ZERO-EMISSION CREDITS AND THE THREAT TO OPTIMAL STATE INCENTIVES

Peter S. Ross[*]

Synopsis: New York, Illinois, and New Jersey recently enacted zero-emission credit (ZEC) programs to compensate nuclear plant owners for the carbon-free electricity they produce. This article focuses on the New York and Illinois programs, which provide a subsidy based on the social cost of carbon, and to protect consumers, the subsidy decreases if wholesale market prices rise above a certain baseline level. Competing power producers have sued these States, claiming that the Federal Power Act (FPA) preempts the ZEC programs because they usurp the Federal Energy Regulatory Commission's (the FERC) exclusive authority to regulate wholesale electricity sales. The programs, according to the plaintiffs, impermissibly mandate payments to nuclear generators that exceed the FERC-approved wholesale auction clearing price, thereby effectively setting the wholesale rate for nuclear power from these facilities. Plaintiffs focus particularly on how the programs' "price collar" or "price adjustment" causes ZEC prices, within certain ranges, to rise and fall proportionally with wholesale market prices. The Northern District of Illinois and the Southern District of New York granted motions to dismiss their respective cases on multiple grounds, holding, *inter alia*, that the ZEC programs did not intrude on or conflict with the FERC's jurisdiction. Both the Second and Seventh Circuits recently affirmed these decisions, ruling that that the FPA did not preempt the New York or Illinois ZEC programs, respectively, because, *inter alia*, neither program required a generator to sell its electricity into the federally-regulated wholesale market. The litigation remains ongoing.

This article argues that, apart from whether ZECs are a good idea, adopting plaintiffs' expansive vision of FPA preemption would prevent states from achieving their environmental goals at the lowest cost. Preempting the ZEC programs would not prohibit states from subsidizing zero-emission nuclear power; it only would prohibit them from doing so in a way that avoids a windfall to nuclear power plant owners and an unnecessary burden to ratepayers should wholesale prices rise. The states' environmental motivations for creating ZECs would remain even if the program is struck down. Thus, extinguishing the ZEC programs would only encourage states to resurrect them in a less surgical form; the main casualty would not be the nuclear subsidy itself, but its optimality.

New Jersey's recently enacted ZEC statute illustrates this point. The structure of New Jersey's ZEC program differs from that of New York and Illinois in one key respect - it contains no reference to wholesale market prices in its price formula. Instead, New Jersey's ZEC program seeks to contain future costs through

* Peter S. Ross wrote this article during his fellowship in energy law and policy at New York University School of Law's Guarini Center for Environmental, Energy, and Land Use Law. His research at the Guarini Center focused mainly on FPA jurisdiction, environmental law, energy efficiency, and State renewable energy incentives. He previously practiced as an associate at Debevoise & Plimpton LLP, and clerked for the Hon. John Gleeson in the United States District Court for the Eastern District of New York.

a formula tied to statewide demand and by empowering its regulators to reduce the subsidy in the future. This article further argues that these price containment measures are an inferior way of protecting consumers, and appear to be driven mainly by preemption concerns. New Jersey, thus, shows the compromises and workarounds that states must consider as they attempt to implement their own ZEC programs in an increasingly uncertain legal environment.

This article concludes by examining how the ongoing ZEC litigation, and its focus on the use of price collars to protect consumers, exposes the practical consequences of rigidly interpreting the FPA's jurisdictional clauses. In so doing, ZECs and their attendant legal issues provide further support for the growing judicial trend of interpreting the FPA through a pragmatic lens. In jurisdictional grey areas, courts should err on the side of functional governance, drawing the line between federal and state authority with a light touch. Demarcating the boundaries of federal and state jurisdiction is a highly fact-specific and technical exercise. Latching onto a simple formalistic heuristic, such as whether a statute references a wholesale market price or not, can have the negative effect of preventing states from achieving their legitimate environmental goals in a cost-effective manner. As demonstrated by the Second and Seventh Circuits' decisions, the FPA does not compel such a strict jurisprudential line.

I. PREEMPTION UNDER THE FPA

The FPA divides authority over the nation's electricity sector between states and the federal government.[1] The FPA gives the FERC exclusive authority over the transmission and sale of wholesale electricity in interstate commerce.[2] However, the statute reserves to the states jurisdiction over "any other sale of electric energy," including retail sales (*i.e.*, sales to end-use customers) and wholesale sales that occur entirely within the state.[3] Importantly, states retain exclusive control over "facilities used for the generation of electric energy."[4] This includes the "[n]eed for new power facilities, their economic feasibility, and rates and services."[5] "States [thus] have broad powers under state law to direct the planning

1. 16 U.S.C. § 824(a) (2018).

2. *Id.* § 824(b); *see also Id.* § 824(d) (defining "sale of electric energy at wholesale" as "a sale of electric energy to any person for resale").

3. *Id.* § 824(b)(1); FERC v. Elec. Power Supply Ass'n, 136 S. Ct. 760, 767-68 (2016).

4. *Id.* § 824(b)(1).

5. Pacific Gas & Electric v. State Energy Comm'n, 461 U.S. 190, 205 (1983).

and resource decisions of utilities under their jurisdiction" and may "order utilities to build renewable generators themselves, or . . . order utilities to purchase renewable generation."[6]

An early line of Supreme Court cases characterized this division between state and federal authority as a "bright line easily ascertained."[7] The FPA gave the FERC and its predecessor plenary jurisdiction over "all wholesale sales in interstate commerce except those which Congress has made explicitly subject to regulation by the states."[8] This "bright line" test was suited for the twentieth century electricity grid.[9] Large generation facilities would transmit power over high voltage lines to be either sold at wholesale to other utilities or for delivery through local distribution facilities to electricity customers.[10] Thus, in this world, it was relatively easy to distinguish retail sales from wholesale, and transmission from distribution.[11]

Moreover, since vertically-integrated utilities owned the production, transmission, and distribution of electricity, ratemaking was a similar exercise at the federal and state level.[12] Utilities in this era typically operated on a cost-of-service model, where they would submit the costs for a given project plus a rate of return to the regulator for approval.[13] Although not without its complexities, the bright line test was useful in adjudicating disputes between states and the federal government under these circumstances.[14] For instance, when the FERC ordered a utility to purchase a portion of output from a federally-regulated nuclear plant at a rate

6. Entergy Nuclear Vt. Yankee, LLC v. Shumlin, 733 F.3d 393, 417 (2d Cir. 2013) (quoting *Southern Cal. Edison Co. San Diego Gas & Elec. Co.*, 71 F.E.R.C. ¶ 61,269, at p. 8 (1995)) (internal quotation marks omitted); *see also* Allco Fin. Ltd. v. Klee, 861 F.3d 82, 101 (2d Cir. 2017) (noting that states have authority to order a utility to "purchase power from" a particular type of resource); *Southern Cal. Edison*, 70 F.E.R.C. ¶ 61,215 (1995).

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

8. *Id.* at 216; *see also* Mississippi Power & Light Co. v. Mississippi ex rel. Moore, 487 U.S. 354, 374 (1988) ("Congress has drawn a bright line between state and federal authority in the setting of wholesale rates and in the regulation of agreements that affect wholesale rates.").

9. New York v. FERC, 535 U.S. 1, 5 (2002) ("In 1935, when the FPA became law, most electricity was sold by vertically integrated utilities that had constructed their own power plants, transmission lines, and local delivery systems. . . . Competition among utilities was not prevalent."); *Elec. Power Supply Ass'n*, 136 S. Ct. at 768 ("Decades ago, state or local utilities controlled their own power plants, transmission lines, and delivery systems, operating as vertically integrated monopolies in confined geographic areas."); California Indep. Sys. Operator Corp. v. FERC, 372 F.3d 395, 396 (D.C. Cir. 2004) ("Until very recently, vertically integrated electric utilities sold generation, transmission, and distribution services as a single bundled package.").

10. *See generally* Robert R. Nordhaus, *The Hazy "Bright Line": Defining Federal and State Regulation of Today's Electric Grid*, 36 ENERGY L.J. 203, 207 (2015).

11. *Id.*

12. Nantahala Power & Light Co. v. Thornburg, 476 U.S. 953, 969 (1986).

13. *Id.* at 970; Morgan Stanley Cap. Grp. Inc. v Pub. Util. Dist. No. 1, 554 U.S. 527, 532 (2008).

14. *See generally Nantahala*, 476 U.S. at 970 (citing "bright line" standard in holding FPA preempted state commission order, under a cost-of-service regime, that prevented company from recovering the full costs of acquiring power under the FERC-approved scheme).

determined to be just and reasonable by the FERC, states had to treat those payments as reasonably incurred operating expenses for the purpose of setting the utility's retail rates.[15]

However, the electricity sector fundamentally changed towards the end of last century. Power producers became smaller and proliferated in number.[16] Transmission upgrades allowed for a larger and more integrated grid.[17] In light of these changes, the FERC encouraged the adoption of competitive markets to determine wholesale electricity prices in the 1990s.[18] States, in turn, began to unbundle the electricity supply and distribution functions of investor-owned utilities on the theory that the generation of power was no longer a natural monopoly.[19] Third-party non-profit entities – independent service operators ("ISOs") and regional transmission organizations ("RTOs") – were formed to manage competitive wholesale markets in energy, capacity, and ancillary services.[20] Technological advances in distributed energy resources and demand response further altered the electricity sector envisioned by the FPA.[21] For instance, end-use customers could participate in federal and state demand response programs that compensated them for not using electricity, which was not the case when the FPA was enacted.[22]

As a result, the once workable bright line between federal and state authority became increasingly "hazy."[23] Technological and market reforms "generate[d] a

15. *Mississippi Power & Light Co.*, 487 U.S. at 374; *see also Nantahala*, 476 U.S. at 966 ("Once FERC sets such a rate, a State may not conclude in setting retail rates that the FERC-approved wholesale rates are unreasonable.").

16. Steven Stoft, POWER SYSTEM ECONOMICS: DESIGNING MARKETS FOR ELECTRICITY, at 7-8 (2002) (discussing how development of a single synchronized AC power system in the Eastern United States and Eastern Canada allowed for the de-integration of the electric industry and the formation of competitive markets for generation).

17. *Id.*

18. Order No. 888, *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Pub. Utilities; Recovery of Stranded Costs by Pub. Utilities and Transmitting Utilities*, 75 F.E.R.C. ¶ 61,080 (1996) (requiring non-discriminatory open access transmission services "to remove impediments to competition in the wholesale bulk power marketplace and to bring more efficient, lower cost power to the Nation's electricity consumers."); *see also* Order No. 889, *Open-Access Same-Time Info. Sys. (Formerly Real-Time Info. Networks) and Standards of Conduct*, 75 F.E.R.C. ¶ 61,078 (1996); *see also* Order No. 2000, *Reg'l Transmission Organizations*, 89 F.E.R.C. ¶ 61,283 (2000).

19. *Electric Regulation in the US: A Guide*, RAP Energy Solutions for a Changing World (March 2011), https://www.raponline.org/wp-content/uploads/2016/05/rap-lazar-electricityregulationintheus-guide-2011-03.pdf.

20. Seth Blumsack, *Regional Transmission Organizations*, EME 801 Energy Mkts. Pol'y, and Reg. Online Course Module, PENN. STATE DEP'T. OF ENERGY & MIN. ENG'G, https://www.e-education.psu.edu/eme801/node/535 (last visited Aug. 13, 2018).

21. Jeffery S. Dennis et al, *Federal/State Jurisdictional Split: Implications for Emerging Electricity Technologies*, Energy Analysis & Envtl. Impacts Div., LAWRENCE BERKELEY NAT'L. LAB. (Dec. 2016), https://www.energy.gov/sites/prod/files/2017/01/f34/Federal%20State%20Jurisdictional%20Split—Implications%20for%20Emerging%20Electricity%20Technologies.pdf.

22. *Id.*

23. *Nordhaus*, *supra* note 10, at 206 (describing how distributed generation, FERC-regulated organized markets and demand response have challenged the "bright line" theory of FPA jurisdiction); *see also* Oneok Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1603 (2015) (Scalia, J. dissenting).

steady flow of jurisdictional disputes," and it became ever more difficult to determine whether a given policy crossed the jurisdictional line.[24] Though legally separate, the state and federally-regulated markets are interdependent.[25] Regulatory changes on the state-administered retail side of the electricity sector can affect prices in the federally-regulated wholesale markets (and vice versa).[26] "[T]ransactions that occur on the wholesale market have natural consequences at the retail level," as Justice Kagan observed in *FERC v. EPSA*.[27] "When the FERC sets a wholesale rate, when it changes wholesale market rules, when it allocates electricity as between wholesale purchasers - in short, when it takes virtually any action respecting wholesale transactions - it has some effect, in either the short or the long term, on retail rates."[28]

Accordingly, courts have consistently held that "the law of supply-and-demand is not the law of preemption."[29] There must be something more than a mere incidental or indirect effect on rates to find jurisdictional transgressions.[30] Thus, under the FPA, states "may regulate within the domain Congress assigned to them even when their laws incidentally affect areas within the FERC's domain."[31] Under current law, demarcating jurisdictional boundaries under the FPA requires not just ascertaining whether a given state policy influences wholesale market rates, but determining whether the policy is so tied to the wholesale rates that it usurps the FERC's authority.[32]

The Supreme Court's recent decision in *Hughes v. Talen Energy Mktg., LLC*, struck down one such state policy. [33] In *Hughes*, the Court held that the FPA preempted a Maryland order directing utilities to enter into a contract for differences with a new gas-fired power generation plant in order to incentivize the plant's construction.[34] Under the contract for differences, if the plant's capacity cleared the wholesale auction, but the clearing price fell below the contract-guaranteed price, Maryland utilities would pay the plant the difference between the contract price and the clearing price.[35] The *Hughes* holding was expressly limited;

---

24. *Elec. Power Supply Ass'n*, 136 S. Ct. at 766.

25. *Id.*

26. *Id*.

27. *Id.* at 764.

28. *Id.* at 776.

29. PPL Energyplus v. Solomon, 766 F.3d 241, 255 (3d Cir. 2014) (citing Northwest Cent. Pipeline v. State Corp. Comm'n of Kansas, 489 U.S. 493, 514 (1989)).

30. New England Power Generators Ass'n, Inc. v. FERC, 757 F.3d 283, 290 (D.C. Cir. 2014) (the FERC has "jurisdiction to regulate certain parameters of the capacity market related to the price of capacity, even if those determinations touch on states' authority" (citations omitted)).

31. Hughes v. Talen Energy Mktg. LLC, 136 S. Ct. 1288, 1298 (2016); *PPL Energyplus*, 766 F.3d at 255 ("When a state regulates within its sphere of authority, the regulation's incidental effect on interstate commerce does not render the regulation invalid.").

32. *Hughes*, 136 S. Ct. at 1298.

33. *Id*. at 1288.

34. *Id.*

35. Capacity markets have several different objectives: ensuring that generators will be able to provide energy over a specified period of time, providing "missing money" to generators to the extent that revenues from energy and ancillary services do not cover their fixed and variable costs, and to incentivize new entrants into the market. Richard B. Miller, Neil H. Butterklee, Margaret Comes, *"Buyer-Side" Mitigation in Organized Capacity*

it invalidated the Maryland order solely because the contract conditioned payment of funds on capacity clearing the wholesale auction.[36] "Nothing in this opinion," the Court admonished, "should be read to foreclose Maryland and other states from encouraging production of new or clean generation through measures untethered to a generator's wholesale market participation."[37]

II. ILLINOIS AND NEW YORK ZEC PROGRAMS

What constitutes a "tethered" as opposed to an "untethered" policy was left undefined in *Hughes*, and remains at the heart of the pending ZEC litigation.[38] Following *Hughes*, New York and Illinois implemented zero-emission credit programs to support their aging nuclear fleets, which provide gigawatts of carbon-free electricity.[39] Competing electricity generators sued, claiming that these States, through their programs, were substituting their preferred rates for those approved by the FERC.[40] The Southern District of New York and Northern District of Illinois both dismissed the complaints.[41] In both cases, the district courts held that the FPA does not allow private parties to bring suit in federal court on the ground that a state law violates the FPA, and even if it did, the ZEC programs at issue were not preempted and did not violate the dormant Commerce Clause.[42]

In September 2018, the Seventh Circuit affirmed the Northern District of Illinois' decision on substantive grounds, holding that the Illinois program was a lawful exercise of state power under the FPA and did not violate the Constitution's dormant Commerce Clause.[43] Two weeks later, the Second Circuit similarly affirmed the Southern District of New York's dismissal of preemption and dormant Commerce Clause challenges to New York's program. The plaintiffs, according to the Second Circuit, failed to identify any impermissible *Hughes*-like "tether" between New York's ZEC program and wholesale market participation.[44]

Markets: Time for A Change?, 33 ENERGY L.J. 449, 450 (2012) (discussing the purpose of capacity markets and proposing reforms); *Hughes*, 136 S. Ct. at 1294–95.

36. *Hughes*, 136 S. Ct. at 1299.

37. *Id.* (internal quotations omitted).

38. *Id.*

39. *Id.*; *see also* Village of Old Mill Creek v. Star, No. 17 CV 1163, 2017 WL 3008289, at *3 (N.D. Ill. July 14, 2017); *see also* Coalition for Competitive Elec., Dynegy Inc. v. Zibelman, 272 F.Supp. 3d 554, 561 (S.D.N.Y. 2017).

40. *Village of Old Mill Creek*, 2017 WL 3008289, at *1, *5; *see also* Coalition for Competitive Elec., 272 F. Supp. 3d at 559.

41. *Village Old Mill Creek*, 2017 WL 3008289, at *18; *see also* Coalition for Competitive Elec., 272 F.Supp. 3d at 586.

42. *Village of Old Mill Creek*, 2017 WL 3008289 at *6, *14, *16-17; *see also Coalition for Competitive Elec*., 272 F. Supp. 3d at 567, 576, 583. The Northern District of Illinois also dismissed claims by consumer groups that the Illinois ZEC program violated the Equal Protection Clause of the Fourteen Amendment. *Village of Old Mill Creek*, 2017 WL 3008289, at *17-18. The court concluded that the Illinois statute had a plausible rational basis and that treating Illinoisans different from citizens of other States does not run afoul of the Equal Protection Clause.

43. Elec. Power Supply Ass'n v. Star, Case Nos. 17-2433 & 17-2445, 2018 WL 4356683 (7th Cir. Sept. 13, 2018).

44. Coalition for Competitive Elec., Dynergy Inc. v. Zibelman, No. 17-2654-CV, 2018 WL 4622696 (2d Cir. Sept. 27, 2018).

Both states' ZEC programs share a similar structure: a base subsidy representing the social cost of carbon that decreases if wholesale electricity prices rise (referred to as a "price collar" or "price adjustment").[45] The social cost of carbon is a measure, quantified in U.S. dollars, of the climate change damage done by a ton of carbon dioxide emissions in a given year.[46] Because it represents the net economic cost of such emissions, this calculation also represents the value of damages avoided for an emission reduction including "changes in net agricultural productivity, human health, [and] property damages from increased flood risk . . ."[47] Illinois' Future Energy Jobs Act (FEJA) requires Illinois electric utilities to acquire ZECs equal to 16% of the electricity they distribute each year.[48] FEJA defines a ZEC as "a tradable credit that represents the environmental attributes of one megawatt hour of energy produced from a zero emission facility."[49] The utilities must enter into contracts to purchase ZECs from qualifying nuclear power plants that are interconnected with the MISO or PJM systems, and may then pass along the corresponding costs to their customers.[50] The statutory formula for Illinois ZEC prices begins with a baseline subsidy of $16.50/MWh.[51] ZEC payments can never increase above this figure, but can be adjusted downward, even all the way to $0, should wholesale market prices increase.[52] The baseline subsidy of $16.50/MWh is derived from the U.S. Interagency Working Group on Social Cost of Carbon's price in the August 2016 Technical Update. If wholesale electricity prices remain stable or fall, ZEC payments will equal the statutory social cost of carbon (*i.e.*, $16.50 for the first six years). However, if electricity prices increase, the social cost of carbon subsidy would be reduced proportionally by the amount by which the projected wholesale energy and capacity prices for a given year exceed those for the twelve-month period ending May 31, 2016 (the "baseline market price index," set by FEJA at $31.40/MWh).[53] This is "to ensure that the procurement remains affordable to retail customers in this State."[54] If the difference is greater than or equal to the statutory social cost of carbon, then no ZEC payments are due in that delivery year.[55]

---

45. *Id.* at 4; *see also Coalition for Competitive Elec.*, 272 F.Supp. 3d at 562.

46. EPA Fact Sheet: Social Cost of Carbon (Dec. 2016), https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf (last accessed July 15, 2018).

47. *Id.*

48. 20 Ill. Comp. Stat. 3855/1-75(d-5) (2017). "Zero emission facility," in turn, means "a facility that: (1) is fueled by nuclear power; and (2) is interconnected with PJM Interconnection, LLC or the Midcontinent Independent System Operator, Inc., or their successors." 20 Ill. Comp. Stat. 3855/1-10 (2017).

49. 20 Ill. Comp. Stat. 3855/1-10.

50. Illinois is covered by two ISOs/RTOs: PJM Interconnection, LLC (PJM) and the Midcontinent Independent System Operator, Inc. (MISO). Under FEJA, the Illinois Power Agency, subject to Illinois Commerce Commission review and approval, will select nuclear power generators eligible to sell ZECs based on public-interest criteria. 20 Ill. Comp. Stat. 3855 § 1-75(d–5)(1)(C). Zero emission facilities seeking to participate in the zero emission program must submit detailed cost projections for the next six years, but it is unclear how this information factors into determining eligibility. *Id.*

51. *Id.* § 1-75(d-5)(1)(B)(i).

52. *Id.* § 1-75(d-5)(1)(B).

53. *Id.*

54. 20 Ill. Comp. Stat. 3855 § 1-75(d-5)(1)(B).

55. *Id.*

New York's ZEC program follows a similar structure and logic.[56] Under the New York Public Service Commission's Clean Energy Standard, ("CES Order"), the program lasts for twelve years with ZEC prices set in six two-year tranches.[57] Like Illinois, the prices are based on the U.S. Interagency Working Group's projected social cost of carbon.[58] Since New York, unlike Illinois, participates in the Regional Greenhouse Gas Initiative cap-and-trade system (RGGI), market revenues received by nuclear power plants due to the RGGI program are deducted from the social cost of carbon subsidy.[59] This was calculated at $17.48/MWh for the first two-year period.[60] As is the case in Illinois, if projected wholesale energy and capacity prices rise in New York, ZEC payments are further reduced by the amount that those prices exceed a baseline of $39/MWh.[61] Taken together, the ZEC price formula is the social cost of carbon minus RGGI revenues minus the amount that forecasted energy and capacity prices combined exceed a baseline of $39/MWh.[62]

Plaintiffs have channeled their complaints towards the most legally vulnerable feature of the ZEC program — the price adjustment mechanism and its relationship to wholesale market prices.[63] They point out the similarities between this feature and the Maryland Order's contract for differences that the Supreme Court

---

56. *See generally* New York Public Service Commission, *Order Adopting a Clean Energy Standard* (Aug. 1, 2016) [hereinafter CES Order].

57. New York's CES Order, establishing the ZEC program, was issued in an effort to achieve the State Energy Plans goals of 50% renewable energy consumption by 2030. *See* CES Order (discussing NYPSC's legal authority); *see also* 2015 New York State Energy Plan, http://energyplan.ny.gov/Plans/2015.aspx (setting a target of 50% renewable consumption by 2030); *see also* New York Energy Law § 6-104(5)(b) (2011) (requiring "[a]ny energy-related action or decision of a state agency, board, commission or authority shall be reasonably consistent with the forecasts and the policies and long-range energy planning objectives and strategies contained in the plan, including its more recent update.").

58. CES Order, *supra* note 56, at 131-32.

59. RGGI is a partnership of nine states including New York. Under this program, member States set a region-wide cap on carbon emissions and sell allowances to power plants at auction. One RGGI allowance authorizes power plants to emit one ton of carbon dioxide. *See also* Regional Greenhouse Gas Initiative, http://www.rggi.org. Carbon-emitting power plants reflect the cost of RGGI allowance payments in the price for which they sell their electricity on the market. This raises the market price for electricity from all sources, including nuclear, thereby increasing the market revenues that nuclear generators receive for their produced power.

60. CES Order, *supra* note 56, App. E at 11. FEJA does not set forth how it translated the IWG's calculations into a per megawatt hour figure. Illinois and New York nonetheless arrived at similar ZEC prices, $16.50/MWh and $17.48/MWh, respectively, though the difference would be greater had New York's ZEC price not accounted for RGGI revenues, which resulted in a lower price. *Id.* at 130. In any event, plaintiffs dispute that the baseline subsidy in FEJA and the CES Order is based on the amount of payments that would be sufficient to keep the states' nuclear facilities online as opposed to objective estimates of the social cost of carbon. *See also* Declaration of David W. Deramus, *EPSA v. Star*, No. 17-cv-1164, at 13 (N.D. Ill. Mar. 31, 2017) (Dkt No. 38-3).

61. CES Order, *supra* note 56, App. E at 12.

62. *Id.*

63. "The ZEC subsidy . . . is expressly tethered to wholesale prices result from the PJM and MISO [wholesale] auctions. As auction prices decrease, the ZEC subsidy increases, and vice versa, thereby guaranteeing that the plants will be paid for wholesale electricity sales at the rate Illinois prefers, despite the prices resulting from the PJM and MISO auctions." Brief of Plaintiffs-Appellants at 7, EPSA v. Star, No. 17-2445 (7th Cir. Aug. 28 2017); *see also* Reply Brief for Plaintiffs-Appellants at 21, Coalition for Competitive Elec., Dynegy Inc. v. Zibelman, No. 17-2654-cv (2d. Cir. Oct. 13, 2017) (No. 17-2654).

struck down on preemption grounds in *Hughes*.[64] Conceding that states are free to "provide tax incentives or land grants . . . or even provide direct subsidy payments not tethered to wholesale markets,"[65] the competing power producers contend ZEC programs are distinguishable as follows:

> Unlike those subsidies, the ZEC is *conditioned* on the inadequacy of wholesale rates, and is adjusted in response to those rates. The connection to wholesale auction markets is express and integral to the ZEC program, unlike the "incidental" effect that these other subsidies may have by increasing the supply of electricity.[66]

Ironically, the very mechanism that serves to reduce ZEC payments when prices rise, and therefore mitigate the alleged harmful effects of the program on wholesale markets, is the source of ZECs' perceived legal vulnerability. As a group of amici economists noted, the price adjustment "would tend to *reduce* the impact of the ZEC program on wholesale markets because it would lower the ZEC price and, under some circumstances, eliminate it entirely."[67] Plaintiffs also cited the price adjustment mechanism in an effort to distinguish ZECs from unbundled renewable energy credits (RECs), products over which the FERC has disclaimed jurisdiction.[68] "REC prices are essentially determined by the supply and demand of renewable energy," according to plaintiffs, whereas ZEC prices, due to the price adjustment feature, are "tethered to wholesale prices."[69]

III. THE ZEC PRICE COLLAR HIGHLIGHTS THE NEED FOR A PRAGMATIC APPROACH TO FPA PREEMPTION

Judges should consider carefully the implications of outlawing the ZEC price adjustment mechanism. If courts hold that the ZEC programs intrude on the FERC's exclusive jurisdiction, states would be wary of using wholesale prices as an input in future subsidy formulas. Illinois and New York still would face the same political and environmental pressures to keep the nuclear plants online as they did prior to the litigation, only in this scenario, state officials would have fewer policy options at their disposal.[70] To insulate their programs from legal

---

64. Brief of Plaintiffs-Appellants at 41-43, *EPSA v. Star,* No 17-2445 (7th Cir. Aug. 28, 2017).

65. *Id.* at 51; *see also Coalition for Competitive Elec.*, 272 F. Supp. 3d at 569; Brief and Special Appendix for Plaintiffs-Appellants at 38, *Coalition for Competitive Elec.*, No. 17-2654-cv (2d Cir. Oct. 13, 2017).

66. Brief and Special Appendix for Plaintiffs-Appellants at 38, *Coal. for Competitive Elec.*, No. 17-2654-cv (2d Cir. Oct. 13, 2017) (emphasis in original).

67. Brief of Independent Economists as Amici Curiae in Support of Defendants-Appellees and Affirmance at 17, *Coal. for Competitive Elec.*, No. 17-2654-cv (2d Cir. Nov. 22, 2017).

68. FERC determined that unbundled REC transactions – *i.e.*, where the sale of the REC and wholesale energy are not part of the same transaction – "fall outside of the Commission's jurisdiction under sections 201, 205 and 206 of the FPA," and "bundled REC transactions fall within the Commission's jurisdiction under sections 201, 205 and 206 of the FPA." *WSPP Inc.*, 139 F.E.R.C. ¶ 61061 at p. 16 (2012).

69. Brief and Special Appendix for Plaintiffs-Appellants at 41, *Coal. for Competitive Elec.*, No. 17-2654-cv (2d Cir. Oct. 13, 2017).

70. As evidence of the enduring political forces behind the ZEC program, one New York Senator proposed eliminating the ZEC program and subsidizing the State's nuclear facilities with RGGI auction proceeds. Though it has since stalled, the New York State Senate introduced a bill that sought to allocate tens of millions of RGGI proceeds to fund annual subsidies to nuclear power plants. *See generally* Robert Walton, *New York Senate narrowly passes bill to reallocate funds for nuclear subsidies*, UTILITY DIVE (June 19, 2017), https://www.utilitydive.com/news/new-york-senate-narrowly-passes-bill-to-reallocate-funds-for-nuclear-subsid/445272/; *see*

challenge, states are likely to directly subsidize nuclear facilities, but in a way that contains no relation to wholesale markets and the revenues they generate.[71] One policy response, for instance, could be to remove the price adjustment mechanism entirely and decrease the social cost of carbon-based subsidy to take future wholesale revenues into account.

Such a plan would be a recipe for inefficient, suboptimal policy. If prices increase, nuclear generators likely would receive a windfall in excess of their environmental contributions to the grid, all to the detriment of ratepayers.[72] Even if states decide to abandon all nuclear subsidies and let the facilities close, state governments could very well choose to implement other, possibly more draconian measures to avoid backsliding on their climate change obligations, or, in the alternative, they could allow carbon pollution to proceed unabated.[73] What is certain is that states would have less efficient tools to translate their preferences into policy.

A. New Jersey's ZEC program

New Jersey's recently enacted ZEC legislation reflects the perceived need to steer well clear of *Hughes*'s preemptive reach and illustrates some of the tradeoffs that this approach entails.[74] Senate Bill No. 2313 establishes a zero emission certificate program for the State's nuclear power plants, but unlike New York and Illinois, it does not mention or reference wholesale energy prices.[75] Rather, the statute directs each electric public utility "to recover from its retail distribution customers a charge of $0.004 per kilowatt-hour which reflects the emissions avoidance benefits associated with the continued operation of selected nuclear

also Jackson Morris, *NY Senate Must Reject Bill to Raid Clean Energy Funding*, NRDC (June 8, 2017), https://www.nrdc.org/experts/ny-senate-must-reject-bill-raid-clean-energy-funding.

71. *See generally* Walton, *supra* note 70.

72. *Id.*

73. CES Order, *supra* note 56, at 19 ("Germany's abrupt closure of all its nuclear plants resulted in a large increase in the use of coal, causing total carbon emissions to rise despite an aggressive increase in solar generation."); *see also* Soren Amelang, Benjamin Wehrmann, Julian Wettengel, *Germany's energy use and emissions likely to rise yet again in 2017*, CLEAN ENERGY WIRE (Nov. 13, 2017), https://www.cleanenergywire.org/news/germanys-energy-use-and-emissions-likely-rise-yet-again-2017. New England's closure of the Vermont Yankee nuclear facility in 2014 resulted in an increase of 5750 GWh of natural gas-fired generation in 2015, and an increase of carbon emission rates from 726 pounds/MWh to 747 pounds/MWh. 2015 ISO New England Electric Generator Air Emissions Report at 14, 22 (Jan. 2017), https://www.iso-ne.com/static-assets/documents/2017/01/2015_emissions_report.pdf.

74. Gavin Bade, *New Jersey passes bills for nuke subsidies, 50% RPS, 2 GW storage target*, UTILITY DIVE (Apr. 13, 2018), https://www.utilitydive.com/news/ new-jersey-passes-bills-for-nuke-subsidies-50-rps-2-gw-storage-target/521314 (noting that the fact that New Jersey law does not mention wholesale market prices at all could "give the New Jersey program firmer legal footing than the existing ZEC programs").

75. *Id.*

power plants."[76] These revenues are used to purchase ZECs with any excess returned to ratepayers at the end of the year.[77] Estimates of the total cost vary from $250 million to $302 million per year.[78] The amount is structured so that its costs are guaranteed to be significantly less than the social cost of carbon emissions avoided by the continued operation of nuclear power plants – around $10/MWh in the first year.[79] This provision "ensur[es] that the program does not place an undue financial burden on retail distribution customers."[80] Like New York, to avoid double payment for environmental benefits, the New Jersey Board of Public Utilities (BPU) must reduce the number of ZECs purchased by utilities to account revenues received by nuclear plants from RGGI, and other federal and state laws.[81]

Like New York and Illinois, New Jersey's formula for ZEC prices seeks to protect consumers in the event wholesale prices rise and less revenue is needed to keep the State's reactors online.[82] But it does so not by referencing wholesale market prices, but rather electricity demand.[83] Nuclear power currently meets approximately 40% of New Jersey's electric power needs.[84] The BPU determines the price of ZECs each year by dividing the amount collected by the utilities *by the greater of*: "40 percent of the total number of megawatt-hours of electricity distributed by the electric public utilities in the State in the prior energy year, *or* the number of megawatt-hours of electricity generated in the prior energy year by the selected nuclear power plants."[85] If New Jersey's total electricity load increases, but nuclear production remains constant, then ZEC prices fall.[86] Since rising demand for electricity is correlated with higher wholesale market prices, the statute effectively uses the amount of distributed electricity as a proxy for wholesale market prices.[87] Nuclear generators will presumably earn greater revenues

---

76. S.B. 2313 218th Leg. § 3(j)(1) (N.J. 2018). This fixed charge functions as a cap since electric public utilities are not required to purchase any additional number of ZECs if the cost exceeds the revenues collected. *Id.* § (3)(j)(2).

77. *Id*. The funds are deposited in interest-bearing accounts. To the extent that the BPU's ZEC-related administrative costs exceed the ZEC application fees paid by the nuclear plants (up to $250,000 per plant), these costs will be deducted from the accounts, with the remainder being returned to ratepayers. *Id.* § (e)(1)(5).

78. New Jersey Office of Legislative Servs., *Legislative Fiscal Estimate Senate No. 2313*, at 3 (Apr. 5, 2018). This range is substantially below the $400 million increase in utility bills that, according to the Brattle Group, New Jersey ratepayers would see if the Salem and Hope Creek plants were to close. Mark Berman & Dean Murphy, *Salem and Hope Creek Nuclear Power Plants' Contribution to the New Jersey Economy*, BRATTLE GROUP, at 2 (Nov. 2017).

79. New Jersey Office of Legislative Servs., *Legislative Fiscal Estimate Senate No. 2313*, at 5 (Apr. 5, 2018).

80. S.B. 2313 218th Leg. § (1)(b)(8). "Carbon emissions avoided by selected nuclear power plants are but one component of their emissions avoidance benefits." *Id.*

81. *Id.* § (3)(i)(3).

82. *Id.* § (3)(i)(1).

83. *Id.*

84. S.B. 2313 218th Leg. § (1)(a)(7).

85. *Id.*; *see also* N.J. Stat. Ann. § 48:3-51 (West 2015) ("Energy year" means "means the 12-month period from June 1st through May 31st, numbered according to the calendar year in which it ends.") (emphasis added). "Energy year" means "means the 12-month period from June 1st through May 31st, numbered according to the calendar year in which it ends."

86. S.B. 2313 218th Leg. § 3(j)(1).

87. *Id.*

from the market when demand is high and have less need for ZEC revenues to stay afloat. Moreover, the 40% of distributed electricity figure, rather than the amount of nuclear generation, will almost certainly set this component of the ZEC price.[88] New Jersey currently has three nuclear power plants that meet 40% of demand, but one of those plants – Oyster Creek – is set to close in October 2018 and will not be eligible for ZECs.[89] The remaining and likely eligible facilities at Salem and Hope Creek satisfy only 33.5% of New Jersey's present load.[90] Barring a substantial increase in output or a plummeting drop in statewide electricity demand, the 40% of statewide electricity demand will remain the operative variable in the ZEC formula.[91]

The New Jersey statute also ensures that the ZEC program remains affordable to New Jersey retail distribution customers by empowering the BPU, in its discretion, to reduce, but not raise the fixed $0.004 per kilowatt-hour charge for subsequent three-year eligibility periods.[92] To lower the amount charged to ratepayers for the ZEC program, the BPU must determine that "a reduced charge will nonetheless be sufficient to achieve the State's air quality and other environmental objectives by preventing the retirement of the [eligible] nuclear power plants."[93]

This legislation is a novel way to navigate the post-*Hughes* legal uncertainty surrounding what states can and cannot do in the name of environmental policy, but it is not without cost. New Jersey's electricity demand, for instance, is not perfectly correlated with wholesale market prices, so there is still the possibility of nuclear subsidies rising along with market revenues within the three-year eligibility period, resulting in overcompensation of nuclear assets. More concerning, however, is that the burden of accommodating any rise in wholesale prices falls squarely on the BPU.[94] Under the statute, the BPU has the discretion, but not the duty, to adjust ZEC prices downward.[95] In order to exercise that discretion, it must first determine that any such adjustment would not cause the closure of nuclear reactors.[96] Regulators would understandably be risk averse in their deliberation, erring on the side of possibly overcompensating nuclear generators rather than risk their sudden closure. Moreover, nuclear generators and their advocates will be well incentivized to present a powerful case that any BPU-imposed decrease in ZEC prices would precipitate their plants' closure.[97]

---

88. *Id.*

89. 16 U.S.C. § 824(b)(1).

90. Mark Berman & Dean Murphy, *Salem and Hope Creek Nuclear Power Plants' Contribution to the New Jersey Economy*, THE BRATTLE GROUP (2017), http://files.brattle.com/files/11755_salem_and_hope_creek_nuclear_power_plants_contribution_to_the_new_jersey_economy.pdf.

91. *Id.*

92. S.B. 2313, 218th Leg. § (3)(i)(1).

93. *Id.* § (3)(j)(3)(a).

94. 16 U.S.C. § 824(b)(1).

95. N.J. Stat. Ann. § 48:3-51 (West 2015).

96. *Id.* When electricity demand *falls*, however, and assuming output is relatively constant, New Jersey's formula automatically accounts for this by reducing the amount of megawatts constituting 40 percent of electricity distributed by New Jersey's utilities in the prior energy year. There is no need for nuclear plant owners to go to the BPU and argue that ZEC prices should increase to reflect market realities. That increase is already baked into the formula.

97. *Id.*

Further, for the BPU to depart from the status quo and decrease the ZEC fixed charges, it must conclude that the nuclear market revenues will not suffer any sudden misfortunes in the near term.[98] It is difficult for regulators to accurately predict swings in the wholesale market prices, even three years out. When New Jersey restructured its electric utilities industry, for instance, it authorized the regulated utility, Public Service Enterprise Group (PSEG), to recover from the ratepayers' $2.9 billion in "stranded costs" associated with functionally separating its competitive generation assets.[99] This figure was based on an administrative estimate of the assets' income projections.[100] The PSEG's assets, it turned out, performed better than expected in the competitive markets over the next decade and a half, and many of the estimated "stranded costs" never materialized.[101] However, the PSEG nonetheless was able to collect a windfall on the backs of New Jersey ratepayers because, *inter alia*, the law contained no adjustment mechanism tied to wholesale market revenues.[102] Ratepayer advocates have cited the over-estimation of the PSEG's stranded costs in urging that any New Jersey ZEC proposal should make clear how prices would account for federal wholesale revenues.[103]

B. Recent Supreme Court Jurisprudence and Turning Towards A More Pragmatic Approach

From the perspective of the broader power sector, state ZEC programs, and their cost-containment features, support interpreting the FPA with an eye towards functionality.[104] This means attempting to apply the basic premise behind the FPA's jurisdictional 'bright line' to realities of an evolving electric power industry.[105] Recent jurisprudence under the FPA, and its companion statute the Natural Gas Act, has moved in this direction and deemphasized the "bright line" precedent.[106] In *Oneok, Inc. v. Learjet, Inc.*, the Supreme Court stated that the Platonic ideal of "a clear division between areas of state and federal authority" does not describe

---

98. *Id*.

99. In re Pub. Serv. Elec. & Gas Co.'s Rate Unbundling, 771 A.2d 1163, 1175 (N.J. 2001); N.J.S.A. C.48:3-50 2(c)(4) (EDECA guarantees utilities "the opportunity to recover above-market power generation and supply costs and other reasonably incurred costs associated with the restructuring of the electric industry in New Jersey.").

100. *Id.*

101. In re Murphy, 426 N.J. Super. 423, 433 (Super. Ct. App. Div. 2012).

102. *Id*. at 427 (plaintiff alleged "PSE & G had undervalued its assets to obtain a higher amount of stranded costs" and "the charges imposed by PSE & G exceeded the actual stranded costs it incurred"); Atif Malik, New Jersey Citizen Action, *Comments on New Jersey's April 2008 Draft Energy Master Plan*, at 8-11 (July 25, 2008), http://www.nj.gov/emp/home/docs/pdf/080408_NJCA_LiebmanE.pdf.

103. Steven S. Goldenberg, *Op-Ed: PSEG, Open Your Books!*, NJ SPOTLIGHT (Dec. 1, 2017), http://www.njspotlight.com/stories/17/11/30/op-ed-pseg-open-your-books/.

104. *See generally* Matthew R. Christiansen, *FERC v. EPSA: Functionalism and the Electricity Industry of the Future*, 68 STAN. L. REV. ONLINE 100 (2016).

105. *Id.* (approving the recent functional and pragmatic approach to the FPA).

106. The relevant provisions of the FPA and Natural Gas Act are "in all material respects substantially identical," and as a result, the Supreme Court has adopted an "established practice of citing interchangeably decisions interpreting the pertinent sections of the two statutes." Ark. La. Gas Co. v. Hall, 453 U.S. 571, 578 n. 7 (1981) (internal quotation marks omitted).

the regulatory world.[107] Though *Hughes* held that the FPA preempted a Maryland order that required producers to bid and clear the federal wholesale auction, the opinion took pains to stress the narrow, case-specific limits of its holding.[108] Justice Sotomayor, in her concurrence, reaffirmed that the FPA is a "collaborative federalism statute" that "envisions a federal-state relationship marked by interdependence."[109]

Along with *EPSA v. FERC*, discussed below, this trifecta of recent Supreme Court cases represent a watershed shift away from a "bright line" view towards a more functional approach. Professor Jim Rossi contends that *Oneok*, *Hughes*, and *EPSA* represent a "brave new world" for the FPA as they "abandon dual sovereignty as the primary organizing principle for resolution of federalism disputes under energy statutes" in favor of concurrent jurisdiction.[110] Other scholars agree that these three cases mark a sea change in FPA jurisprudence.[111]

EPSA v. FERC perhaps best shows how a functional interpretation of the FPA can help regulators meet the energy demands of the twenty-first century.[112] Justice Kagan's opinion highlighted the desirability of demand response – the practice of paying consumers to reduce their electricity consumption during times of peak demand – as a tool to reduce costs and increase reliability to the grid.[113] Interpreting the FPA to preclude the FERC from regulating demand response would likely create a regulatory gap, "conflict[ing] with the Act's core purposes by preventing all use of a tool that no one (not even EPSA) disputes will curb prices and enhance reliability in the wholesale electricity market."[114] The Court refused to read the FPA "to halt a practice that so evidently enables the Commission to fulfill its statutory duties of holding down prices and enhancing reliability in the wholesale energy market."[115] In so doing, it cited other Supreme Court decisions that considered the effectiveness of federal and state policy in interpreting the FPA's jurisdictional provisions in the context of avoiding regulatory gaps.[116] Congress

---

107. *Oneok*, 135 S. Ct at 1601.

108. *Hughes*, 136 S. Ct. at 1299. The Fourth Circuit decision, which *Hughes* affirmed, found that the Maryland order was field preempted because it functionally set the rates that the generator received for its sales in the PJM action. PPL EnergyPlus, LLC v. Nazarian, 753 F.3d 467 (4th Cir. 2014).

109. *Hughes*, 136 S. Ct. at 1300 (Sotomayor, J., concurring).

110. Jim Rossi, *The Brave New Path of Energy Federalism*, 95 TEX. L. REV. 399, 403 (2016).

111. Amy L. Stein, *Regulating Reliability*, 54 HOUS. L. REV. 1191, 1210 (2017) (examining how the trifecta of recent Supreme Court cases mark a "new era of federal jurisprudence" and discussing implications of Supreme Court's functional interpretation of FPA on regulating reliability of the electric system); Matthew R. Christiansen, *FERC v. EPSA: Functionalism and the Electricity Industry of the Future*, 68 STAN. L. REV. ONLINE 100 (2016) (approving the recent functional and pragmatic approach to the FPA).

112. Rossi, *supra* note 110, at 445 ("The Supreme Court's 2016 EPSA decision illustrates how a federalism approach premised on concurrent jurisdiction—rather than bright-line jurisdiction—can often better advance the primary purpose of energy statutes in modern energy markets.").

113. *Elec. Power Supply Ass'n*, 136 S. Ct. at 763.

114. *Id.* at 773. Removing FERC's ability to regulate demand response on jurisdictional grounds would "remove a key element of elasticity of demand that could moderate prices in organized energy markets" and would result in higher prices and greater carbon pollution. Nordhaus, *supra* note 10, at 209.

115. *Elec. Power Supply Ass'n*, 136 S. Ct. at 782, 787.

116. *Id.* at 787 (*citing* Fed. Power Comm'n v. La. Power & Light Co., 406 U. S. 621, 631 (1972); *citing also* FPC v. Transcon. Gas Pipe Line Corp., 365 U. S. 1, 19 (1961)).

intended to create a "comprehensive and effective regulatory scheme of dual state and federal authority" and to avoid "no man's land" beyond the reach of either sovereign.[117] In its extreme form, the "bright line" doctrine could impede regulators in their efforts to achieve important goals, such as integrating clean-energy resources into the grid, ensuring reliability, and promoting energy security.[118]

The Supreme Court's shift towards a more functional approach has coincided with a shrinking of field preemption and the renewed attention to resolving disputes through conflict preemption.[119] Rooted in the U.S. Constitution's Supremacy Clause and its declaration that "the Laws of the United States . . . shall be the supreme Law of the Land," federal preemption doctrine comes in three forms: express preemption, field preemption, and conflict preemption.[120] Because the FPA contains no express prohibition on state lawmaking, plaintiffs raising FPA preemption arguments typically state claims of field or conflict preemption. Field preemption exists when Congress has decided to so thoroughly occupy a given area of law so as to remove it completely from state regulatory authority.[121] Consequently, "[w]here Congress occupies an entire field . . . even complementary state regulation is impermissible."[122] Conflict preemption, on the other hand, only prevents states from making laws that actually conflict with federal law or "stand[] as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."[123] With respect to the FPA, *Oneok*, *Hughes*, and *EPSA* have clarified the dividing line between state and federal power, "mak[ing] conflict preemption the most appropriate lens through which to resolve these cases."[124] Some scholars have gone so far as to declare that field preemption should be treated as a doctrinal relic in light of the new FPA preemption jurisprudence.[125] The related idea of concurrent jurisdiction, under which each sovereign can make

---

117. Fed. Power Com. v. Louisiana Power & Light Co., 406 U.S. 621, 631 (1972); Fed. Power Comm'n v. Transcontinental Gas Pipe Line Corp., 365 U. S. 1, 19 (1961).

118. Rossi, *supra* note 110, at 402-403.

> At the extreme, dual sovereignty's legacy can bind regulators by reinforcing judicially-defined limits on their authority. This approach hamstrings agency regulators from adopting proactive regulatory approaches that can adapt as they seek to balance important goals in the regulation of energy markets, such as expanding clean-energy resources, integrating those resources into the grid, protecting reliability, addressing energy security, and monitoring anticompetitive conduct that is harmful to consumers.

See also Stein, *supra* note 111, at 1191 (examining implications of Supreme Court's functional interpretation of FPA on regulating reliability of the electric system).

119. Joel B. Eisen, *The New(Clear?) Electricity Federalism: Federal Preemption of States' "Zero Emissions Credit" Programs*, 45:2 Ecology Law Quarterly 149, 153 (2018).

120. U.S. Const. art. VI, cl. 2; *see also* Retail Prop. Tr. v. United Bhd. of Carpenters & Joiners of Am., 768 F.3d 938, 948 (9th Cir. 2014).

121. Arizona v. United States, 567 U.S. 387, 401 (2012).

122. *Id.*

123. *Oneok*, 135 S. Ct. at 1595.

124. Eisen, *supra* note 119, at 153; *see also* Rossi, *supra* note 110, at 406; Brief of Amici Curiae Electricity Regulation Scholars In Support of Defendants-Appellees, No. 17-2445 at 26; Emily Hammond, Response, *Hughes v. Talen Energy Marketing, LLC: Energy Law's Jurisdictional Boundaries – Take Three*, GEO. WASH. L. REV. DOCKET at n. 7 (Apr. 22, 2016) ("Arguably, the Court engaged in a conflict analysis as a functional matter, notwithstanding its disavowal of such an approach.").

125. *See* Rossi, *supra* note 110, at 46.

rules in areas unregulated by the other, has also risen in prominence in the wake the Supreme Court's trio of cases.[126]

However, even among those that recognize this functionalist view centered around conflict preemption, there remains disagreement as to which features of a state law come into conflict with federal law. As judges search for some consistent framework of distinguishing permissible from impermissible state subsidies, it would be tempting to latch on to the inclusion of wholesale market prices as a "fatal flaw" that renders the Illinois and New York ZEC programs preempted.[127] Some scholars have pointed to the fact that the ZEC programs' formula includes an input variable for wholesale prices as a step too far under recent Supreme Court precedent.[128] Because a "formula that changes credit prices in line with wholesale market prices aims at those rates," the ZEC programs run afoul of *Oneok*.[129] As Emily Hammond reasoned, "the math itself includes the wholesale markets" and, as such, has violated *Hughes* by tethering compensation for merchant plants to wholesale markets.[130]

However, it is not clear that this new "fatal flaw" of wholesale market inputs provides any more guidance than the fatal flaw identified in *Hughes*, i.e. conditioning payment of funds to generators on their capacity bids clearing the wholesale markets.[131] Moreover, this doctrinal shift would come with substantial cost. It would prevent states from achieving their environmental objectives at the lowest cost to consumers by removing a useful policymaking tool.[132] Isolated from the social cost of carbon subsidy itself, the ZEC price adjustment mechanism is akin to demand response in its universal desirability. Virtually no one, except perhaps the nuclear generators, would like to see excessive subsidies over and above those needed to fulfill the environmental purposes of the ZEC programs.

Of course, that a given state policy is beneficial cannot, by itself, render it lawful, but excluding states from regulating an area carries a risk that necessary action would be beyond federal jurisdiction as well.[133] Preempting ZECs, which

---

126. *Id.* at 405-406; *see also* Scott Jacobson, *Dual Sovereignty Is Out, Time for Concurrent Jurisdiction to Shine*, 42 WM. & MARY ENVTL. L. & POL'Y REV. 627, 631-32 (2018).

127. *Id.* at 640.

128. Joel B. Eisen, *The New(Clear?) Electricity Federalism: Federal Preemption of States' "Zero Emissions Credit" Programs*, ECOLOGY LAW QUARTERLY, 2018 (Dec. 20, 2017) (forthcoming), https://ssrn.com/abstract=3091338.

129. *Id.* at 165. This "self-conscious purpose of preserving baseload generation that is struggling on the markets" distinguishes ZECs from other state green energy programs, which do not take market prices into account, and makes them perhaps the "most controversial" state energy programs. *Id.* at 125.

130. *See* Emily Hammond, *The Energy In-Betweens*, at 12, JURIMETRICS (2018) (forthcoming).

> But in calculating the subsidies such that the math itself includes the wholesale markets, it is hard to see how they can survive *Hughes*. Essentially, these states have tethered compensation for merchant plants to the wholesale markets, and have done so for the purpose of making up for flaws in those markets.

131. *Hughes*, 136 S. Ct. at 1299.

132. Even under a "bright line" test, a court could find ZECs to be lawful exercises of state authority, especially if *Hughes*' holding is limited to prohibit only state laws that "condition payment of funds on capacity clearing the auction." *Id.*

133. New York v. FERC, 535 U.S. 1, 24 (2002) ("[R]egardless of their persuasiveness, the sort of policy arguments forwarded by New York are properly addressed to the Commission or to the Congress, not to this

include such a price adjustment, arguably could create a regulatory gap as the FERC would not have the ability to curtail state nuclear subsidies in the event wholesale prices rise. No regulator – state or federal – would be able to create a calibrated, ZEC-like scheme. In fact, one group of electricity regulation scholars expressly warn that preempting ZECs would create regulatory no man's lands in other areas, such as energy swap contracts and renewable energy subsidies.[134] They argue that the ZEC plaintiffs propose to create a "regulatory gap" by "cut[ting] off state authority to enforce energy credit programs, while also leaving the FERC no clear authority to mandate that utilities purchase energy credits."[135] In addition, this proposed expansion of the FERC's exclusive field of jurisdiction could require the federal agency to regulate energy swap contracts and emission allowances.[136]

IV. POTENTIAL FALLOUT ON U.S. NUCLEAR POLICY AND BEYOND

Whether states will be allowed to rationally calibrate their nuclear subsidies will have impacts beyond New York, Illinois, and New Jersey. The United States has 61 commercially operating nuclear power plants with 99 nuclear reactors and an average age of about 36 years.[137] New York's Nine Mile Point 1, which entered commercial service in 1969, is one of the oldest operating reactors in the country.[138] And, by some reports, the majority of America's reactors are currently unprofitable due, in part, to the low cost of natural gas and the inability of states to accurately price carbon pollution.[139]

Ohio, Pennsylvania, and Connecticut are considering implementing their own ZEC programs.[140] Exelon Corporation notified the Nuclear Regulatory Commission that it plans to close Pennsylvania's Three Mile Island nuclear plant in 2019, and First Energy, which recently declared bankruptcy, plans to close another

---

Court."); Chemehuevi Tribe of Indians v. Fed. Power Comm'n, 420 U.S. 395, 423-24 (1975) (recognizing the FPA's distinction between using water in hydroelectric project and thermal-electric power plant may no longer be viable but nonetheless upholding distinction in light of statutory text and judicial precedent).

134. Brief of Amici Curiae Electricity Regulation Scholars in Support of Defendants-Appellees, at 25, *Coalition for Competitive Elec. v. Zibelman*, No 17-2654-cv (2d. Cir. Nov. 22, 2017).

135. *Id.*

136. *Id.* at 26-27.

137. *How many nuclear power plants are in the United States, and where are they located*? U.S. ENERGY INFO. ADMIN, https://www.eia.gov/tools/faqs/faq.php?id=207&t=21 (last visited Sept. 13. 2018).

138. U.S. ENERGY INFO. ADMIN. (last updated Jun. 18, 2018), https://www.eia.gov/tools/faqs/faq.php?id=228&t=21; *see also* Richard Martin, *How Old is Too Old for a Nuclear Reactor?*, MIT TECHNOLOGY REVIEW (Dec. 8, 2015), https://www.technologyreview.com/s/544211/how-old-is-too-old-for-a-nuclear-reactor/ ("While there are significant unknowns around extending the lives of nuclear plants built in the 1970s and 1980s, most people in the industry believe that the reactors can operate safely for 80 years.").

139. Jim Polson, *More Than Half of America's Nuclear Reactors are Losing Money*, BLOOMBERG (June 15, 2017), https://www.bloomberg.com/news/articles/2017-06-14/half-of-america-s-nuclear-power-plants-seen-as-money-losers (*citing* BNEF analysis that 34 of the nation's 61 reactors are losing money, with losses totaling $2.9 billion a year).

140. Rachel Valletta, *Getting to Zero: ZECs and the Future of Nuclear Energy*, (Nov. 13, 2017), http://pecpa.org/pec-blog/getting-zero-zecs-future-nuclear-energy/.

Pennsylvania plant and two others in Ohio.[141] In 2017, the output from those four facilities was greater than all renewable energy in the PJM footprint.[142]

After months of lobbying, ZEC legislation to support Ohio's two remaining nuclear plants has reemerged in the form of H.B. 381 "Ohio Clean Energy Jobs Act."[143] The zero-emission program would last twelve years, subsequently charging residential customers $2.50 and non-residential customers the lesser of 5% of their monthly load or $3,500.[144] Pennsylvania is also considering enacting a ZEC program to save Pennsylvania's five remaining nuclear power plants.[145] Connecticut recently passed a law requiring state officials to examine whether the state's only nuclear power plant should be allowed to participate in a competitive solicitation for power-producing contracts with other zero-carbon resources such as solar and hydroelectric power.[146] However, an independent analysis determined that the nuclear facility would be profitable from 2021 to 2035 even with lower-than-anticipated natural gas prices.[147]

It is, of course, not certain that all these States will follow through. Economic and technological changes in the electricity sector could render ZEC programs environmentally unnecessary. In perhaps a sign of things to come, the California utility PG&E plans to replace 2,300 MWs of generation capacity from the Diablo Canyon Nuclear Plant only with carbon-free resources.[148] New York regulators

141. Jeff St. John, *FirstEnergy Seeks Bankruptcy Protection for Ailing Coal and Nuclear Subsidiaries*, GREENTECH MEDIA (Apr. 2, 2018), https://www.greentechmedia.com/articles/read/firstenergy-seeks-bankruptcy-protection-coal-and-nuclear-subsidiaries#gs.iBoxmbI; *see also* Reid Frazier, *FirstEnergy says it's closing three nuclear plants; seeks federal help*, STATE IMPACT (Mar. 29, 2018), https://stateimpact.npr.org/pennsylvania/2018/03/29/firstenergy-says-its-closing-three-nuclear-plants-seeks-federal-help/.

142. Davis-Besse, Perry, Beaver Valley, and Three Mile Island generated approximately 40 TWh in 2017. PJM's solar and wind resources generated approximately 30 TWh in that year. David Roberts, *The simple argument for keeping nuclear power plants open*, VOX (Apr. 5, 2018), https://www.vox.com/energy-and-environment/2018/4/5/17196676/nuclear-power-plants-climate-change-renewables.

143. John Funk, *FirstEnergy's nuclear zero emission credits may have stalled*, THE CLEVELAND PLAIN DEALER (June 8, 2017), http://www.cleveland.com/business/index.ssf/2017/06/firstenergys_nucear_zero_emiss.html; *see also* John Funk, *FirstEnergy likes DOE support for coal and nuclear, vows to continue efforts for state assist*, THE CLEVELAND PLAIN DEALER (Aug. 24, 2017), http://www.cleveland.com/business/index.ssf/2017/08/firstenergy_likes_doe_support.html; *see also* Peter Maloney, *FirstEnergy keeps pressure on for passage of Ohio nuclear subsidy bill*, UTILITY DIVE (May 22, 2017), https://www.utilitydive.com/news/firstenergy-keeps-pressure-on-for-passage-of-ohio-nuclear-subsidy-bill/443179/.; H.B. No. 381§ 4928.02 (G) – (I).

144. H.B. No. 381§ 4928.7524 (B)(1); *see also* Sonal Patel, *Connecticut, Ohio, Pennsylvania Make Substantive Gains for State Nuclear Subsidies*, POWER (Nov. 1, 2017), http://www.powermag.com/connecticut-ohio-pennsylvania-make-substantive-gains-for-state-nuclear-subsidies/.

145. Patel, *supra* note 144.

146. Ken Dixon, *Malloy signs Millstone nuclear bill*, CT POST (Oct. 31, 2017), http://www.ctpost.com/local/article/Malloy-signs-Millstone-nuclear-bill-12320251.php#photo-14457552.

147. Patel, *supra* note 144.

148. Jeff St. John, *PG&E to Replace Diablo Canyon Nuclear Plant With 100% Carbon-Free Resources*, GREENTECH MEDIA (June 21, 2016), https://www.greentechmedia.com/articles/read/pge-to-replace-diablo-canyon-nuclear-plant-with-100-carbon-free-resources#gs.BAyRzz4. This is a policy shift from an earlier closure of the San Onofre Nuclear Generation Station, which resulted in the addition of natural-gas-fired power and increased carbon emissions. *Id.*

considered this option but found it "virtually impossible" to replace the 27.6 million MWh of nuclear energy with renewables in the short term.[149] More comprehensive policies, such as a resource-neutral carbon tax, could achieve the same carbon reductions at lower cost to ratepayers over the long term without distorting wholesale market signals.[150]

The legal uncertainty surrounding ZECs will also have effects beyond the nuclear industry. Many states along the eastern seaboard are encouraging the development of offshore wind farms.[151] Maryland awarded Offshore Renewable Energy Credits ("ORECs") to two projects in May 2017, and other states are exploring how to incentivize this promising resource, while protecting consumers in the event electricity prices rise.[152] The New York State Energy Research and Development Authority proposed several procurement options for offshore wind-generated electricity, including a Forward OREC that would adjust every two years based on two-year energy and capacity price forecasts.[153] How governments structure these incentives to guard against potential windfalls to offshore wind generators will involve the same sorts of tradeoffs and calculations that attend ZECs.

These high policy stakes underscore the necessity of giving states ample room to maneuver under the FPA. Courts should interpret the FPA's jurisdictional provisions to give states the flexibility to fashion laws that protect each states' environmental interests at the lowest cost to their citizens. The recent Second and Seventh Circuit decisions that narrowly construe *Hughes*' "tethering" language to uphold the legality of state ZEC programs are a positive step in this direction. Windfall profits to nuclear plants do nothing to prevent climate change, while increasing costs to ratepayers, and diverting funds that could be allocated towards

149. CES Order, *supra* note 56, at 127. The New York Public Service Commission estimated that replacing 27.6 million MWh of zero-emission electricity produced by New York's at-risk nuclear facilities would require 9,000 MW of onshore wind or 22,000 MW of solar deployment. *Id.*

150. "Economists generally agree that the best way to address this negative externality would be to impose an economy-wide price on CO2 emissions through a carbon tax or cap-and-trade program." Brief of Independent Economists as Amici Curiae in Support of Defendants-Appellees and Affirmance, No. 17-cv-2654, at 19 (2d Cir. Nov. 22, 2017) (Dkt No. 129); *see also* Brief of the Institute for Policy Integrity at New York University School of Law as Amicus Curiae in Support of Defendant-Appellees, No. 17-cv-2654, at 6 (2d Cir. Nov. 28, 2017) (Dkt No. 149) ("The most economically efficient way to reach those goals would be to impose an economy-wide carbon tax on every emitter."); CES Order, *supra* note 56, at 47 (nuclear plant owners argued that fuel-neutral carbon standard would be preferable).

151. Peter Brannen, *Offshore Wind Farms Will Be Encouraged in Tracts Along the East Coast*, THE WASHINGTON POST (July 23, 2012), https://www.washingtonpost.com/national/health-science/offshore-wind-farms-will-be-encouraged-in-tracts-along-the-east-coast/2012/07/23/gJQAD2Pu4W_story.html?noredirect=on&utm_term=.95815bc1ec9ccoast/2012/07/23/gJQAD2Pu4W_story.html?noredirect=on&utm_term=.95815bc1ec9c.

152. Press Release, *Maryland PSC Awards ORECs to Two Offshore Wind Developers: Projects to Create Jobs, Economic Development in New Industry*, MARYLAND PUBLIC SERVICE COMMISSION (May 11, 2017), http://www.psc.state.md.us/wp-content/uploads/PSC-Awards-ORECs-to-US-Wind-Skipjack.pdf; *see also* NYSERDA, *New York State Offshore Wind Master Plan*, https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/New-York-Offshore-Wind-Master-Plan.

153. NYSERDA, Offshore Wind Policy Options Paper, at 7 (Jan. 29, 2018), https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Biomass-Solar-Wind/Master-Plan/Offshore-Wind-Policy-Options-Paper.pdf.

other environmental priorities. This inefficient, suboptimal policy outcome is not foreordained by the FPA. No ZEC opponents argue that owners of otherwise profitable nuclear plants should receive excessive payments over and above the amounts necessary to keep the plants online. States should be able to ensure they do not.