at 66–67 ("Finally, development of measurement and verification standards is critically needed at both the wholesale and retail levels. Methods for measuring and verifying demand response reductions currently vary significantly across the country, and measurement and verification standards will increase confidence in markets.").

172. Standards for Business Practices and Communication Protocols for Public Utilities, 75 Fed. Reg. 20,901 (Apr. 22, 2010) (to be codified as 18 C.F.R. pt. 38); Standards for Business Practices and Communication Protocols for Public Utilities, 78 Fed. Reg. 14,654 (Mar. 7, 2013) (to be codified at 18 C.F.R. pt. 38). In the spirit of experimentalism, the final rule noted that the new standards represented an "incremental improvement" over those adopted in 2010 and that "it is appropriate to allow industry to gain additional experience with these new standards prior to considering additional enhancements." *Id.* at 14,659, 14,661.

173. Standards for Business Practices and Communication Protocols for Public Utilities, 75 Fed. Reg. at 20,901; s*ee also* FED. ENERGY REGULATORY COMM'N, *supra* note 122, at 72 (remarking that "development of standardized practices for quantifying demand reductions would greatly improve the ability of system operators to rely on demand response programs of all kinds and would minimize gaming opportunities").

174. Standards for Business Practices and Communication Protocols for Public Utilities, 78 Fed. Reg. at 14,659 ("[T]he particular standards we are incorporating by reference in this Final Rule apply only in organized wholesale electric markets administered by RTOs or ISOs."). In addition, in the event of a conflict between the RTO's or ISO's governing documents and the NAESB standards, the governing documents control. *Id.*

175. *See* Order Accepting Tariff Revisions, Subject to Conditions, *supra* note 169, at 12, 35 (discussing the benefits of uniform standards). There have also been some local and regional efforts at increased standardization. For instance, the New England ISO ("NE-ISO") proposed modifications to its baseline calculation methodologies in 2011 based, in part, on conclusions in a study conducted by PJM.

176. *See* ENERNOC, THE DEMAND RESPONSE BASELINE 2 (2011), *available at* http://www.enernoc.com//themes/bluemasters/images/brochures/pdfs/4-ENR_BR_B5_00638-Demand_Response_Baseline_low_725.pdf (noting that "[a]lthough there are many methods currently in use, some are much more accurate than others"). *Compare* DUKE ENERGY CAROLINAS, LLC, RIDER PSC (SC): POWERSHARE CALLOPTION NONRESIDENTIAL LOAD CURTAILMENT (2013), *available at* https://www.duke-energy.com/pdfs/scriderpsc.pdf (using a measure of demand called the

when demand response was in its infancy than it is now. Sufficient learning has taken place to allow regulators to standardize methodologies, or at least place limits on the number of permissible methodologies, in order to curb gaming in demand response programs.

Finally, there is unevenness in state penalties and enforcement regimes for failures to comply with demand response commitments or for intentional violations of program rules. Compliance is vital in demand response markets both to ensure that program goals are met and to preserve public and government support for demand response. If customers or aggregators bid fictitious loads into the grid or manipulate their energy baselines, demand response's pricing and reliability advantages are undercut.[177] Gaming not only hurts individual demand response programs, it hurts demand response as an industry because it undermines confidence in the technology.[178]

Notwithstanding the importance of eliminating gaming, penalties for noncompliance also vary from program to program. Some penalties are relatively minor, as in MidAmerican Energy's program in Iowa, which assures customers that "your share [of any added capacity purchased to cover the shortfall] will never exceed your annual curtailment credit."[179] Some companies even offer penalty-free programs.[180] By contrast, in the Duke

"Proforma," which is "based on the Customer's historical load comparable to the period when the Company declares an event"), *with* IND. MICH. POWER CO., SCHEDULE OF TARIFFS AND TERMS AND CONDITIONS OF SERVICE GOVERNING SALE OF ELECTRICITY IN THE STATE OF INDIANA (2013), *available at* https://www.indianamichiganpower.com/global/utilities/lib/docs/ratesandtariffs/Indiana/IM_IN_TB_16_9-29-2014.pdf (offering a detailed methodology that averages four out of the five most recent similar non-event days).

177. *See* Susan Kelly & Elise Caplan, *Time for a Day 1.5 Market: A Proposal to Reform RTO-RUN Centralized Wholesale Electricity Markets*, 29 ENERGY L.J. 491, 538 (2008) (noting that "sufficient safeguards would have to be included in RTO tariffs to ensure that demand response resources would indeed perform as promised at the time demanded if a demand response bid clears the market. RTOs such as ISO New England are currently working on such criteria, to avoid the phenomenon of "phantom" demand response resources").

178. One need only look at the media frenzy surrounding the collapse of solar company and federal stimulus recipient Solyndra to conclude that a prominent instance of demand response program gaming might cast a pall on the endeavor as a whole. *See* Editorial, *The Solyndra Mess*, N.Y. TIMES (Nov. 24, 2011), http://www.nytimes.com/2011/11/25/opinion/the-solyndra-mess.html?_r=0.

179. *Energy Efficiency: Iowa*, MIDAMERICAN ENERGY, http://www.midamericanenergy.com/ee/ia_bus_load.aspx (last visited Jan. 21, 2015) (follow "What happens if I can't comply when I'm asked to curtail?" hyperlink under Frequently Asked Questions No. 4).

180. A survey of retail programs in the Midwestern ISO ("MISO") footprint found that nearly 20% of programs surveyed did not have penalties for non-performance. *See* RANJIT BHARVIRKAR ET AL., COORDINATION OF RETAIL DEMAND RESPONSE WITH MIDWEST ISO WHOLESALE MARKETS 23 (2008), *available at* http://emp.lbl.gov/sites/all/files/REPORT%20lbnl-288e.pdf (stating that 27 out of 141 DR programs have no penalties); *see also* APS'S DEMAND RESPONSE PROGRAM, ARIZ. PUB. SERV., *available at* https://www.azmag.gov/Documents/MC_2012-03-14_Item-10_APS-Peak-Solutions-Demand-Response-Presentation.pdf (last visited Jan. 21, 2015) (advertising no penalties or out of pocket expenses for customers). Some aggregators may also be willing to mitigate the noncompliance charges for their customers to encourage participation.

PowerShare program in North and South Carolina, noncompliant customers forfeit their monthly credit *and* are charged 110% of the cost of that energy per kilowatt-hour.[181]

Penalties for violations in wholesale markets are more serious. FERC has aggressively policed potential violations of RTO/ISO demand response program rules. The threat of FERC enforcement is a significant one in light of the Commission's authority to assess up to $1 million per day per violation of its rules.[182] FERC showed that it was not afraid to use this authority in several recent investigations involving alleged violations relating to wholesale demand response markets. These investigations, which resulted in large settlements, show that the problem of gaming is not illusory.[183]

Program diversity can be a virtue in experimental regulatory regimes, and it has been beneficial to the development of demand response. However, persistent lack of standardization and adoption of those best practices in program design threatens to unravel the benefits of demand response programs. Therefore, from the perspective of internal standardization, FERC's bypassing strategy and attendant efforts to standardize demand response programs are a step in the right direction.

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181. *See* DUKE ENERGY CAROLINAS, LLC, *supra* note 176, at 4.

182. *See* 16 U.S.C. § 8250-1(b) (2012).

183. The Commission secured over $500,000 in civil penalties and over $2 million in disgorgement of unjust profits as part of a 2010 consent agreement following its investigation of North American Power Partners, a demand response aggregator, and its Senior Vice President of Operations, Joseph Polidoro. Order Approving Stipulation and Consent Agreement, N. Am. Power Partners, 133 FERC ¶ 61,089 (2010) (No. IN09-6-000), *available at* https://www.ferc.gov/enforcement/civil-penalties/actions/133FERC61089.pdf. Polidoro entered into a separate consent agreement, agreeing to pay a $50,000 civil penalty and refrain from participation in the PJM market for two years. *See* Order Approving Stipulation and Consent Agreement, *In re* Joseph Polidoro, 138 FERC ¶ 61,018 (2012) (No. IN09-6-001), *available at* http://www.ferc.gov/enforcement/civil-penalties/actions/138FERC61018.pdf. According to FERC, the penalties could have been even higher were it not for the fact that a larger award might have threatened the financial viability of the company. Order Approving Stipulation and Consent Agreement, *supra*, at 5.

In a second case, demand response aggregator and market leader EnerNOC agreed to pay a penalty of $820,000 and disgorge $656,806 to resolve allegations that it overstated load drop data for customers participating in the ISO-NE demand response programs. Order Approving Stipulation and Consent Agreement, EnerNOC, Inc., 141 FERC ¶ 61,211 (2012) (No. IN13-6-000), *available at* http://www.ferc.gov/enforcement/civil-penalties/actions/IN13-6-000.pdf. Finally, in 2013, FERC approved Stipulation and Consent Agreements with two companies for allegedly establishing false and inflated baselines from which to measure their energy curtailment. Order Approving Stipulation and Consent Agreement at 4, 25, Rumsford Paper Co., 142 FERC ¶ 61,218 (2013) (No. IN12-11-000), *available at* http://www.ferc.gov/enforcement/civil-penalties/actions/142FERC61218.pdf (requiring the company to disgorge nearly $ 3 million and to pay a civil penalty of $10 million); Order Approving Stipulation and Consent Agreement, Enerwise Global Technologies, Inc., 143 FERC ¶ 61,218 (2013) (No. IN12-15-000), *available at* http://www.ferc.gov/enforcement/civil-penalties/actions/143FERC61218.pdf (requiring the company to disgorge nearly $21,000 and to pay a civil penalty of $780,000).

2. Crowding Out Energy Efficiency

Despite the benefits of a more coordinated federal approach to demand response programs themselves, however, FERC's bypassing strategy is disadvantageous in that it risks promoting demand response at the expense of other strategies for reducing consumer demand for electricity. Specifically, there is a tension between customer participation in incentive-based demand response programs and in energy efficiency programs. Energy efficiency programs are particularly advantageous because they can ensure a *net* reduction in demand over time, whereas demand response programs might not. The environmental benefits of energy efficiency programs are also clearer. In some cases, however, the competition between demand response and energy efficiency is a zero sum game. Customers must choose between reducing their energy consumption permanently as part of an energy efficiency program or doing so on a temporary basis to participate in demand response. While demand response programs will continue to play an important role in mitigating *peak* electricity demand, those gains should not be made at the expense of energy efficiency.

a. Conservation Trade-Offs

The DOE defines "energy efficiency" as "using less energy to provide the same or improved level of service to the energy consumer in an economically efficient way."[184] Utilities can promote energy efficiency in several ways. Some utilities funnel money from utility customers into "public benefits funds" that are used to promote energy efficiency by, for example, subsidizing energy efficiency upgrades to existing buildings or investing in research and development.[185] Regulators can also offer customers direct incentives to purchase and install more energy efficient appliances[186] or set energy savings targets for utilities.[187] While some programs, such as the DOE's minimum energy efficiency standards for appliances,[188] are mandatory, many programs

184. CHARLES GOLDMAN ET AL., COORDINATION OF ENERGY EFFICIENCY AND DEMAND RESPONSE: A RESOURCE OF THE NATIONAL ACTION PLAN FOR ENERGY EFFICIENCY ES-1 (2010), *available at* http://www.epa.gov/cleanenergy/documents/suca/ee_and_dr.pdf.

185. *See* Inara Scott, *"Dancing Backward in High Heels": Examining and Addressing the Disparate Regulatory Treatment of Energy Efficiency and Renewable Resources*, 43 ENVTL. L. 255, 267 (2013).

186. For example, the federal government offered residential customers energy efficiency tax credits for installing insulation, exterior windows and doors, furnaces, water heaters, and other appliances. The credit applied to purchases from January 1, 2012, through December 2013. *See Residential Energy Efficiency Tax Credit*, U.S. DEP'T OF ENERGY, http://energy.gov/savings/residential-energy-efficiency-tax-credit (last visited Jan. 21, 2015). The DOE maintains a searchable database of state incentives for energy efficiency at www.dsireusa.org.

187. For example, Missouri has a voluntary savings target of 9.9% of electricity demand by 2020. *See generally* S.B. 376, 95th Gen. Assemb., 1st Reg. Sess. (Mo. 2009).

188. *See Appliance and Equipment Standards Program*, U.S. DEP'T OF ENERGY, http://energy.gov/eere/buildings/appliance-and-equipment-standards-program (last visited Jan. 21, 2015).

remain voluntary, placing them in direct competition with incentive-based demand response programs.

Customers with some demand flexibility therefore have a choice of programs. Because a customer that reduces energy usage to participate in energy efficiency programs can no longer bid that reduction into a demand response program, they must select one or the other. Rational consumers will presumably select the most lucrative program.[189] From the customer's perspective, participation in demand response programs at the wholesale level can be significantly more lucrative than retail energy efficiency programs.[190] FERC, therefore, by creating these lucrative wholesale market programs, is, in the words of their own counsel in recent litigation, "luring" customers away from retail markets.[191]

Within wholesale markets, incentive-based demand response programs dominate energy efficiency programs. Some wholesale markets have experimented with allowing customers to bid energy efficiency commitments into annual auctions. PJM, for example, allows energy efficiency resources that can achieve a permanent load reduction to participate in their forward capacity markets. Qualifying projects include installing energy efficient lighting and appliances and weatherization projects "that exceed then current building codes, appliance standards, or relevant state or federal standards."[192] These resources may only participate in the markets for four years, however.[193]

In practice and as discussed above, demand response programs provide more attractive customer opportunities. Perhaps unsurprisingly, therefore, PJM's Reliability Pricing Model ("RPM") capacity auction for delivery years 2014–2015 procured 14,118 MW of demand response and only 822 MW of energy efficiency.[194] The results for the next year's auction saw a 700 MW increase in demand response resources compared to a mere 100 MW increase in energy efficiency resources.[195]

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189. Admittedly, some customers may be motivated by incentives other than price, such as environmental considerations.

190. *See* BETH W. DUNLOP & DONALD GILLIGAN, THE ROLE OF ENERGY EFFICIENCY AND ENERGY SERVICE COMPANIES IN WHOLESALE MARKETS 5.43 (2000) (stating "it is the price signals of the wholesale markets, newly opening to demand-side bidding, that provide the potential for a true market-based opportunity for demand and energy reductions").

191. Oral Argument at 29:48, Elec. Power Supply Ass'n v. FERC, 753 F.3d 216 (D.C. Cir. 2014) (No. 11-1486), *available at* http://www.cadc.uscourts.gov/recordings/recordings.nsf/DocsByRDate?OpenView&count=100&SKey=201309.

192. *RPM Energy Efficiency (EE) FAQs*, PJM.COM, http://www.pjm.com/~/media/markets-ops/rpm/rpm-auction-info/rpm-energy-efficiency-faqs.ashx (last updated Mar. 30, 2011).

193. *Id.* In contrast, demand response loads may be bid into capacity markets year after year.

194. *Demand Resources and Energy Efficiency Continue to Grow in PJM's RPM Auction*, PR NEWSWIRE (May 13, 2011), http://www.prnewswire.com/news-releases/demand-resources-and-energy-efficiency-continue-to-grow-in-pjms-rpm-auction-121806178.html.

195. PJM, 2015/2016 RPM BASE RESIDUAL AUCTION RESULTS 17 (2012), *available at* http://www.pjm.com/~/media/markets-ops/rpm/rpm-auction-info/20120518-2015-16-base-residual-

b. Environmental Trade-Offs

One significant problem with incentivizing temporary over permanent demand reductions is the minimization of environmental co-benefits.[196] The environmental benefits of reducing *net* demand for energy are considerable. As now-FERC commissioner James Moeller noted in 1993, reducing demand "does not contribute to acid rain, global warming or stratospheric ozone depletion. Unlike new nuclear power plants, using [demand-side management] does not produce radioactive waste."[197] However, demand response, even TOU and CPP programs, do not necessarily reduce net demand for energy so much as shift demand from one period to another.[198] As discussed in Part I, there are three primary methods of reducing electricity use to participate in demand response programs: "foregoing," "shifting," and "onsite generation."[199] If customers forgo energy use entirely, the environmental impact is net positive. If customers shift energy usage, however, by altering production times or by using stored energy, the effects are less clear. And customers who substitute on-site generation may actually be *increasing* emissions of some pollutants over the levels that would have occurred absent their participation in the demand response program.

The benefits of shifting behavior depend on the power supply mix in a given market. Eliminating or delaying the need to build new generation to provide power at times of peak demand is not necessarily a net gain from an emissions perspective if it means that emissions from dirtier baseload plants increase. If customers shift energy-intensive activities to times of lower demand to comply with obligations under demand response programs, while less power is being consumed at peak times, more is being consumed at off-peak times.[200] The plants typically used to supply power at times of peak demand are newer, relatively cleaner natural gas plants or clean wind energy, whereas much of the baseload power production in this country is still

auction-report.ashx. While the 2016–2017 BRA results saw a drop in demand response resources, this drop can be attributed to changes in the way demand response capacity is calculated in PJM.

196. Vandenbergh & Rossi, *supra* note 7, at 1539–41. Vandenbergh and Rossi advocate for a reduction in the total demand for energy and criticize what they see as the federal government's "emphasis on reducing peak consumption as its primary demand response goal." *Id.* at 1543.

197. James W. Moeller, *Electric Demand-Side Management Under Federal Law*, 13 VA. ENVTL. L.J. 57, 58 (1993).

198. Vandenbergh & Rossi, *supra* note 7, at 1532–33 ("DSM efforts have focused on shifting the timing of demand, not on reducing the total amount of demand.").

199. These terms are drawn from the 2006 DOE Report. *See* 2006 DOE REPORT, *supra* note 2, at 20.

200. *See id.* at 6 n.9 ("[Demand management programs] may also result in *increases* in electricity usage during the majority of hours when electricity prices are lower than average."). These increases might be due to customers shifting energy-intensive activities to off-peak times or to the use of certain kinds of energy storage systems that use power to create energy reserves that can then be used during a demand response event.

provided by dirtier coal plants.[201] Shifting load from peak to off-peak times may therefore increase the operating levels of coal plants while reducing the operating levels of natural gas plants and some wind facilities.[202]

Another environmental consequence of demand response programs is related to the fact that a substantial percentage of customers participate not by reducing their energy consumption but by switching to on-site back-up generation.[203] For some facilities, such as hospitals, schools, and sports arenas, going without electricity may not be an option. The only way these customers can participate in demand response programs, therefore, is by ensuring an adequate back-up supply of energy. Many demand response programs therefore anticipate or even encourage the use of back-up generation to achieve compliance.[204]

Diesel generators account for much of this back-up generation.[205] They are also one of the dirtier sources of electricity. A 2001 report found that nitrous oxide ("NO_x") emissions from diesel generators in the United States were equivalent to NO_x emissions from all power plants in Pennsylvania, New York, and New Jersey combined, and that "[these generators] produced . . . 40% more [carbon dioxide] than . . . all [of the] power plants in New

201. Vandenbergh & Rossi, *supra* note 7, at 1532. Of course, the calculus may shift as coal plants are retired and are replaced by cleaner natural gas-fired plants. And regions such as the Pacific Northwest where the baseload power is supplied primarily by clean sources, such as hydroelectric generation, might actually see environmental *improvements* from load-shifting.

202. *See* KAREN PALMER ET AL., RFF REPORT: ELECTRICITY RESTRUCTURING, ENVIRONMENTAL POLICY, AND EMISSIONS 186–87 (2002), *available at* http://www.rff.org/rff/Documents/RFF-RPT-elecrestruct.pdf (finding an increase in emissions from a real-time pricing scheme but noting that, for one pollutant, NOx, the environmental consequences of emissions at night might be less severe than for those during the day); *see also* 2006 DOE REPORT, *supra* note 2, at 29 ("Emission reductions during peak periods need to be balanced against possible increases in emissions during off-peak hours as well as from increased use of onsite generation."). The DOE qualified its environmental predictions in the report by referring to "[*p*]*ossible* environmental benefits." 2006 DOE REPORT, *supra* note 2, at 29 ("[P]olicymakers should exercise caution in attributing environmental gains to demand response, because they are dependent on the emissions profiles and marginal operating costs of the generation plants in specific regions.").

203. At least one study has found that those customers who reduce demand through the use of on-site generation may be especially likely to participate in demand response programs. *See* Nicole Hopper et al., *Demand Response from Day-Ahead Hourly Pricing for Large Customers*, ELECTRICITY J., Apr. 2006, at 52, 57 (finding, in a study of NYISO's emergency demand response programs between 2001 and 2004, that there was "a correlation between the presence of onsite generation and highly responsive customers").

204. Some demand response programs rely specifically on backup generator use. For example, TECO Power, a Tampa-area utility, has a "standby generator program" that offers monthly bill credits in exchange for a commitment to switch load from the grid to backup generation in response to a radio signal from TECO. *See Standby Generator Program*, TAMPA ELECTRIC, http://www.tampaelectric.com/business/saveenergy/standbygenerator/ (last visited Jan. 21, 2015).

205. *See* Gabriel Nelson, *Air Pollution: Dirty Diesel Generators Test EPA, Demand-Response Industry*, E&E GREENWIRE (July 10, 2012), http://www.eenews.net/stories/1059967047 ("[M]any of those [negawatts] come from emergency diesel generators that can release more air pollution than even the highest-emitting power plants.").

Jersey."[206] Customers who use diesel generation to participate in demand response programs may therefore be *increasing* net pollution,[207] and any comprehensive assessment of demand response's environmental benefits must therefore take into account emissions from these diesel engines.

Some states have adopted stringent rules for diesel back-up generation. In New York, for instance, the Department of Environmental Conservation tightened requirements on emergency generators in 2009.[208] It set limits on annual operating hours as well as caps on the number of working generators in the New York City area.[209] And in California, the Air Quality Management District for the Los Angeles area allows backup generators powered by natural gas, but not diesel, to operate during ISO emergency events for up to a 200 hour-per-year maximum.[210]

In a recent rule, the EPA issued hazardous air pollutant standards and new source performance standards for a particular kind of backup generator that can be used to participate in demand response programs: Stationary Reciprocating Internal Combustion Engines (colloquially known as "RICE").[211] The new standards make it easier for customers to use RICE to

206. VIRINDER SINGH, RENEWABLE ENERGY POLICY PROJECT, BLENDING WIND AND SOLAR INTO THE DIESEL GENERATOR MARKET 6 (2001). The report also noted that diesel generators emit particulate matter and that diesel oil spills can cause water pollution. *Id.* at 3. Over a three month period, for example, diesel generators in remote villages in Alaska resulted in monthly spills of between 100 and 3000 gallons of diesel fuel. *Id.* at 7.

207. *See* Paul J. Hibbard et al., *Demand Response in Capacity Markets: Reliability, Dispatch and Emission Outcomes*, ELECTRICITY J., Nov. 2012, at 14, 16 (noting that, in most advanced organized wholesale markets, "generation-backed DR . . . leads to significantly higher levels of system emissions on an annual basis, across all pollutants"). The authors conducted a simulation integrating demand response resources into capacity planning in PJM over ten years and found that replacing demand resources with natural gas and wind resources (two-thirds and one-third, respectively, based on actual resources that would be available to PJM) would *reduce* emissions, even assuming that only 10–50% of demand response is backed by diesel generation, and even assuming that this generation would rarely run. *Id.* at 21. Notably, the authors' overall conclusions held even when wind resources were removed from the mix. *Id.* at 22.

208. For a description of the permitting process for on-site generation in New York, including air quality requirements, see generally THOMAS BOURGEOIS ET AL., CLEAN DISTRIBUTED GENERATION IN NEW YORK STATE: STATE AND LOCAL SITING, PERMITTING AND CODE ISSUES (2003), *available at* http://energy.pace.edu/sites/default/files/publications/Pace_CHP_Siting_Guidebook.pdf.

209. Hopper et al., *supra* note 115, at 75 (noting that limits are "[d]esigned to achieve compliance with ozone requirements in severe non-attainment areas throughout New York State").

210. *Fact Sheet on Emergency Backup Generators*, S. COAST AIR QUALITY MGMT. DISTRICT, http://www.aqmd.gov/home/permits/emergency-generators (last visited Jan. 22, 2015). Permits that allow generators to run for more than 200 hours per year may be obtained if certain air quality requirements are met. *Id.*

211. National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines, 78 Fed. Reg. 6674 (Jan. 30, 2013) (to be codified at 40 C.F.R. pts. 60, 63) [hereinafter RICE Rules]. As background, the EPA issues emissions standards for hazardous air pollutants for stationary sources (as opposed to mobile sources like cars and trucks) by source category. Clean Air Act, Pub. L. No. 88-206, §112, 77 Stat. 392 (codified as amended at 42 U.S.C. § 7401 et seq.

participate in emergency demand response programs by allowing these engines to run up to 100 hours per year without triggering emissions limits.[212] This allowance, the EPA said, "ensures that a sufficient number of hours are available for engines to meet [RTO] and [ISO] tariffs and other requirements for participating in various emergency demand response programs."[213] The EPA rejected proposals to require pollution control for diesel generators, citing concerns that this could make it "economically infeasible" for customers to participate in demand response programs.[214]

In defense of its standards, the EPA cited the benefits of demand response programs, including grid stabilization, blackout prevention, and reliability support.[215] It also cited, with approval, comments suggesting that "the public health impacts [of] power outage[s] outweigh the air quality impacts from [RICE].[216] The EPA also attempted to minimize the harmful effects of RICE emissions by relying on information provided by commenters claiming "that these emergency demand response events are rarely called."[217]

The new standards have been attacked as insufficiently protective of the environment, with some alleging that the EPA took too narrow a view of the trade-offs involved. As the Independent Market Monitor for PJM commented in the rulemaking proceeding, "[a]llowing additional run time . . . for [RICE]

(2012)). The standards set technology-based requirements (called Maximum Achievable Control Technology, or "MACT") that sources must achieve. States share responsibility for implementing and enforcing the program, but MACT standards are set at the federal level. EPA also issues emissions performance standards for new and modified stationary source categories under the NSPS program for a shorter list of pollutants, although there is some overlap. Clean Air Act § 111.

212. *See* 40 C.F.R. § 63.6640(f)(ii) (permitting RICE owners or operators to run their RICE up to 100 hours annually).

213. RICE Rules, *supra* note 211, at 6675. It was already permissible to run RICE for 100 hours per year but only "for maintenance and testing." *Id.* Programs such as PJM's Emergency Load Response Program, for example, require resources to be available for 60 hours per year of curtailment. *Id.* at 6679. The same hour limitations were applied to RICE under the new national emission standards for hazardous air pollutants ("NESHAPS"). *Id.* at 6680. For larger engines contracted for at least 15 hours per year of demand response program participation, the EPA established ultra-low sulfur diesel fuel and reporting requirements. *Id.* at 6680. While low-sulfur fuel may mitigate some of the environmental impacts of these larger engines, concerns about other pollutants, such as carbon and volatile organics, remain. *See id.* at 6676 ("The estimated reductions in 2013 found that 2010 RICE NESHAP rulemaking with these final amendments are . . . 36,000 tpy of carbon monoxide . . . and 36,000 tpy of volatile organic compounds."). In addition, commenters noted that emergency events are often called on ozone exceedance days, and thus, that emissions contributing to ozone formation were of particular concern. *Id.* at 6685.

214. *Id.* at 6679.

215. *Id.* at 6675, 6679. Environmental benefits were conspicuously absent from this list. FERC, too, has made special allowances for on-site generators that permit uncontrolled emissions. For example, following the California energy crisis, FERC invoked a "good cause" exception to permit owners of back-up generation to sell their power at wholesale without meeting the requirements of section 205 of the FPA. Removing Obstacles, *supra* note 150, at 15,861.

216. RICE Rules, *supra* note 211, at 6685.

217. *Id.* at 6679.

generators would permit RICE generators to displace conservation-based demand side resources."[218] This, in turn, will limit the air quality benefits of demand response.[219]

The RICE rules have already been challenged by Delaware's Department of Natural Resources and Environmental Control and the Conservation Law Foundation ("CLF"), as well as traditional generators, such as PSEG, Calpine, and FirstEnergy.[220] The CLF claimed that allowing "dirty diesel" to participate in demand response programs does not, in fact, reduce demand and risks more air pollution.[221] Similarly, the director of the Division of Air Quality for the Delaware Department of Natural Resources and Environmental Control argued that "The rule as written promotes extended use of diesel generators, which were not intended to be used as power plants . . . [this] has the potential to result in a tremendous amount of air pollution during the worst times of the year when we're trying to combat ozone."[222]

Thus, despite the EPA's efforts, the use of backup generation continues to raise questions about the environmental benefits of demand response programs. Even so, the EPA rules are a good example of the kind of federal standardization and streamlining that is needed within demand response programs. The rules also provide some advantages over patchwork state

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218. JEFFREY M. MAYES, MONITORING ANALYTICS, LLC, COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM 1 (2013).

219. It is also of concern that the EPA failed to work with FERC to pursue a coordinated federal policy in the final rule. The EPA unhelpfully recommended that commenters who were concerned about the possible interaction between FERC's new compensation rules for demand response, which were aimed at increasing participation in demand response programs, and the new RICE rule take the matter up with FERC. RICE Rules, 6674 Fed. Reg. at 6685 (noting that air quality and health concerns resulting from interplay between the two rules were "more appropriately directed towards the FERC"); *see also* Memorandum from Vickie Patton et al., Envtl. Def. Fund, to Air & Radiation Docket & Info. Ctr., U.S. Envtl. Prot. Agency (Dec. 3, 2012), *available at* http://www.whitehouse.gov/sites/default/files/omb/assets/oira_2060/2060_0103 2013-1.pdf (arguing that FERC's new compensation rule would increase participation in demand response programs, including participation by resources relying on backup generation, and that EPA should take this increase into account).

220. *See* National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines, 78 Fed. Reg. 54,606, 54,606–07 (Sept. 5, 2013) (to be codified at 40 C.F.R. pts. 60, 63); John Funk, *FirstEnergy Halts Its Challenge to Efficiency Mandates, for Now*, CLEVELAND.COM (Nov. 28, 2012, 9:48 PM), http://www.cleveland.com/business/index.ssf/2012/11/firstenergy_halts_its_challeng.html (stating that the company abandoned its challenge, "but would not rule out a future attempt"). The EPA made no changes to the rule in response to these petitions. NESHAP for Reciprocating Internal Combustion Engines; NSPS for Stationary Internal Combustion Engines, 79 Fed. Reg. 48,072, 48,072 (Aug. 15, 2014) (to be codified at 40 C.F.R. pts. 60, 63).

221. *EPA Draws Competing Lawsuits over Diesel Generator Air Rule,* CARBON CONTROL NEWS, Apr. 4, 2013.

222. Jessica Coomes, *EPA Faces Lawsuits over Rule Allowing Longer Operation of Backup Generators*, BNA DAILY ENV'T REP., Apr. 3, 2013, at A-6 (internal quotation marks omitted).

regulation in that they create uniformity and predictability for demand response program participants.[223]

But unless the EPA promulgates more stringent regulations for backup generators, or FERC limits the use of backup generators for demand response customers in wholesale markets, FERC's bypassing strategy will continue to crowd out more environmentally beneficial strategies for controlling consumer demand for electricity.

B. FEDERALISM CONCERNS

Bypassing may also circumvent important procedural safeguards associated with the traditional legislative processes. When the Constitution was adopted, one of the key compromises made by advocates of a stronger national government was that the new federal system would adequately preserve state power and state interests. Congress was granted only specifically enumerated powers in Article I, while the states and the people retained all powers not otherwise specified.[224] Recognizing this initial allocation and the importance of the issue, the courts have imposed certain safeguards on adjustments to federalism boundaries. Perhaps most notably, federalism concerns animate the presumption against preemption applied by courts in interpreting legislative and regulatory pronouncements that conflict with state law.[225]

While the basic principles of federalism are still taken seriously, the years since the founding of this nation have seen a one-way ratchet of power in favor of the federal government.[226] Judicial protections are now more rhetorical than actual. For example, the Supreme Court has repeatedly invoked the

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223. Hopper et al., *supra* note 115, at 72 (citing a third-party aggregator as saying that investments in generators were too risky "without clear, long-term rules" on generator participation in demand response programs).

224. U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."). The nature of the balance struck—what falls within the federal sphere and what falls within the state sphere—is less important here than that the drawing of a boundary was of fundamental importance to the Framers.

225. *See, e.g.*, Medtronic v. Lohr, Inc., 518 U.S. 470, 485 (1996) ("[B]ecause the States are independent sovereigns in our federal system, we have long presumed that Congress does not cavalierly pre-empt state-law causes of action."); Cipollone v. Liggett Group, Inc., 505 U.S. 504, 518 (1992) (construing provisions of the Federal Cigarette Labeling and Advertising Act "in light of the presumption against the pre-emption of state police power regulations"); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947) ("[W]e start with the assumption that the historic police powers of the States were not to be superseded by the Federal Act unless that was the clear and manifest purpose of Congress.");.

226. *See, e.g.*, Richard A. Epstein, *Constitutional Faith and the Commerce Clause*, 71 NOTRE DAME L. REV. 167, 167 (1996) (remarking that, during the New Deal, the Commerce Clause "expanded the powers of the federal government far beyond any level that it had previously held"). In 1954, Herbert Wechsler remarked on this "centralizing growth," although he concluded that "federal law is still a largely interstitial product, rarely occupying any field completely." Wechsler, *supra* note 161, at 544–45.

phrase "Our Federalism," which stands for "a system in which . . . the National Government, anxious though it may be to vindicate and protect federal rights and federal interests, always endeavors to do so in ways that will not unduly interfere with the legitimate activities of the States."[227] However, the Court takes pains to emphasize that "Our Federalism" is a two-edged sword. Our system protects state interests, but it also vindicates the principle of national control where necessary.[228] The presumption against preemption, too, has seen better days and is no longer invoked enthusiastically by the courts.[229]

Notwithstanding this general trend, the rise of the administrative state has created additional *procedural* concerns about shifting power dynamics.[230] As Catherine Sharkey has noted, with the growing importance of agency interpretations of federal law has come "the ascendancy of federal agencies in preemption disputes."[231] Even outside the preemption context, states are increasingly being forced to fight jurisdictional battles at the agency level. While no federal lawsuit materialized in response to FERC's Order 719,[232] state interests voiced their opposition to the move in regulatory proceedings. For example, the National Association of Regulatory Utility Commissioners ("NARUC"), which represents state regulators, pushed hard to obtain an "opt-in" in the final rule that would not allow retail demand response customers to participate in wholesale demand response programs unless the relevant state or local regulator affirmatively allowed them to do so.[233]

As agencies assume greater responsibility for interpreting and implementing federal statutes, it is only natural that questions arise about whether unelected actors should adjust the boundaries between state and

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227. Younger v. Harris, 401 U.S. 37, 44 (1971). The phrase has been used in no fewer than 87 decisions. *See, e.g.*, Alden v. Maine, 527 U.S. 706, 748 (1999) ("[O]ur federalism requires that Congress treat the States in a manner consistent with their status as residuary sovereigns and joint participants in the governance of the Nation.").

228. *Younger*, 401 U.S. at 44 (noting that "[t]he concept does not mean blind deference to 'States' Rights' any more than it means centralization of control over every important issue in our National Government and its courts").

229. *See* Mary J. Davis, *Unmasking the Presumption in Favor of Preemption*, 53 S.C. L. REV. 967, 968 (2002).

230. Catherine M. Sharkey, *Inside Agency Preemption*, 110 MICH. L. REV. 521, 524 (2012).

231. *Id.* Of particular concern has been the practice of "preemption by preamble," in which agencies introduce their preemptive intent not in the regulatory text proper, but in the printed preamble to those regulations that appear in the Federal Register. Regulatory preambles are required by 1 C.F.R. § 18.12 and are intended to provide a lay reader with an understanding of the basis and purpose for the rule. For a thorough discussion of this practice, see Catherine M. Sharkey, *Preemption by Preamble: Federal Agencies and the Federalization of Tort Law*, 56 DEPAUL L. REV. 227 (2007) (describing the increasing prevalence of preemptive intent in regulatory preambles).

232. The Order permits retail customers to bid demand response loads into federal markets. *See supra* note 147 and accompanying text. Some states did, however, challenge the Order's implementation by RTOs and ISOs. *See, e.g.*, Ind. Util. Regulatory Comm'n v. FERC, 668 F.3d 735, 738 (D.C. Cir. 2012) (challenging PJM's tariff revisions in response to the Order).

233. *See* Order 719, *supra* note 145, at 74–75. FERC instead adopted an "opt-out," which allowed participation unless state and local regulators affirmatively disallowed it. *Id.* at 83–84.

federal authority. Some checks certainly exist. It has been argued, for example, that the nondelegation doctrine[234] safeguards federalism by preventing agencies from circumventing a process (legislation) carefully calibrated to preserve state interests.[235] Courts have also been less than completely deferential to agency preemption decisions: while the Supreme Court has given "some weight" to an agency's analysis of whether state tort law conflicts with federal purposes,[236] it has declined to defer to the agency's conclusion that state law has been preempted.[237]

Like broad legislative delegations and agency preemption, bypassing might be seen as a member of a set of suspect procedural innovations designed to circumvent the twin requirements of bicameralism and presentment. As Bradford Clark has noted, when federal actors avoid the legislative process, they may "exercise more power than the Constitution contemplates, at the expense of state authority."[238] They do so by avoiding structural and political checks that ensure that state interests are represented in any effort to increase the sphere of federal authority.[239] State interests might be better safeguarded through the traditional legislative process than in an administrative rulemaking for several reasons. First, the states play a substantial role in selecting members of Congress.[240] Thus, those members might be expected to better represent state interests than administrators who owe no allegiance to the states. More crucially, all laws must be passed by the

234. The nondelegation doctrine prevents Congress from delegating power to administrative agencies absent an "intelligible principle" to govern its application. *See* J.W. Hampton, Jr., & Co. v. United States, 276 U.S. 394, 409 (1928) ("If Congress shall lay down by legislative act an intelligible principle to which the person or body authorized to fix such rates is directed to conform, such legislative action is not a forbidden delegation of legislative power.").

235. Bradford R. Clark, *Separation of Powers as a Safeguard of Federalism*, 79 TEX. L. REV. 1321, 1374 (2001).

236. *See, e.g.*, Wyeth v. Levine, 555 U.S. 555, 576–77 (2009) (applying *Skidmore* deference, which accords weight to an agency's interpretation based on the "thoroughness, consistency and persuasiveness" of the agency's analysis).

237. Nina Mendelson has suggested that a "presumption against *agency* preemption" is needed. Nina A. Mendelson, *A Presumption Against Agency Preemption*, 102 NW. U. L. REV. 695, 699 (2008) (emphasis omitted). She argues that agencies are poorly situated to make federalism decisions because of their institutional focus and their "stake in validating their own policy decisions." *Id.*

238. Clark, *supra* note 235, at 1324.

239. *See id.* at 1372; Wechsler, *supra* note 161, at 544–45.

240. *See* Wechsler, *supra* note 161, at 544, 546–48. Although the influence of states in the selection process is somewhat diluted now that Senators are popularly elected and political parties play a greater role in selecting candidates, Representatives are still elected by state voters. *Id.* at 546–47. Of course, the story about influence is not one-sided. Representatives, once elected, may feel more ties to federal policy as part of the national government, and, to the extent that legislators are affected more by special interest groups than by individual voters, those interest groups might have national as well as state and local interests. Nevertheless, the basic point is a comparative one: members of Congress are *more* aware of and tied to the interests of states than are federal administrators.

Senate, an institution created in part to ensure that the interests of all states, even the less populous ones, would be represented at the federal level.

One might also think that the relatively deliberate pace of the legislative process might produce better considered reallocations of power than would adjustments by administrative agencies.[241] Barring situations in which one party controls both the House and the Senate (and times of extraordinary national consensus, for example in the wake of a highly publicized crisis), legislation is typically a drawn-out process. More deliberate decision-making can ensure that more voices are heard, including state voices, at the policy formulation stage.

A related concern is that administrative federalism adjustments are better shielded from view and therefore less likely to have the benefit of stakeholder debate than legislative proposals. This concern might be muted in the case of notice and comment rulemaking, where all interested parties may file comments on proposed rules (to which the agency must respond).[242] In the case of bypassing, however, where the change works an incidental, rather than an explicit alteration of authority, there is still cause for concern. This is because affected states and localities must recognize the magnitude of the threat in time to raise the issue before the agency.

One response to concerns about bypassing is simply that the growth of the administrative state, coupled with the relative intransigence of Congress, makes such innovations unavoidable. But even if this is so, modifications of constitutional procedures can be countered with other modifications that put the system back into balance.[243] The best solution might therefore be to add procedural safeguards back into the system, albeit at different points.

The first possibility is to set the courts up as guardians of federalism. Even in cases where no state law would be rendered inoperable, the Court has recognized the limits of administrative authority to broaden federal power. In *Solid Waste Agency of North Cook County*, for example, a case in which the Court invalidated the Army Corps of Engineers' assertion of federal jurisdiction over certain intrastate waters under the Clean Water Act, the majority opinion noted that "Congress [also] does not casually authorize administrative agencies to interpret a statute to push the limit of congressional authority

241. *See* Clark, *supra* note 235, at 1325 (noting that the cumbersome process of bicameralism and presentment means that a small number of proposed bills becomes law in any given year).

242. Mendelson, *supra* note 237, at 717 (citing testimony from Senator Patrick Leahy, remarking that comments made through the notice-and-comment process are less visible than objections raised by members of Congress).

243. *See, e.g.*, Cynthia R. Farina, *Statutory Interpretation and the Balance of Power in the Administrative State*, 89 COLUM. L. REV. 452 (1989) (arguing that the administrative state itself requires a rebalancing of the initial allocation of power between the three primary branches of government to prevent encroachment); Carlos Manuel Vázquez, *The Separation of Powers as a Safeguard of Nationalism*, 83 NOTRE DAME L. REV. 1601 (2008) (arguing that given the departure from the original constitutional structure represented by the administrative state, other, even constitutionally suspect, safeguards, such as the legislative veto, might be introduced).

[especially] where the administrative interpretation alters the federal-state framework."[244]

A strong state-centric approach to judicial interpretation would read congressional authorizations narrowly where federalism concerns are implicated and would therefore brand most bypassing attempts *ultra vires*. Congress, it might be argued, knows how to authorize federal agencies to step in where states fail to address a problem adequately. In the Energy Policy Act of 2005, for example, Congress authorized construction of federal siting of transmission lines in certain areas of the country if state and local authorities failed to act.[245] Similarly, the Clean Air Act authorizes the EPA to draft federal air quality plans for states that are unwilling or unable to draft adequate plans themselves.[246] According to this argument, congressional silence should therefore not be interpreted as authorizing bypassing.[247]

Another possibility is to rehabilitate what Herbert Wechsler called "a burden of persuasion on those favoring national intervention."[248] While Wechsler was referring to the legislative process, one could envision a similar burden on administrative agencies seeking to enlarge the scope of federal responsibility. In essence, the agency would have to persuade a court that federalization, even de facto federalization, was superior to state-by-state governance in order for its reading of a statute as authorizing greater federal control to be found reasonable.[249] This approach would recognize the federalism concerns bypassing prompts but would find ways to address those concerns short of disfavoring bypassing in every instance.

One major drawback of both of these approaches is the problem that made bypassing attempts appealing in the first place: congressional intransigence. Congressional delegations to agencies are capacious, in part, because agencies have the agility and energy to adapt to changing circumstances. If we wait for Congress to update statutory provisions, many statutory anachronisms will remain unaddressed. Thus the problem pits the interests of states in a process that protects their interests against the desirability of nimble policy adjustment in response to a swiftly changing economy.

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244. Solid Waste Agency of N. Cook Cnty. v. U.S. Army Corps of Eng'rs, 531 U.S. 159, 172–73 (2001).

245. 16 U.S.C. § 824p(b) (2012).

246. 42 U.S.C. § 7410(c)(1) (2012).

247. Nina Mendelson makes a version of this argument in her article on agency preemption, arguing that agencies should be required to point to clear evidence of Congressional intent before preempting state law. Mendelson, *supra* note 237, at 707–08.

248. Wechsler, *supra* note 161, at 545.

249. Under the familiar two-part test articulated in the *Chevron* case, a court will defer to an agency's reading of a statutory provision it is authorized to administer if, first, the statutory provision is ambiguous, and, second, the agency's interpretation is reasonable. Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 842–43 (1984).

Of course, concerns about eclipsing state authority are more muted outside of the preemption context. Bypassing threatens only prospective lawmaking, rather than invalidating existing acts of state legislatures and state courts. Concerns are further minimized when the federal government has a reasonable argument that it is acting within the scope of its existing authority, and that any effects on state power are therefore incidental.

Ultimately, the ability of courts to mitigate the bypassing problem is probably limited. An approach that relies on the courts to distinguish cases in which agency action works a de facto diminution of state authority is unlikely to be judicially administrable. The Supreme Court has already made clear that it believes there is no meaningful distinction between "jurisdictional" and "nonjurisdictional" statutory provisions for purposes of applying the *Chevron* doctrine.[250] Thus, the Court held that *Chevron* deference was due to agency interpretations of statutes they administer notwithstanding any jurisdictional implications.[251] Thus, even if there is a danger that bypassing might encroach on state power, and even if that encroachment is seen as undesirable as a matter of policy or even contrary to the intentions of the Framers, there may be little courts can do to limit its occurrence short of some type of judicial nullification strategy.[252]

The best option, therefore, might be to enhance procedural safeguards at the agency level, as suggested by Catherine Sharkey in the context of agency preemption. Sharkey finds that agency preemption of state law is here to stay but that agencies offer certain advantages over Congress as "loci of meaningful debate with state government entities about the impact of federal regulatory schemes on state regulatory interests."[253] Where agencies choose to bypass jurisdictional allocations of authority, certain procedural interventions might lessen the legislative process's superiority in safeguarding state interests.

Some of the mechanisms that Sharkey suggests for disciplining preemption by preamble would also help mute the concerns related to bypassing strategies. An additional benefit of these suggestions is that they could be implemented by the executive acting alone, rather than requiring new legislation. One way to limit administrative discretion in areas where state authority might be affected is through executive order. President Clinton did exactly that when he signed Executive Order ("E.O.") 13,132 in 1999 which remains good law. It states that agencies should be guided by a series of

250. City of Arlington v. FCC, 133 S. Ct. 1863, 1868–69 (2013).

251. In fact, in *City of Arlington*, the relevant provision concerned the line between the FCC's authority and that of state regulators. *Id.*

252. In judicial nullification, as in jury nullification, a court reaches an outcome they believe to be contrary to law either because the court disagrees with the law to be applied or believes the law should not apply in that particular case.

253. Catherine M. Sharkey, *Federalism Accountability: "Agency-Forcing" Measures*, 58 DUKE L.J. 2125, 2129 (2009).

federalism principles "[i]n formulating and implementing policies that have federalism implications."[254] One such principle that could apply to bypassing is that "[t]he national government should be deferential to the States when taking action that affects the policymaking discretion of the States and should act only with the greatest caution where State or local governments have identified uncertainties regarding the constitutional or statutory authority of the national government."[255] "Uncertainties" regarding the federal government's authority to allow retail customers to participate in wholesale demand response programs have certainly been identified, for example.[256]

The E.O. also states that, "[t]o the extent practicable, state and local officials shall be consulted" before any action "that would limit the policymaking discretion of the states" is implemented.[257] This language is broad enough that it should apply to bypassing strategies as well as to actions that directly preempt state authority. Even de facto reallocations of power from the state to the federal government might limit a state's "policymaking discretion" if it makes certain policies less effective or limits the states' discretion to block other policies.

The E.O. further states that, where "significant uncertainties" exist as to whether a proposed action is authorized by law or is "appropriate," agencies should explore other means of attaining their objectives by consulting with state and local officials.[258] More directly, the E.O. states that agencies formulating or implementing policies with federalism implications "shall . . . encourage States to develop their own policies to achieve program objectives and to work with appropriate officials in other states."[259] If FERC had followed this guidance in the context of demand-side reductions, it might have made more transparent attempts to encourage state demand response and energy efficiency programs before making wholesale market participation available to retail customers.

The E.O. contains separate, more stringent requirements for agency actions that preempt state law, including consultation with affected actors, publication of a federalism impact statement in the federal register, and disclosure of communications between the agency and state or local officials to the Office of Management and Budget ("OMB").[260] These requirements

254. Exec. Order No. 13,132, 64 Fed. Reg. 43,255, 43,255 (Aug. 4, 1999).

255. *Id.* at 43,256.

256. *See* Brief for Petitioners, Elec. Power Supply Ass'n v. FERC, 753 F.3d 216 (D.C. Cir. 2014) (No. 11-1486).

257. Exec. Order No. 13,132, 64 Fed. Reg. at 43,256.

258. *Id.*

259. *Id.*

260. Sharkey has suggested that these requirements are a good start but must be implemented more consistently by agencies. Sharkey, *supra* note 230, at 526–27. She has proposed that agencies enact internal guidelines to ensure compliance with the E.O., that state consultation be enhanced, and that the Office of Information and Regulatory Affairs ("OIRA") in OMB take a more active role in guiding and overseeing these procedures. *Id.* at 572–73. Nina

could be extended to actions that will have a significant effect on state authority, regardless of whether any laws are actually preempted. Although this step would come with regulatory costs, the benefits of advance consultation could far outweigh them if, for example, consultation prevented expensive lawsuits.

One issue is that the executive cannot bind independent agencies such as FERC through executive order. E.O. 13,132 expressly excludes independent regulatory agencies from its requirements.[261] It has been argued, however, that the executive-independent agency dichotomy is not meaningful and that presidents should therefore be able to issue binding directives to any agency unless Congress has plainly forbidden it.[262] Even if the federalism provisions are not binding, however, the president could request that independent agencies comply with them, either by revising the text of E.O. 13,132, by issuing a companion order, or through other channels.[263]

The combination of aging statutes and new exigencies, as we see in the regulation of executive demand, likely means that agency bypassing as a strategy is here to stay. That administrative agencies exploiting their own sphere of influence will encroach on traditional state powers is a genuine concern. However, for the reasons articulated above, a judicial solution is unlikely. Implementing additional procedural safeguards at the agency level is a more promising way to address state concerns over jurisdictional encroachments. This "rebalanced" system might bypass the safeguards that the Framers put in place to protect state interests, but it replaces them with procedures that achieve the same purposes.

C. THE COSTS OF BYPASSING

While bypassing avoids the costs of challenging legislative boundaries directly, an agency's creative interpretation of statutory federalism provisions is still likely to be disputed. This is particularly true if the agency elects an aggressive posture that threatens state interests. The success of a bypassing strategy may thus depend on an agency's willingness to exercise restraint in its implementation.

Mendelson has also found that agencies' record in preparing "federalism impact analyses" under E.O. 13132 is "quite poor." Mendelson, *supra* note 237, at 718–19.

261. Exec. Order No. 13,132, 64 Fed. Reg. at 43,255 (excluding independent regulatory agencies from the Order's scope).

262. *See, e.g.*, Kirti Datla & Richard L. Revesz, *Deconstructing Independent Agencies (and Executive Agencies)*, 98 CORNELL L. REV. 769, 824–43 (2013).

263. There is precedent for this approach. Cary Coglianese notes that President Obama has at times been particularly pointed in his language, noting that independent agencies "should" comply with various directives rather than merely requesting that they do so. *See, e.g.*, Exec. Order No. 13,579, 76 Fed. Reg. 41,587 (July 11, 2011) (noting that independent regulatory agencies "should" comply with E.O. 13,563, which contained several measures aimed at improving the regulatory process).

While many petitioners asked FERC to reconsider its first effort in Order 719 to open wholesale markets to retail demand response resources, the Order largely escaped judicial challenge. FERC's jurisdictional authority was questioned in *Indiana Utility Regulatory Commission v. FERC*, in which Indiana regulators challenged FERC's approval of PJM's tariff provisions implementing Order 719, but the D.C. Circuit held in that case that the plaintiffs had not adequately preserved their jurisdictional arguments.[264]

The reason for dissenting states' and other interest parties' failure to challenge Order 719 more aggressively is clear. As explained above, Order 719 provided states with an "opt-out": the relevant state retail regulatory authority could prohibit retail customers' participation in wholesale markets.[265] Thus, the stakes were likely not sufficiently high to make an expensive legal battle worthwhile. Order 745 changed that calculus by making retail customer participation in wholesale "economic" demand response programs (programs in which customers bid their services in response to high prices as opposed to emergency, capacity or ancillary services programs) much more lucrative.[266] The facial challenge to Order 745's pricing scheme and collateral attack on FERC's jurisdictional authority to set such prices in the first instance followed.

Last May, a divided panel of the D.C. Circuit agreed with the petitioners and invalidated Order 745, finding both that its compensation scheme was arbitrary and capricious and, more importantly, that FERC lacked jurisdiction to promulgate the compensation scheme in the first instance.[267] The jurisdictional ruling was the more problematic and far-reaching of the two, and the compensation holding, described as an alternative justification for invalidating the rule, was discussed without much fanfare or analysis in the final two pages of the opinion. The two-judge majority found that FERC could not assign wholesale rates for demand response provided by retail customers because doing so impermissibly encroached on state jurisdiction to set retail rates.[268] In his thorough and carefully-reasoned dissent, Judge Harry Edwards concluded that Order 745 was "hardly the stuff of grand agency overreach" and should be upheld.[269] He explained that setting prices for demand response in the wholesale markets, which are clearly under FERC's jurisdiction, in no way constituted direct regulation of retail rates, and therefore failed to encroach on the domain carved out for states in the FPA.[270]

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264. Ind. Util. Regulatory Comm'n v. FERC, 668 F.3d 735, 739, 739–40 (D.C. Cir. 2012) (finding that the petitioners' jurisdictional arguments had not been "set forth clearly" before the agency as required by statute).

265. *See* Order 719, *supra* note 145.

266. Order 745, *supra* note 145, at 74.

267. Elec. Power Supply Ass'n v. FERC, 753 F.3d 216, 222–25 (D.C. Cir. 2014).

268. *Id.* at 218, 222.

269. *Id.* at 233 (Edwards, J., dissenting).

270. *Id.* at 233–34.

Regardless of the ultimate outcome of the litigation, the lesson for agencies engaged in bypassing strategies may be that discretion is the better part of valor. Two features of an agency's bypassing strategy affect the likelihood of challenge. First, the closer an agency gets to the statutory jurisdictional boundary, the more likely it is to face opposition. More controversial policies are also likely to produce costly challenges. Certain bypassing policies, such as the federal government's decision to proceed with hydraulic fracturing rulemaking for federal lands described below, might be controversial but are squarely within the government's existing authority. FERC's mistake was to elect a contentious pricing mechanism in a jurisdictional space that lay close to the limits of its authority. While the D.C. Circuit panel's resolution of the jurisdictional question may yet be overturned or at least limited, FERC's failure to proceed with caution may prove to be the undoing of its policies in this area.[271]

D. POSTPONING LEGISLATIVE SOLUTIONS

Paradoxically, although bypassing may be less desirable than legislation for the reasons outlined above, the strategy might actually make an ultimate legislative solution less likely. This is because, by making the existing jurisdictional framework appear more workable, bypassing can mask the existence of disconnects between statutory jurisdictional allocations and modern exigencies.

Although a comprehensive legislative reassessment of the jurisdictional boundaries in the FPA is unlikely, Congress could take a more active role in shaping incentive programs for demand-side management. Were it to do so, it could promote energy efficiency programs alongside peak demand reduction to achieve both greater conservation and environmental benefits. However, because FERC's strategy allows it to report progress on demand-side management generally, the approach may be muting signals to Congress that legislative intervention is needed.[272]

Federalism has become one of the key stumbling blocks to rolling out demand-side programs nationwide.[273] Indeed, the federalism boundaries

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271. For more extended discussion of the benefits of agency restraint, see Sharon Jacobs, *The Administrative State's Passive Virtues*, 66 ADMIN. L. REV. 565 (2014).

272. Ironically, a failed bypassing attempt may actually generate increased congressional attention. A senate bill introduced after the D.C. Circuit's ruling would have given FERC explicit authority to regulate demand response. S. 2947, 113th Cong. (2014).

273. For recent literature addressing this problem, see, for example, Ann E. Carlson, *Energy Efficiency and Federalism*, 1 SAN DIEGO J. CLIMATE & ENERGY L. 11 (2009) (describing the federal roadblocks states have faced in promoting energy efficiency); Alexandra B. Klass, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 HARV. ENVTL. L. REV. 335 (2010) (discussing the interplay between federal appliance efficiency standards and state efforts). Federalism limitations have also caused problems for states and the federal government in pursuing sustainable energy initiatives more broadly. *See, e.g.*, Steven Ferrey, *Sustainable Energy, Environmental Policy, and States' Rights: Discerning the Energy Future*

drawn in 1935 in the FPA may no longer be appropriate in today's world. The electricity industry has changed in fundamental ways since 1935, and technology has advanced to permit practices never contemplated by the drafters of the FPA. To name just a few innovations, power plants have become much larger (only two power plants larger than 500 MW existed in the U.S. prior to 1948, compared with 122 by 1972);[274] the energy grid is increasingly interconnected thanks to the development of higher voltage transmission lines;[275] wholesale markets have grown in size and prominence;[276] and many states have restructured their vertically-integrated monopolistic market structure to allow competition.[277]

The Commerce Clause provides ample room for expansion of the federal role. As the Supreme Court has written, "it is difficult to conceive of a more basic element of interstate commerce than electric energy," since it is "a product used in virtually every home and every commercial or manufacturing facility" and "[n]o State relies solely on its own resources in this respect."[278] Thus there is little doubt that Congress could enact legislation that would situate primary responsibility for regulating retail electricity rates and services in a federal agency.

There is precedent for more aggressive assertion of jurisdiction in some areas of energy law. Although states are generally responsible for the siting of generation, for example, the federal Nuclear Regulatory Commission ("NRC") has exclusive jurisdiction over the siting and safety regulation of nuclear power plants,[279] and FERC has similar responsibility for licensing hydroelectric facilities.[280] Congress has also taken tentative steps in the

Through the Eye of the Dormant Commerce Clause, 12 N.Y.U. ENVTL. L.J. 507 (2004) (arguing that several state renewable energy programs violate the dormant commerce clause).

274. MATTHEW H. BROWN & RICHARD P. SEDANO, NAT'L COUNCIL ON ELEC. POLICY, ELECTRICITY TRANSMISSION: A PRIMER 4 (2004), *available at* http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/primer.pdf.

275. *Id.* at 4 (noting that high-voltage transmission lines were rare in the 1950s but tripled in the 1960s). Today, there are more than 200,000 miles of high-voltage transmission lines in the United States. *See Transmission*, *supra* note 42.

276. *See* ELEC. ENERGY MKT. COMPETITION TASK FORCE, REPORT TO CONGRESS ON COMPETITION IN WHOLESALE AND RETAIL MARKETS FOR ELECTRIC ENERGY 19 (2007) ("When the FPA was enacted, wholesale and interstate sales of electricity were limited."). Between the 1970s and 2004, electric utilities' ownership of electric generation dropped from 95% of all generation to less than 60%. *Id.* at 10.

277. As of September 2010, 16 states and the District of Columbia had moved from monopolistic to competitive electricity market structures. Seven states had begun the restructuring process but suspended it following the California energy crisis. *Status of Electricity Restructuring by State*, *supra* note 34.

278. FERC v. Mississippi, 456 U.S. 742, 757 (1982).

279. Atomic Energy Act of 1954, Pub. L. No. 83-703, 68 Stat. 919 (codified at 42 U.S.C. § 2011 et seq. (2012)).

280. 16 U.S.C. § 791 (repealed 1935). FERC also has plenary authority to authorize the siting and construction of onshore or near-shore liquid natural gas ("LNG") import or export facilities. Natural Gas Act § 3, 15 U.S.C. § 717b(1) (2012).

direction of federalizing power over new transmission siting to facilitate the development of renewable energy. In the Energy Policy Act of 2005, it authorized DOE to designate "National Interest Electric Transmission Corridors" ("NIETC") in areas where transmission suffers from congestion or capacity constraints.[281] In any area so designated, FERC was granted authority to issue a permit for transmission construction if the state or local authority proved unable or unwilling to do so.[282]

Yet, despite the growing incongruity between the emergence of electricity as a national product and the jurisdictional limits of the FPA, and despite a solid legal basis for expansion of the federal role in regulating electricity, legislative readjustment of the FPA's federalism boundaries is unlikely. First, Congress has been virtually deadlocked, and the prospects for significant legislation of any kind are dim.[283] Even consensus measures on energy efficiency are proving difficult to pass. Last year, bipartisan energy efficiency legislation that had been stripped down to a handful of uncontroversial measures was delayed indefinitely by disagreements over amendments and by the government funding crisis.[284] Prospects for the newest incarnation of the bill are uncertain, even after several new

281. Energy Policy Act of 2005, Pub. L. No. 109-58, § 1221(a), 119 Stat. 594, 946–47 (codified as amended in scattered titles of U.S.C.).

282. *Id.* § 1221(b), 119 Stat. at 947.

283. *See* Rachel Weiner & Ed O'Keefe, *Judging the (Un)productivity of the 113th Congress*, WASH. POST (Aug. 2, 2013), http://www.washingtonpost.com/blogs/the-fix/wp/2013/08/02/judging-the-unproductivity-of-the-113th-congress/ (noting that the 112th Congress "was the most unproductive" since measurement began in 1948 and predicting that the 113th would be even worse based on legislative output in its first six months); *see also* Amanda Terkel, *113th Congress on Pace to Be Least Productive in Modern History*, HUFFINGTON POST (July 11, 2013, 2:22 AM), http://www.huffingtonpost.com/2013/07/08/113th-congress-bills_n_3563008.html (explaining that the 113th Congress had passed only 15 bills as of July 2013, eight fewer than what the 112th Congress had passed at the same point in time, making it the most unproductive Congress since the 1940s). The government shutdown over Congress's inability to agree on an amendment-free measure to fund the federal government, even temporarily, is merely the latest manifestation of legislative gridlock. *See, e.g.*, Roxana Tiron et al., *Government Shutdown Begins As Deadlocked Congress Flails*, BLOOMBERG (Oct. 1, 2013, 8:13 AM), http://www.bloomberg.com/news/2013-10-01/government-shutdown-begins-as-deadlocked-congress-flails.html.

284. *See* Ben Geman, *Government Funding Battle Knocks Stalled Efficiency Bill off Senate Floor*, HILL (Sept. 19, 2013, 9:57 PM), http://thehill.com/policy/energy-environment/323523-government-funding-battle-knocks-stalled-efficiency-bill-off-senate-floor. The measure had stalled before the funding crisis due to disagreements about "non-germane amendments." Ramsey Cox, *Reid Threatens to Pull Energy Efficiency Bill If Amendment Deal Isn't Reached*, HILL (Sept. 18, 2013, 2:44 PM), http://itk.thehill.com/blogs/floor-action/senate/322973-reid-threatens-to-pull-energy-efficiency-bill-if-amendment-deal-isnt-reached. The bill, co-sponsored by Senators Jeanne Shaheen (D-NH) and Rob Portman (R-Ohio), would have strengthened national model building codes and provided incentives for state and federal adoption, encouraged research and development in energy efficient technologies and created a voluntary program to recognize supply chain efficiency, and required the federal government to conserve energy in federal buildings. Energy Savings and Industrial Competitiveness Act of 2013, S. 1392, 113th Cong. (2013).

amendments were added as part of a compromise agreement.[285] Second, in light of this reality, the Obama Administration has put its weight behind regulatory, as opposed to legislative, solutions to climate and energy problems.

Third, we are unlikely to see the kind of popular groundswell in favor of federalized energy law that we saw in the environmental context in the 1960s and 1970s. Richard Lazarus has explained the rise and persistence of the environmental movement of that era by noting "the depth of the shift in public attitudes" resulting from a "fundamental reconceptualization of time and space" that crystallized concerns about human impacts on the environment.[286] Advancing technology allowed for expanded horizons but also wrought visible changes on the landscape. Visual imagery, such as the famous photograph of the Earth from space, made life seem fragile.[287] Manmade disasters, such as the oil slicks that caught fire in the Cuyahoga River in 1969, made environmental degradation more immediately salient, while authors and journalists raised the specter of invisible threats from radiation poisoning to pesticide contamination.[288]

Problems in energy law in general, and electricity law in particular, are unlikely to trigger such widespread reactions. Even disasters like the Deepwater Horizon oil spill in 2010 failed to produce a legislative response. The most immediately salient problems in electricity law, which relate to reliability and pricing, are even less likely to spur action. The 2003 blackout in the Northeast *did* produce mandatory national reliability standards with hefty civil penalties for non-compliance,[289] and additional crises might propel popular support for further federalization. However, in the absence of such crises, the existing federalism lines are unlikely to be redrawn. In general, popular groundswells are unlikely in the context of electricity reform because, like environmental reforms, energy reforms are costly in the present while their benefits will be felt primarily in the future. Furthermore, energy issues can be even more complex than their environmental counterparts, making

285. *See* Nick Juliano, *Energy Efficiency: Shaheen, Portman Finalize Latest Version of Their Bill Ahead of Tomorrow's Release*, E&E DAILY (Feb. 26, 2014), http://www.eenews.net/stories/1059995135/print.

286. RICHARD J. LAZARUS, THE MAKING OF ENVIRONMENTAL LAW 44 (2004). As Lazarus is careful to explain, movements do not emerge from nowhere, and although the environmental movement may have "had its first, most formal, expression during" that era, it relied on deep historical roots in natural resources law as well as health and safety regulation. *Id.*

287. *Id.* at 56–57.

288. *Id.* at 59.

289. *See* 16 U.S.C. 8240 (2012) (requiring FERC to review and approve mandatory reliability standards developed by an electric reliability organization). The requirement was adopted in the Energy Policy Act of 2005. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (codified as amended in scattered titles of U.S.C.)

them difficult for the public to grasp.[290] "Well-balanced supply and demand" does not make as persuasive a rallying cry as "clean air" or "clean water."

Although redrawing the jurisdictional lines in electricity law might not be feasible, Congress could still do more to promote demand-side incentives. For example, it might require FERC to take a more balanced approach to promoting energy efficiency alongside demand response programs. Congress could also provide better incentives for state action on energy efficiency programs in particular, and FERC could do a better job of coordinating and promoting state efforts. The danger of FERC's bypassing approach is that it might mute incentives for Congress to take any of these steps.

CONCLUSION

Demand response is a growing phenomenon in the electricity sector. Demand response resources now total approximately 9.2% of U.S. peak demand.[291] However, the potential remains for even greater demand-side reductions. To help achieve that potential, FERC has set up demand response programs in regional wholesale energy markets, essentially "bypassing" some of the jurisdictional limitations in the FPA. But the "bypassing" strategy, while creative, has significant downsides. First, FERC's focus on demand response, the simplest demand-side program to implement in wholesale markets, risks crowding out more conservation-focused, environmentally-friendly forms of demand reductions, such as energy efficiency. Second, bypassing raises federalism concerns that are arguably better addressed through the legislative process. Third, bypassing, if executed incautiously, may not avoid litigation costs. Finally, bypassing, by masking any underlying problems in the statute's federalism allocations, might postpone a legislative fix.

Bypassing has proved a popular strategy for agencies confronting outdated statutory mandates. Even within electricity law, demand response programs are merely the latest example of FERC's self-help approach to jurisdictional boundaries. FERC's efforts to grow wholesale electricity markets, for example, have also enlarged its authority over electricity pricing and policies.[292] Another example, this one from the resource extraction side, is the regulation of hydraulic fracturing. The current legal structure puts states in charge of regulating the practice.[293] The Safe Drinking Water Act,

290. As David Spence has argued, it may be that Congress has a particularly difficult time passing energy reform measures because the issues in energy law are so technically and politically complex. *See generally* David B. Spence, *Regulation, "Republican Moments," and Energy Policy Reform*, 2011 BYU L. REV. 1561.

291. FED. ENERGY REGULATORY COMM'N, *supra* note 158, at 1.

292. *See, e.g.*, BARBARA ALEXANDER, THE FEDERALIZATION OF ENERGY PRICES: HOW POLICIES ADOPTED BY THE FEDERAL ENERGY REGULATORY COMMISSION IMPACT ELECTRICITY PRICES FOR RESIDENTIAL CONSUMERS: A PLAIN LANGUAGE PRIMER (2008), http://www.opportunitystudies.org/repository/File/NCAFconf08/FERC_Pricing.pdf.

293. *See* Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. L. REV. 115, 142–43 (2009).

under which the EPA regulates underground injection of fluids, specifically excludes hydraulic fracturing activities from the definition of underground injection.[294] One way in which federal agencies can amplify their impact on developing state regulatory regimes, however, is to take advantage of the federal government's proprietary powers by issuing regulations for hydraulic fracturing on public lands. The Department of the Interior has done precisely that, issuing proposed regulations last spring.[295] By moving forward with regulation in areas it controls, the federal government has signaled that it wants to encourage hydraulic fracturing and eliminate barriers to development. It has also provided a set of model regulations, lowering the transaction costs for states that wish to put in place regulations of their own, all without the necessity of challenging existing statutory jurisdictional boundaries.

Given the prominence of the statutory lag problem, especially in energy and environmental law, it is unsurprising that federal agencies are implementing existing authorizations creatively. This Article has sought to begin a broader dialogue about one such technique, bypassing federalism, by naming it and by offering an in-depth case study of FERC's use of the strategy to promote demand response. Because statutory lags are likely to remain a feature of modern governance, it is a conversation worth having.

294. Energy Policy Act of 2005, H.R. 6, 109th Cong. § 322 (2005) (enacted).

295. *See* John M. Broder, *New Fracking Rules Proposed for U.S. Land*, N.Y. TIMES (May 16, 2013), http://www.nytimes.com/2013/05/17/us/interior-proposes-new-rules-for-fracking-on-us-land.html.