Pace Environmental Law Review

Volume 35
Issue 1 *Fall 2017*

Article 4

September 2017

Armageddon: The Inevitable Death of Nuclear Power and Whether New York State Has the Legal Authority to Keep It on Life Support

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NOTE

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I. INTRODUCTION

Nuclear power has been met with criticism and skepticism almost since its inception. Despite extensive growth through the 1960s and early 1970s, investment dropped off by 1976.[1] Costly to construct and expensive to fuel, nuclear power plants are fundamentally at odds with existing economic forces. Although nuclear's fiscal imprudence became exposed in the late Seventies,[2] investment and subsidization persist today. Even the plants that have been built have succumbed to economic pressure: "Existing nuclear plants are losing upwards of fifty million [dollars] per [plant per] year."[3] New York's nuclear generators have experienced crippling profit losses, bringing several plants to the brink of closure.[4] Natural gas is cheaper and more abundant. Renewable sources such as solar have gained significant traction. Nonetheless, in its Clean Energy Standard ("CES"), New York approved a subsidy program to keep these plants operating. In adopting the CES, the New York State Public Service Commission ("PSC") carved out Tier 3, an "independent but related component of the CES" which specifically concerns the state's nuclear

1. NIGEL EVANS & CHRIS HOPE, NUCLEAR POWER: FUTURES, COSTS, AND BENEFITS 16 (1984).
2. *See infra* Part I, Section B.
3. Tim Echols, *Nuclear Energy: Tastes like Chicken*, PUB. UTIL. FORT., Sept. 2016, at 56.
4. Patrick McGeehan, *New York State Aiding Nuclear Plants with Millions in Subsidies*, N.Y. TIMES, (Aug. 1, 2016), https://perma.cc/A22J-SMVZ.

facilities.[5] Tier 3 appears counterproductive despite substantial political pressure to keep New York's nuclear fleet online.

In recent years, Governor Andrew Cuomo announced a push towards clean energy. The 2015 New York Energy Plan calls for 50% of New York's consumed energy to be sourced from carbon-free generation, and to reduce the state's greenhouse gas ("GHG") emissions 40% by 2030.[6] Nuclear generation is by far New York's largest source of carbon-free generation. Currently, nuclear power represents 31% of the state's total generation capacity.[7] Renewable energy and efficiency advocates reluctantly support artificially sustaining nuclear power because these plants would most likely be replaced by natural gas, which would mean more carbon emissions. The fear is very real; after the 2014 closing of the Yankee Nuclear Power Station in Vermont, the New England Independent System Operator ("ISO-NE") reported that when roughly five gigawatt-hours ("GWhs") of nuclear generation was shut down, nearly six GWhs of natural gas generation took its place.[8]

New York's Tier 3 carve-out drew fierce legal opposition. Seventeen parties filed petitions for rehearing on the CES, of which nearly all were summarily rejected by the PSC.[9] Ampersand Hydro, LLC, a conglomerate of hydropower stations, filed a procedural challenge, claiming that the PSC gave nuclear an unfair advantage and failed to explain why hydropower is ineligible.[10] In response, the PSC agreed to review which sources will qualify for Zero Emission Credits ("ZECs").[11] Hudson River Sloop Clearwater and Goshen Green Farms, LLC jointly filed an Article 78 lawsuit against the PSC based on State Administrative Procedures Act ("SAPA") violation claims, citing insufficient time

5. Order Adopting a Clean Energy Standard, Case No. 15-E-0302 at 19 (N.Y. Pub. Serv. Comm'n. Aug. 1, 2016), https://perma.cc/8G2E-9AQ5 [hereinafter CES Order].
6. N.Y. STATE ENERGY RESEARCH & DEV. AUTH., 2015 NEW YORK STATE ENERGY PLAN (2015), https://perma.cc/9244-CXGF.
7. CES Order, *supra* note 5, at 19.
8. James Conca, *Natural Gas—Not Renewables—Is Replacing Nuclear Power*, FORBES (May 16, 2016), https://perma.cc/YKD2-9QXY.
9. Gavin Bade, *New York PSC Rejects Challenges to Nuclear Subsidy Program*, UTIL. DIVE (Dec. 29, 2016), https://perma.cc/NDG4-46FZ.
10. Saqib Rahim, *Challenge Looms for N.Y.'s Clean Energy Standard*, E&E NEWS (Aug. 24, 2016), https://perma.cc/HQ45-L2XJ.
11. Bade, *supra* note 9.

for public comment on the CES.[12] The gas industry raised concerns that New York's actions strayed into federal jurisdiction: "the National Energy Marketers Association has argued that the nuclear supports are the same type of regulatory action invalidated by the Supreme Court in *Hughes v. Talen Energy Marketing*."[13] The Natural Gas Supply Association similarly concluded that the ZEC proposal intrudes into the jurisdiction of the Federal Energy Regulatory Commission ("FERC").[14] The overarching questions arising out of the challenge are: (1) What can a state do, as empowered by the Tenth Amendment to the U.S. Constitution, to influence the vitality of the market players of an industry? and (2) In the case of the energy industry, an industry with increasingly overlapping regulation at both the federal and state levels, at what point does state influence begin to conflict with the outer limits of federal preemption under the Commerce Clause?

New York has not been the only state to tinker with nuclear subsidies in this fashion. Illinois also created a ZEC program, under the Future Energy Jobs Act, which was met with similar controversy.[15] Both programs were challenged in federal district court—and both challenges have since been dismissed.[16] In each case, the plaintiffs asserted that the state programs interfered with federal wholesale rate-setting.[17] Appeals have already been filed with the Seventh Circuit Court of Appeals for the Illinois program, and the New York plaintiffs have indicated they intend to appeal as well.[18]

12. *See* Notice of Verified Article 78 and Declaratory Judgment Petition, Hudson River Sloop Clearwater, Inc. v. N.Y. Pub. Serv. Comm'n, No. 07242-16 (N.Y. Sup. Ct. Nov. 30, 2016), https://perma.cc/6GDH-7THT. Hudson River Sloop Clearwater is an environmental activist organization dedicated to protecting the Hudson River. *Id*. at ¶ 36. Goshen Green Farms, LLC operates an organic farm within a fifty-mile radius of the Indian Point Nuclear Facility. *Id.* at ¶ 40.
13. Robert Walton, *With Clean Energy Standard, New York Looks to Save Nukes, Skirt Legal Challenges*, UTIL. DIVE (Aug. 4, 2016), https://perma.cc/ZG2B-Y6UU.
14. *Id.*
15. *See* S.B. 2814, 99th Gen. Assemb. (Ill. 2016).
16. Peter Maloney, *ZECs Appeal: Illinois, New York Nuclear Cases Could Shape Power Market Jurisdiction*, UTIL. DIVE (July 31, 2017), https://perma.cc/NHW2-FSAD.
17. *Id.*
18. *Id.*

This Note seeks to make the argument for New York's ZEC program as a legitimate exercise of state power. Part I provides context—the history of nuclear power, the rise and fall in the incidence of nuclear power projects, and why such investments are failing. Part II then provides an overview of the CES and the ZEC program contained therein. In Part III, the legal challenges filed in response to Tier 3 are discussed, as well as the Illinois case which parallels the conventional generator challenge in New York. Part III will also discuss relevant legal precedent the cases concern, namely the recent United States Supreme Court case, *Hughes v. Talen Energy Marketing, LLC*.[19] Part IV analyzes federal preemption to the extent it affects the New York program. This analysis mirrors—and in some areas, expands upon—the district court's findings regarding New York's program. Further, it compares similar crediting mechanisms currently used across the United States and other analogs demonstrating that, although federal preemption appears to control, there is significant room for the states to regulate. This Note ultimately concludes in Part V that the ZEC program is likely a legitimate exercise of state power, despite incidental effects it may have on related federal regulation.

New York's program is not vested in ignorance; most of the state's nuclear fleet is drawing its last breath due to economic forces. The only plant that seemingly bucks this trend is the Indian Point Nuclear Energy Center, which provides power to New York City and Westchester County and has so far remained profitable.[20] The outlook for this profitability is marginal, and in the face of mounting political pressure from Governor Cuomo, Entergy, the plant's owner and operator, recently agreed to a deal to cease generation by 2021.[21] While the New York State government recognizes that the ZEC program is not a permanent solution, it is equally conscious of the reality that renewable energy is not yet ready to take nuclear's place.[22] Clean energy and the state doing its part in the fight against climate change are worthy policy goals.

19. 136 S. Ct. 1288 (2016).
20. Vivian Yee & Patrick McGeehan, *Indian Point Nuclear Power Plant Could Close by 2021*, N.Y. TIMES (Jan. 6, 2017), https://perma.cc/GXG3-XV6X; Robert Walton, *As Nuclear Plants Shutter, State Efforts to Save Them Are Coming Too Late*, UTIL. DIVE (June 6, 2016), https://perma.cc/8TCB-U39C.
21. Yee & McGeehan, *supra* note 20.
22. CES Order, *supra* note 5, at 19.

Nonetheless, the intricate crisscross of state and federal purview over the energy industry compels the federal government to protect its place in the federalist regulatory scheme. New York's aggressive ambitions for its nuclear fleet addresses the state's energy problems but creates federal concern.

II. HISTORY OF NUCLEAR POWER IN THE UNITED STATES

A. Too Cheap to Meter: The Capital Investment Phenomenon

In 1954, Lewis Strauss, then chairman of the now-defunct United States Atomic Energy Commission, gave a speech to a room of scientists, proclaiming that energy from nuclear plants would be "too cheap to meter."[23] Uranium, the fuel used to power nuclear plants, is immensely energy dense, more energy dense than other conventional fuels.[24] Further, operating costs are relatively low compared to their fossil fuel counterparts. "In 2015, the national average total generating cost for nuclear energy was $35.50 per megawatt-hour ("MWh")."[25] For comparison, the Nuclear Energy Institute projects that combined-cycle gas-fired plants set to replace recently closed nuclear plants will have a levelized cost of over $70 per MWh.[26] The levelized cost of energy ("LCOE") is a summary measure of the overall competitiveness of certain energy sources, factoring in building and operating costs over an assumed

23. *Abundant Power from Atom Seen: It Will Be Too Cheap for Our Children to Meter, Strauss Tells Science Writers*, N.Y. TIMES, Sept. 17, 1954. The Atomic Energy Commission was created in 1946 to manage nuclear initiatives across the country, before being abolished by the Energy Reorganization Act of 1974 and later succeeded by the Nuclear Regulatory Commission. *NRC Glossary: Atomic Energy Commission*, U.S. NUCLEAR REG. COMM'N, https://perma.cc/QF8U-4RTM (last updated Apr. 10, 2017).

24. Karl S. Coplan, *The Intercivilizational Inequities of Nuclear Power Weighed Against the Intergenerational Inequities of Carbon Based Energy*, 17 FORDHAM ENVTL. L. REV. 227, 227 (2006). Uranium has an energy density of 560,000 gigajoules per tonne, as compared to coal, for example, which is only 27 gigajoules per tonne. *Id.* at n.1.

25. NUCLEAR ENERGY INST., NUCLEAR COSTS IN CONTEXT 2 (2016), https://perma.cc/2SUG-MMQ3.

26. *Id.* at 5.

plant lifetime.[27] However, the 2016 LCOE estimated by the Energy Information Administration spells a less-optimistic account, exposing recent trends which indicate nuclear has and will continue to struggle to compete against natural gas or renewables like solar.[28]

Utility companies were attracted to nuclear plants because they were literally the next "big thing." Apart from the benefits, nuclear power plants were much larger and costlier to build than conventional plants. This provided the opportunity to further exploit a historical trend of increasing economies of scale in the industry. Utility companies operate as regulated monopolies over their respective territories under the Federal Power Act ("FPA").[29] A simple formula was designed to determine how much a utility can charge its customers to both recover its costs as well turn a modest profit to attract investment, known as the revenue requirement: (Rate Base Investment × Rate of Return) + Operating Expenses = Revenue Requirement.[30] Because the value of capital investment, but not operating expenses, is multiplied by the rate of return, utilities are incentivized to seek larger projects. This made nuclear the ideal candidate for investment when interest in the technology peaked in the aftermath of World War II. The first large-scale power plant in the United States opened its doors in 1957, and by 1971, twenty-two power plants were fully operable.[31] Eight years later, this number skyrocketed to seventy-two.[32]

B. The Premature Decay of Nuclear Profit Margins

Despite the optimism of the first few decades of nuclear power, "too cheap to meter" never came to fruition. By the mid-1980s,

27. U.S. ENERGY INFO. ADMIN., LEVELIZED COST AND LEVELIZED AVOIDED COST OF NEW GENERATION RESOURCES IN THE ANNUAL ENERGY OUTLOOK 2016 1 (2016), https://perma.cc/HY98-HUNM.

28. *Id.* The Energy Information Administration ("EIA") calculated that "advanced nuclear" plants entering service in 2022 would cost $99.7 per MWh after available tax credits, versus $56.4 per MWh for Conventional Combined Cycle or $58.2 per MWh for Solar PV. *Id.* at 6.

29. *See* JIM LAZAR, ELECTRICITY REGULATION IN THE US: A GUIDE 4 (2d ed. 2016), https://perma.cc/LUR2-538P.

30. *Id.* at 49, fig.8-1.

31. U.S. DEP'T OF ENERGY, THE HISTORY OF NUCLEAR ENERGY 17 (2016), https://perma.cc/UFL7-PRFL.

32. *Id.* at 18.

disasters at Three Mile Island domestically and Chernobyl abroad sparked skepticism, and economic failures became so apparent that the nation took notice. The reality is that nuclear plants "are *fundamentally uneconomic*," and this fact began to surface for several reasons.[33] As the country modernized, utilities expected corresponding increases in demand. A continuous increase did not occur, however, and so the extra capacity nuclear brought was not necessary.[34] Further, additional costs were unexpectedly incurred due to rising interest rates and inflation.[35] This created an exponential rise in building costs, due to the sheer scale of nuclear power plants.[36] The trust in the economies of scale rationale was also misplaced; simply put, bigger stopped getting cheaper:

> Bigger plants turned out to be more costly [sic] in operation; their downtime and maintenance raised costs, and under new technologies, 50 to 150 megawatt plants wound up cheaper than 500 megawatt plants. Many of today's most expensive plants are nuclear plants built with very large overruns; between 1985 and 1992, utilities had to write off at least $22.4 billion in nuclear plant investment.[37]

The effectiveness of small plants had a direct effect on the financing of new nuclear projects. From 1981 to 1984, 77 gigawatts ("GW") of nuclear plants (as well as some coal plants) were cancelled, and none were ordered as a replacement.[38] Energy efficiency, ignored for over a century, became substantially more cost-effective than simply running the nuclear plants.[39] Adopted efficient technology was capable of saving three-fourths of the electricity produced in 1985, which enabled utilities to pay off sunk

33. Letter from Amory B. Lovins, Chairman/Chief Scientist, Rocky Mountain Inst., to Forbes's "Nuclear Follies" (Feb. 8, 1985) (on file with author) (emphasis in original).
34. John B. McArthur, *Cost Responsibility or Regulatory Indulgence for Electricity's Stranded Costs?*, 47 AM. U. L. REV. 775, 823–24 (1998).
35. *Id.* at 823.
36. *Id.*
37. *Id.* at 823–24.
38. Lovins, *supra* note 33.
39. *Id.*; Energy efficiency is defined by the EIA as "using technology that requires less energy to perform the same function." *Energy Efficiency and Conservation*, U.S. ENERGY INFO. ADMIN., https://perma.cc/TYH7-6K2A (last updated Dec. 15, 2016).

costs while lowering consumer rates.[40] These measures never went away, and now, not only is nuclear dethroned as the "future of electricity," but newer or improving technologies are simply outpacing nuclear economically.

Beyond the issues encountered in the eighties, nuclear power now faces increased competition from natural gas. With the maturation of fracking, "the real issue is persistently low natural gas prices, according to [Public Service Enterprise Group] President and CEO Ralph Izzo, whose company operates three nuclear plants."[41] Persistently low natural gas prices are crippling nuclear profits to the point of closure. Quad Cites, built in 1973, and Clinton, built in 1987, were both Illinois plants that were undercut by natural gas and failed to clear the PJM Interconnection capacity auction, prompting premature closure by their owner, Exelon.[42] In the Northeast, Vermont Yankee has shut down, and Pilgrim Power Plant in Massachusetts is slated to close in 2019.[43] Had New York not intervened, the R.E. Ginna, Nine Mile Point, and James A. FitzPatrick plants located in upstate New York all were anticipating closure.[44] This has also dissuaded utilities from completing existing projects. Ratepayers could end up paying $2.5 billion for plants that never come to fruition because at least seven states allow utilities to expend certain costs prior to breaking ground.[45] The only plants currently under construction are the Vogtle Plant and Virgil Summer Station in South Carolina.[46] Both are behind schedule and over budget, amassing approximately $698 million in above-budget capital

40. Lovins, *supra* note 33.
41. Gavin Bade, *Atoms for Green Energy: What Role Should Nuclear Power Play in Decarbonization?*, UTIL. DIVE (July 21, 2016), https://perma.cc/AZA3-W6M9.
42. Walton, *supra* note 20. PJM Interconnection LLC is a regional transmission organization that serves Pennsylvania, New Jersey, and Maryland, along with all or parts of other states throughout the Eastern United States. *Who We Are*, PJM INTERCONNECTION, https://perma.cc/N8CN-G4FV.
43. Walton, *supra* note 20.
44. Yee & McGeehan, *supra* note 20.
45. Peter Maloney, *Bloomberg: Electric Customers Could Pay $2.5B for Unbuilt Nuclear Plants*, UTIL. DIVE (Aug. 10, 2016), https://perma.cc/4SLS-BVWJ.
46. *Id.*

costs.[47] Exacerbating these problems is the recent bankruptcy of Westinghouse Electric. The company, which filed Chapter 11 in March of 2017, provided the reactor technology behind these plants and others and has maintained a considerable role in the nuclear power industry at large.[48] "At the least, it is toxic news for the fate of the only nuclear projects to begin construction in the United States in three decades . . . . At the worst, Westinghouse's collapse could spell the end of any nuclear build-out in the United States."[49] In Illinois, the Exelon plants had held out hope that an ultimately failed legislative measure would have alleviated the economic toll, but the plants had been two of the best-performing in Exelon's fleet—and they still lost a combined $800 million over the course of seven years.[50] Lingering construction costs and other factors hamper the savings nuclear power would otherwise achieve, meaning higher market bids that competitors can beat.[51] Without state aid, nuclear plants are simply succumbing to natural market forces.

47. *Id. See also* Herman K. Trabish, *Nuclear Industry Darkened by Delays, Cost Overruns at Vogtle & Summer Facilities*, UTIL. DIVE (Aug. 24, 2015), https://perma.cc/Z5FV-SW9R.

48. Peter Maloney, *Westinghouse Bankruptcy Could Grind US Nuclear Sector to a Halt*, UTIL. DIVE (April 12, 2017), https://perma.cc/B5ZH-FGD8.

49. *Id.*

50. Press Release, Exelon Corp., Exelon Announces Early Retirement of Clinton and Quad Cities Nuclear Plants (June 2, 2016), https://perma.cc/V9SY-CJGP.

51. Utility investments are recoverable under the existing regulatory framework employed in New York and across the United States. Capital investments and other expenditures are included in what is called the rate base, "the total of all long-lived investments made by the utility to serve consumers, net of accumulated depreciation. It includes buildings, *power plants*, fleet vehicles, office furniture, poles, wires, transformers, pipes, computers, and computer software." LAZAR, *supra* note 29, at 51 (emphasis added). For assets to be recoverable, they must be "used and useful" and "prudently incurred." *Id.* at 52. Typically, utilities enjoy a presumption of these factors. *Id.* Thus, when a capital-intense project such as a nuclear plant experiences overruns, utilities may charge customers to recover these expenses. *Id.* However, in the wholesale context, this means increasing the price to the point where nuclear energy becomes pricier than other sources. *Id.*

II. THE CLEAN ENERGY STANDARD AND THE ZEC PROGRAM

On August 1, 2016, the New York State PSC issued an order adopting the CES.[52] The CES coincides with a State Energy Plan goal that 50% of New York's electricity be generated by renewable sources by 2030, in coordination with another statewide goal of a 40% reduction in statewide GHG emissions by the same year.[53] The CES outlines six focus areas:

> (a) program and market structures to encourage consumer-initiated clean energy purchases or investments; (b) obligations on load serving entities to financially support new renewable generation resources to serve their retail customers; (c) a requirement for regular renewable energy credit (REC) procurement solicitations; (d) obligations on distribution utilities on behalf of all retail customers to continue to financially support the maintenance of certain existing at-risk small hydro, wind and biomass generation attributes; (e) a program to maximize the value potential of new offshore wind resources; and (f) obligations on load serving entities to financially support the preservation of existing at-risk nuclear zero-emissions attributes to serve their retail customers.[54]

To that end, the CES establishes three tiered components. Tier 1 imposes an obligation on all load-serving entities ("LSEs") to procure new renewable resources (evidenced by obtaining RECs) to account for a certain percentage of the total load served.[55] Tier 2 adopts a maintenance program outlined under the existing Renewable Portfolio Standard ("RPS").[56] Tier 3 governs the nuclear subsidy program.[57]

The order sites multiple justifications for its program. Nuclear represents 31% of the state's total generation, and it offsets nearly fifteen million tons of carbon dioxide ("CO_2") per year.[58] Germany, despite its aggressive adoption of solar generation, observed an

52. CES Order, *supra* note 5, at 1.
53. *Id.* at 2.
54. *Id.*
55. *Id.* at 14.
56. *Id.* at 18.
57. *Id.* at 19.
58. *Id.*

increase in carbon emissions in the form of added coal plants when it abruptly shut down all its nuclear plants.[59] New York seeks to avoid a similar outcome with natural gas plants.[60] This will be accomplished with the ZEC scheme. The New York State Energy Research and Development Authority ("NYSERDA") will offer multiyear contracts that demonstrate public necessity, for a contract period from April 1, 2017 through March 31, 2029.[61] The ZEC price will initially be set at $17.48 per MWh for two years and will then be adjusted based on the social cost of carbon.[62] ZEC pricing was set by the PSC, rather than determined by competition and other market forces, because there are too few owners of affected nuclear facilities, meaning an overly influential command of market power amongst them.[63] The social cost of carbon is an estimate of the economic damages associated with a small increase in CO_2 emissions—conventionally, one metric ton—in a given year.[64] The social cost of carbon includes climate change damages such as "agricultural productivity, human health, property damages from increased flood risk, and changes in energy system costs . . . . However, given current modeling and data limitations, it does not include all important damages," such as currently incalculable ones.[65]

The Order bases its methodology on public necessity. Beyond the environmental consequences of losing the avoidance of over 15 million tons of CO_2 emissions, shutting down New York's nuclear plants would create other issues. For example, reduced fuel

59. *Id.*
60. *Id.*
61. *Id.* at 19–20.
62. *Id.* at 19–20, 49.
63. Order Adopting a Clean Energy Standard, Case No. 15-E-0302, app. E, at 4 (N.Y. Pub. Serv. Comm'n. Aug. 1, 2016), https://perma.cc/NZG6-G4JZ [hereinafter Appendix E].
64. *The Social Cost of Carbon*, EPA (Jan. 19, 2017), https://perma.cc/UDF8-B2MA.
65. *Id. See generally* PETER HOWARD, OMITTED DAMAGES: WHAT'S MISSING FROM THE SOCIAL COST OF CARBON (2014), https://perma.cc/Q92N-YXTE. The Cost of Carbon Project, a joint project of the Environmental Defense Fund, the Institute for Policy Integrity, and the Natural Resources Defense Council, addresses what it perceives to be shortcomings of the social cost of carbon, finding missing or poorly quantified damages in areas such as "hot spot damages including increases in forced migration, social and political conflict, and violence; weather variability and extreme weather events; and declining growth rates," among other impacts. *Id.* at 1.

diversity (due to the anticipated heavier reliance on fossil-fuel-based energy should nuclear plants close) could also affect system reliability and price stability due to the inherent volatility of natural gas prices, rendering consumers susceptible to rate shock.[66] "Public necessity" will be determined on a plant-specific basis at the discretion of the PSC based on several factors:

> (a) the verifiable historic contribution the facility has made to the clean energy resource mix consumed by retail consumers in New York State regardless of the location of the facility; (b) the degree to which energy, capacity and ancillary services revenues projected to be received by the facility are at a level that is insufficient to provide adequate compensation to preserve the zero-emission environmental values or attributes historically provided by the facility; (c) the costs and benefits of such a payment for zero-emissions attributes for the facility in relation to other clean energy alternatives for the benefit of the electric system, its customers and the environment; (d) the impacts of such costs on ratepayers; and (e) the public interest.[67]

This effectively excludes Indian Point, the largest nuclear plant in New York, which has managed to avoid the economic difficulties of its upstate counterparts.[68] Located in Southern New York just outside New York City, it enjoys higher energy prices, meaning greater profitability than the other plants which serve rural, less densely populated areas.[69] Nonetheless, the Department of Public Service Staff included in Appendix E of the CES Order a section specifically directed at Indian Point, essentially vowing to include the plant in New York's CES should the need arise.[70] In return, eligible facilities must produce to meet

66. CES Order, *supra* note 5, at 19. The order also warns of additional "significant adverse economic impacts" of nuclear plant closure but does not delve into what those consist of with any specificity. *Id.*

67. Appendix E, *supra* note 63, at 2.

68. *See id.* at 2–4.

69. Jessica Bayles, *New York Creates New Emissions Credit for Nuclear Plants*, NAT'L L. REV. (Sept. 20, 2016), https://perma.cc/9RMH-56KH.

70. Appendix E*, supra* note 63, at 9–10. The Department of Public Service ("DPS") is the agency arm of the PSC, *see generally Department of Public Service - Our Mission*, N.Y.S. PUB. SERV. COMM'N , https://perma.cc/9D6F-9RN3, and are authors of the CES Order, *see* CES Order, *supra* note 5, at 11. Within the CES order and others issued by the PSC, the DPS staff are often simply referred to as "staff." *See* CES Order, *supra* note 5, at 11.

an obligation within a group (that is, each facility will contribute to an overall target set for a specified group of facilities), as well as under both group and individual MWh caps for each tranche period.[71] Should a facility fail to meet its part of the group obligation, the cap will be reduced as a financial penalty.[72] The amount of ZECs to be purchased each year, with each ZEC denominated by the MWh, will also be capped. Initially, the statewide cap is to be set at 27,618,000 MWh annually.[73] This is representative of the "historic contribution the facilities have made to the clean energy resource mix," and Appendix E lays out criteria for changing the cap should the ownership of FitzPatrick change.[74] This change in ownership did in fact occur in August of 2016 when Exelon, owner of the other upstate nuclear plants, agreed to purchase the FitzPatrick facility.[75] Accordingly, the caps will now be combined and treated as a single group.[76]

III. THE LEGALITY OF THE ZEC PROGRAM

A. Legal Challenges by Other Players in the New York Energy Industry

While nuclear plant owners breathed sighs of relief after the ZEC program's adoption, the groundbreaking initiative was not without controversy. Hydropower stations have filed a procedural challenge, claiming that the PSC has given nuclear an unfair advantage and failed to explain why hydropower is ineligible.[77] Gas, oil, and coal generators were dealt a blow in their lawsuit, which alleged that the subsidies intrude on federal jurisdiction,

71. Appendix E*, supra* note 63, at 2–5. A "tranche" is defined as "an issue of bonds derived from a pooling of like obligations that is differentiated from other issues especially by maturity or rate of return." *Tranche*, MERRIAM-WEBSTER ONLINE DICTIONARY (11th ed. 2017), https://perma.cc/P76K-3CH7.
72. Appendix E*, supra* note 63, at 3.
73. *Id.* at 9.
74. *Id.*
75. Robert Walton, *Exelon to Buy Entergy's Fitzpatrick Nuclear Plant in $110M Deal*, UTIL. DIVE (Aug. 10, 2016), https://perma.cc/DY9Q-86E8.
76. Appendix E*, supra* note 63, at 9.
77. Rahim, *supra* note 10.

when the Southern District of New York granted the motions to dismiss.[78]

Ampersand Hydro, LLC operates twelve small hydropower stations within the state.[79] The company filed for a rehearing on procedural grounds, essentially seeking equal treatment.[80] Like nuclear, hydropower is a zero-carbon energy source, and hydropower plants are similarly facing deficiencies warranting closure.[81] However, hydropower plants are clearly excluded under Tier 3.[82] The Order goes so far as to define "Zero Carbon Electric Generating Facility" as an "electric generating facility that uses energy *released in the course of nuclear fission* to generate electricity."[83] The PSC chose the zero-carbon language to refer to nuclear-sourced energy, rather than just the term "nuclear power" itself, likely for the same reason Ampersand Hydro is challenging it: choosing one type of generator over others comes dangerously close to being arbitrary and capricious without appropriate justification for the discrimination.[84]

The conventional generator challenge is another matter, having raised multiple issues. FERC utilizes an auction-based scheme to ensure wholesale rates are just and reasonable.[85] The claimants argued that, in carving out a subsidy program for nuclear power, New York is essentially ignoring the auction results—that the plants either fail to clear the auction (meaning their price is too high to be accepted by wholesale purchasers under the FERC scheme) or are undercut by competition and are thus

78. Coal. for Competitive Elec. v. Zibelman, No. 16-CV-8164, 2017 U.S. Dist. LEXIS 116140 (S.D.N.Y. Jul. 25, 2017); Robert Walton, *Generators: New York Nuclear Subsidies Defy FERC Jurisdiction, Supreme Court decision*, UTIL. DIVE (Oct. 20, 2016), https://perma.cc/WZ43-F3C5.

79. Rahim, *supra* note 10.

80. *Id*.

81. *Id*.

82. *See* CES Order, *supra* note 5, at 33. (Although hydropower is discussed throughout the order, it makes no references to the energy source when outlining the subsidy program under Tier 3. *See id.*)

83. Appendix E, *supra* note 63, at 1 (emphasis added).

84. Rahim, *supra* note 10. A lack of a reasonable rationale for discrimination would likely expose an order to judicial review under the State Administrative Procedures Act. *See* N.Y. C.P.L.R. § 7803(3) (McKinney 2006).

85. Hughes v. Talen Energy Mktg., LLC, 136 S. Ct. 1288, 1291–92 (2016).

losing profits by federal design.[86] Second, the claimants asserted that retail ratepayers will unfairly be forced to fund the "artificially depress[ed]" wholesale market prices.[87] Such prices could be an estimated $7.6 billion over the next twelve years, and if the FitzPatrick Nuclear Power Plant is sold, the entire subsidy would most likely go to a single company.[88] Third, claimants cited the federal preemption doctrine and the dormant Commerce Clause because the subsidies only relate to wholesale production.[89]

Predating the New York challenge are the cases of *Village of Old Mill Creek v. Star* and *Electric Power Supply Association v. Star*.[90] These companion cases, dismissed by the U.S. District Court for the Northern District of Illinois, involved challenges to a similar ZEC program in Illinois based on federal preemption and the dormant Commerce Clause. Finding that the claims were, "in large part, not justiciable," the court nonetheless held that the generator plaintiffs adequately established standing to challenge the program in part.[91] The assertions were nearly identical to those later claimed in New York—and were all summarily dismissed. The court found that "the ZEC program falls within Illinois's reserved authority over generation facilities," and that the "alleged harm to out-of-state power generators . . . is not clearly excessive when balanced against these weighty and traditional areas of

86. *See* Complaint at 1–2, Coal. for Competitive Elec. v. Zibelman, No. 16-CV-8164, 2017 U.S. Dist. LEXIS 116140 (S.D.N.Y. Jul. 25, 2017) [hereinafter Complaint].

87. *Id.* at *5.

88. *Id.* at *2. The complaint refers to a now-confirmed sale of FitzPatrick to Exelon, which already owned the other two upstate power plants. *See* James Conca, *Exelon Buys Fitzpatrick Nuclear Plant, Setting the Standard for U.S. Carbon Goals*, FORBES (Aug. 11, 2016), https://perma.cc/HB8Y-848M.

89. Complaint, *supra* note 86, at 5–6. The FPA explicitly authorizes FERC alone to regulate interstate sale and transmission of electric energy, thus including wholesale rate-setting. Federal Power Act, 16 U.S.C. § 824(a) (2012). Therefore, claimants argue either that FERC, not the states, explicitly wields the authority to subsidize in this manner, or, alternatively, that the dormant Commerce Clause inherently grants the power to the federal government and, by extension, FERC. Complaint, *supra* note 86, at 5–6; *see* English v. Gen. Elec. Co., 496 U.S. 72, 78–80 (1990) (holding that an employee's state tort claim was not sufficiently related to the operation of a nuclear facility to fall within the preempted field of nuclear safety under the Supremacy Clause).

90. No. 17-CV-1163 and 17-CV-1164, 2017 U.S. Dist. LEXIS 109368 (N.D. Ill. July 14, 2017). These cases were consolidated.

91. *Id.* at *18.

permissible state regulation."[92] Less than two weeks later, the Southern District of New York echoed the Northern District of Illinois's dismissal.[93] The court rejected the plaintiff's claims that the ZEC program was "tethered" to the wholesale auction and thus invalid under *Hughes*[94]: "A whole host of measures that States might employ to encourage clean energy development . . . involve propping up the operation of a generator that might otherwise be unprofitable. *Hughes* did not prohibit such state assistance."[95] There are several reasons why the two district courts correctly concluded that the ZEC programs are legitimate exercises of state power. It is evident *Hughes* does not preclude state assistance to particular generators, nor does the Commerce Clause prohibit the incidental consequences such actions have on the wholesale market.

B. The Federal Framework and *Hughes*

FERC wields substantial authority over the electric industry, inherent in the FPA and, in turn, based on Congress's authority to regulate interstate commerce under the Commerce Clause.[96] Writing on the relationship between the energy industry and interstate commerce, the Supreme Court noted: "[I]t is difficult to conceive of a more basic element of interstate commerce than electric energy, a product used in virtually every home and every commercial or manufacturing facility. No State relies solely on its own resources in this respect."[97] Nonetheless, Congress specifically delegated regulatory authority over retail rates to the states.[98] The incongruity of this approach has been the subject of judicial debate for decades because wholesale and retail rates are "inextricably

92. *Id.* at *33, *40.
93. Gavin Bade, *Federal Court Throws out Challenge to New York Nuclear Subsidies*, UTIL. DIVE (July 25, 2017), https://perma.cc/S874-G7KK.
94. Coal. for Competitive Elec., 2017 U.S. Dist. LEXIS 116140, at *18.
95. *Id.*
96. U.S. CONST. art. I, § 8, cl. 3; 16 U.S.C. § 824(a).
97. FERC v. Mississippi, 456 U.S. 742, 757 (1982). *See also* Fed. Power Comm'n v. Fla. Power & Light Co., 404 U.S. 453, 461 (1972).
98. 16 U.S.C. § 824(b)(1).

linked."[99] Thus, unsurprisingly, this linkage spills over into the distributed generation context.[100]

Maryland twice demonstrated its dissatisfaction with this FERC scheme with actions at issue in *Hughes*.[101] Part of the auction scheme involves a "New Entry Price Adjustment" ("NEPA").[102] This guarantees new generators a stable capacity price for the first three years to prevent such entry from lowering the clearing price to the point that that generator cannot recover its costs.[103] The first instance of Maryland's opposition to FERC's scheme came in a tariff-setting proceeding for PJM Interconnection (a regional transmission organization whose grid encompasses the state of Maryland).[104] Several parties, including the state commission, argued for extending the NEPA duration from three to ten years.[105] Although FERC noted that longer commitment periods have a positive influence on the financing process of new generation projects, it ultimately rejected the proposal.[106] FERC stated that:

> PJM's proposal would further bifurcate capacity markets by giving new suppliers longer payments and assurances unavailable to existing suppliers providing the same service. Thus, it would result in further price discrimination between existing resources, including demand response, and new generation suppliers . . . . [W]e must therefore balance the benefits of the longer commitment period (to the extent it fosters new entry by making project financing easier or cheaper) against the possible uplift payments in excess of auction clearing prices that loads may have to bear due

99. FERC v. Elec. Power Supply Ass'n (*EPSA*), 136 S. Ct. 760, 766 (2016).

100. "Distributed generation refers to a variety of technologies that generate electricity at or near where it will be used, such as solar panels and combined heat and power." *Distributed Generation of Electricity and its Environmental Impacts*, EPA, https://perma.cc/G8KK-KKAQ (last updated Jan. 24, 2017).

101. 136 S. Ct. 1288 (2016).

102. *Id.* at 1294. NEPA is often used in the energy context to refer to new entry price adjustments, not to be confused with the National Environmental Policy Act.

103. *Id.*

104. *Id.*

105. *Id.* The parties also discussed both a five- and seven-year period in settlement proposals. *See generally* PJM Interconnection, LLC, 126 FERC ¶ 61,275 (2009).

106. PJM Interconnection, LLC, 126 FERC at ¶ 62,563.

> an [sic] extension of the NEPA term. In our view, no party has made the case that extending the NEPA term to five or seven years strikes a superior balance to the existing provisions.[107]

After FERC's rejection of the NEPA proposal, the Maryland Public Service Commission ("MPSC") promulgated the generation order at issue in *Hughes*.[108] It required LSEs to enter into a twenty-year "contract for difference" which, unlike a traditional bilateral contract, did not transfer ownership of capacity.[109] Instead, the generator is guaranteed the contract price, with the LSE paying "the difference between the contract price and the clearing price," should the clearing price fall below the contracted amount.[110] In practice, the contract for differences effectively created an artificial seventeen-year NEPA extension.[111] The Supreme Court found the Maryland regulation invalid on preemption grounds[112]: "[S]tate laws are preempted when they 'den[y] full effect to the rates set by FERC, even though [they do] not seek to tamper with the actual terms of an interstate transaction.'"[113] This begs the question: To what degree can a state regulate when a byproduct of such regulation conflicts with federal jurisdiction?

The *Hughes* Court even noted that the decision should not be read as a rigid barrier to state efforts to support new or existing generation.[114] While not directly stated, it appears intent plays a role in determining the permissibility of a program: "States, of course, may regulate within the domain Congress assigned to them even when their laws incidentally affect areas within FERC's

107. *Id.*
108. *Hughes*, 136 S. Ct. at 1294.
109. *Id.*
110. *Id.* at 1295.
111. *Id.* at 1296–97.
112. *Id.* at 1298.
113. *Id.* at 1296 (citing PPL EnergyPlus, LLC v. Nazarian, 753 F.3d 467, 476 (4th Cir. 2014)).
114. *Id.* at 1300 (Sotomayor, J., concurring). In her concurrence, Justice Sotomayor cautions that the courts "must be careful not to confuse the 'congressionally designed interplay between state and federal regulation,' for impermissible tension that requires pre-emption under the Supremacy Clause." *Id.* (internal citation omitted).

domain."[115] Summarily, *Hughes* echoed the sentiment of the Court in *Nantahala Power & Light Co. v. Thornburg* that "State[s] must . . . give effect to Congress'[s] desire to give FERC plenary authority over interstate wholesale rates, and to ensure that the States do not interfere with this authority."[116] The wholesale auction scheme employed by FERC is designed to fulfill its statutory mandate that costs be "just and reasonable."[117] While costs are sufficiently regulated in this manner, the states' environmental and reliability concerns are left unconsidered; such concerns are not factored into the equation.[118]

IV. CAN NEW YORK STATE REGULATE NUCLEAR POWER OUT OF ITS ECONOMIC FAILURE?

A. Federal Preemption Does Not Go So Far as to Prevent State Action that Has an Incidental Effect on Federal Authority over Wholesale Markets

In light of its successful motion to dismiss in *Coalition for Competitive Electricity*, New York firmly believes its programs avoid federal preemption issues. Audrey Zibelman, then Chairwoman of the PSC, described the lawsuit as "frivolous" and simply a political move.[119] "The Supreme Court has repeatedly upheld the rights of states to protect their environment for the welfare of citizens," she added.[120] The PSC also disputes the suit's

115. *Id.* at 1298. *See* ONEOK, Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1599 (2015) (holding that state gas price manipulation which incidentally affected wholesale rates was not preempted by the Natural Gas Act).

116. Nantahala Power & Light Co. v. Thornburg, 476 U.S. 953, 966 (1986).

117. 16. U.S.C. § 824d(a).

118. Emily Hammond, *Hughes v. Talen Energy Marketing, LLC: Energy Law's Jurisdictional Boundaries – Take Three*, GEO. WASH. L. REV. DOCKET (Apr. 22, 2016), https://perma.cc/7WA8-KL2J.

119. Jesse McKinley, *Lawsuit Seeks to Halt New York Subsidies for Upstate Nuclear Plants*, N.Y. TIMES (Oct. 19, 2016), https://perma.cc/2ZSF-EKZW. Audrey Zibelman has since stepped down, leaving the PSC to oversee the Australian Energy Market Operator on March 20th. Krysti Shallenberger, *New York PSC Chair Zibelman to Leave for Australian Grid Operator in March*, UTIL. DIVE (Jan. 23, 2017), https://perma.cc/4F6J-PFY.

120. McKinley, *supra* note 119. *See also* Massachusetts v. EPA, 549 U.S. 497 (2007) (holding that numerous states and several cities had standing to compel federal regulation of GHGs as pollutants based on the alleged harm coastal jurisdictions endure from climate-change-induced sea-level rise);

alleged cost estimates, claiming that the financial impact would be "less than $2 per month for a typical residential customer."[121] While *Hughes* certainly reinforces the notion that a state cannot directly interfere with FERC wholesale rates, it is equally clear that any state action in the energy industry will have at least an incidental impact on the wholesale market. For example, the FPA leaves siting decisions exclusively to states.[122] Assuming New York allows the upstate nuclear plants to close, it would have rather unfettered discretion in deciding how to replace them. Although unrealistic and subject to challenge, New York could approve a new, larger nuclear plant to take its place, with capital costs being recoverable by retail consumers. This hypothetical scenario would potentially rival—if not exceed—the costs of the ZEC subsidies.

States have interests beyond price-setting when siting a particular plant. These interests do not disappear after the plant is sited and certainly play a role in keeping the plant afloat amidst economic troubles. Furthermore, a decision to shut down a nuclear plant, such as Indian Point, impacts wholesale rates when the plant goes offline; the plant's substantial power contribution to the auction stack disappears and must be replaced by other—and potentially more expensive—means of generation. Using Indian Point as an example, many in New York are concerned about how its generational footprint will be replaced. The New York Times reported that potential options include Canadian hydropower—a glaring example of how the energy industry traverses territorial borders irrespective of the their role in compartmentalizing regulatory authority.[123] In turn, interstate commerce is almost inevitably impacted by the major shifts in New York's energy production.

Yet, such an impact would not be considered an intrusion on federal authority. Jurisprudence has demonstrated a federal respect for state actions which result in incidental effects on the wholesale energy market.[124] Furthermore, it has led to arguments

Georgia v. Tenn. Copper Co., 206 U.S. 230, 237 (1907) (holding that in their role as "quasi-sovereign[s]," the states have an interest "independent of and behind the titles of its citizens, in all the earth and air within its domain").

121. McKinley, *supra* note 119.

122. 16 U.S.C. § 824(b)(1).

123. Yee & McGeehan, *supra* note 20.

124. *See* Nw. Cent. Pipeline Corp. v. State Corp. Comm'n, 489 U.S. 493, 493 (1989) (holding that the state's regulation governing the timing of natural

that dual sovereignty principles regarding energy market regulation (namely the FPA's division of authority over wholesale and retail rates to FERC and the states, respectively) have eroded since their conception in the New Deal era.[125] After competition was reintroduced to the energy market, coupled with the onset of new technologies, the once-bright lines between federal and state authority blurred, leading to increased conflicts and litigation.[126] Adhering to an outdated, rigid scheme, rather than acknowledging the unavoidable interplay between federal and state power:

> 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.[127]

The most troublesome of these principles in the modern era is likely field preemption; "[o]ne of the highest profile modern endorsements of field preemption is in the context of nuclear regulation."[128] In *New York v. FERC*, the Supreme Court noted that, when reviewing field preemption claims, it is appropriate to begin with "the assumption that the historic police powers of the States were not to be superseded . . . unless that was the clear and manifest purpose of Congress."[129] This police power is derived from the Tenth Amendment to the Constitution, included in the powers reserved to the states.[130] Nonetheless, the Supreme Court was hesitant to apply a "presumption against pre-emption" when FERC

gas production violated neither the Supremacy nor the Commerce Clauses); *see also* Rochester Gas & Elec. Corp. v. Pub. Serv. Comm'n, 754 F.2d 99, 105 (2d Cir. 1985) (holding that a state's practice of imputing incidental sales in a utility's revenue base to determine tariff change benefits did not violate the Supremacy Clause).

125. Jim Rossi, *The Brave New Path of Energy Federalism*, 95 TEX. L. REV. 399, 402–03 (2016).
126. *Id.* at 402.
127. *Id.* at 402–03.
128. *Id.* at 417.
129. New York v. FERC, 535 U.S. 1, 18 (2002) (citing Hillsborough Cty. v. Automated Med. Labs., Inc., 471 U.S. 707, 715 (1985)) (internal citation omitted).
130. U.S. CONST. amend. X.

strayed into the retail sphere with Order No. 888.[131] It is thus clear that the courts still maintain the position that regulation of the energy market is largely within FERC's control; however, the reasoning has shifted from dual sovereignty to principles arising out of FERC's statutory mandates. When faced with petitioners' argument for a clear division of authority in natural gas regulation, the majority in *ONEOK, Inc. v. Learjet, Inc.* opined that the "[p]latonic ideal does not describe the natural gas regulatory world."[132] In rejecting the argument for exclusive federal control over pipelines in *ONEOK*, the Supreme Court demonstrated an unwillingness to apply field preemption to matters not purely wholesale in nature.[133] A year later, Justice Kagan directly displaced dual sovereignty in favor of a pragmatic analysis based on FERC's "just and reasonable" obligations.[134] Although both *ONEOK* and *EPSA* upheld FERC's actions where intrusion into state jurisdiction was in question, the Supreme Court did so without relying on field preemption.

Furthermore, these decisions do not stray from a perceivable Congressional intent to the contrary. Even in 1935, the Senate Report accompanying the FPA noted that subsection (a) "declares the policy of Congress to extend that regulation to those matters which cannot be regulated by the States *and to assist the States in the exercise of their regulatory powers*."[135] The House reported similar sentiments, elaborating further that "[the FPA] is conceived entirely as a supplement to, and not a substitute for, State regulation."[136] The overwhelming support for concurrent jurisdiction, rather than dual sovereignty, limits the applicability of field preemption to state subsidy of nuclear plants.

When combined with concurrent jurisdiction principles, *Hughes* supports the notion that New York's ZEC program escapes field preemption. The Second Circuit was the first to address *Hughes* and its scope, applying the Supreme Court's reasoning to a preemption challenge against the Connecticut Department of

131. *FERC*, 535 U.S. at 17. Order No. 888 imposed an open access requirement on unbundled retail transmissions. *Id.* at 11.
132. ONEOK, Inc. v. Learjet, Inc., 135 S. Ct. 1591, 1601 (2015) (citation omitted).
133. Rossi, *supra* note 125, at 432.
134. *Id.* at 434; EPSA, 136 S. Ct. 760, 767–68 (2016).
135. S. REP. NO. 74-621, at 48 (1935) (emphasis added).
136. H.R. REP. NO. 74-1318, at 8 (1935).

Energy and Environmental Protection ("DEEP") in *Allco Finance Ltd. v. Klee*.[137] Allco owns and operates several solar projects throughout the country.[138] It alleged that DEEP's solicitation process for solar project proposals (which did not select any Allco proposal, giving rise to the suit) under the 2013 Act Concerning Connecticut's Clean Energy Goals was preempted by federal law.[139] In affirming the lower court's dismissal, the Second Circuit found that DEEP's request for proposals were "precisely what the *Hughes* Court placed outside its limited holding."[140] In contrast to Maryland's program, DEEP Commissioner Klee was simply authorized to guide—but not compel—utilities to enter into bilateral contract agreements with generators. This lack of compulsion—that is, a lack of direct interference (such as that observed in *Hughes*)—renders a state action in this field permissible.[141]

Although state laws are preempted when they "den[y] full effect to the rates set by FERC, even though they do not seek to tamper with the actual terms of an interstate transaction,"[142] in this case, New York is regulating the attribute, rather than the energy production. Nuclear plants are wholesale market participants, meaning that the energy they produce and sell is regulated at the federal level. However, New York created a credit for the type of energy it produces, rather than the energy itself. This does not (on its face) alter the price a nuclear plant can take to market.

B. ZECs are Separable as a Commodity from the Energy Produced by Nuclear Plants

Commissioner Zibelman also defended the credits as "designed to value only the carbon-free attributes of the energy, and not the actual power."[143] While that may be true, assigning the attribute

137. 861 F.3d 82 (2d Cir. 2017).
138. *Id.* at 89.
139. *Id.* at 86.
140. *Id.* at 99.
141. *Id.* The Second Circuit also noted that the DEEP-directed contracts were ultimately subject to FERC review, further legitimizing Connecticut's program. *Id.* at 99–100.
142. PPL EnergyPlus, LLC v. Nazarian, 753 F.3d 467, 476 (4th Cir. 2014).
143. Walton, *supra* note 78.

value nonetheless arguably influences the wholesale auction. Despite not actually changing the cost of the nuclear-produced energy, the plants will remain able to enter the auction, preventing additional generators—new or existing—from otherwise filling out the "auction stack."[144] Regardless, this incidental effect cannot be misinterpreted as running afoul of FERC's authority, as portrayed in *Hughes*. In *Hughes*, Maryland deliberately meddled with FERC authority by providing new generators with the state's contract for difference.[145] New York's actions are easily distinguishable because the valuation of ZECs is unaffected by the prices offered at auction, rather than dependent on a predetermined figure, as in *Hughes*. ZECs can be treated as a separate commodity, further solidifying New York's actions as permissible. In fact, FERC has recognized that environmental attributes in the form of RECs can be traded separately and are not necessarily bound to or conveyed with the "energy or capacity" generators produce—and that logic is likewise applicable to the zero-carbon attribute of nuclear power.[146] FERC later declared and cemented its position on RECs with an order in 2003 and a denial of a request for rehearing in 2004.[147]

To refute the distinction between the Maryland and New York approaches despite the divisibility of the zero-carbon attribute and the energy itself, would essentially be to argue that nuclear facility operators cannot engage in any commercial activity for fear of reducing overhead to the point that the operators may lower their wholesale bids. Imagine a pizzeria selling pizzas valued at $5. If the pizzeria is failing, Maryland would give the pizzeria $2 per pie, if the store can only manage to sell them at $3. New York would allow the pizzeria to charge $2 to certify that the pizza dough is

144. Auction stacks are how generators enter the wholesale capacity auction. *See* Adam James, *How a Capacity Market Works*, THE ENERGY COLLECTIVE (June 14, 2013), https://perma.cc/A74F-P3E7. These markets are "forward looking," with generators being compensated for the amount of power they can provide for a specified time period. *Id.* Each generator bids based on its operation costs, which then "stack" from lowest to highest. *Id.* However, once capacity is reached, each bidder receives the "clearing price," or the highest price necessary to meet demand. *Id.*

145. Hughes v. Talen Energy Mktg., LLC, 136 S. Ct. 1288, 1295 (2016).

146. Am. Ref-Fuel Co., Covanta Energy Grp., Montenay Power Corp., & Wheelabrator Tech. Inc., 105 FERC ¶ 61,004 (2003).

147. TODD JONES ET AL., THE LEGAL BASIS FOR RENEWABLE ENERGY CERTIFICATES, CENT. FOR RESOURCE SOLUTIONS 4 (2015), https://perma.cc/2EMJ-REPQ.

organically sourced, regardless of what price at which it sells the actual pie. Monetizing perceived benefits as a separate revenue stream sufficiently departs from rate-setting to not be considered an intrusion on FERC authority. To argue the contrary would be logically akin to prohibiting a nuclear plant from selling pizza in addition to its energy production out of fear that its added revenue (which is separate from its energy production revenue) will grant an unfair advantage at auction.

C. Existing REC and SREC Programs Legitimize New York's ZEC Credit Scheme

The ZEC program bears striking similarities to its REC counterpart. A renewable energy credit, also referred to as a renewable energy certificate, is defined by the EPA as "a market-based instrument that represents the property rights to the environmental, social and other non-power attributes of renewable electricity generation."[148] Under the CES Order, like ZECs, LSEs must meet certain renewable obligations and can purchase RECs from NYSERDA, with the same goals of reducing carbon emissions and achieving 50% clean energy by 2030.[149] RECs are not unique to New York; they are recognized federally as well in thirty-six states.[150] Besides FERC, the Department of Energy, the Federal Energy Management Program, and the White House Council on Environmental Quality (under the Obama Administration) all have recognized RECs as a legitimate means of valuating the non-energy attributes of energy generation, and that such attributes can be sold separately.[151] Furthermore, without RECs (and in the case of nuclear, ZECs), there are few means available to track where electricity comes from when a consumer turns on a light;[152] "[o]nce renewable electricity is introduced into the grid, it is physically indistinguishable from electricity generated from conventional sources."[153] Courts have also endorsed RECs by

148. EPA, RENEWABLE ENERGY CERTIFICATES (RECS), https://perma.cc/Q92G-CGJY (last updated September 8, 2017).
149. CES Order, *supra* note 5, at 16, 18.
150. JONES ET AL., *supra* note 147, at 3.
151. *Id.* at 5.
152. *Id.* at 6.
153. *Id.*

treating them as a form of property.[154] Notably, the Second Circuit recognized the following:

> Generally speaking, *RECs are inventions of state property law* whereby the renewable energy attributes are "unbundled" from the energy itself and sold separately. The credits can be purchased by companies and individuals to offset use of energy generated from traditional fossil fuel resources or by government agencies to satisfy certain requirements that these agencies purchase a certain percentage of their energy from renewable sources.[155]

RECs have been endorsed by multiple agencies and courts at the federal and state levels. Certifying non-energy attributes is a time-tested, legitimate means of subsidy, and New York's ZECs are no exception.

Zero-carbon can certainly be included in the non-power category of attributes which RECs otherwise provide value for and track. However, there is no "rule" that prohibits "spinning-off" this attribute into another form of certificate, as New York has done with Tier 3. In fact, states have done just that with Solar Renewable Energy Credits ("SRECs"). SRECs "represent the generation attributes of solar energy systems" specifically.[156] SREC markets exist in nine states and Washington, D.C., designed to meet various RPS in these jurisdictions.[157] In at least one instance, a federal court has acknowledged SRECs—meaning that their inclusion in discussions of non-energy attribute valuation legitimizes them for the same, widely accepted reasons supporting RECs.[158] While one can argue that making these credits too particularized may lead to tracking and accounting issues, no federal statute or regulation has yet to define how far states may

154. *Id.* at 5. Both the Superior Court of New Jersey as well as the Connecticut Supreme Court have recognized that RECs are "property" and that they effectively "'unbundle[ ]' the renewable energy attribute of the electric product from the generic energy component for accounting purposes and allow[ ] them to be traded separately." *Id.* (citations omitted).

155. *Id.* (citing Wheelabrator Libson, Inc. v. Conn. Dep't of Pub. Util. Control, 531 F.3d 183, 186 (2d Cir. 2008)) (emphasis added).

156. LORI BIRD ET AL., NAT'L RENEWABLE ENERGY LAB, SOLAR RENEWABLE ENERGY CERTIFICATE (SREC) MARKETS: STATUS AND TRENDS 1 (2011), https://perma.cc/WY52-PKUA.

157. *See id.* at 7.

158. Nichols v. Markell, No. 12-777-CJB, 2014 U.S. Dist. LEXIS 52976, at *4 (D. Del. Apr. 17, 2014).

go in isolating and propping up favorable non-energy attributes over one another. It follows that, like SRECs, New York's use of ZECs is acceptable because state property law justifies certifying non-energy attributes of electricity generation.

D. States Have Subsidized Market Players in Other Industries Through Similar Means that Are Permissible Under the Commerce Clause

Subsidizing nuclear is nothing new; the reactors were built on the backs of taxpayers and ratepayers, enjoying government subsidies since their inception over fifty years ago.[159] Recently, nuclear power was included in Ohio's RPS, with half the mandate being met by "advanced nuclear reactors."[160] Similar proposals were considered in several other states.[161] "Sixteen states have policies in place that support the development of new reactors, including recovery of preconstruction costs and [Construction Work in Progress] ("CWIP"), though the specific policies and cost-recovery mechanisms may vary from state to state."[162] CWIP is a mechanism employed by some regulators to allow ongoing projects "to be included in [the] rate base during the construction period."[163] The project owner is also allowed to earn a current return in the revenue requirement; the high capital costs of projects such as nuclear made this an issue for nuclear projects in the 1980s that never saw completion.[164] For example, the Texas Economic Development Act empowers "local school districts to grant subsidies to businesses within their district through deferral of the school-tax portion of property taxes."[165] In 2007, nuclear power plant projects were made eligible, and by 2009 it became the second-largest energy-sector beneficiary in Texas.[166] However, the

159. DOUG KOPLOW, UNION OF CONCERNED SCIENTISTS: NUCLEAR POWER: STILL NOT VIABLE WITHOUT SUBSIDIES 1 (2011), https://perma.cc/W2E8-XUCR.
160. *Id.* at 24.
161. *Id.* These states included Florida, Indiana, South Carolina, and West Virginia. *Id.*
162. *Id.* at 37.
163. LAZAR, *supra* note 29, at 60.
164. *Id.*
165. KOPLOW, *supra* note 159, at 52.
166. *Id.* The gross projected tax abatements exceed $500 million and represent nearly one-fourth of all benefits funded by Texas over the past eight years. *Id.* at tbl.13.

Texas school district subsidies were intended for bringing manufacturing and research jobs into the state, rather than nuclear power.[167] State subsidies are certainly not exclusive to the nuclear plant construction context, with programs and mechanisms employed across various state industries.

The Texas Economic Development Act provides one such example where a state exercised its power to subsidize market participants in other industries, albeit one that also was manipulated to subsidize solar. Tax abatements, such as tax free holidays (which started in 1997 in New York and expanded to twenty states by 2007), are one such method to support state economies.[168] New York began its sales tax holiday to help clothing retailers compete against stores in neighboring New Jersey, where clothes are not subject to the sales tax.[169] Currently, sixteen states and Puerto Rico employ some form of a tax holiday.[170] The practice has occurred for twenty years, despite New York explicitly seeking to favor its businesses over New Jersey's in 1997. The lack of Commerce-Clause-invoked federal intervention lies in part with the inherent power of states to tax within their borders.

While the Commerce Clause broadly confers upon Congress the power to "regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes," it leaves out language concerning intrastate commerce,[171] thus often conflicting with the equally weighted Tenth Amendment.[172] Regarding a state-imposed sales tax, the Tenth Amendment wins.[173] The

167. *Id.*

168. Nathan Marwell & Leslie McGranahan, *The Effect of Sales Tax Holidays on Household Consumption Patterns* 3-4 (Fed. Reserve Bank of Chi., Working Paper No. 2010-06, 2010), https://perma.cc/CVT9-5JKQ.

169. *Id.* at 3.

170. *Sales Tax Holiday Chart By State*, SALES TAX INSTITUTE, https://perma.cc/ZL9P-ZCH7.

171. *See* U.S. CONST. art. I, § 8, cl. 3.

172. *See* U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.").

173. Cari Beth Janssen, *(Un)Happy Holidays: The True Meaning of Sales Tax "Holiday" Policy*, 24 LOY. CONSUMER L. REV. 412, 413–14 (2012). There is no federal sales tax, meaning that without that power being specifically granted to the federal government, "states are free to impose tax on individuals using goods, or retailers providing goods, within the boundaries of that state." *Id.* (referencing U.S. CONST. amend. X.).

Supreme Court has long upheld sales taxes as a valid exercise of state power, despite the dormant Commerce Clause doctrine[174]: "The central rationale [of the dormant Commerce Clause] is to prohibit state or municipal laws whose object is local economic protectionism, laws that would excite those jealousies and retaliatory measures the Constitution was designed to prevent."[175] However, "the dormant Commerce Clause does not prevent states from creating incentive structures to attract certain kinds of business."[176]

It appears that Tier 3 of the CES does not discriminate against interstate commerce on its face, and thus, is not invalid per se.[177] Therefore, notwithstanding the court's conclusion in *Coalition for Competitive Electricity* that New York acted as a market participant rather than as a regulator,[178] a potential violation, if any, by the ZEC program under a dormant Commerce Clause analysis may be governed by the test outlined by the U.S. Supreme Court in *Pike v. Bruce Church, Inc.*[179]

Under *Pike*, a state statute which may have an indirect effect on interstate commerce (but does not directly discriminate) may be

174. *See* Madden v. Kentucky, 309 U.S. 83, 90–93 (1940) (holding that a Kentucky bank deposit tax did not violate the Fourteenth Amendment because the use of banks was not "a privilege of national citizenship," and that, as long as state policies were constitutional, "the power of the state over taxation is plenary"); *see also* Complete Auto Transit, Inc. v. Brady, 430 U.S. 274, 288–89 (1977) (holding that a "privilege of doing business" tax by a state within its borders, even when part of a multi-state transaction, does not violate the Commerce Clause); McGoldrick v. Berwind-White Coal Mining Co., 309 U.S. 33, 45 (1940) (citing Gibbons v. Ogden, 22 U.S. 1, 187 (1824)) (holding that states may constitutionally levy taxes, so long as the tax does not interfere with interstate commerce).

175. Energy & Env't Legal Inst. v. Epel, 43 F. Supp. 3d 1171, 1176 (D. Colo. 2014) (citing C & A Carbone, Inc. v. Town of Clarkstown, 511 U.S. 383, 390 (1994)). Interesting for the purposes of this Note, *Epel* involved a dispute in the energy industry over whether Colorado could require utilities operating in the state to obtain an increasing proportion of their electricity from renewables. *Id.* The plaintiffs ultimately failed to show that Colorado violated the dormant Commerce Clause. *Id.*

176. *Id.* at 1180.

177. *See* Nat'l Elec. Mfrs. Ass'n v. Sorrell, 272 F.3d 104 (2d Cir. 2001) (holding that state statutes which clearly discriminate against interstate commerce are virtually invalid per se).

178. Coal. for Competitive Elec. v. Zibelman, No. 16-CV-8164, 2017 U.S. Dist. LEXIS 116140, at *63 (S.D.N.Y. Jul. 25, 2017).

179. Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970).

invalid if the "burden imposed on [interstate] commerce is clearly excessive in relation to the putative local benefits."[180] Put differently, the Seventh Circuit, citing *Pike*, stated that "where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits."[181] The Second Circuit, which would have jurisdiction should any litigation concerning the ZEC program be removed to federal court and later appealed, has also heard cases applying the *Pike* test. In *Brown & Williamson Tobacco Corp. v. Pataki*, the Second Circuit reversed the district court's holding and found that, under *Pike*, Section 1399-II of New York's Public Health Law, which prohibited cigarette sellers from shipping and transporting cigarettes directly to New York consumers, did not violate the dormant Commerce Clause.[182] There, the court opined that the *Pike* balancing test "does not invite courts to second-guess legislatures by estimating the probable costs and benefits of the statute," and that under *Sorrell*, "a burden that seems incommensurate to the statute's gains survives *Pike* as long as it affects intrastate and interstate interests similarly—the similar effect on interstate and intrastate interests assuaging the concern that the statute is designed to favor local interests."[183] Furthermore, in upholding the prohibition, the Second Circuit found that "the [s]tatute, at most, *incidentally* affects interstate commerce."[184]

Much more recently and within the energy context, the Second Circuit again applied the *Pike* test in *Allco*. In addition to its failed preemption claims, Allco asserted that the Connecticut DEEP's solicitation process discriminated against its facilities in Georgia and New York.[185] Connecticut law does not allow non-neighboring, out-of-state RECs to count towards Connecticut utilities' RPS requirements and only permits neighboring-state producers to sell

180. *Id.*
181. Cavel Int'l, Inc. v. Madigan, 500 F.3d 551, 555 (7th Cir. 2007) (quoting *Pike*, 397 U.S. at 142).
182. Brown & Williamson Tobacco Corp. v. Pataki, 320 F.3d 200, 219 (2d Cir. 2003).
183. *Id.* at 209.
184. *Id.* at 217 (emphasis added).
185. Allco Fin. Ltd. v. Klee, 861 F.3d 82, 93–94 (2d Cir. 2017).

RECs to Connecticut utilities after paying transmission fees.[186] Applying *Pike* to the Georgia facility, the Second Circuit rejected both assertions and held that the RPS is facially nondiscriminatory; the court reasoned that a Georgia-based generator would not transmit electricity to the Northeast-based ISO-NE grid for sale.[187] Therefore, competition would not be unduly undermined by Connecticut's program.[188] Thus, the Second Circuit held that the RPS program is not "clearly excessive in relation to the putative local benefits" and, thus, passed the *Pike* test in relation to the Georgia facility. The Second Circuit brushed aside the allegations concerning the New York facility, determining that "Allco has failed sufficiently to plead that such [transmission] charges are anything more than use fees, analogous to road tolls, which regularly pass constitutional muster."[189] Ultimately, the courts have demonstrated that incidental effects are not enough to fail *Pike* scrutiny. Because the ZEC program's effects on interstate commerce are *de minimis* at best, absent action by Congress prohibiting the valuation of zero-carbon attributes exclusively, the program does not violate the dormant Commerce Clause.

V. CONCLUSION

The end of nuclear power in New York may be on the horizon, but the state's efforts to stave off the inevitable are by no means impermissible. The New York PSC appears ready to defend its two-pronged position on appeal: (1) that ZECs, like RECs and other certificate mechanisms which value non-energy attributes of energy production, are legally valid, and (2) because it leaves FERC's wholesale auction scheme undisturbed, it does not go too far as to disturb the Commerce Clause. At best, the fact that these ZECs enable plants to remain in operation maintains the status

186. *Id.*

187. *Id.* at 103; ISO-NE is the Independent System Operator that is responsible for operating the wholesale power market and maintaining the transmission network of the New England region. *Electric Power Markets: New England (ISO-NE)*, FERC, https://perma.cc/664X-8XLB (last updated Aug. 1, 2017).

188. *Allco Fin. Ltd.*, 861 F.3d at 106. The court arrived at this conclusion by determining that RECs produced by the Georgia facility are dissimilar to those produced by generators able to connect to Connecticut's grid. *Id.* at 105; *see also* Gen. Motors Corp. v. Tracy, 519 U.S. 278, 303–04 (1997).

189. *Allco Fin. Ltd.*, 861 F.3d at 108.

quo without substantially altering the wholesale auction scheme. As declared in *Pike*, and elaborated by *Brown & Williamson Tobacco Corp.*, incidental effects such as these are not enough to warrant a finding that the state's actions intrude on federal authority.[190] As such, without a valid Commerce Clause argument to the contrary, New York is well within its power under the Tenth Amendment to regulate in this fashion.

190. *See* discussion of *Pike* and *Brown & Williamson Tobacco Corp. supra* pp. 30–31.