The Clean Power Plan: An Introduction To Cooperative Federalism In Energy Regulation

Tina Calilung

Follow this and additional works at: http://digitalcommons.wcl.american.edu/aublr
Part of the Administrative Law Commons, Energy and Utilities Law Commons, and the Environmental Law Commons

Recommended Citation
Available at: http://digitalcommons.wcl.american.edu/aublr/vol4/iss2/1

This Article is brought to you for free and open access by the Washington College of Law Journals & Law Reviews at Digital Commons @ American University Washington College of Law. It has been accepted for inclusion in American University Business Law Review by an authorized editor of Digital Commons @ American University Washington College of Law. For more information, please contact kclay@wcl.american.edu.
THE CLEAN POWER PLAN: AN INTRODUCTION TO COOPERATIVE FEDERALISM IN ENERGY REGULATION

TINA CALILUNG*

The regulation of electricity markets in the United States can be viewed as an optimization problem involving several objective functions: balancing electricity supply and demand; minimizing consumer prices; and minimizing environmental costs. The ideal regulatory scheme would produce the perfect mix of generation resources, to provide reliable capacity that meets consumer demand at the lowest price with the least environmental impact. Federalism, however, requires the separation of regulatory authority over electricity production between federal and state bodies. Moreover, in restructured energy markets, deregulation further distributes decision-making authority to market actors who, through their collective actions, determine market prices and supply. Such fragmented jurisdictional authority can lead regulatory bodies, acting in furtherance of their individual objectives, to work towards conflicting goals. In some instances, federal preemption requires legitimate state goals to yield to federal objectives. The Clean Power Plan ("CPP"), the U.S. Environmental Protection Agency's ("EPA") proposed regulation of carbon emissions released by existing coal-fired power plants, establishes a framework of cooperative federalism that grants states vast flexibility for achieving federally-mandated emissions reduction goals. The tools available to states for designing implementation plans can also advance state energy goals, like promoting fuel diversity and enhancing system reliability, which may otherwise be preempted by federal law.

* The author would like to thank her family, especially her mother Evelyn, who has graciously contributed to this work with their endless support. The author would also like to thank Professor William J. Snape III for his invaluable advice and encouragement, and Eddy Rivero for guiding her through the writing process.
Introduction

I. Energy Regulation in the United States: From the New Deal to Deregulation
   A. The Rise of Federal Electricity Regulation
   B. The FPA and PURPA: Zeitgeists of the New Deal and the Arab Oil Embargo
   C. The Rising Tide of Deregulation and Market-based Reforms
   D. The PJM Cases

II. Beyond Suboptimal: Moving Away from Decision-Making in a Silo
   A. The Problem of Preemption: Crowding Out State Authority Over Electricity Markets
   B. Expansion of Federal Authority in Deregulated Electricity Markets
   C. The Clean Power Plan

III. Using the Clean Power Plan to Enable Resource Planning

Conclusion

INTRODUCTION

Electricity is the indispensable form of energy that enables technological innovation and productivity growth in the modern world. The unique characteristics of electricity, however, create challenges for the regulation of electricity generation and transmission. Electricity cannot be efficiently stored in bulk and as a result, the supply and demand for electricity must be instantaneously and continuously balanced over the interconnected transmission grid. Interconnected grids ensure that any electricity that enters the system moves in interstate commerce. As such, the Commerce
Clause necessitates separate federal and state regulation of electricity sales.\(^5\) However, the site selection and construction of new power plants, excluding nuclear and hydropower plants, is deemed a local concern subject to state regulation.\(^6\) The Nuclear Regulatory Commission ("NRC") licenses and regulates commercial nuclear power plants, and the Federal Energy Regulatory Commission ("FERC") provides similar oversight for hydropower facilities.\(^7\)

Electric power generation is also a source of significant environmental costs. Fossil fuel generation provided 67% of global electricity-generating capacity in 2008.\(^8\) It also accounted for most local conventional pollution, including sulfur oxides, nitrous oxides, particulate matter, and global carbon dioxide pollution.\(^9\) To this end, the EPA regulates conventional fuel power plant operations, including pollution control, the handling of coal combustion byproducts, and cooling water intake structures.\(^10\)

Fragmented authority over electricity generation and sales can lead regulators to work at cross-purposes.\(^11\) To the extent that regulatory


\(^6\) 16 U.S.C. § 824(b) (2012) (reserving for the states the authority to regulate "facilities used for the generation of electric energy").

\(^7\) See James W. Moeller, State Regulation of Nuclear Power and National Energy Policy, 12 J. ENERGY NAT. RESOURCES & ENVTL. L. 1, 4–5 (1992) (explaining that the Atomic Energy Act establishes a "virtually unique" comprehensive scheme for the regulation of commercial nuclear power plants by the NRC); see also Peter Huber, Electricity and the Environment: In Search of Regulatory Authority, 100 HARV. L. REV. 1002, 1011 (1987) (referring to First Iowa Hydro-Elec. Coop. v. FPC, which upheld the authority of the federal agency to preempt state regulation of the licensing of new hydroelectric development).


\(^9\) See id. at 910–911 (observing that reduction of conventional pollution is more urgent in developing countries due to the immediate damage to public health and the environment).


\(^11\) Cf. Huber, supra note 7 at, 1044, 1054 (arguing that the irretrievably fragmented regulation of the safety and environmental impacts of electric power plants
decision-making is disjointed and dispersed among numerous entities with competing goals, one regulatory objective, whether it is market competition, system reliability, or environmental stewardship, may have to yield to another.

This Comment argues that the EPA's cooperative federalism approach to the regulation of greenhouse gas emissions by coal-fired power plants may afford states with deregulated electricity markets the opportunity to achieve objectives for the provision of electricity supply that would otherwise be barred by federal preemption of state laws. Part II provides an overview of the regulation of wholesale electricity sales and the development of deregulated electricity markets. Part III examines a series of cases involving the PJM electricity market to illustrate how the FERC's wholesale ratemaking authority preempts the authority of states participating in deregulated electricity markets to subsidize the construction of new power plants in order to resolve reliability concerns. Finally, Part IV suggests that states participating in deregulated electricity markets can use the regulatory framework of the CPP to mandate the construction of new power plants, despite the preemption findings in the PJM cases.

This Comment assumes the validity of the CPP. The proposed regulation, however, is the subject of legal challenges that pertain to issues that lie outside the purview of this Comment. Notwithstanding current and prospective legal challenges, the CPP's design may afford deregulated states the ability to direct some of their generation resource planning, which would otherwise be determined solely by market mechanisms.

I. ENERGY REGULATION IN THE UNITED STATES: FROM THE NEW DEAL TO DEREGULATION

Regulation of the production and sale of electricity is an expansive task that has resulted in a system of rules as complex and multi-faceted as the energy commodity itself. At the turn of the twentieth century, electric utility companies were largely organized as vertically integrated monopolies that owned and operated electric power plants, transmitted electricity to captive local service areas, and distributed electricity to retail leads to environmentally regressive technological choices).


13. See generally Jim Rossi & Thomas Hutton, Federal Preemption and Clean Energy Floors, 91 N.C.L. REV. 1283, 1316 (2013) (observing that the regulation of electricity addresses multiple services consisting of the wholesale supply of electricity, transmission, and retail distribution to end-use customers).
customers. Because each utility supplied its own capacity resources, electricity sales consisted entirely of retail sales, which were subject to state and local regulation. The lack of interconnection meant that there was little competition among utilities. However, as the development of high-voltage transmission lines capable of carrying electricity over long distances enabled interstate wholesale electricity sales, a federal regulatory framework emerged. This framework would adapt over time to address multiple policy objectives, namely the provision of least-cost electricity through competition, the promotion of system reliability, and the minimization of adverse environmental impacts.

A. The Rise of Federal Electricity Regulation

Growing interstate competition among electric utilities in the early twentieth century necessitated federal oversight of wholesale electricity sales. The ability of electric utilities to generate power in one state and transmit it to another state for distribution raises Commerce Clause issues and effectively elevates the regulation of electricity sales from a state concern to a national interest. In the seminal case, Public Utilities Commission of Rhode Island v. Attleboro Steam & Electric Co., a Rhode Island electric utility agreed to supply Attleboro Steam & Electric Company, a Massachusetts utility, all of the electricity required to serve Attleboro’s retail electricity load. When the Public Utilities Commission of Rhode Island unilaterally increased the wholesale electricity price,

15. Id. at 381 (defining capacity as the ability to produce sufficient energy to meet demand).
16. Id. at 383 (explaining that each utility was granted an exclusive service territory by the state).
17. New York v. FERC, 535 U.S. 1, 5 (2002) (stating that although there were some interconnections between utilities, most operated as separate individual monopolies).
18. Hanna, 977 F. Supp. 2d at 383–84 (explaining that utilities no longer had to maintain capacity to meet peak demand because they could contract bilaterally in wholesale markets to supply peak demand).
19. See New York v. FERC, 535 U.S. at 7–10 (explaining that improved efficiency in power generation and the development of interconnected transmission grids leads to Congressional action to promote the development of new generation facilities, the conservation of fossil fuels, and the development of competitive bulk power markets).
22. Id. at 85–86 (specifying a basic rate for electricity sold).
Attleboro objected on the ground that the Commission’s regulation placed a direct burden on interstate commerce.  

The Supreme Court held that the price of electricity sold by the Rhode Island company to the Massachusetts company was not subject to regulation by either state “in the guise of the protection of their local interests.” Instead, the regulation of wholesale electricity sales could be achieved only “by the exercise of the power vested in Congress.” Congress enacted Part II of the Federal Power Act (“FPA”) in 1935 to fill the regulatory gap identified in Attleboro.

B. The FPA and Public Utilities Regulatory Policy Act (“PURPA”): Zeitgeists of the New Deal and the Arab Oil Embargo

Part II of the FPA is broadly viewed as a New Deal consumer protection measure that curbs monopoly abuses by utility companies and promotes the provision of electricity at the lowest possible rates. The statute bifurcates the regulation of electricity sales between the federal government and the states. Section 201 of the FPA established exclusive federal jurisdiction, exercised by the FERC, over the transmission and sale of electric energy in interstate commerce. Section 205 requires the FERC to ensure just and reasonable rates for the transmission or sale of wholesale electricity, and, at the same time, prohibits undue discrimination and preferential treatment. States, on the other hand, retain their traditional authority over retail

23. Id. at 86 (finding that the rate was unreasonably low and could threaten the general public welfare if it prevented the Rhode Island utility from fully serving its other customers).

24. Id. at 90 (creating the “Attleboro gap”).

25. Id. (noting the national interest encompassed within interstate electricity sales).

26. New York v. FERC, 535 U.S. 1, 6 (2002) (noting that the FPA went beyond the Attleboro gap and extended federal control to some areas that had previously been governed by the states).

27. See Pub. Sys. v. FERC, 606 F.2d 973, 979 n.27 (D.C. Cir. 1979) (observing that the just and reasonable standard of the FPA aims to protect consumers from exorbitant prices and unfair business practices); Contra Rossi & Hutton, supra note 13, at 1320 (arguing that Congress’ original design in the FPA was not limited to preserving low electricity rates, but also “established a framework for articulation of national energy goals and their implementation by the states”).

28. See Rossi & Hutton, supra note 13, at 1343 (noting that the FPA provided a structure designed to disable states from the extremes of protectionist wholesale price regulation that imposed costs on other states, without displacing the ability of states to pursue their own retail pricing policies).

29. 16 U.S.C. § 824(a) (2012) (expressly limiting federal regulation only to those matters which are not subject to regulation by the states).

electricity rates and power generation facilities.\textsuperscript{31}

While the FPA may have been founded on the principle of consumer price protection, evolving market conditions have forced Congress to explicitly incorporate other goals into the national electricity regulatory policy.\textsuperscript{32} For example, in the 1970s, approximately one-third of the nation’s electricity was generated using oil and gas.\textsuperscript{33} When the 1973 Arab Oil Embargo almost quadrupled oil prices within a six-month period,\textsuperscript{34} the rapid increase in the price of fuel inputs resulted in higher power plant operating costs, decreased efficiency of the generating units, and ultimately higher consumer electricity prices.\textsuperscript{35} Congress passed PURPA in 1978 to combat the impacts of the energy crisis on the electricity sector through conservation and energy efficiency.\textsuperscript{36}

PURPA explicitly embraced multiple policy goals, namely, (1) conservation of energy supplied by electric utilities; (2) optimization of the efficiency of facilities and resources by electric utilities; and (3) provision of equitable rates to electricity consumers.\textsuperscript{37} The development of renewable energy resources, such as solar, wind, biomass, and geothermal energy, was an attendant PURPA goal, as non-traditional energy sources signified safe, environmentally attractive substitutes for scarce fossil fuels.\textsuperscript{38} Accordingly, Section 210 of PURPA required electric utilities to purchase wholesale electricity from qualifying cogeneration\textsuperscript{39} and small


\textsuperscript{32} \textit{E.g.}, FERC v. Mississippi, 456 U.S. 742, 743 (1982) (enumerating the three regulatory goals of PURPA).

\textsuperscript{33} \textit{Id.} at 745 (noting that electricity generation was one of the fastest growing sectors of the nation’s economy).


\textsuperscript{35} \textit{FERC v. Mississippi}, 456 U.S. at 745–46 (determining that Congress was concerned with conserving oil and natural gas).

\textsuperscript{36} \textit{See} Richard D. Cudahy, \textit{PURPA: The Intersection of Competition and Regulatory Policy}, 16 ENERGY L.J. 419, 421 (1995) (explaining that PURPA was Part V of the National Energy Act, which was intended to further the United States’ energy self-sufficiency).

\textsuperscript{37} 16 U.S.C. § 2611 (2012) (achieving these goals entailed adopting and implementing specific rate designs).

\textsuperscript{38} Cudahy, \textit{supra} note 36, at 421 (explaining that non-traditional resources were non-depletable and environmentally benign).

\textsuperscript{39} \textit{See generally} W.M. Warwick, U.S. DEP’T OF ENERGY FEDERAL ENERGY MANAGEMENT PROGRAM, A PRIMER ON ELECTRIC UTILITIES, Deregulation, and Restructuring U.S. ELECTRICITY MARKETS, A.5 (2002), \url{http://eere.pnnl.gov/femp/publications/Primer-ElectricUtilitiesDeregulationRestructuring.pdf} (defining a cogenerator as an efficient,
power production facilities at full-avoided cost. As the energy crisis subsided, however, competition and energy market liberalization overtook conservation and fuel diversity as prime regulatory goals.

C. The Rising Tide of Deregulation and Market-Based Reforms

Academic criticism of regulatory capture is considered the fountainhead of the deregulation movement. The notion that regulatory agencies tend to be captured by the industries that they are tasked to regulate cast doubt on the need for direct regulation, and has galvanized industry-wide restructuring of telecommunications, railroads, airlines, and natural gas.

In 1992, the FERC issued Order No. 636, which increased competition in the natural gas market by requiring gas pipeline companies to unbundle their supply and transportation services, and to provide "open access transportation that is equal in quality for all gas supplies, regardless of whether the gas is supplied by the pipeline company or not." This non-discriminatory access to pipeline transportation services revolutionized the natural gas industry by spurring unprecedented exploration and pipeline construction, which increased natural gas supply, reduced prices, and effectively erased memories of the fuel shortages of the 1970s. These market forces had a profound impact on the electricity industry, as cheap natural gas became the preferred fossil fuel for electricity generation. Moreover, the deregulation of the natural gas market became the model for restructuring the electricity market.

Rising electricity costs, despite little to no growth in electricity usage, had led to the general sense that electricity prices could only be reduced

environmentally preferable facility that produces electricity and another useful form of thermal energy).

40. Cudahy, supra note 36, at 422 (explaining that electric utilities were reluctant to purchase power from competing independent power producers).


42. Id. at 161–69 (citing the Interstate Commerce Commission as a bellwether of declining independent regulatory agencies).


44. Warick, supra note 39, at 6.3 (noting that as gas prices fell, profits increased from increased sales).

45. Cudahy, supra note 36, at 424 (explaining that natural gas is utilized by combustion turbine plants, which can be constructed quickly and with less capital).

46. Warick, supra note 39, at 6.4; accord Cudahy, supra note 41, at 169 ("In a number of respects, natural gas was to be the model for electricity deregulation, but in practice electricity has proven more challenging.").
through competition. In response, Congress and the FERC followed the natural gas deregulation model and undertook a series of market-based reforms to promote competition in the wholesale electricity market. First, the Energy Policy Act of 1992 authorized the FERC to order individual utilities to provide transmission services to unaffiliated wholesale power generators on a case-by-case basis. In 1995, the FERC issued a Notice of Proposed Rulemaking that outlined a rule requiring public utilities that own transmission facilities to provide non-discriminatory open-access transmission services, essentially making transmission companies common carriers of electricity. The Notice of Proposed Rulemaking ultimately resulted in FERC Order No. 888, which ordered the “functional unbundling” of wholesale generation and transmission services. To promote the efficiency of electricity transmission systems, the FERC encouraged market participants to organize into Regional Transmission Organizations (“RTOs”), which exercise consolidated control of all transmission services and provide a platform for wholesale power markets.

The market-based transformation of wholesale electricity markets also aligned with PURPA reform, as reformers decried the law’s mandatory purchase obligation as outdated and anticompetitive. The Energy Policy

47. See Cudahy, supra note 41, at 171 (explaining that cost overruns in the construction of nuclear power plants implied that economies of scale could not be realized to reduce electricity prices).

48. See generally id. at 159 (clarifying that electricity transmission and distribution remain regulated functions as they constitute natural monopolies). See also id. at 170 (noting that large industrial users seeking to shop for cheaper power pushed for retail competition).


50. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities, 60 Fed. Reg. 17,662, 17,663-64 (Mar. 28, 1995) (codified at 40 C.F.R. pt. 86) (“To achieve the benefits of robust, competitive bulk power markets, all wholesale buyers and sellers must have equal access to the transmission grid.”).

51. New York v. FERC, 535 U.S. 1, 11 (2002) (explaining that functional unbundling requires “each utility to state separate rates for wholesale generation, transmission, and ancillary services, and to take transmission of its own wholesale sales and purchases under a single general tariff”).


Act of 2005 provided for the termination of an electric utility’s obligation to purchase wholesale power from qualifying facilities if the FERC finds that cogeneration and small power production facilities have nondiscriminatory access to sell energy and capacity in wholesale electricity markets. Critics of PURPA reform, however, were concerned that a competition regime would result in market mechanisms that would converge on a “cheapest power approach,” which recognizes only internalized costs and ignores intangible societal values such as fuel diversity, reliability, and environmental costs. Electric power restructuring at both the wholesale and retail levels unearthed tensions between consumer populism, which entails providing electricity at the lowest possible cost, and advancement of other societal and regulatory values.

By way of example, deregulation of retail electricity markets enjoyed wide support in states with high retail electricity rates, which stymied economic growth as businesses chose to expand in low-cost states. Proponents of deregulation promised lower retail rates through both consumer choice and competition in electricity supply, California’s deregulation measures required investor-owned utilities to divest their electricity-generating assets. The deregulated power supply would be bid to the California Independent System Operator on a daily basis, and load-serving utilities would purchase their supply requirements in a competitive wholesale market. Utilities were prohibited by law from purchasing

54. 16 U.S.C. § 824a-3(m).
55. See Cudahy, supra note 36, at 421 (commenting that the FERC, in disapproving a PURPA order as unnecessary and expensive, “does not seem to permit assessing the probabilities of even an impending or foreseeable conversion of social costs to pecuniary costs”).
56. See id. at 436 (predicting that the FERC’s PURPA enforcement could lead to an approach wherein internalized costs are dispositive and work to the exclusion of other regulatory values, including environment, diversity of generation, energy self-sufficiency).
57. Warwick, supra note 39, at 6.1.2 (explaining that state integrated resource planning maintained low rates, but the process was adversarial, time-consuming, and expensive).
58. See Cudahy, supra note 41, at 170 (explaining that large industrial retail customers promoted retail deregulation as means of securing cheaper power).
59. Steven Ferrey, The Eagles of Deregulation: The Role of the Courts in a Restructured Environment, 32 ENVT. L. 297, 299 (2002) (clarifying that as retail price caps discouraged retail customers from switching electricity suppliers, utilities still had to supply over 90 percent of the power being sold in the state despite having divested their generation assets).
60. Id. (explaining that after deregulation the California Energy Commission no longer assessed the State’s generation needs).
power through long-term contracts. On the demand side, consumers were free to shop among retail service providers; however, retail prices were initially reduced by ten percent and subsequently frozen at that level.

The California plan famously imploded in 2000 when the market failed to produce sufficient electricity supply to meet consumer needs. A combination of factors, including increased demand due to a growing economy and unusually hot summer temperatures, as well as a lack of supply due to reduced output from hydropower facilities, a failure to add new generating capacity in the past, and manipulation of the spot market, resulted in soaring wholesale electricity rates and rolling blackouts. Utility companies faced bankruptcy as the retail rate freeze prevented them from recovering their purchased power costs.

The market failure in California challenges the notion that the least-cost mix of generation produced by a competitive market, also provides the most reliable sources of electricity. Some observers questioned whether market price signals alone are enough to ensure the level of system reliability demanded by the public. The tension between competitive electricity markets and reliability concerns arose once again in recent litigation over state-subsidized power projects.

D. The PJM Cases

In a series of cases involving the PJM Interconnection, LLC ("PJM") market, (hereinafter collectively referred to as the PJM cases) federal courts were called upon to adjudicate the boundary between the FERC's authority to set wholesale electricity rates and a state's authority to incentivize the construction of generating facilities in deregulated

61. Cudahy, supra note 41, at 174 (explaining that utilities could not hedge their forward electricity supply, leaving them exposed to wholesale price increases).

62. Id. at 175 (describing the retail price freeze as a concession to residential customers to garner political support for deregulation).

63. See id. at 177 (recounting that when wholesale electricity prices increased dramatically, electric utilities implemented rolling black-outs as a means of rationing the available wholesale electricity, which was in shortage).

64. Id. at 174 (noting also that the Department of Energy under the Clinton Administration issued orders for wholesale generators to continue serving the California market; the Bush Administration discontinued the order in Jan. 2001).


66. See Cudahy, supra note 36, at 438 (observing that market proponents espoused an "expansive faith in competition and toward the rejection of policy judgments articulated independently of market forces").

67. Cudahy, supra note 41, at 186 ("It may be that the price signals are not quick enough or sure enough means of controlling the electricity delivery system to satisfy the public demand for reliability and price stability.").
electricity markets.\textsuperscript{68} PJM operates the country’s largest competitive wholesale electricity market, in a region spanning from North Carolina to Chicago.\textsuperscript{69} As the system operator, PJM must secure a sufficient amount of electric capacity within its footprint to provide reliable service during periods of peak demand.\textsuperscript{70} To this end, PJM holds competitive capacity auctions wherein generators bid to supply capacity three years in advance; the auction clears at the price where the offered supply equals the forecasted demand.\textsuperscript{71} PJM’s FERC-approved market design, known as the Reliability Pricing Model ("RPM"), is meant to provide long-term forward price signals to indicate scarcity and the need for new capacity.\textsuperscript{72} Electricity-generating companies will decide whether to expand operations or construct new power plants based on these market signals.\textsuperscript{73}

While the FERC was satisfied that the RPM had succeeded in securing sufficient capacity for the PJM region as whole, some state and local authorities, including those in Maryland and New Jersey, argued that the RPM failed to inspire new development necessary to meet reliability needs in their local areas.\textsuperscript{74} In response to the perceived localized market failures, Maryland and New Jersey individually offered out-of-market subsidies to select project developers for the construction of new natural gas-fired power plants in certain capacity-deficient areas.\textsuperscript{75} The FERC


\textsuperscript{69} PJM Interconnection, LLC, 117 FERC ¶ 61,331 (2006) (explaining that the PJM market covers 14 states from the Eastern Seaboard, including North Carolina, to Chicago).

\textsuperscript{70} N.J. Bd. of Pub. Utils., 744 F.3d at 82 (explaining that PJM requires member utilities that sell electricity to end-use customers to secure their proportionate shares of the expected peak load three years in advance).

\textsuperscript{71} Hanna, 977 F. Supp. 2d at 388.

\textsuperscript{72} Id. at 387–88; see also PJM Interconnection, LLC, 117 FERC at ¶ 62,652–56 (approving the RPM to replace existing market rules, which the FERC found to be unjust and unreasonable because the old rules created significant price volatility and failed to set prices at levels necessary to ensure sufficient investment to meet the anticipated growth in electricity demand).

\textsuperscript{73} Hanna, 977 F. Supp. 2d at 387–88 (clarifying that forward price signals do not signify long-term revenue assurances for generators and developers).

\textsuperscript{74} PJM Interconnection, LLC, 137 FERC ¶ 61,145, 2011 WL 5893596 at *1–2 (Nov. 17, 2011) (recounting the states’ argument that the Minimum Offer Price Rule (MOPR) impedes state and local efforts to ensure reliability by mitigating or automatically raising the offer price of certain new projects).

countermanded these state initiatives by changing the PJM tariff to eliminate such state-sponsored entries.\textsuperscript{76} The FERC argued that subsidized, uneconomic entry into competitive markets can produce unjust wholesale rates by artificially depressing capacity prices.\textsuperscript{77} Conversely, Maryland and New Jersey argued that the FERC’s action encroached upon the states’ exclusive authority over “facilities used for the generation of electric energy” under the FPA.\textsuperscript{78}

The courts ultimately resolved the jurisdictional conflict in the FERC’s favor based on the field preemption doctrine. In \textit{PPL Energyplus, LLC v. Nazarian} and \textit{PPL Energyplus, LLC v. Hanna}, the federal district courts of Maryland and New Jersey respectively determined that the states impermissibly intruded upon the FERC’s exclusive ratemaking authority under Section 205 of the FPA when they mandated subsidized payments to state-approved projects.\textsuperscript{79} The United States Court of Appeals for the Third Circuit wrestled with the inverse proposition in \textit{New Jersey Board of Public Utilities v. FERC}, and found that the FERC, in limiting the states’ ability to subsidize capacity bids, did not interfere with the states’ authority to regulate generating facilities.\textsuperscript{80} Thus, the traditional power of the states to direct the construction of electricity generation resources is inherently circumscribed by the constructs of the competitive markets in which they participate.\textsuperscript{81} However, the Third Circuit, in \textit{PPL EnergyPlus, LLC v. 2013}) (explaining that the Maryland Public Service Commission ordered electric distribution companies (“EDCs”) to enter in contracts for differences, which guarantee project developers fixed revenues); \textit{Hanna}, 977 F. Supp. 2d at 393 (explaining that the N.J. LCAPP statute required EDCs to pay eligible generators the difference between the capacity auction clearing price and their actual development costs).


\textsuperscript{77.} \textit{Id.} at 61,105–06 (citing the Pennsylvania Commission’s argument that one state’s subsidized uneconomic entry can depress overall market prices and discourage investment in other states).

\textsuperscript{78.} N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74, 95 (3d Cir. 2014) (also articulating the states’ second argument that the FERC acted arbitrarily and capriciously when it approved the elimination of the state-mandated exemption to the MOPR without sufficiently explaining its reasons for departing from the 2006 Settlement).


\textsuperscript{80.} N.J. Bd. of Pub. Utils., 744 F.3d at 97–98 (citing Conn. Dep’t of Util. Control v. FERC, 569 F.3d 477, 18 (D.C. Cir. 2009) (stating that New Jersey and Maryland are free to make their own decisions regarding how to satisfy their capacity needs, but they “will appropriately bear the costs of [those] decisions”).

\textsuperscript{81.} \textit{See Nazarian}, 974 F. Supp. 2d at 829 (“[A]fter a generator physically comes into existence and operation and participates in the wholesale electric energy market, the prices or rates received by that generator in exchange for wholesale energy and capacity sales are within the sole purview of the federal government.”).
Solomon, affirmed the findings of the district court in Hanna and clarified that states can use other policy tools that do not affect wholesale rates to achieve their reliability goals. Thus, when states regulate within their authority to select the types of new generation facilities to be built and where to build them, the incidental effects of the new supply on wholesale electricity rates do not trigger federal jurisdiction.

II. BEYOND SUBOPTIMAL: MOVING AWAY FROM DECISION-MAKING IN A SILO

The essential nature of electricity in the modern world demands that regulation of this commodity embrace various societal goals. If regulation is "the art of making unpleasant choices wisely," then the regulation of electricity is an optimization problem with several simultaneous objective functions. To the extent that electricity is positively correlated with economic wellbeing, regulation must aim to minimize electricity costs in order to protect consumers from the abuses of monopoly power by electric utility companies. Moreover, as reliable electric supply is necessary to support public welfare, regulation must secure sufficient generating and transmission capacity to meet electricity demand. Finally, as the national grid and the myriad power plants that feed it impose significant environmental costs, regulation must both minimize harm to public health and the environment, and secure public consent for

83. Id. at 255 ("The states' regulatory choices accumulate in to the supply transacted through the interstate market.").
84. See Huber, supra note 7, at 1003–04 (arguing that electricity is inseparably married to national welfare through its impact on the national economy and the environment).
85. Id. at 1004–05 (internal quotations omitted) (as risk is ubiquitous, "the regulation of health, safety, and the environment presents its own brand of tragic choice").
86. See id. at 1003 n.1 (noting that growth in electricity supply has accompanied growth in the national economy for many decades, but causation is unclear); Rossi & Hutton, supra note 13, at 1318 (explaining that the conventional account of the FPA's just and reasonable standard as a New Deal deterrent against monopoly abuses is consonant with the progressive era's regulatory focus on keeping rates as low as possible to protect consumers); Rossi & Hutton, supra note 13, at 1306 (explaining that the avoided cost requirement under PURPA reflects a consumer protection objective).
87. See also Amy L. Stein, The Tipping Point of Federalism, 45 CONN. L. REV. 217, 254 (2012) (observing that the growing gap between electricity supply and demand, as evidenced by prior blackouts, raised Congressional concern over national energy security); Cf. 16 U.S.C. § 824a(c) (2012) (providing that in times of war or electricity shortage, the FERC has the authority to order the generation, delivery, interchange, or transmission of electric energy that will best meet the emergency or serve the public interest).
Some of the decisions that confront electricity regulators include: how much generating and transmitting capacity should be installed; what type of generating technology should be employed; how much utility companies can charge for wholesale and retail sales; and whether the rates should be determined through regulation or market-based processes. To complicate matters further, constitutional limitations, federalism, and the discrete jurisdictional boundaries of federal agencies demand that the authority to make such decisions be distributed among numerous national and subnational actors. For example, the Commerce Clause mandates federal regulation of wholesale electricity rates. States, however, retain authority over retail electricity rates and most power plant siting and construction. Nuclear and hydro power plants are federally licensed and regulated by the Nuclear Regulatory Commission ("NRC") and the FERC, respectively. Further, environmental regulation of power plants is split along similar lines between the EPA, the NRC, and the FERC. Finally, where states have chosen to deregulate their electricity generation markets, they implicitly vest the competitive market with the authority to set price and capacity levels.

88. Huber, supra note 7, at 1002–04 (describing the national power system as the "largest, most costly, and environmentally most voracious structure on our landscape").
90. See, e.g., Steven Ferrey et. al., Fire and Ice: World Renewable Energy and Carbon Control Mechanisms Confront Constitutional Barriers, 20 DUKE ENVT'L. L. & POL’Y F. 125, 127 (2010) (commenting that in a federalist system, state action to abate global warming and promote renewable energy is limited by the Supremacy Clause of the Constitution, which among other things, acts as a barrier to State implementation of feed-in tariffs).
91. FERC v. Mississippi, 456 U.S. 742, 757 (1982) (declaring that "it is hard to conceive of a more basic element of interstate commerce than electric energy").
92. 16 U.S.C. § 824(b) (reserving for the States the authority to regulate retail electricity sales).
94. See Huber, supra note 7, at 1010–12 (discussing the authority of the EPA, NRC and FERC, as the three main environmental and safety agencies in the power industry, to promote and force technologies within their jurisdictions).
95. See Ferrey, supra note 59, at 299 (explaining that after California deregulated, market participants, not the California Energy Commission, were responsible for securing power supply).
The partition of decision-making functions along jurisdictional bounds, while necessary given our federal system, effectively reduces multi-objective optimization — the procuring right mix of electricity production and technology that minimizes cost, maximizes reliability and minimizes environmental damage — into a series of discrete choices. When multiple regulators each act in isolation to maximize their individual objective functions, they can work at cross-purposes and thereby arrive at suboptimal or even zero-sum outcomes. The federal preemption of states' initiatives to develop renewable energy and new capacity resources are salient examples of how jurisdictional partitions may prioritize one regulatory regime to the detriment of another.

A. The Problem of Preemption: Crowding Out State Authority over Electricity Markets

The Supremacy Clause allows federal law to supersede state law either expressly by an act of Congress, or impliedly through occupation of a field or as a the result of a conflict with state law. Energy law relies on jurisdictional clarity to resolve preemption issues. The settled approach to federal preemption in energy statutes assumes that federal and state governments serve as functional substitutes. Thus, when Congress expands federal authority in a given field, it produces a commensurate contraction in state and local authority through the adoption of preemption "ceilings," which create unitary national standards. When Congress has not clearly

96. Cf. Huber, supra note 7, at 1003 (illustrating a similar dynamic in the context of environmental regulation wherein multiple federal agencies sharing authority with states over the single market for electric power never squarely confront total electricity supply and its aggregate environmental cost).

97. See id. (explaining that as regulatory authority over the electric power industry is dispersed among numerous regulators, final policy choices are often litigated and extreme positions crowd out the broader middle ground).


99. Compare Hanna, 977 F. Supp. 2d at 408–11 (finding that the LCAPP statute was preempted under both the field and conflict preemption doctrines) with Nazarian, 974 F. Supp. 2d at 841 (leaving open the issue of conflict preemption after finding that the Generation Order was field preempted).

100. Rossi & Hutton, supra note 13, at 1286 (observing that while the entire field of electric power regulation of public utilities is within Congress' power to preempt under its Commerce Clause authority, Congress has consistently protected the role of states in controlling certain aspects of public utility operations).

101. Id. at 1287 (noting also that state and local authority expands in areas where Congress fails to adopt a clear national policy, such as a comprehensive policy
delineated the limits of federal and state authority, courts define the boundaries.\textsuperscript{102}

The unitary preemption approach presumes that the federal statute and the challenged state law address the same regulatory objective.\textsuperscript{103} However, where Congress has not articulated a clear regulatory objective, or where a pervasive federal regime touches upon a state law addressing an unrelated regulatory aim, the unitary preemption standard may prevent states from implementing their desired policies.\textsuperscript{104} In the PJM cases, federal courts Circuit applied the unitary field preemption approach to interpret the FERC-approved RPM as a price ceiling that prevents Maryland and New Jersey from guaranteeing above-market prices.\textsuperscript{105} However, unlike the preemption of state clean energy regulations, which signify state experimentation in a field unaddressed by Congress, the PJM cases resulted in the preemption of state initiatives intended to resolve reliability needs, a traditional state concern.\textsuperscript{106}

B. Expansion of Federal Authority in Deregulated Electricity Markets

At first blush, the finding of federal preemption in the PJM cases may be a surprise given that the Supreme Court has articulated a general presumption that in the case of a conflict with a state law, the "historic police powers of the states shall not be superseded unless it [is] the clear

addressing climate change).\textsuperscript{102} See id. (arguing that the interpretive approach adopted by courts with respect to energy statutes should favor floor preemption similar to the approach applied in environmental law).\textsuperscript{103} Id. at 1287–88 (explaining that traditional federal preemption in energy law assumes that federal and state governments can serve as substitutes for each other).\textsuperscript{104} See id. (asserting that the unitary preemption approach is likely to be incongruous when applied to clean energy regulation); cf. Scott Hempling et al., Nat’l Renewable Energy Lab., Renewable Energy Prices in State-Level Feed-in Tariffs: Federal Law Constraints and Possible Solutions (2010), available at http://www.nrel.gov/docs/fy10osti/47408.pdf (explaining that the FERC’s ratemaking authority under the FPA and the avoided cost cap under PURPA may likely preempt states from establishing feed-in tariffs to promote the deployment of renewable energy resources).\textsuperscript{105} See PPL EnergyPlus, LLC v. Hanna, 977 F. Supp. 2d 372, 406 (D.N.J. 2013) (holding that the LCAPP standard offer capacity contracts occupy the same field as the RPM Auction); PPL EnergyPlus, LLC v. Nazarian, 974 F. Supp. 2d 790, 833 (D. Md. 2013) (holding that the Generation Order fixes the monetary value of wholesale energy and capacity and is thus preempted by the FERC-approved auction mechanism).\textsuperscript{106} Response/Reply Final Brief for Petitione’r/Cross-Respondent’t Maryland Public Service Commission at 7, N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74 (3d Cir. 2013) (Nos. 11–4245, et al.), 2013 WL 2474552, at *7 (arguing that the FERC disregarded substantial, undisputed evidence that the Maryland Public Service Commission acted solely to address a legitimate reliability need).
and manifest purpose of Congress. This implies that despite the pervasiveness of the FERC's regulation of wholesale electricity rates, states may still be permitted to operate at the interstices of the regulatory scheme to address their local concerns. However, Congress' promotion of competitive markets over the last twenty years can be construed as evidence of its clear purpose to displace state initiatives that impact wholesale market price mechanisms.

Further, deregulation and competition expand the scope of federal regulation over electricity markets simply by increasing the number of wholesale transactions. Aside from the fact that the RTOs operating competitive markets are subject to FERC jurisdiction, deregulation introduces numerous brokers, aggregators, and intermediaries, thereby increasing the total number of wholesale transactions. Thus, as deregulation confers federal authority over a larger proportion of electricity sales, the prerogative to define the governing principles over such sales shifts from state to federal authority.

Some of the FERC's pricing principles are generally held to pose obstacles to state efforts to deploy renewable energy resources using state-level feed-in tariffs. For example, the FERC has determined that while states are not precluded from implementing feed-in tariffs to support renewable energy projects, the prices that can be offered under such tariffs are capped by PURPA's avoided cost standard with respect to "Qualifying Facilities", and by FPA wholesale rates with respect to all other facilities.

107. See Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947) (enumerating several ways in which Congress may manifest its intent to preclude state regulation).

108. See Viet D. Dinh, Reassessing the Law of Preemption, 88 GEO. L.J. 2085, 2106 (2000) ("[A] presumption against preemption at least would permit the States to regulate intersitially rather than be displaced altogether.").

109. See Id. (arguing that as Congress passes more legislation in a given field, the inference that Congress intends to displace state law through field preemption becomes stronger).


112. Ferrey, supra note 110 (explaining that in 1998 wholesale power sales exceeded retail power sales by 500% compared to 1996).

113. Id. (predicting that the FERC's pricing principles may dominate state-level regulations through the filed rate doctrine).


Similarly, the FERC's policy of promoting competitive markets has been construed as preempting state pricing initiatives.\textsuperscript{116} The PJM cases expand this trend as the PJM's FERC-approved capacity auction mechanism has been interpreted as a constraint on the ability of states to incentivize the development of new capacity resources, despite the fact that states have historically regulated power plant siting and construction.\textsuperscript{117} As a result, the market clearing prices set by the RPM act as a ceiling to prices that electricity generators can receive, which in turn guide where and when new resources will be developed.\textsuperscript{118}

The FERC's application of ceiling preemption in setting prices tends to emphasize the singular policy of consumer protection at the expense of other regulatory goals.\textsuperscript{119} To allow for some rebalancing in favor of other objectives, Rossi & Hutton have proposed interpreting federalism in energy statutes to permit regulatory floors, similar to those found in environmental statutes, as a means of facilitating clean energy policies and other energy innovation by state and local regulators.\textsuperscript{120} Thus, federal law, including the FERC's wholesale pricing standards, would serve as a minimum that precludes more lax state standards.\textsuperscript{121} This approach to statutory interpretation is premised on the recognition that federal energy statutes encompass a broader range of values\textsuperscript{122} in addition to consumer

\begin{footnotesize}
\begin{enumerate}
  \item[116.] Rossi, \textit{supra} note 114, at 254–55 (citing Duke Energy Trading & Mktg. v. Davis, 267 F.3d 1042, 1058–59 (9th Cir. 2001)).
  \item[117.] See \textbf{N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74, 97–98 (3d. Cir. 2014)} (stating that New Jersey and Maryland are free to make their own decisions regarding how best to satisfy their capacity needs, but they will bear the consequences of those decisions, including possibly having to pay twice for capacity).
  \item[118.] See \textbf{PPL EnergyPlus, LLC v. Nazarian, 974 F. Supp. 2d 790, 813–14 (D. Md., 2013)} (explaining that out-of-market subsidies offer effective rates that are greater than the market-clearing prices and citing expert opinion asserting that higher capacity prices in a locational deliverability area encourages projects to be developed in that area because the RPM "reflects the locational impact on need and on cost" of electric energy).
  \item[119.] Rossi, \textit{supra} note 114, at 265 (arguing that the "New Deal price regulation relic of ceiling preemption in setting prices" has led the FERC and the courts to emphasize consumer protection over other goals embodied in federal energy statutes).
  \item[120.] Rossi \& Hutton, \textit{supra} note 13, at 1287–88 (arguing that absent clear evidence of congressional purpose to adopt unitary standards, an obvious conflict, or an obstacle to a clearly defined regulatory program, courts and agencies should generally favor floor preemption over ceiling preemption in the context of energy statutes).
  \item[121.] \textit{See id.} at 1336 (arguing that under a floor preemption approach, the FPA accords with feed-in tariffs and other state and local efforts to promote and subsidize renewable energy).
  \item[122.] \textit{See Rossi, \textit{supra} note 114, at 255–57} (arguing that PURPA encompasses numerous goals including conservation and fuel diversity, and that the FPA "just and
Indeed, states account for environmental protection, conservation, and efficiency when implementing state regulations, such as integrated resource planning. The floor preemption approach, however, may not be applicable to the PJM cases because the challenged state actions implicate the FERC-approved market design rather than the actual price levels.

The filed-rate doctrine posits that federal wholesale rate determinations may not be "second-guessed or overruled" by state regulatory commissions. The doctrine is not limited to rates, but rather extends to other "non-rate matters" such that states must defer to any valid federal regulation. Thus, given that the FERC-approved market rules — not the actual price levels — presented the constraint on state actions in the PJM cases, Maryland and New Jersey had to yield to FERC regulations that altered the market design. Conversely, interpreting the final product of the market mechanism (the auction clearing prices) as a price floor would likely contravene the intended purpose of competitive markets.

The FERC acknowledged the potential for deficiencies in market design and intimated that the solution is to incorporate features for the provision of public goods, such as reliability and environmental attributes, into the overall architecture. However, critics of this solution may point out that the PJM market rules approved by the FERC in 2006 did in fact account for reasonable mandate has evolved beyond New Deal consumer protection”).

123. See id. at 257 (claiming that the recognition of diverse statutory values is more consistent with preemption floors rather than ceilings, except where an obstacle exists or Congress expressly intends to preempt state law).

124. Id. (noting a shift in "utility consensus," which recognized environmental and conservation goals, notwithstanding the fact that updates in the law may have been lagging).

125. See N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74, 97–98 (3d. Cir. 2014) (recounting the Petitioners’ arguments attacking the FERC’s elimination of the MOPR exemption for state-mandated resources).


127. Id. at 170–71 (including regulation of QFs, independent power producers (IPPs), and public utilities).

128. See id. at 171 ("The [FPA] precludes all state regulation of interstate wholesale power transactions.").

129. See PJM Interconnection, LLC, 137 FERC ¶ 61,145, 2011 WL 5893596 at *90 (Nov. 17, 2011) (stating that the objective of the RPM is to provide the least-cost, competitively-priced combination of resources necessary to meet the region’s reliability objectives on a three-year forward basis).

130. Id. (stating that RPM has no feature to explicitly recognize environmental or technological goals, or to contemplate reliability needs beyond a 3-year forecast).
the long-term reliability goals of the states by guaranteeing auction clearance for a state’s self-supplied generation. The provision was eliminated and subsequently reinstated in modified form on the ground that guaranteed clearance would suppress market-clearing prices. The mere fact that these issues were resolved through litigation rather than negotiation demonstrates that following the FERC’s suggestion and modifying market rules through the stakeholder process alone may be easier said than done. A separate regulatory framework may be required to force the market to internalize the value of public goods, including long-term reliability.

C. The Clean Power Plan

The PJM’s capacity auction operates under the paradigm that a single market clearing price, calculated for individual locational delivery areas, promotes economic efficiency by encouraging sellers to minimize their costs and thereby produce the least expensive mix of electricity resources necessary to meet demand.

Under the “law of one price,” it does not matter whether the electric energy is produced by an old generator or a new generator; the energy commodity itself, not its resource attributes, carries value in the marketplace. This model provides incumbent generators with a bidding advantage because older facilities, having operated long enough to recover their capital costs, can bid into the market as “price-takers.” In comparison, new generators with un-depreciated capital costs are at a competitive disadvantage because their higher, cost-based bid prices may not clear the auction. To the extent that the single market-clearing price reflects only the fixed cost of generation, and does not incorporate the value of the resource attributes of electricity, the least expensive mix of resources will likely be procured from older, more carbon-intensive

131. See N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74, 104 (3d. Cir. 2014) (criticizing the agency for “fundamentally changing the MOPR’s treatment of self-supply, but barely acknowledging that it was making any change at all”).

132. PPL EnergyPlus, LLC v. Hanna, 977 F. Supp. 2d 372, 391 (D.N.J. 2013) (describing changes to the MOPR in 2011 and 2013, which were implemented through modifications to the PJM tariff).

133. Id. at 387–88 (recounting expert testimony, which hypothesizes that competition among sellers who minimize costs results in low prices).

134. Id. at 389 (clarifying that energy prices may vary among PJM regions, known as Locational Delivery Areas, due to transmission constraints).

135. Id. at 390 (explaining that when an existing generator bids zero, it accepts the minimum benchmark price).

136. Id. at 389 (N.J. Board of Public Utilities rejecting the RPM theory on grounds that it is biased against new generators and volatile short-term capacity prices render long-term financing of new projects highly speculative).
It therefore follows that if the market-clearing price can account for the value of resource attributes, then the market — acting as the regulator of last resort — can also advance the states’ concomitant goals of promoting long-term system reliability, fuel diversity, and clean energy. The EPA’s proposed rulemaking for the regulation of carbon pollution by fossil-fired power plants may provide states with a viable platform to incorporate the value of environmental and reliability attributes into the non-discriminatory wholesale electricity prices produced by deregulated markets.

The CPP can be viewed as energy policy animated by environmental regulation. As with other environmental regulations, the proposed rule establishes a cooperative federalism framework for reducing emissions by setting state-specific rate-based emissions goals, and affording states the latitude to develop individual implementation plans, which reflect the Best System of Emissions Reduction (“BSER”). In its narrowest context, the BSER is the combination of four building blocks used to determine state emissions targets. However, the specific components of the BSER, which consist of:

---

137. See Respondent/Reply Final Brief for Petitioner/Cross-Respondent’s Maryland Public Service Commission, supra note 106 (stating that the value of resource attributes, such as enhancing system reliability, reducing emissions, economic development, and competition are disregarded under the capacity market’s net cost of new entry analysis); Petitioner/Cross-Respondent’s’ Joint Statement, N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74 (3d Cir. 2013) (Nos. 11-4245, et al.), 2013 WL 2474553, at *12 (citing the N.J. Legislature’s findings in the Long-Term Capacity Agreement Pilot Program (LCAPP) statute that as a result of a lack of new electric generation facilities, New Jersey has become more reliant on coal-fired plants, and the state’s fleet of generation facilities is aging, with over 50 percent of the plants being more than 30 years old).

138. FERC precedent contemplates the inclusion of environmental costs in wholesale electricity rates. See So. Cal. Edison Co., 70 FERC ¶ 61,215, 61,678 (1995) (Massey, concurring) (“The order expressly leaves open the possibility that states may account for the environmental costs of all fuel sources included in an all-source determination.”).

139. See Carbon Pollution Emissions Guidelines for Existing Stationary Sources: Electricity Utility Generation Units, 79 Fed. Reg. 34,830, 34,832 (proposed on June 18, 2014) (to be codified at 40 C.F.R. pt. 60) [hereinafter Clean Power Plan] (proposing to reduce nationwide carbon emissions released by the power plant sector by 30 percent (compared to 2005 levels) by 2030).

140. See id. (imposing emissions reductions requirements for regulated electricity generating units pursuant to section 111(d) of the Clean Air Act).

141. Id. at 34,833–34 (characterizing the relationship between the EPA and the States under § 111(d) as a partnership wherein the EPA sets the goals and States take the lead in achieving them).

142. See id. at 34,855–58 (describing the EPA’s analytical approach for determining the components and scope of the BSER).
(1) reducing the carbon intensity of existing coal plants through technological changes designed to improve heat rates; (2) substituting generation from coal-fired plants through increased utilization of existing less carbon intensive units, including natural gas combined cycle plants; (3) substituting generation from coal-fired plants with generation from nuclear and renewable energy resources; and (4) reducing the total amount of electricity required through demand-side management.[143] Encompass energy strategies that are already being implemented in some states.[144] As such, the CPP has the potential to federalize state energy policies to the extent that they are incorporated into state implementation plans.[145]

Conceptually, the CPP comports with the theoretical approaches articulated by both Rossi & Hutton and the FERC for facilitating the provision of public goods in deregulated electricity markets.[146] The CPP accords with cooperative federalism in the energy sector because it sets federally enforceable emissions goals while giving states the ability to achieve their targets in a manner that suits their particular circumstances, such as load growth, existing market structures, and availability of generation resources.[147] Whereas Rossi & Hutton suggest that agencies and courts should interpret preemption floors in federal energy statutes, the CPP delineates the preemption floor for carbon emissions. Further, the CPP expressly grants states the flexibility to utilize different policy tools, such as the deployment of low-carbon energy resources, which can also advance concomitant energy goals, including the enhancement of system reliability.[148] Thus, despite the fact that the CPP relies on an environmental statute, Section 111(d) of the Clean Air Act ("CAA"), it promotes energy federalism in the manner envisaged by Rossi

143. Id. at 34,877 (explaining that the combination of all four building blocks will result in greater emissions reductions at a lower cost than mandated reductions imposed on affected coal-fired plants only).
144. See id. at 34,835 (stating that the proposed rule builds on programs, such as renewable portfolio standards and energy efficiency measures, which have been enacted at the state level).
145. See id. at 34,844 (stating that once a state plan is approved by the EPA, its provisions become federally enforceable against the entities responsible for noncompliance).
146. See id. at 34,903 (interpreting section 111(d) of the CAA in a manner that gives states the flexibility to include other measures that are not performance standards in their implementation plans).
147. See id. at 34,853 (declaring that the statewide application of BSER allows states to account for local circumstances and state policy goals when determining how to reduce emissions from affected local sources).
148. See id. (allowing states to impose implementation plan obligations on entities other than the affected generating units).
In the PJM Cases, the FERC suggested that stakeholders can modify market rules to recognize broader objectives in the valuation of capacity resources. To this end, the CPP gives states the authority to establish requirements, such as emissions allowances or mandated control technologies, which can change the relative cost of coal-fired generation vis-à-vis natural gas-fired, renewable, and nuclear energy generation. These requirements, in addition to forcing emissions reductions, can serve the parallel state goal of promoting the construction of new generating facilities to improve reliability. Natural gas plants, which are subject to price mitigation rules in the PJM’s capacity auction, may be more competitive if states require incumbent coal-fired generators to bear the cost of environmental compliance under the CPP.

The FERC has indicated that the CPP need not conflict with the regulation of wholesale electricity markets. Indeed, the regulatory adaptation required under the CPP may simply be an acceleration of changes that are gradually occurring as the state of technology moves the power sector from a resource mix dominated by coal to one grounded in natural gas. For states that have been hindered by market constructs in deploying new natural gas generation, the CPP may be a policy tool, as envisioned by Solomon, that can be used to resolve local reliability needs without treading on the FERC’s exclusive ratemaking authority.

149. See Rossi & Hutton, supra note 13, at 1304 (asserting that as energy statutes encompass coextensive national, state, and local regulation, preemption should be applied narrowly to prefer floors over unitary standards).

150. See Clean Power Plan, supra note 139, at 34,882 (suggesting that states could change the relative costs of generation for more carbon-intensive generating units by imposing a cost on carbon emissions).

151. See PJM Interconnection, LLC, 137 FERC ¶ 61,145, 2011 WL 5893596, at *24 (Nov. 17, 2011) (asserting that natural gas-fired plants have the shortest development time to respond to reliability needs).

152. See PJM Interconnection, LLC, 135 FERC ¶ 61,022, 61,108, 2011 WL 1383624, at *31 (Apr. 12, 2011) (observing that unlike developers of generation technologies that require long lead times, developers of natural gas combustion turbine and combined cycle plants do not need to incur construction costs until after a project clears its first auction).

153. FERC Perspectives: Questions Concerning EPA’s Clean Power Plan and Other Grid Reliability Challenges: Hearing Before the Subcomm. on Energy and Power, 113th Cong. 45 (2014) [hereinafter FERC Hearing] (statement of Cheryl A. Lafleur, Acting Chairman of FERC) (stating that the EPA makes environmental rules which become the baseline in which the [electricity] system is planned).

154. Id. at 51 (statement of Phillip D. Moeller, FERC Comm’r) (“[I]t is a gradual transition that is already occurring. We are already not building coal plants because the science is not changing. . . . [S]o science is driving this change, not EPA.”).

155. See Clean Power Plan, supra note 139, at 34,901 n.274 (noting that a state-driven portfolio plan is suitable for states that have restructured their electricity sectors.
III. USING THE CPP TO ENABLE RESOURCE PLANNING

States like Maryland and New Jersey, which have electricity capacity needs that are not adequately addressed by competitive markets, should design state implementation plans that meet emissions reduction goals by adding new natural gas generation resources.

The CPP authorizes states to submit implementation plans that either place the responsibility for achieving emissions reduction fully and solely on the regulated coal-fired generators, or to adopt a portfolio approach, which places enforceable obligations on entities other than the regulated generators. A portfolio-based implementation plan may, for example, include emissions limits imposed on coal-fired generators, and also a renewable portfolio standard ("RPS") and energy efficiency measures that avoid carbon emissions. The various measures included in a portfolio-based implementation plan would create enforceable performance obligations on a diverse range of affected entities, aside from the regulated power plants.

State plans may include enforceable measures that reduce emissions by the regulated generators. States participating in competitive wholesale electricity markets should amend the capacity market rules to account for the value of these compliance costs. For example, to the extent that emissions reductions are achieved through the utilization of mandated control technology, which results in additional capital investment or operating costs, these costs should be incorporated into the minimum benchmark prices used to assess the competitiveness of an offer in a capacity auction. When the cost of environmental compliance is

by requiring utilities to divest their generating assets); FERC Hearing, supra note 153, at 78 (statement of Tony Clark, FERC Comm'r) (observing that there is a potential in some restructured markets to graft a state-led integrated resource plan onto the market construct).

156. Clean Power Plan, supra note 139 at 34,901 (citing the Regional Greenhouse Gas Initiative as a possible precedent for a portfolio-based plan).

157. Id. at 34,849 (defining an RPS as a requirement that retail electricity suppliers supply a minimum percentage or amount of their retail electricity load with electricity generated from eligible sources of renewable energy).

158. Id. at 34,901 (noting that RPS and energy efficiency measures constitute existing state programs).

159. Id. at 34,909 (raising concerns about practical enforcement against noncompliance under a portfolio plan). But see Clean Power Plan at 34,888 (noting comments by some stakeholders that measures affecting entities beyond the regulated generating units, as a legal matter, cannot be part of the BSER).

160. Id. at 34,909 (describing the approvability criteria for § 111(d) state plans, which differ from the criteria applicable to § 110 State Implementation Plans).

161. See N.J. Bd. of Pub. Utils. v. FERC, 744 F.3d 74, 85 n.8 (3d Cir. 2013) (defining the PJM's net cost of new entry as the cost of constructing a particular type of
reflected in higher benchmark prices, new generators may avoid upward price mitigation of their sell offers, and thereby remain competitive relative to older, fully-depreciated coal-fired plants. Indeed, placing a “fee” on coal-fired generation to make natural gas-fired generation more competitive — regardless of the market context (regulated or restructured) — may be necessary simply to preclude an unprecedented paradigm shift from economic dispatch to environmental dispatch.

If a state adopts a portfolio-based implementation plan, it can mandate the construction of new natural gas-fired combined cycle generators as part of its system of emissions reduction. Building block two contemplates that part of a state’s emissions goal can be achieved by substituting low-carbon natural gas-fired generation for carbon-intense coal-fired generation. A state can likewise incorporate the construction of new natural gas-fired combined cycle generators into its implementation plan. The state, having exclusive authority over the siting and construction of power plants, could then strategically build the new units in capacity-deficient regions.

Any obligation to add new natural gas-fired generation under a state implementation plan would be a legally enforceable obligation. Thus, a state may have the authority to require electric utility companies to enter into long-term contracts for the purchase of energy and capacity from such generating units. The PJM cases, however, suggest that if New Jersey or Maryland were to adopt such a measure without modifying the existing RPM, new capacity resources may still be required to clear a competitive generation resource, less the estimated revenue that the unit would receive from energy and ancillary sales.

162. See PJM Interconnection, LLC, 135 FERC ¶ 61,022, 61,088, 2011 WL 1383624, at *2 (Apr. 12, 2011) (explaining that uncompetitive sell offers, which fall below the minimum offer price based on the net cost of new entry, may be “mitigated” (increased) to a competitive level).

163. See FERC Hearing, supra note 153, at 40 (statement of Phillip D. Moeller, FERC Comm’r.) (reconciling economic dispatch with increased natural gas utilization may require “fee” on other carbon emitters to make them less competitive than natural gas).

164. Clean Power Plan, supra note 139, at 34,877 (including the substitution of coal-fired generation with natural gas-fired generation as building block 2 of the BSER).

165. Id. at 34,837 (state plans may incorporate strategies that are not explicitly mentioned in the building blocks, including construction of new natural gas plants).

166. But see FERC Hearing, supra note 153, at 25 (statement of Phillip D. Moeller, FERC Comm’r.) (observing that limits on natural gas pipeline capacity may constrain the contemplated increase in the dispatch of natural gas generation).

167. See Clean Power Plan, supra note 139, at 34,903 (proposing to interpret section 111(d) of the Clean Air Act to encompass and allow various components of the portfolio approach, which would render the measures federally enforceable once approved into the SIP).
capacity auction in order to count the resource towards the capacity obligations of the state’s load serving entities.\textsuperscript{168}

If the cost to construct new projects is prohibitively high relative to other resources bidding into forward capacity auctions, the PJM cases imply that a state mandating new construction under its implementation plan may be placed in the untenable position of either paying twice for the new capacity or not achieving its emissions reduction goals.\textsuperscript{169} While this outcome is plausible, it is not inevitable because the state actions taken in the PJM cases were grounded in state authority. In contrast, a state’s CPP mandate to develop new natural gas-fired generation would be based on its state plan obligations under federal law, Section 111(d) of the CAA. Any conflict arising between the FPA and CAA would be distinguishable from the controversies in the PJM cases, which involved the federal preemption of state actions by the FERC’s ratemaking authority. To the extent that a state’s participation in a FERC-approved competitive electricity market can be harmonized with its duties under the CPP, states need not be compelled to double pay for capacity in order to fulfill their enforceable obligations under the CAA. For its part, the FERC has indicated that market rules and rates can adapt to the new regulatory environment created by the CPP.\textsuperscript{170}

Alternatively, states that operate within regional electricity markets can adopt a multi-state implementation plan and coordinate their emissions reduction efforts through an RTO, including PJM. The CPP affords states this option as a means of reducing implementation costs.\textsuperscript{171} Moreover, both the EPA and the FERC suggest that state actions coordinated through RTOs and independent system operators (“ISOs”) can help maintain grid stability and reliability.\textsuperscript{172}

To this end, states facing long-term reliability violations may benefit from a coordinated multi-state plan. First, as states adopt a common goal,
they will also have the flexibility to spread compliance costs among a more diverse range of parties, rather than concentrating the burden solely on an individual state’s existing generators. For example, the Regional Greenhouse Gas Initiative, which has nine participating states, operates a carbon emissions trading program. An overall emissions budget is set for the affected power plants in the region, but the carbon dioxide allowances can be traded by both regulated and non-regulated parties. In a similar vein, states that intend to reduce emissions by substituting carbon-intensive coal-fired generation with natural gas-fired or renewable energy generation would have a wider range of resources to deploy if they coordinated their efforts. Renewable energy resources, in particular, are not evenly distributed, so low-resource states could benefit by partnering with high-resource states. Further, the introduction of new intermittent renewable energy resources to the system could require the addition of more quick-start resources for reliability. Such planning could be more effectively done at the regional level.

Coordination will also allow multiple states to plan and implement the transition from a carbon-intensive mix of resources to a lower carbon-emitting generation fleet with the least amount of disruption to grid stability. The foreseeable capacity reduction that New Jersey attempted to resolve in Hanna was precipitated by federal and state government environmental regulations that required coal-fired plants to either be retired or renovated. The state actions taken under the CPP may produce similar results or even exacerbate the number of retirements, depending on the design of the state implementation plan. A state like New Jersey, which already projects future capacity deficiencies, may want to participate in a multi-state plan coordinated by an RTO simply to minimize the risk of disruption to electricity deliveries within the state. Where a state intends to

173. Clean Power Plan, supra note 139, at 34,848 (noting that California established a multi-sector, economy-wide GHG emissions trading program under the 2006 Global Warming Solutions Act).

174. Id. (explaining that carbon emissions markets create price signals, which factor into the economic dispatch of the affected coal-fired units).

175. Ferrey et. al., supra note 90, at 134 (noting that renewable energy resources are not as concentrated in the northeast region of the United States compared to other parts of the country).

176. Ferrey, supra note 2, at 280–281 (explaining that the addition of intermittent resources such as solar and wind would introduce more volatility to the grid, thereby requiring more quick-start back-up resources).

177. See FERC Hearing, supra note (reiterating FERC’s insistence on coordination through RTOs).

reduce carbon emissions by replacing coal-fired plants with new capacity resources, an RTO can coordinate the transition to ensure that the lights stay on.

CONCLUSION

Our system of national electricity regulation has demonstrated a capacity to adapt to changed circumstances by incorporating multiple regulatory values and goals. Whereas federal authority was first invoked to prevent states from regulating in a way that burdened interstate commerce, the current federal regulatory scheme now addresses the need for competition, reliability, and environmental protection. And yet, the jurisdictional authority of national and subnational regulators is so fragmented that some entities’ regulatory goals have yielded to others. In the PJM cases, state plans for resolving reliability concerns were subordinated to the federal aim of promoting competitive markets. However, as federal regulation adapts to deal with the threat of climate change, states may find an opportunity to advance their local reliability goals while simultaneously implementing federally-mandated carbon emissions reductions.

The CPP’s framework of cooperative federalism affords states the flexibility to adopt measures that serve energy goals and reduce emissions. States may replace carbon-intensive coal-fired generation with natural gas, renewable energy, or nuclear generation as a means of cutting emissions. To the extent that new natural gas power plants can be quickly deployed in capacity-deficient regions, these projects can both enhance system reliability and promote emissions reduction. Thus, states that have ceded the authority to directly control the local electricity supply by deregulating their electricity markets may use the portfolio and regional planning tools available under the CPP to strategically design implementation plans to advance other energy goals, such as system reliability and fuel diversity.