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Public Utility's Potential

ABSTRACT. State public utility commissions are at the forefront of the clean-energy transition. These state agencies, which have jurisdiction over energy-generation resources, distribution systems, and retail energy sales, exercise significant control over the energy systems that are responsible for much of the United States' greenhouse-gas emissions. But state public utility commissions have been slow to embrace their role in addressing climate change and facilitating a decarbonized energy grid. Some scholars attribute this reluctance to a traditional divide between energy and environmental law: energy law is said to focus on economic regulation, while environmental law focuses on regulating environmental pollutants and public health. This divide, scholars argue, prevents public utility commissioners from considering climate concerns in their energy decisions, thus fundamentally hampering the clean-energy transition.

This Feature challenges the assumed dichotomy between energy and environmental law and argues that state public utility commissions as currently constituted have significant power to address climate change and the clean-energy transition. To do so, this Feature uncovers the forgotten history of a full-scale energy transition that New York City underwent in the 1940s and 1950s. During that period, New York City suffered from a severe smoke-pollution problem due to its reliance on coal-based fuels. Rather than addressing this problem through traditional air-pollution controls, New York's Public Service Commission spearheaded a transformation of the city's energy grid from one that relied on coal to one that relied on "smokeless" natural gas. In a ten-year period, the Commission, coordinating with the city's utilities, used the tools of public utility regulation to obtain previously inaccessible supplies of natural gas, construct new transmission lines, and changeover millions of appliances in homes across New York City to make them compatible with natural gas.

The energy transition orchestrated by New York's public utility regulator provides a glimpse into the potentially transformative role of public utility regulation. From this history, the Feature makes three contributions. First, it demonstrates that, contrary to conventional scholarly wisdom, achieving environmental goals through energy regulation is perfectly within the wheelhouse of energy law. Second, it argues that public utility commissions could play a significant role in implementing and executing a clean-energy transition using extant tools of public utility regulation. Third, it suggests that modern public utility commissions' reluctance to engage in the clean-energy transition lies in other factors, such as deeper structural and political dynamics — not doctrinal limitations. The Feature concludes that public utility's potential within state and local governments is broader than our modern imagination assumes.

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FEATURE CONTENTS

INTRODUCTION

States are likely to be at the forefront of efforts to address climate change in the United States. That is because the laws and institutions that regulate our energy systems are incredibly fractured.[1] State governments—in particular, the state agencies tasked with regulating public utilities like gas and electric companies, known as public utility commissions—historically exercised plenary authority over their energy and electricity systems.[2] And although Congress eventually granted the federal government jurisdiction over the interstate aspects of our energy systems, federal law explicitly preserves exclusive state authority over much of the energy sector.[3] As a result, states and their public utility commissions will, in large part, determine whether and how we tackle climate change and transition to a clean-energy economy.

Efforts by states to address climate change have drawn attention to a perceived divide between environmental law and energy law. Legal scholars have described these fields as distinct disciplines, with environmental law historically concerned with regulating public health and the environment, and energy law historically concerned with the economics of regulating natural monopolies.[4] With climate change becoming the dominant issue in both fields, however, scholars have observed increasing overlap between the two, particularly through

1. *See* Alexandra Klass, Joshua Macey, Shelley Welton & Hannah Wiseman, *Grid Reliability Through Clean Energy*, 74 STAN. L. REV. 969, 976-77 (2022) (describing the "disaggregated" nature of the United States' "energy regulatory system," in which power is divided amongst local, state, and federal governments).

2. *See* Fed. Energy Regul. Comm'n v. Elec. Power Supply Ass'n, 577 U.S. 260, 265-66 (2016) ("In the early 20th century, state and local agencies oversaw nearly all generation, transmission, and distribution of electricity.").

3. *See, e.g.*, Matthew R. Christiansen & Joshua C. Macey, *Long Live the Federal Power Act's Bright Line*, 134 HARV. L. REV. 1360, 1363 (2021) (explaining that, under the Federal Power Act, "Congress explicitly reserved oversight of several important parts of the electricity sector for exclusive regulation by the states"); Hughes v. Talen Energy Mktg., LLC, 578 U.S. 150, 166 (2016) (noting that the Federal Energy Regulatory Commission (FERC) has jurisdiction over interstate sales, but that states may have the ability to "encourage development of new or clean generation" electricity through "tax incentives, land grants, direct subsidies, [and] construction of state-owned facilities").

4. *See infra* Section I.B. The term "natural monopoly" is often used to describe a scenario in which "the entire demand within a relevant market can be satisfied at lowest cost by one firm rather than by two or more." Richard A. Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548, 548 (1968). Electricity and natural gas companies are often considered to be natural monopolies and subjected to regulation as such. *See infra* Section I.B. n.70.

state legislative efforts around climate change.[5] Despite these legislative efforts, state public utility commissions have been slow to incorporate climate considerations into their energy decision-making—a phenomenon that some scholars have attributed to the traditional energy/environmental law divide.[6] As a result, some have argued that resolving this divide is one of the most important steps in instituting a clean-energy transition.[7]

This Feature challenges the assumed dichotomy between energy law and environmental law. It argues that state public utility commissions, as currently constituted, have significant power to address climate change and the clean-energy transition. The vision of energy law presented in the convergence debate is a narrow one, but historically, energy law was a more capacious field. Much of energy law is a form of public utility regulation, a legal field predating not only contemporary environmental laws but also most modern regulatory regimes. This Feature argues that state energy regulators incorporated environmental issues like air pollution in their decision-making long before the creation of our modern environmental-law regime. Because these state regulators continue to maintain substantial (and sometimes exclusive) authority over our energy systems,[8] this history suggests that state public utility commissions could play a vital role in facilitating a clean-energy transition to an extent much greater than is commonly recognized.[9]

As a prime example, the Feature uncovers the forgotten history of a full-scale energy transition in New York City in the 1940s and 1950s. During that period,

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5. *See, e.g.*, Alexandra B. Klass, *Climate Change and the Convergence of Environmental and Energy Law*, 24 FORDHAM ENV'T L. REV. 180, 183-200 (2013); Lincoln L. Davies, *Alternative Energy and the Energy-Environment Disconnect*, 46 IDAHO L. REV. 473, 504-06 (2010); Amy J. Wildermuth, *The Next Step: The Integration of Energy and Environmental Law*, 31 UTAH ENV'T L. REV. 369, 369, 383-88 (2011).

6. *See infra* Section I.B.

7. *See, e.g.*, Davies, *supra* note 5, at 475 ("Until the disjunction between energy and environmental law is repaired, one of the most fundamental barriers to a new and different energy future remains.").

8. *See infra* Section IV.A.

9. Some commentators outside of the legal academy have identified state public utility commissions as important institutions in the clean energy transition. *See, e.g.*, Jessie Ciulla & Cory Felder, *The Untapped Potential of Public Utility Commissions*, ROCKY MOUNTAIN INST. (July 12, 2021), https://rmi.org/the-untapped-potential-of-public-utility-commissions [https://perma.cc/69TK-2Z3M]; Charles Hua & Leah C. Stokes, *How to Transform Public Utility Commissions*, THIRD ACT, https://thirdact.org/blog/how-to-transform-public-utility-commissions [https://perma.cc/W7XQ-PAQA]. Still, this commentary has focused on the relatively narrow conception that we have of state public utility commissions today. By uncovering and recounting the largely forgotten role that state public utility commissions historically played in facilitating energy transitions, this Feature suggests that state public utility commissions may be even more important than the modern commentary suggests.

New York suffered from severe smoke pollution from coal-based fuels. Rather than addressing this problem through traditional air-pollution controls, New York relied on energy regulation to clear the city's air. In particular, the New York Public Service Commission (PSC) (the state's public utility commission) spearheaded a decade-long effort to transition the city's energy grid from coal to "smokeless" natural gas.[10] Using original archival material consisting of the PSC's annual reports, case files, and utility-company records, the Feature reconstructs how the PSC, in collaboration with the city's utilities, obtained previously inaccessible supplies of natural gas, constructed new transmission lines to transport that gas into the city, and changed over millions of appliances in homes across the city.[11] The result was the first successful effort towards smoke abatement in New York City in the modern era.

The PSC executed this transition using traditional tools of public utility regulation that still exist today.[12] Under New York's Public Service Law, the PSC is given the authority to set utilities' rates and regulate their quality and conditions of service.[13] The PSC wielded those versatile tools as an aggressive advocate for and strategic coordinator of the public interest. For instance, the PSC advocated for the interests of the New York public before federal regulators in charge of managing interstate natural gas infrastructure.[14] The PSC used its authority over the utilities' standards of service to oversee the retrofitting of the city's

10. *See infra* Section II.B, Part III.

11. *See infra* Part III. As far as the author knows, New York's historical energy transition has been recounted only twice before: once in an article by Chris Castaneda & Joseph Pratt, *New Markets, Outmoded Manufacturing: The Transition from Manufactured Gas to Natural Gas by Northeastern Utilities After World War II*, 18 BUS. & ECON. HIST. 238 (1989), which summarizes JOSEPH PRATT, A MANAGERIAL HISTORY OF CONSOLIDATED EDISON OF NEW YORK, 1937-1981 (1988). However, these sources do not appear to have relied on the original case files of the New York Public Service Commission (PSC), currently stored in the New York State Archives in Albany, New York. Thus, as far as the author is aware, this Feature is the first to uncover and rely on these materials.

12. "Public utility regulation," as it is used here, refers to a model of regulation through which the government controls the entry of companies into an industry, fixes their prices, controls their quality and conditions of services, and imposes an obligation to serve all comers under reasonable conditions. *See* 1 ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 3 (5th ed. 1993). Recently, legal scholars have expressed interest in reviving the field of public utility regulation and assessing its application to a broader range of industries. *See, e.g.*, MORGAN RICKS, GANESH SITARAMAN, SHELLEY WELTON & LEV MENAND, NETWORKS, PLATFORMS, AND UTILITIES LAW AND POLICY 1-2 (2022). This Feature contributes to that effort insofar as it explores how public utility regulation was historically used as inspiration for the modern day.

13. *See infra* Section III.A; *see also* RICKS ET AL., *supra* note 12, at 24-30 (describing public utility regulation's "regulatory toolkit" as including rate setting and quality-of-service requirements).

14. *See infra* Section III.B.

distribution infrastructure.[15] And it used its authority over the utilities' rates and accounting practices to allocate the transition's costs between the ratepayers and the utilities.[16] Thus, a full-scale energy transition happened mostly through and within the intricacies of state-level public utility regulation.

This lost history of New York's energy transition provides several important lessons for the modern day. First, it reveals that, far from being fundamentally divided or antagonistic, energy and environmental law ought to be understood as deeply connected. Both are fields of law that can address environmental problems. In fact, New York's natural gas transition suggests that energy-law tools may be uniquely well-suited to an energy transition, which is precisely the solution needed to respond to climate change.[17]

Second, the New York example suggests that state public utility commissions could play a very different role in today's clean-energy transition than they currently do. They could coordinate and advocate for the public interest in disputes over what our energy systems ought to look like. They could cajole utilities to get them on board with the energy transition and calculate cost-allocation methods to reduce parties' resistance to the transition. They could adopt bold and creative methods for converting our energy infrastructure. In essence, they could be agents of change rather than symbols of the status quo. The fact that many state public utility commissions are not playing this role is a product not of legal constraints but of underlying structural and political dynamics.

Third, the connection between environmental and energy law that this Feature reveals also illuminates conceptual errors that have occurred in the field of environmental law. A series of environmental-law cases, including *Massachusetts v. EPA*,[18] *Utility Air Regulatory Group v. EPA*,[19] and, most recently, *West Virginia v. EPA*,[20] have involved a line of reasoning that characterizes efforts to regulate greenhouse gases as unbounded uses of agency authority. The Feature demonstrates how this line of reasoning reflects the same erroneous energy/environmental law divide — that is, environmental law stops when energy law starts, and vice versa. The Feature argues that rejecting this way of thinking and instead recognizing that energy and environmental regulators play on the same field will

15. *See infra* Sections III.C, III.D.

16. *See infra* Section III.E.

17. *Cf.* William Boyd, *Public Utility and the Low-Carbon Future*, 61 UCLA L. REV. 1614, 1614 (2014) (proposing that an "expanded notion of public utility" may be necessary to address climate change).

18. 549 U.S. 497 (2007).

19. 573 U.S. 302 (2014).

20. 597 U.S. 697 (2022).

be necessary to address climate change in both the energy and environmental contexts.[21]

At bottom, this Feature argues that the potential for state public utility commissions to address climate change and facilitate a clean-energy transition is broader than public imagination assumes. These state agencies exercise unique authority over our energy systems — authority that has not diminished over time. Indeed, given states' exclusive jurisdiction over some aspects of energy regulation, that authority will be essential regardless of federal efforts to address climate change. As such, addressing the most pressing environmental problem of our time — climate change — will require relying on mostly obscure state public utility commissions using mostly obscure tools of public utility regulation.

The Feature proceeds in four Parts. Part I describes the important role that state public utility commissions play in our clean-energy transition; the slow progress to date in that transition; and the conventional wisdom that this delinquency reflects a traditional divide between energy and environmental law. Part II challenges this conventional wisdom by recounting the story of the energy transition New York City underwent in the 1940s and 1950s, highlighting public utility regulators' use of energy law to address a classic environmental problem. Part III unearths archival material laying out the New York PSC's comprehensive use of its authority under public utility regulation to oversee and implement the transition. Part IV explains what state public utility commissions today can learn from this history and discusses how those commissions could take on a broader, more proactive role in addressing our most serious environmental problems. Part V concludes that, contrary to conventional wisdom, energy law can respond to climate change — and indeed, energy law's historical role in facilitating energy transitions suggests that today's clean-energy transition is not so unprecedented or unbounded as some might believe.

I. PUBLIC UTILITY COMMISSIONS AND THE ENERGY/ENVIRONMENTAL LAW DIVIDE

This Part explains the role that state public utility commissions play in regulating our energy systems. It also describes how some state public utility commissions have been resisting the clean-energy transition. It then summarizes how some legal scholars have attributed this resistance to a fundamental division between energy and environmental law.

21. *See infra* Section IV.D.

A. Public Utility Commissions and the Clean-Energy Transition

State public utility commissions have the potential to be at the forefront of the clean-energy transition in the United States. Under our federalist system of energy regulation, Congress gave states exclusive jurisdiction over significant parts of our electricity and natural gas systems.[22] In particular, state public utility commissions are in charge of setting the retail rates at which electricity and natural gas are sold to consumers;[23] overseeing the siting of local energy and distribution facilities and high-voltage-electricity transmission lines;[24] and, perhaps most crucially, influencing the types of generation that utilities use.[25] Given that electricity generation and natural gas together make up over half of the United States' total greenhouse-gas emissions,[26] state public utility commissions will be crucial to any serious effort to mitigate climate change.

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22. The two primary federal statutes regulating our electricity and natural gas systems are the Federal Power Act of 1935, 16 U.S.C. §§ 791a-828c (2018), and the Natural Gas Act of 1938, 15 U.S.C. §§ 717-717w (2018). When Congress passed the Federal Power Act, it "explicitly reserved oversight of several important parts of the electricity sector for exclusive regulation by the states." Christiansen & Macey, *supra* note 3, at 1363. The Natural Gas Act is modeled after the Federal Power Act and adopts the same exclusive jurisdictional divide. *See id.* at 1366 & n.29.

23. *See* 15 U.S.C. § 717(c) (2018); 16 U.S.C. § 824(b) (2018); *see also* Fed. Energy Regul. Comm'n v. Elec. Power Supply Ass'n, 577 U.S. 260, 265 (2016) ("[T]he law places beyond FERC's power, and leaves to the States alone, the regulation of 'any other sale'—most notably, any retail sale—of electricity."); Oneok, Inc. v. Learjet, Inc., 575 U.S. 373, 386 (2015) (explaining that retail rates of natural gas are "firmly on the States' side" of regulatory jurisdiction (quoting Nw. Cent. Pipeline Corp. v. State Corp. Comm'n of Kan., 489 U.S. 493, 514 (1989))).

24. *See* 15 U.S.C. § 717(c) (2018); 16 U.S.C. § 824(b)(1) (2018); *see also* Klass et al., *supra* note 1, at 977 ("States control many decisions about the construction and siting of electric generating plants and the location of virtually all electric transmission lines."). In around a dozen states, agencies other than the state public utility commission are in charge of siting transmission lines. *See* Sharon B. Jacobs, *Agency Genesis and the Energy Transition*, 121 COLUM. L. REV. 835, 854 & n.106 (2021).

25. Hughes v. Talen Energy Mktg., LLC, 578 U.S. 150, 154 (2016) ("The States' reserved authority includes control over in-state 'facilities used for the generation of electric energy.'" (quoting 16 U.S.C. § 824(b)(1) (2012))); *see* Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 205 (1983) ("Need for new power facilities, their economic feasibility, and rates and services, are areas that have been characteristically governed by the States."). State public utility commissions' control over generation choices can vary depending on how much states chose to "deregulate" or "restructure" their energy systems. *See infra* Section IV.A.

26. *See Sources of Greenhouse Gas Emissions*, U.S. ENV'T PROT. AGENCY (Oct. 5, 2023), https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions [https://perma.cc/M799-J8LB]. The U.S. Environmental Protection Agency (EPA) breaks down greenhouse gas emissions from five sectors: "agriculture" (10%), "transportation" (28%), "electric power"

Recognizing the role that state public utility commissions play in making states' energy decisions, policymakers at both the state and federal level have pushed state commissions to incorporate climate considerations into their energy regulations. Thirty-six states, the District of Columbia, and Puerto Rico have adopted requirements or goals that their state-regulated utilities procure a portion of their electricity from renewable[27] or zero-emission[28] energy resources.[29] In addition, at least thirteen states and the District of Columbia have passed or proposed legislation setting technology-specific targets for certain renewable and zero-emission resources.[30] Twenty-two states have passed or proposed legislation that would set carbon-emission-reduction targets or institute other policies, like carbon pricing, to reduce emissions from their energy sectors.[31] States have also adopted a variety of other incentives to subsidize renewable- or clean-energy technologies, ranging from tax incentives to net-metering programs that encourage customers to install rooftop solar systems on their houses.[32]

(25%), "industry" (23%), and "commercial & residential" (13%). *Id.* The "industry," "electric power," and "commercial & residential" sectors all rely on the burning of fossil fuels to create energy for these sectors, which would include electricity generation and natural gas consumption, so I have included them in the rough calculation here. However, these categories may capture additional greenhouse gases *not* generated from electricity generation or natural gas, for instance, through the use of refrigerants for cooling in businesses and homes, so these percentages would be an overestimate of the emissions traceable to natural gas and/or electricity generation.

27. What technology qualifies as a "renewable energy" resource varies state by state. *See State Renewable Portfolio Standards and Goals*, NAT'L CONF. STATE LEGISLATURES (Aug. 13, 2021), https://www.ncsl.org/energy/state-renewable-portfolio-standards-and-goals [https://perma.cc/YU4Q-DHWF].

28. Although what qualifies as a zero-emission or clean-energy resource varies by state, the term is often intended to capture those energy resources that have zero carbon emissions. *Id.* A resource could be "clean" without being "renewable," with a classic example being nuclear power. *Id.*

29. These requirements are often referred to as "Renewable Portfolio Standards" (RPS) or "Clean Energy Standards" (CES). For scholarly work on RPS, see Shelley Welton, *The Bounds of Energy Law*, 62 B.C. L. REV. 2339, 2362 n.122 (2021). For the most recent information available on states' RPS or CES status, see Emily Apadula, Rebekah de la Mora, Justin Lindemann, Brian Lips, Vincent Potter & Autumn Proudlove, *50 States of Power Decarbonization: Q1 2023 Quarterly Report*, NC CLEAN ENERGY TECH. CTR. 31 fig.9 (2023), https://static1.squarespace.com/static/5ac5143f9d5abb8923a86849/t/6462a69965f6bc684d430a02/1684186780921/Q1-23-PowerDecarb-Final.pdf [https://perma.cc/X7F8-PKAW].

30. *See* Apadula et al., *supra* note 29, at 34 tbl.5 (listing state procurement targets for distributed energy generation, solar, battery storage, offshore wind, and energy efficiency).

31. *Id.* at 70 tbl.8 (summarizing state carbon-emission targets and carbon policies).

32. *See* Welton, *supra* note 29, at 2362 & n.123.

Federal climate policy also reflects an effort to make clean-energy technology more attractive to states and their utilities. For instance, the most recent federal legislation intended to combat climate change, the Inflation Reduction Act, incentivizes the construction of zero-emission energy technologies through tax credits and grants.[33]

But these federal financial incentives—and even the state-level legislative mandates for renewable energy procurement—rely on actions by state public utility commissions and the utilities they regulate to be effective. It is the state public utility commissions who often implement state renewable portfolio standards.[34] They ensure that utilities are on track with legislative requirements to build new renewable resources or acquire sufficient renewable-energy generation. And they often review utilities' procurement plans, which means approving or rejecting utilities' plans to rely on zero-emission resources to supply energy to their consumers.[35] Additionally, because many states regulate their utilities as natural monopolies, financial incentives intended to make clean-energy technologies cheaper do not necessarily carry the same punch that they would in a free-market system: monopolistic utilities care more about what their public utility commissions will authorize them to recover in their ratemaking proceedings than about how cheap a new solar plant is.[36] Because of the complex interplay of regulatory bodies and regulated markets in the energy field, the success of many of these state and federal climate initiatives depends on the actions of utilities and the state public utility commissions that regulate them.

To date, this success has been modest. In 2022, fossil fuels—in the form of coal, natural gas, or oil—were the largest contributing resource in the electricity-

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33. *See* Inflation Reduction Act §§ 13105, 13201, Pub. L. No. 117-169, 136 Stat. 1818, 1929-32 (2022) (codified as amended in scattered sections of 26 U.S.C.).

34. *See* U.S. ENV'T PROT. AGENCY, ENERGY AND ENVIRONMENT GUIDE TO ACTION 5-6 (2015) https://www.epa.gov/sites/default/files/2017-06/documents/guide_action_full.pdf [https://perma.cc/2J49-ZVE9] (describing state renewable portfolio standards and explaining that a "state's PUC or other state agency is generally tasked with establishing the detailed rules governing RPS requirements").

35. For an overview of state public utility commissions' involvement in utility procurement and planning processes in the context of environmental goals, see U.S. ENV'T PROT. AGENCY, ENERGY AND ENVIRONMENT GUIDE TO ACTION: ELECTRICITY RESOURCE AND PROCUREMENT PLANNING 1-5 (2022) https://www.epa.gov/system/files/documents/2022-08/Electricity%20Resource%20Planning%20and%20Procurement_508.pdf [https://perma.cc/3YQN-N95F].

36. *See* Aneil Kovvali & Joshua C. Macey, *The Corporate Governance of Public Utilities*, 40 YALE J. REG. 569, 582-91 (2023) (describing the regulatory framework for public utilities and why this framework may not incentivize utilities to adopt the least-cost resource procurement option).

generation mix in all but fourteen states.[37] In only sixteen states did clean-energy resources (defined as hydropower, nuclear power, solar, wind, geothermal, and biomass) make up at least half of the state's net generation mix.[38] Nationwide, almost forty percent of electricity generation came from natural gas in 2022, and almost twenty percent came from coal.[39] And this is just the electricity sector. It does not include, for instance, the residential sector more broadly, where more than half of all homes in the United States still rely on natural gas for space and water heating, cooking, and drying clothes.[40]

This is not to say that there has been no progress in the clean-energy transition. Carbon emissions from the entire U.S. energy sector decreased around seventeen percent from their peak in 2007, and they had been on a downward trend before the COVID-19 pandemic[41] (although researchers have attributed most of these emissions reductions to a shift from coal to natural gas).[42] The share of

37. *See* Apadula et al., *supra* note 29, at 8 fig.1. Of the fourteen states where fossil fuels were not the dominant resource, four states (Oregon, Washington, Idaho, and Vermont) relied most heavily on hydropower for their electricity generation. *Id.* Five states (Illinois, Tennessee, South Carolina, Maryland, and New Hampshire) relied most heavily on nuclear power. *Id.* Five states (South Dakota, Iowa, Kansas, Oklahoma, and New Mexico) relied most heavily on wind. *Id.*

38. *Id.* at 10 fig.3 (identifying at least fifty percent of the electricity generation in California, Montana, Illinois, Idaho, Iowa, Kansas, Maine, Minnesota, New Hampshire, New York, Oregon, South Carolina, South Dakota, Tennessee, Vermont, and Washington as being derived from clean-energy sources).

39. *What Is U.S. Electricity Generation by Energy Source?*, U.S. Energy Info. Admin. (Oct. 2023), https://www.eia.gov/tools/faqs/faq.php?id=427&t=3 [https://perma.cc/NMV2-565F].

40. *Natural Gas Explained: Use of Natural Gas*, U.S. Energy Info. Admin. (Apr. 28, 2023), https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php [https://perma.cc/UU34-9VPG].

41. *EIA Expects U.S. Energy-Related Carbon Dioxide Emissions to Increase in 2022 and 2023*, U.S. Energy Info. Admin. (Jan. 20, 2022), https://www.eia.gov/todayinenergy/detail.php?id=50958 [https://perma.cc/AM3S-TQT5] ("In 2020, U.S. energy-related CO_2 emissions decreased by 11% as energy use declined during the onset of the COVID-19 pandemic. As the U.S. economy began to return to pre-COVID activity, CO_2 emissions increased by an estimated 6% in 2021."). The U.S. Energy Information Administration expects continued increases through 2022 and that energy-related carbon emissions will remain flat in 2023. *Id.*

42. *See U.S. Energy-Related Carbon Dioxide Emissions, 2021*, U.S. Energy Info. Admin. (Dec. 14, 2022), https://www.eia.gov/environment/emissions/carbon/archive/2021 [https://perma.cc/6BE4-F95R] (explaining that the carbon-emissions intensity of U.S. electricity generation decreased from 0.61 metric tons per megawatt-hour to 0.39 metric tons per megawatt-hour from 2005 to 2021, with fifty-eight percent of those avoided emissions due to a switch from higher-carbon fuel generation to natural gas generation and forty-two percent due to growth in zero-carbon generation).

electricity generation from renewable energy is increasing, and the price of renewable resources has dropped dramatically.[43]

But as Shelley Welton has pointed out, this is too little too late: "Starting from a place of climate science, rather than a catalogue of U.S. greenhouse-gas emissions data, reveals a bleak picture."[44] To meet the internationally agreed-upon target to limit global temperature increases to two degrees Celsius,[45] the United States will need to achieve emissions reductions of approximately five to seven percent annually going forward, a rate historically reached only during the global recession of 2008 and the COVID-19 pandemic.[46]

Because state public utility commissions have so much influence over states' energy systems, the plodding pace of the clean-energy transition is at least in part due to the failure of state public utility commissions to embrace the kind of clean-energy transition that is required. Granted, some state public utility commissions have been leading the charge in the clean-energy transition.[47] But a number of state public utility commissions have pushed back against climate-change mitigation and clean-energy initiatives in several ways.

First, some state public utility commissions have resisted calls to incorporate considerations of the harms of climate change into their decision-making. For example, in 2022, South Carolina's Public Service Commission directed a state utility to calculate its long-term energy needs based on a model that did not include a carbon-emission-reduction policy.[48] The utility had voluntarily proposed to reduce the carbon intensity of its energy fleet.[49] The Commission not only rejected this proposal but also ordered the utility to estimate an "economic" timeline for its remaining coal plants that does not include any consideration of the plants' carbon emissions.[50]

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43. *See* Welton, *supra* note 29, at 2365-66.

44. *Id.* at 2368.

45. *See* Paris Agreement to the United Nations Framework Convention on Climate Change art. 2, Dec. 12, 2015, T.I.A.S. No. 16-1104.

46. Welton, *supra* note 29, at 2368.

47. For example, California's Public Utility Commission has been implementing a statewide effort to reduce greenhouse-gas emissions since California's passage of AB 32. *See* Daniel A. Mazmanian, John L. Jurewitz & Hal T. Nelson, *State Leadership in U.S. Climate Change and Energy Policy: The California Experience*, 29 J. ENV'T & DEV. 51, 52-70 (2019).

48. *See* S.C. P.S.C. Order No. 2022-643, at 7 (Sept. 21, 2022), Docket Nos. 2019-224-E & 2019-225-E; *see also* S.C. P.S.C. Order No. 2021-447, at 10-12, 20 (June 28, 2021), Docket No. 2019-224-E (noting that the proposed policy without a carbon-reduction strategy was the "least cost plan").

49. *See* S.C. P.S.C. Order No. 2022-643, at 7 (Sept. 21, 2022), Docket Nos. 2019-224-E & 2019-225-E.

50. S.C. P.S.C. Order No. 2023-189, at 4 (Mar. 22, 2023), Docket No. 2019-224-E.

Similarly, in 2020, the Pennsylvania Public Utility Commission denied requests that the Commission require Philadelphia's public utility to consider the impacts of climate change in its long-term planning.[51] In so doing, the Commission rejected the position of its administrative law judges,[52] who had concluded that the "Commission should look at these issues now before it reaches a point when [the utility's] business model becomes increasingly expensive and burdensome to the ratepayers" due to climate change.[53]

Second, public utility commissions have approved long-term plans for energy development that include constructing new fossil-fuel resources. For instance, in 2020, the Alabama Public Service Commission approved the state public utility's request to acquire thousands of megawatts of additional natural gas capacity.[54] In the process, the Commission dismissed arguments by intervenors that the utility should not construct new natural gas units because of their contribution to climate change and the risk that these assets would become stranded in the next several decades.[55] Commissions in Florida, Georgia, and Mississippi have approved similar natural gas projects over the last several years.[56]

More broadly, even with the Inflation Reduction Act's expansion of federal financial incentives to encourage renewable and clean-energy investments, state-level energy-planning processes following passage of the Act indicate that utilities continue to propose significant amounts of natural gas infrastructure.[57] They do so even where such proposals contradict states' legislatively adopted carbon-reduction requirements. For instance, in 2020, Virginia passed the Virginia Clean

51. Pa. P.U.C. Opinion and Order, Docket No. R-2020-3017206, at 91-95 (Nov. 19, 2020).

52. *Id.* at 95.

53. *Id.* at 80. For additional examples of this phenomenon, see *Mandate Versus Movement: State Public Service Commissions and Their Evolving Power over Our Energy Sources*, 135 HARV. L. REV. 1616, 1624-31 (2022), which discusses examples from the Maryland Public Service Commission, the Wisconsin Public Service Commission, the Montana Public Service Commission, the Hawaii Public Utility Commission, and the Iowa Utilities Board.

54. *See* Ala. P.S.C. Docket No. 32953, at 2-3 (Aug. 14, 2020).

55. *See id.* at 36-37. "Stranded" costs refer to "those investments that a utility has incurred to meet its obligation to serve customers with an expectation of cost recovery through rates, but which can no longer be recovered due to a change in the industry." Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 BROOK. L. REV. 645, 646-47 (2017). Here, it refers to fossil-fuel resources whose value is likely to decrease significantly as climate change forces a shift away from carbon-intensive infrastructure.

56. *See* Adam D. Orford, *Natural Gas and Net Zero: Mutually Exclusive Pathways for the Southeast*, 39 GA. ST. U. L. REV. 1033, 1076-80 (2023) (discussing southeastern states' plans to rely on natural gas for future electricity generation and listing examples of public utility commissions' approvals of natural gas projects).

57. *See* Apadula et al., *supra* note 29, at 114-15 (observing that, as of the first quarter of 2023, the largest aggregate planned resource additions across long-term utility-procurement plans in twenty-five states were, first, solar; second, wind; third, storage; and fourth, natural gas).

Economy Act, which includes the state's first renewable-portfolio standard and aims to phase out fossil-fuel generation by 2050.[58] In 2023, however, Virginia's largest gas and electric utility submitted a planning document to the state's public utility commission that presented five "alternative plans" for the utility's long-term energy outlook.[59] All five plans assume continued use of fossil-fuel generation, including not only existing but also newly constructed fossil-fuel infrastructure,[60] and three of the plans expressly supported natural gas past the state's 2050 termination target.[61] Whether these plans are approved ultimately depends on Virginia's state public utility commission.

These examples reveal the pivotal role that state public utility commissions could play in the clean-energy transition. These agencies review utilities' energy plans, approve or deny requests to build new energy infrastructure, and enforce state-level renewable- and clean-energy requirements. But in many cases, these agencies have been slow to embrace the clean-energy transition, resisting efforts to incorporate climate considerations into their decisions or approving construction of new fossil-fuel infrastructure that is incompatible with carbon emission-reduction goals.

B. The Traditional Energy/Environmental Law Divide

In light of the failures of many state energy regulators to address the problems of climate change, some legal scholars have argued that one of the primary challenges in instituting a clean-energy transition is the fundamental divide between energy and environmental law. As this Section explores, energy law and environmental law have been treated as two distinct fields, with the former focused on economic regulation and the latter focused on regulating pollution and public health.[62] Legal scholars have argued that this divide prevents energy

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58. *See* Virginia Clean Economy Act, 2020 Va. Acts 2498.

59. *See Virginia Electric and Power Company's Report of Its 2023 Integrated Resource Plan Before the Virginia State Corporation Commission and North Carolina Utilities Commission, Case No. PUR-2023-00066, Docket No. E-100, Sub 192*, DOMINION ENERGY 2-3 (May 1, 2023), https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/company/2023-va-integrated-resource-plan.pdf [https://perma.cc/D6AN-RV92].

60. *Id.* at 4 (showing that all five of Dominion's proposed plans include the construction of additional natural gas plants).

61. *See id.* at 4.

62. *See, e.g.*, Klass et al., *supra* note 1, at 976 ("For at least a century, the American legal system has treated energy and the environment as distinct policy concerns."); Jody Freeman, *The Uncomfortable Convergence of Energy and Environmental Law*, 41 HARV. ENV'T L. REV. 339, 340-41 (2017) (noting the "long tradition of separateness" between energy law and environmental law); Todd S. Aagaard, *Energy-Environment Policy Alignments*, 90 WASH. L. REV. 1517, 1519-

regulators from considering climate-related concerns in their energy decision-making, thus fundamentally hampering the clean-energy transition.

Conventionally, environmental law is understood to be concerned with public health and environmental values.[63] Scholars associate the field with the major federal statutes passed in the 1960s and 1970s that focus on protecting natural resources (e.g., the Clean Air Act and the Clean Water Act).[64] These statutes broadly aim to reduce pollution, often by relying on various risk-assessment methods, command-and-control regulations, and cost-benefit analyses.[65] And while environmental regulations at the state and local levels predated this federal regime, today, the "cooperative federalism" model of environmental law means that the federal government often sets the substantive requirements of environmental law.[66]

By contrast, legal scholars view energy law as concerned primarily with ensuring continuous energy provision at affordable prices.[67] Scholars describe energy law as the laws that regulate the extraction, production, and sale of energy

20 (2015) (observing that, despite overlapping concerns, "energy law and environmental law have stayed separate"); Inara Scott, *Teaching an Old Dog New Tricks: Adapting Public Utility Commissions to Meet Twenty-First Century Climate Challenges*, 38 HARV. ENV'T L. REV. 371, 390-91 (2014) (describing how, historically, "energy law remained separated from environmental policy"); Klass, *supra* note 5, at 185 ("[E]nergy law and environmental law historically have covered very different topics and arose out of very different structures . . . ."); Wildermuth, *supra* note 5, at 369 ("The laws that govern energy in this country — energy law — have very little to do with the laws that restrict what can be done with nature — environmental law."); Davies, *supra* note 5, at 474 ("It is one of the most important — and unspoken — paradoxes of the modern American regulatory state: Energy law and environmental law rarely, if ever, merge.").

63. *See, e.g.*, Aagaard, *supra* note 62, at 1530 ("[E]nvironmental statutes regulate primarily to protect public health and the environment.").

64. *See, e.g.*, Klass, *supra* note 5, at 185-86; Freeman, *supra* note 62, at 348-51.

65. Klass, *supra* note 5, at 185-86 (observing that environmental law historically focused on "risk assessment and the creation of regulatory tools to limit the environmental impacts of an industrialized society, leading to command-and-control regulation for industrial and other sources of pollution"); Wildermuth, *supra* note 5, at 381 ("Environmental law . . . reduces the risk of other harms and threats to public health and the environment, often while balancing the cost of that reduction against the benefits.").

66. Freeman, *supra* note 62, at 350-51 (observing that the environmental statutes adopt a "cooperative federalism" model "which affords relatively greater power to federal regulators" and results in states "perform[ing] much of the day-to-day work of environmental protection . . . subject to federal supervision, and pursuant to delegated authority, which can be withdrawn").

67. Wildermuth, *supra* note 5, at 369 ("The primary focus of energy law is to ensure that energy is supplied without disruption at an affordable price."); Welton, *supra* note 29, at 2358 ("Energy law [has] remained comfortably in its silo, focused on delivering energy at low prices.").

resources—areas that are mostly the province of public utility regulation.[68] State public utility laws originated at the turn of the twentieth century to regulate companies like natural gas and electricity utilities, which regulators considered to be natural monopolies.[69] These laws created public utility commissions and charged those bodies with ensuring that utilities—which might otherwise use their monopoly power to take advantage of customers—"serve all who request[] service," "provide adequate service," and "charge only just and reasonable rates."[70] As a result, energy law is thought to focus on "economics, monopolies, and markets,"[71] and specifically on "keep[ing] energy costs low" while also ensuring that energy is "widely available."[72] Moreover, while Congress instituted a federal energy regulatory regime in the 1930s with laws like the Natural Gas Act and the Federal Power Act, Congress crafted these statutes to "deliberately preserve[] the bulk of the states' traditional jurisdiction."[73] Thus, unlike in environmental law, states have greater autonomy in energy law.[74]

In sum, scholars consider energy and environmental law as

> not one; they persist as separate, distinct. They serve different purposes; they involve different governmental agencies; they achieve success by different metrics. Their interface is more akin to legal 'bridges' between their subject matters than any kind of real integration of their mechanisms, philosophies, doctrines, or aims. Energy and environmental law rarely, if ever, actually merge.[75]

Drawing from this conventional wisdom, some legal scholars have argued that the energy/environmental law divide prevents energy regulators from responding to the problem of climate change. For instance, Inara Scott has argued that energy regulators' focus on the short-term economic impact of policies on utilities' ratepayers prevents them from incorporating environmental harms,

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68. *See, e.g.*, Klass, *supra* note 5, at 185; Wildermuth, *supra* note 5, at 380.

69. *See* Joshua C. Macey, *Zombie Energy Laws*, 73 VAND. L. REV. 1077, 1086-89 (2020) (describing the "conventional" story that energy companies were subjected to public utility regulation because they were thought to be natural monopolies). *See generally* William J. Novak, *The Public Utility Idea and the Origins of Modern Business Regulation*, *in* CORPORATIONS AND AMERICAN DEMOCRACY 139 (Naomi R. Lamoreaux & William J. Novak eds., 2017) (describing the early history of public utility regulation and its justifications).

70. Scott, *supra* note 62, at 385.

71. Klass, *supra* note 5, at 185.

72. Aagaard, *supra* note 62, at 1520.

73. Freeman, *supra* note 62, at 350.

74. *See id.* at 351 ("There is no equivalent in environmental law to the states' retention, under the [Federal Power Act], of authority over retail electricity sales.").

75. Davies, *supra* note 5, at 478.

including harms from climate change, in their decision-making, or from embracing the kinds of transformational changes necessary to reduce greenhouse-gas emissions.[76] Lincoln Davies has similarly argued that the division of authorities and goals between energy and environmental regulators has prevented investment in renewable-energy technologies.[77] At the federal level, Jody Freeman has contended that federal energy regulators' view of their authority as primarily "economic" has prevented them from adopting more aggressive climate-friendly policies in their decisions about regulating wholesale electricity markets and interstate fossil-fuel infrastructure.[78] Others have suggested that the set of regulatory tools provided by traditional public utility regulation is simply incapable of rising to the enormous challenge of climate change.[79] According to this traditional account, therefore, the conceptual divide between these two fields has drastic consequences in the real world.

II. CHALLENGING THE TRADITIONAL DIVIDE: NEW YORK CITY'S MIDCENTURY ENERGY TRANSITION

This Feature argues that, contrary to the conventional scholarly wisdom, energy law and environmental law are not so divided. Historically, regulators viewed the tools of energy law as perfectly capable of addressing environmental problems. To establish this point, this Feature examines the problem of smoke pollution in New York City in the 1940s and 1950s. At that time, smoke and soot from the city's heavy reliance on coal filled the air. Rather than turn to traditional environmental-law solutions like air-pollution control to solve the problem, the city looked to energy law. Experts believed that shifting the city's primary fuel

76. *See* Scott, *supra* note 62, at 376 ("[T]he strict economic focus of public utility commissions will direct future decisions in two predictable ways: First, environmental impacts will be considered only to the extent that they directly impact rates paid by the affected utility's customers in the near term. Second, risky investments without near-term economic benefits will not be pursued."); *see also Mandate Versus Movement*, *supra* note 53, at 1616 (making similar arguments and advocating for the wholesale restructuring of state public utility commissions).

77. *See* Davies, *supra* note 5, at 502-04.

78. *See* Freeman, *supra* note 62, at 385-90.

79. *See, e.g.*, Welton, *supra* note 29, at 2367 ("I worry that the regulatory theories and structures bequeathed to us by a century of fossil-fueled development are simply not up to the task of driving the decarbonization transformation that our energy system demands today."); Jacobs, *supra* note 24, at 886-91 (summarizing criticisms of state public utility commissions (PUCs) – including that the "*types* of expertise historically represented within PUCs may not be sufficient to support the energy transition" and that "the slow pace and formality of PUC decisionmaking is ill-suited to the rapid transitions to low-carbon economies that experts say are necessary to keep global warming below catastrophic levels" – that may encourage policymakers to look to other agencies to address the challenges of climate change).

source from coal to other, "smokeless" fuels — namely, natural gas — would relieve the city of its smoke menace. It was thus New York's energy regulators who led the charge in this "clean(er)" energy transition.

Notably, New York was not the only city to undergo such an energy transition. As the benefits of natural gas became more widely understood, cities across the country converted their systems, led by public utility regulators in, for instance, Washington, D.C.;[80] Minneapolis, Minnesota;[81] and Madison, Wisconsin.[82] This Feature focuses on New York because of the wealth of archival material available from the New York PSC, which allows for a more detailed recreation of how the PSC used the state's public utility laws to accomplish this transition. The focus on New York should not detract from the broader point that, historically, traditional public utility regulation played a large and widely accepted role in facilitating energy transitions. As such, modern legal scholars' characterization of energy law as historically concerned only with regulating monopolies — and not environmental problems — is incorrect.

A. The Problem: Smoke Pollution

Major American and European cities suffered from devastating smoke pollution in the mid-twentieth century.[83] This smoke came from the most common form of energy production at the time: coal burning.[84] Countries used coal in all variety of energy generation.[85] It provided the fuel for manufacturing and

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80. *See* Frank P. Lamb, *Technical Aspects of the Washington Changeover*, AM. GAS J., Aug. 1948, at 27.

81. *See* Geo. B. Johnson, *Two Stage Changeover Puts Minneapolis in Straight Natural Gas Ranks*, AM. GAS J., Jan. 1950, at 29.

82. *See* F.D. Mackie, *Distribution System is Sectionalized for Conversion to Natural Gas*, AM. GAS J., Dec. 1949, at 30. For additional discussions of natural gas transitions during this period, although without detail on the actual execution of the transition by public utility regulators and the utilities, see MARK H. ROSE, CITIES OF LIGHT AND HEAT: DOMESTICATING GAS AND ELECTRICITY IN URBAN AMERICA 171-88 (1995); and Joel A. Tarr & Bill C. Lamperes, *Changing Fuel Use Behavior and Energy Transitions: The Pittsburgh Smoke Control Movement, 1940-1950*, 14 J. SOC. HIST. 561 (1981).

83. R. Dale Grinder, *The Battle for Clean Air: The Smoke Problem in Post-Civil War America*, *in* POLLUTION AND REFORM IN AMERICAN CITIES, 1870-1930, at 83 (Martin V. Melosi ed., 1980); ALAN GILPIN, CONTROL OF AIR POLLUTION 3, 11-12 (1963).

84. Martin V. Melosi, *Environmental Crisis in the City: The Relationship Between Industrialization and Urban Pollution*, *in* POLLUTION AND REFORM IN AMERICAN CITIES, 1870-1930, *supra* note 83, at 3, 5; SIMON PIRANI, BURNING UP: A GLOBAL HISTORY OF FOSSIL FUEL CONSUMPTION 18 (2018) ("As shares of the global commercial energy balance, . . . in 1950, coal was 61 per cent, oil and gas 37 per cent. Coal dominated power generation, fuelled industry, and had an almost complete grip on space heating provision in rich countries.").

85. PIRANI, *supra* note 84, at 18.

industry, transportation, and even household heating and cooking.[86] In many cases, industrial and residential consumers burned coal directly to produce energy, but over the course of the nineteenth and twentieth centuries, industry developed techniques to convert coal into various kinds of gas.[87] Gas produced from coal, often called "manufactured gas," could be stored in tanks and pumped directly into people's homes.[88] During the late-nineteenth and early-twentieth centuries, manufactured gas became an increasingly popular choice for domestic consumption.[89]

All this coal-burning wrought havoc on industrializing cities. Coal smoke from industrial and domestic consumption "left its mark on buildings, on laundry, and in the lungs of urbanites."[90] Soot and ash—believed to stem primarily from residential furnaces—hung throughout the air and created an "overlying pall of smoke and . . . dirt and grime."[91] As coal smoke built up, a series of fatal air-pollution incidents swept across British and American cities. In October 1948, the city of Donora, Pennsylvania, an industrial town located close to Pittsburgh, experienced an air-pollution event in which eighteen people died and more than a third of the local population became sick.[92] Only a few years later, in December 1952, London experienced a similar event.[93] Over about three weeks, an estimated 3,500 to 4,000 Londoners died, likely due to smoke pollution.[94]

New York City was no exception to the smoke menace. At midcentury, the city's estimated eight million people burned approximately twenty-seven million

86. Tarr & Lamperes, *supra* note 82, at 562; GILPIN, *supra* note 83, at 5.

87. *See* GILPIN, *supra* note 83, at 112, 181-90; PETER THORSHEIM, INVENTING POLLUTION: COAL, SMOKE, AND CULTURE IN BRITAIN SINCE 1800, at 135-37 (2006).

88. Joel Tarr, *Lighting the Streets, Alleys, and Parks of the Smoky City, 1816-1930*, 86 PA. HIST.: J. MID-ATL. STUD. 315, 329 n.9 (2019); Joel A. Tarr, *Transforming an Energy System: The Evolution of the Manufactured Gas Industry and the Transition to Natural Gas in the United States (1807-1954)*, *in* THE GOVERNANCE OF LARGE TECHNICAL SYSTEMS 19, 20 (Olivier Coutard ed., 1999) [hereinafter Tarr, *Transforming an Energy System*].

89. *See, e.g.*, Joel A. Tarr, *Toxic Legacy: The Environmental Impact of the Manufactured Gas Industry in the United States*, 55 TECH. & CULTURE 107, 110 (2014) (observing that the number of manufactured gas plants more than tripled between 1869 and 1909 in the United States, with more than half of those plants located in New York, Massachusetts, Pennsylvania, and Ohio).

90. MARTIN V. MELOSI, EFFLUENT AMERICA: CITIES, INDUSTRY, ENERGY, AND THE ENVIRONMENT 26 (2001).

91. GILPIN, *supra* 83, at 5, 16.

92. *Id.* at 12.

93. *Id.* at 11.

94. *Id.*

tons of coal annually.[95] City residents submitted thousands of complaints about smoke pollution.[96] The city's newspapers "offered regular, significant coverage and crusading editorials" on the topic.[97] In 1947 alone, the New York Times published at least nine articles, seven editorials, and multiple letters to the editor about the smoke pollution.[98] In one such letter, a resident of the Bronx wrote: "[E]very day I remove layers of black soot from my window sills. My curtains are black with soot within a week after they are put up bright and clean. Instead of breathing good, clean air, my lungs are congested from inhaling the soot . . . ."[99] In an editorial, the Times noted with alarm the developing link between air pollution and negative effects on human health.[100]

Smoke from apartment buildings was "perhaps the single most hated cause of smoke."[101] Apartments, "with their often primitive, smoky furnaces, boilers, and garbage incinerators, were allegedly responsible for over half of all New York City's visible air pollution, and were a frequent object of complaint . . . ."[102] A 1951 article published in the New York Times asked, "Where does all the smoke come from?" and answered: "There are 740,000 heating units in the city—in apartment houses, private homes, business places, utilities and factories, and comparatively few of them use smokeless fuels."[103]

B. The Solution: Energy Regulation

At the time, environmental-protection agencies were still nascent.[104] As a result, the perceived solution to the smoke problem was not "pollution control" in

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95. SCOTT HAMILTON DEWEY, DON'T BREATHE THE AIR: AIR POLLUTION AND U.S. ENVIRONMENTAL POLITICS, 1945-1970, at 117-18 (2000).

96. *Id.* at 117-20; *see also* Tom Huddleston, *The Facts Behind the Smoke*, N.Y. TIMES, Nov. 25, 1951, at 211 (reporting that in a little over a year the city received 19,000 complaints from residents about excessive smoke conditions).

97. DEWEY, *supra* note 95, at 136.

98. *Id.* at 137.

99. A Grateful Reader, Letter to the Editor, *Layers of Black Soot*, N.Y. TIMES, Jan. 8, 1947, at 22.

100. Editorial, *Smoke in New York City*, N.Y. TIMES, Jan. 3, 1947, at 20; *see also* DEWEY, *supra* note 95, at 136-38 (discussing the *New York Times*' "concerted anti-smoke drive of early 1947" that began with "a letter from 'Constant Reader' together with a strident editorial on the smoke nuisance").

101. DEWEY, *supra* note 95, at 117.

102. *Id.* at 120.

103. Huddleston, *supra* note 96, at 211.

104. Smoke pollution gave rise to the formation of local smoke-abatement bureaus and smoke ordinances, which were precursors to our modern environmental-protection agencies and

the modern sense of the phrase, where the emissions of specific air pollutants are reduced or eliminated at the source. Rather, the solution was what today we would call "generation shifting"—that is, the wholesale substitution of one energy resource for another.[105] Experts believed that replacing coal with "smokeless fuels" would solve the smoke menace.[106]

In particular, experts saw natural gas as a promising alternative to coal.[107] As early as the 1880s, the city of Pittsburgh experienced a dramatic improvement in its air quality when it replaced its significant coal consumption with natural gas from a new natural gas field.[108] Natural gas firms and appliance companies often distinguished themselves from their coal competitors by emphasizing that natural gas burned cleaner.[109] Advertising campaigns highlighted the "cleanliness, comfort, and convenience" of natural gas heating and cooking.[110] As one letter to the editor in the New York Times wrote in 1947:

> The introduction of natural gas [into New York City] would at one fell swoop solve many problems now confronting us . . . . The wide use of this fuel would materially cut down the incidence of smoke, it would reduce coal and oil truck traffic, permit the use of space now devoted to coal and oil storage for other purposes, [and] reduce the dust and dirt

environmental regulations. *See* RICHARD J. LAZARUS, THE MAKING OF ENVIRONMENTAL LAW 50-51 (2004). Efforts to reduce smoke from these entities occurred in parallel to efforts to changeover the fuel supply wholesale. *See* Joel A. Tarr, Gary David Goodman & Ken Koons, *Coal and Natural Gas: Fuel and Environmental Policy in Pittsburgh and Allegheny County, Pennsylvania, 1940-1960*, 5 SCI., TECH. & HUM. VALUES 19, 20 (1980).

105. *See infra* Section IV.D (discussing generation shifting in *West Virginia v. EPA*, 597 U.S. 697 (2022)).

106. *See, e.g.*, THORSHEIM, *supra* note 87, at 135 (explaining that "most people expected to obtain heat from the direct combustion of fossil fuels for the foreseeable future," and therefore "smokeless fuels" were considered to be a promising solution to the smoke-pollution problem).

107. *See, e.g.*, DAVID STRADLING, SMOKESTACKS AND PROGRESSIVES: ENVIRONMENTALISTS, ENGINEERS, AND AIR QUALITY IN AMERICA, 1881-1951, at 140-41 (1999) (describing the belief that either natural gas or electricity would provide the solution to the smoke problem).

108. *See* Joel A. Tarr & Karen Clay, *Boom and Bust in Pittsburgh Natural Gas History: Development, Policy, and Environmental Effects, 1878-1920*, 139 PA. MAG. HIST. & BIOGRAPHY 323, 325, 331-32 (2015).

109. *See, e.g.*, ROSE, *supra* note 82, at 3-9, 82, 117-19 (describing the advertising tactics around natural gas); STRADLING, *supra* note 107, at 140-41 (same).

110. ROSE, *supra* note 82, at 7.

> concomitant with coal and ash with resultant general over-all cleanliness.[111]

For natural gas to replace coal, however, New York would need access to a reliable gas supply, a local distribution infrastructure to transport natural gas to the city, and home appliances compatible with natural gas. New York City had none of these. Most of the country's natural gas reserves were located in the Southwest, and technology had not yet developed to transport natural gas across long distances.[112] Moreover, because New York did not have reliable access to natural gas, it had built a local pipeline and appliance system designed to function on manufactured gas.[113]

It was New York's energy regulators who took the initiative to coordinate the city's transition to natural gas. Shortly after World War II, New York's PSC advocated aggressively to secure long-term supplies of natural gas for the state.[114] This supply had only recently become available due to advancements in pipeline technology, as well as the creation of a federal regulatory apparatus (through the Natural Gas Act of 1938) to govern the interstate transport and sale of natural gas.[115] Under this new regime, a federal agency, the Federal Power Commission, was given the power to decide "how much of the available [natural gas] supply carried by transmission companies should go to different areas, the quantity to be delivered and the local companies which [we]re to receive it."[116] Following the technological developments and the Act's passage, multiple constituencies who wanted natural gas—including states, cities, and various industrial and commercial interests—fought before the Federal Power Commission to access

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111. Joseph R. Weiss, Letter to the Editor, *Methods of Reducing Smoke: Nuisance Considered Mostly Due to House Heating—Solutions Offered*, N.Y. TIMES, Feb. 1, 1947, at 14.

112. *See* Chris Castaneda & Joseph Pratt, *New Markets, Outmoded Manufacturing: The Transition from Manufactured Gas to Natural Gas by Northeastern Utilities After World War II*, 18 BUS. & ECON. HIST. 238, 238 (1989).

113. Indeed, New York City alone was responsible for consuming forty percent of the country's manufactured gas. *See* Tarr, *Transforming an Energy System*, *supra* note 88, at 28.

114. *See* Castaneda & Pratt, *supra* note 112, at 244 (describing the New York PSC's efforts to secure a natural gas supply for the state before federal regulators).

115. *See* Alison Gocke, *Pipelines and Politics*, 47 HARV. ENV'T L. REV. 207, 214 (2023).

116. 1 DEP'T OF PUB. SERV., STATE OF NEW YORK, UTILITY REGULATION IN POSTWAR YEARS: ANNUAL REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, at 263 (1948) [hereinafter REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947].

these supplies.[117] The New York PSC participated frequently and vocally in the federal proceedings on behalf of New York consumers.[118]

In justifying its efforts to secure natural gas for the city, the PSC argued that natural gas would be cleaner, cheaper, and more reliable for its citizens. The PSC argued that New York residents should receive priority for natural gas supplies because "the use of natural gas for domestic purposes, particularly the traditional uses for cooking, water heating, refrigeration, etc., constitute greater evidence of public interest and convenience than the use by commercial and industrial installations where the matter of convenience and cleanliness are relatively unimportant . . . ."[119] In other words, the PSC argued that New York needed natural gas — and needed it more so than other constituencies — because it was a cleaner-burning fuel. The PSC also noted that other fuels were becoming "extremely costly" and "difficult to obtain in adequate quantities."[120] Despite strong opposition from other interests, the PSC's arguments helped persuade the Federal Power Commission to authorize gas shipments into the state.[121]

The PSC's campaign to secure natural gas supplies for the city was only the first step in the broader conversion process, a story told in greater detail below. For now, it is worth noting that, following the conversion, the substitution of natural gas for coal-based energy sources reduced the city's smoke pollution: "Not until alternate fuels, such as natural gas, replaced coal, did the [city's]

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117. *See* Gocke, *supra* note 115, at 223-25.

118. *See, e.g.*, 1 DEP'T OF PUB. SERV., STATE OF NEW YORK, PUBLIC UTILITY REGULATION IN NEW YORK STATE: ANNUAL REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1946, at 179-86 (1947) [hereinafter REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1946] (describing the New York PSC's active involvement in various Federal Power Commission natural gas proceedings); REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, *supra* note 116, at 263-66 (same); 1 DEP'T OF PUB. SERV., STATE OF NEW YORK, REGULATION OF PUBLIC UTILITIES IN NEW YORK STATE: ANNUAL REPORT OF PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, at 5 (1949) [hereinafter REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948] (same); 1 DEP'T OF PUB. SERV., STATE OF NEW YORK, REGULATION OF PUBLIC UTILITIES IN NEW YORK STATE: ANNUAL REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951, at 205 (1952) [hereinafter REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951] (noting that the New York PSC participated in over fifty proceedings before the Federal Power Commission related to natural gas).

119. REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 96 (quoting a memorandum the New York Public Service Commission submitted to the Federal Power Commission in proceedings to approve Transcontinental's petition for a certificate of public convenience and necessity on March 11, 1948).

120. *Id.*

121. *See* Castaneda & Pratt, *supra* note 112, at 244 ("The state commission's strong arguments in favor of natural gas helped the [Federal Power Commission] push aside the complaints of intervenors from the coal and railroad industries.").

smoke problem begin to dissipate."[122] Indeed, substituting coal with natural gas was a significant driving force behind successful city-level smoke-pollution reductions in the mid-twentieth century.[123]

III. THE CONVERSION PROCESS

The conversion of New York's energy system was, by the PSC's admission, "a task of considerable magnitude."[124] The physical changeover itself was quite complex. It required attaining a long-term supply of natural gas and constructing pipelines to transport the gas into New York.[125] Additionally, the changeover required adjusting home appliances like stoves, furnaces, ovens, and refrigerators.[126] In some cases, new holes needed to be drilled into existing appliances.[127] In other cases, appliances needed to be replaced entirely.[128] This amounted to millions of appliances in homes across New York City.[129]

The logistics of the changeover raised thorny planning questions. Who should construct the new pipeline facilities? How could a reliable natural gas supply be secured? How would customers' appliances be changed over? What would happen to existing manufactured gas plants? Who would pay for the conversion costs? These questions fell to the New York PSC to answer. And answer

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122. Melosi, *supra* note 84, at 6.

123. *See, e.g.*, Tarr & Lamperes, *supra* note 82, at 561-76 (concluding that Pittsburgh's efforts to reduce smoke pollution in the early twentieth century became successful only when the city converted to natural gas in the 1940s and 1950s); Grinder, *supra* note 83, at 100 ("Other urban areas, such as Kansas City, saw their smoke problem disappear with the introduction of a new energy source—natural gas. The cleanup in all these cities indicated that the smoke nuisance was conquered not so much as a result of stricter controls but because of a technological breakthrough that placed a heavier emphasis on natural gas, diesel fuel, and electricity."); STRADLING, *supra* note 107, at 182 (explaining that cities' twentieth-century smoke problems abated only when "cleaner sources of energy beg[a]n to meet the nation's increased demand for power," including natural gas).

124. REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951, *supra* note 118, at 35.

125. *See* Atherton Thomas, *Natural Gas Comes to Metropolitan New York*, 8 ANALYSTS J. 27, 27-28 (1952).

126. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951, *supra* note 118, at 35-36.

127. *Id.*; *see also* Lamb, *supra* note 80, at 28 (describing in detail the mechanics of a changeover from manufactured gas to natural gas).

128. *See, e.g.*, Brooklyn Borough Gas Co. Contract, Exhibit No. 12, N.Y. Pub. Serv. Comm'n, No. 15309 (Feb. 28, 1951) (on file with New York State Archives, Reel 811) (explaining that "[b]urners that cannot be adapted to the use of natural gas shall be replaced by suitable burners" and, "[i]f necessary," new equipment shall be ordered "to replace special equipment, house heating, and space-heating appliances").

129. *See infra* Section III.C and notes 214-218.

them it did, as the PSC, in coordination with New York City's five major utility companies, planned and executed a top-down transformation of the city's gas-distribution grid in approximately a ten-year period.

Remarkably, the PSC executed this energy transition without receiving any specific direction from the New York Legislature. Instead, the PSC relied on its existing authority under state public utility law. This law gave the PSC the ability to, inter alia, set utilities' rates, audit and review utilities' financial accounts, and regulate utilities' quality of service.[130] This suite of authorities is part of what some legal scholars have described as the regulatory "toolkit" of public utility regulation.[131] In particular, setting utilities' rates through ratemaking proceedings and determining utilities' standards of service are core features of public utility regulation.[132] What is notable about the New York example is how the PSC used these tools to lead and execute an energy transition.

First, as described in greater detail below,[133] the PSC used its authority as the regulator with oversight over the public's interest in energy provisioning[134] to determine, first, what the broader public interest was in providing energy services to the city, and second, to advance that interest so that it was adequately represented in federal fora where New York's energy decisions were being made. This can be seen most clearly in the PSC's efforts to secure an interstate natural gas supply for the city, where, once the PSC determined that a transition to natural gas was in the public's interest, the PSC organized and advocated before federal regulators to secure access to gas supplies.

Second, the PSC used its authority over utilities' standards of service to transition the city's energy infrastructure. Under the traditional public utility model, the utilities own and operate the infrastructure that provides energy services. But the public utility commission has the authority to ensure that the utilities' services are "safe and adequate."[135] As described in greater detail below,[136] the PSC

130. *See infra* Section III.A.

131. *See, e.g.*, RICKS ET AL., *supra* note 12, at 24-30.

132. *See* KAHN, *supra* note 12, at 20 (explaining that in public utility regulation, "the government determines price, quality and conditions of service, and imposes an obligation to serve").

133. *See infra* Section III.B.

134. *See* N.Y. PUB. SERV. LAW §§ 65, 66 (McKinney 2022); *see also* Campo Corp. v. Feinberg, 110 N.Y.S.2d 250, 253 (N.Y. App. Div. 1952), *aff'd* 303 N.Y. 995 (1952) ("The Public Service Law gives to the Commission the very broadest of powers to regulate rates, service classifications and regulations of a corporation which sells electricity to the public. Indeed, it is not too much to say that in this respect the Commission is the alter ego of the legislature." (citations omitted)).

135. *See infra* Section III.A and notes 143 & 186.

136. *See infra* Sections III.C, III.D.

used this broad authority both to require the utilities to retrofit homeowners' appliances and to control the pace at which this transition occurred.

Finally, the PSC used its authority over the utilities' rates and accounting practices to allocate the costs of the transition. As described below,[137] the PSC settled upon a cost-allocation method that distributed the costs of the conversion between the utilities and the ratepayers, including the costs of converting the distribution system and the stranded assets associated with the utilities' manufactured gas plants. As a result of this balancing, the PSC likely lowered resistance to the transition to natural gas.

With a focus on how public utility regulation enabled this transition, this Part explores the structure and composition of the New York PSC at the time of the natural gas transition. It then discusses New York's grid transition in greater detail, with an emphasis on securing the gas supply and transmission facilities, the changeover of consumers' appliances, the management of reliability concerns, and the allocation of the costs of the transition.

A. The New York Public Service Commission

The New York PSC was first established in 1907.[138] The PSC had five members, appointed by the Governor with the advice and consent of the State Senate.[139] At the time of New York's natural gas transition, the PSC was chaired by Milo Maltbie.[140] Maltbie had developed a reputation as a fierce advocate for the public interest who was not afraid to use the full might of the PSC to control the utility companies.[141] It was under Maltbie's leadership that the PSC embraced the transition to natural gas and used its authority to execute that transition in an orderly manner.

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137. *See infra* Section III.E.

138. *See, e.g.*, I. Leo Sharfman, *Commission Regulation of Public Utilities: A Survey of Legislation*, 53 ANNALS AM. ACAD. POL. & SOC. SCI. 1, 1-2 (1914). Initially, the PSC consisted of two commissions, *see* Public Service Commissions Law, ch. 429, § 4, 1907 N.Y. Laws 892-93, which were consolidated into a single statewide entity in 1921, *see* Act of March 30, 1921, ch. 134, sec. 7-8, §§ 3-4, 1921 N.Y. Laws 387.

139. Act of March 30, 1921, ch. 134, sec. 8, § 4, 1921 N.Y. Laws 387 (codified at N.Y. PUB. SERV. LAW § 4 (McKinney 2022)).

140. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1946, *supra* note 118, at 1.

141. *See* DANIEL T. RODGERS, ATLANTIC CROSSINGS: SOCIAL POLITICS IN A PROGRESSIVE AGE 151 (1998) (observing that Maltbie "gave full return on the promise of public-spirited expertise"); *see also* PRATT, *supra* note 11 at 13, 63, 67-76 (describing the key role Maltbie played in regulating Consolidated Edison).

The PSC exercised jurisdiction over public utilities in the state, including corporations involved in the manufacture, sale, and distribution of gas and electricity.[142] The New York Public Service Law charges the PSC with ensuring that gas and electric companies provide "safe and adequate" service to their customers and charge "just and reasonable" rates for that service.[143] To enforce these requirements, the PSC is given the power to, inter alia, review gas and electric companies' rates and alter them if the PSC finds them to be unjust and unreasonable,[144] access utility companies' records and accounting books,[145] and inspect gas and electric companies' meters.[146]

Notably, the New York PSC enjoys a significant amount of judicial deference when it employs its traditional tools of public utility regulation. That had not always been the case: during the late nineteenth and early twentieth centuries, courts actively policed decisions made by public utility commissions, especially at the state level.[147] Then, the U.S. Supreme Court in *Federal Power Commission v. Hope Natural Gas Co.* limited judicial review of public utility commission decisions made pursuant to their traditional ratemaking authorities.[148] Since then, both state and federal courts have tended to defer to the decisions of public utility commissions.[149] As the New York Court of Appeals has explained, New York's Public Service Law "empowers the [PSC] to consider all factors 'which in its judgment' are relevant"; the PSC is "free to entertain or ignore any particular factor, or to assign whatever weight it deems appropriate"; and a decision by the PSC with respect to the justness and reasonableness of rates will be set aside only if there is no rational basis or support in the record for it.[150]

During this period, utilities occasionally challenged the decisions of the New York PSC in the courts, but these were generally upheld.[151] Perhaps tellingly, the

142. Act of March 30, 1921, ch. 134, sec. 10, § 5, 1921 N.Y. Laws 388-89 (codified at N.Y. PUB. SERV. LAW § 5 (McKinney 2022)).

143. N.Y. PUB. SERV. LAW § 65(1) (McKinney 2023).

144. *Id.* § 66(5), (12).

145. *Id.* § 66(4), (5).

146. *Id.* § 67.

147. *See, e.g.*, Smyth v. Ames, 169 U.S. 466 (1898) (voiding a Nebraska railroad tariff law).

148. 320 U.S. 591, 602 (1944).

149. *See* William Boyd & Ann E. Carlson, *Accidents of Federalism: Ratemaking and Policy Innovation in Public Utility Law*, 63 UCLA L. REV. 810, 826 (2016) (observing that, "[i]n general," courts have been "quite deferential to PUCs" and "[m]ost courts in most states accord PUCs significant deference when reviewing their actions").

150. Abrams v. Pub. Serv. Comm'n, 492 N.E.2d 1193, 1195-96 (N.Y. 1986).

151. Most notably, during this period, the New York PSC instituted a temporary ten-percent rate cut of Consolidated Edison's electricity rates after the PSC became frustrated that the utility

author could find no such challenge brought against the PSC's implementation of the natural gas transition—indicating that either the PSC's exercise of its authority was not remarkable or there was limited opposition to it.

B. Securing Supply and Transmission Infrastructure

The first step in New York's natural gas transition was to secure a long-term supply and construct the facilities necessary to transport that gas into the city. The city faced three primary challenges on this front.

First, competing interests opposed New York's introduction of natural gas. Some of those interests wanted the newly available natural gas supplies for themselves—like other states and cities around the country. Others were directly threatened by the natural gas industry—like coal and fuel-oil companies, railroad companies that transported other fuels, and labor unions that worked in competing industries.[152] Indeed, coal, railroad, and labor interests were the primary intervenors in proceedings before the Federal Power Commission, and they waged a fierce battle opposing the extension of natural gas into states like New York.[153]

Second, introducing natural gas into the city threatened to strand the New York utilities' existing manufactured gas plants—investments worth hundreds of millions of dollars at the time.[154] The utility companies expressed concern that they would be "abandon[ing] substantial investments in gas manufacturing plants and equipment."[155] As an editorial written in the *American Gas Journal* observed, utilities in the Northeast were hesitant to transition to natural gas due to both (1) a concern that their manufactured gas and coal plants "st[oo]d to be

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was not proceeding in good faith during an ongoing rate investigation. Consolidated Edison challenged the rate cut in court, and the New York Court of Appeals upheld it. *See* Consol. Edison Co. v. Maltbie, 90 N.E.2d 35, 40 (N.Y. 1949).

152. I recount the fights between various interest groups during the expansion of natural gas in the 1940s and beyond in a separate article, some of which I incorporate here. *See* Gocke, *supra* note 115, at 213-30.

153. *Id.* at 222; *see also* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 95 (discussing hearings to approve the construction of the natural gas line in which railroad, coal, and oil, and labor unions intervened); Trans-Continental Gas Pipe Line Co., 7 F.P.C. 24, 27 (1948) (reporting a proceeding to approve the construction of an interstate natural gas pipeline to supply natural gas to New York in which intervenors opposed to the construction of the pipeline included the Fuel Oil Board of Trade of the Bronx, Inc.; the New York Oil Heating Association; the National Coal Association; the United Mine Workers of America; the Brotherhood of Locomotive Engineers; and several railroad companies).

154. *See* PRATT, *supra* note 11, at 164 (estimating the value of Consolidated Edison's manufactured gas plants at approximately $250 million in the 1940s).

155. Tarr, *Transforming an Energy System*, *supra* note 88, at 29.

wiped out of business when the full impact of natural gas [wa]s felt in their markets," and (2) uncertainty as to "what w[ould] happen to the rate base if the large investment in gas making equipment [were] reduced or written off through conversion to . . . straight natural gas."[156]

Third, introducing natural gas would require the utilities to construct new, shared pipelines to transport the natural gas into New York City, which meant that the utilities would have to coordinate and cooperate amongst themselves.

Notwithstanding these challenges, the New York PSC concluded that the public interest warranted the transition to natural gas. In retrospect, the PSC's support for natural gas seems obvious. As the PSC recognized, natural gas burned more cleanly, was more convenient for consumers, and (although it was not yet at the time) was likely to become cheaper than other fuels like coal or oil.[157] In the period after World War II, New York also suffered from a manufactured gas shortage, and long-term access to natural gas promised a stable supply of energy.[158]

Recognizing the substantial opposition it would face, the New York PSC organized a forceful response. First, as early as 1945, the PSC understood that its presence at the proceedings before the Federal Power Commission would be crucial to ensure that the collective interests of the New York public—and not the discrete interests of various competing fuel industries— were represented in the battle to allocate interstate natural gas supplies.[159] The PSC appointed a representative, Malcom Orton, to appear before the Federal Power Commission, testify on behalf of the New York PSC, and report back.[160] Through this, the PSC

156. Elliott Taylor, Editorial, *Preface to Planning*, AM. GAS J., Oct. 1949, at 15.

157. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 95-96. Natural gas had approximately twice the heating value of manufactured gas, meaning that only half as much natural gas was required to perform the same work as one unit of manufactured gas. *Id.* at 95. All else being equal, this meant that natural gas was cheaper than manufactured gas, although this does not factor in the costs associated with the transportation of natural gas. *See also* Thomas, *supra* note 125, at 29 (noting that transmission costs, inefficiency in load, and other costs could reduce the price advantage enjoyed by natural gas).

158. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, *supra* note 116, at 227-317 (describing the gas shortage).

159. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1946, *supra* note 118, at 179-86 (describing the PSC's involvement in the Federal Power Commission's proceedings in 1945 and 1946 to advocate for New York's interest in natural gas).

160. *See id.* at 179. The New York PSC's minutes show that Malcolm Orton reported back to the PSC regularly about the proceedings before the Federal Power Commission and filed interventions in those proceedings. *See, e.g.*, 44 DEP'T OF PUB. SERV., STATE OF NEW YORK, SECRETARY'S MINUTES: OCTOBER 1, 1947 TO MARCH 9, 1948, at 208, 216; 45 DEP'T OF PUB. SERV., STATE OF NEW YORK, SECRETARY'S MINUTES: MARCH 10, 1948 TO AUGUST 10, 1948, at 21, 107; 49 DEP'T OF PUB. SERV., STATE OF NEW YORK, SECRETARY'S MINUTES: NOVEMBER 4, 1949 TO APRIL 18, 1950, at 49.

made certain that it intervened in each federal proceeding, supporting the transportation of natural gas supplies into New York and opposing the transportation of natural gas into other jurisdictions.[161]

Second, the PSC required all of New York's utilities to participate in the Federal Power Commission's proceedings. Initially, only two out of the nine utilities in New York State had intervened in the federal proceedings to request contracts for natural gas.[162] In "view of the many benefits that would accrue to the public through the purchase of natural gas by New York City companies," the PSC "urged the remaining gas utilities . . . to intervene in the proceedings."[163] The utilities ultimately acquiesced to the PSC's direction.[164]

Finally, the PSC coordinated the utilities' cases before the Federal Power Commission to ensure that their intervention would be successful. Leading up to the proceedings, the PSC "held conferences with the utilities concerning plans for the presentation of their cases before the Federal Power Commission."[165] For the smaller utilities, "the [PSC]'s staff assisted the staffs of the companies in the preparation of testimony and exhibits."[166] The PSC's staff also "presented exhibits and testimony which stressed the need of natural gas by the public in the New York metropolitan area."[167] The PSC Chairman himself even personally testified before the Federal Power Commission.[168] According to its reports, the PSC's compilation of this information drove much of the content of the proceedings inside the Federal Power Commission. While opponents of natural gas "offered testimony and exhibits in their own behalf, their greatest efforts were concentrated in intensive cross-examination in an attempt to refute the testimony of

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161. *See, e.g.*, REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, *supra* note 116, at 263-66, 268-69.

162. REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 95.

163. *Id.* It is unclear from the Commission's reports what is meant by the term "urge," but given the utilities' initial reluctance to join the federal proceedings, it is likely that the Commission had to force informally or cajole the utilities to join.

164. *Id.*

165. *Id.* at 96.

166. *Id.*; *see also* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, *supra* note 116, at 264 (explaining that the Commission helped New York State gas companies prepare their cases for the Federal Power Commission).

167. REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 96.

168. *See Maltbie to Ask for Gas: Head of State Commission to Meet the FPC Today*, N.Y. TIMES, May 12, 1948, at 46 (describing Maltbie's appearance before the Federal Power Commission and noting that "it is believed his opinion will go far to influence FPC decisions in the allocation of gas supplies").

witnesses in favor of the pipe line" offered by the New York PSC and the New York utilities.[169]

Ultimately, after several years and numerous appearances before the Federal Power Commission, the PSC's advocacy won the day. The Federal Power Commission approved the construction of an interstate natural gas pipeline (known as the Transcontinental Gas Pipe Line) and its sale of gas into New York in 1948.[170] Each of New York City's five utilities also obtained long-term contracts for natural gas from Transcontinental.[171]

Once the New York utilities secured natural gas supplies, they were committed to the transition. To that end, the utilities recognized that it would be mutually beneficial to construct the facilities needed to transport gas into the city. The Transcontinental Gas Pipe Line had its New York terminus at 134th Street and the Hudson River.[172] The five city utilities each maintained separate franchise territories in the New York metropolitan area.[173] The construction of individual distribution lines from the terminus would have meant "a duplication of facilities and an attendant multiple transversing of franchise areas"[174]—in other words, significant expense with no clear benefit.

As a result, the utilities entered into the "New York facilities agreement."[175] Under this arrangement, each of the utilities agreed to construct a joint pipeline system that would transport gas from the Transcontinental Gas Pipe Line to the utilities' respective territories.[176] The utilities "formed a joint committee to determine the appropriate route for the primary gas main, the size and length of the pipe to be used, and the general design specifications for the project."[177] The

169. REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 95.

170. *See* Trans-Continental Gas Pipe Line Co., 7 F.P.C. 24, 45-46 (1948) (granting the Transcontinental Pipe Line Company a certificate of public convenience and necessity to transport and sell interstate natural gas in New York).

171. *See id.* at 34 (listing contracts for Consolidated Edison Company of New York, Brooklyn Union Gas Company, Brooklyn Borough Gas Company, Kings County Lighting Company, and Long Island Lighting Company).

172. *See* Trans-Continental Gas Pipe Line Corporation System Map, N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 21, 1954) (on file with New York State Archives, Reel 810); Connections for Distribution of Natural Gas in New York City & Vicinity, N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 3, 1951) (on file with New York State Archives, Reel 810).

173. *See* 1 STATE OF NEW YORK, DEP'T OF PUB. SERV., REGULATION OF PUBLIC UTILITIES IN NEW YORK STATE: ANNUAL REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1949, at 78-79 (1950) (describing the locations of the utilities' gas facilities); Consol. Edison Co. of N.Y., 8 F.P.C. 328, 330-32 (1949) (same).

174. Consol. Edison Co. of N.Y., 8 F.P.C. at 332.

175. *Id.*

176. *Id.*

177. PRATT, *supra* note 11, at 166.

utilities maintained ownership and responsibility over the portions of the pipeline that crossed through their territory, but the utilities also agreed to transport gas destined for other utilities through their own lines.[178] Indeed, in at least one instance, a utility constructed and maintained a pipeline system to transport natural gas through its own territory even though none of that gas was going to its own consumers.[179] The total cost of constructing the pipeline system amounted to around $14 million in 1950,[180] or around $177 million today,[181] which the utilities allocated amongst themselves based on the amount of gas they contracted to purchase from Transcontinental.[182]

C. Appliance Changeover

The next step in the New York transition was to convert the city's appliances. Because natural gas had about twice the heating value of manufactured gas, most appliances required adjustment to reduce the volume of gas sent through appliance burners. Some appliances could be retrofitted.[183] These ranged from cook tops to water heaters to stoves to refrigerators to space-heating installations.[184] However, some consumers had to replace their appliances entirely.[185]

Again, the PSC played a crucial role in coordinating the appliance changeover. The Public Service Law charged the PSC with ensuring that utilities

178. Consol. Edison Co. of N.Y., 8 F.P.C. at 332.

179. *See id.* at 333 (observing that the facilities to be constructed by Kings County Lighting Company "will be utilized solely for the purpose of transporting natural gas for the account of another, namely Brooklyn Borough").

180. 1 Dep't of Pub. Serv., State of New York, Regulation of Public Utilities in New York State: Annual Report of the Public Service Commission For the Year 1950, at 37 (1952) [hereinafter Report of the Public Service Commission for the Year 1950].

181. *See Inflation Calculator*, Fed. Rsrv. Bank of Minneapolis, https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator [https://perma.cc/QC7N-YGTF] (calculating that $1 in 1950 is worth $12.59 in 2023).

182. Consol. Edison Co. of N.Y., 8 F.P.C. at 332-34.

183. *See* Report of the Public Service Commission for the Year 1951, *supra* note 118, at 35-36; *see also* Brooklyn Borough Gas Co. Contract, *supra* note 128, at 99-111 (describing the multiple steps of the conversion process in a copy of the contract between Brooklyn Borough Gas Company and its contractor for conversion).

184. Report of the Public Service Commission for the Year 1951, *supra* note 118, at 35-36; *see also* Lamb, *supra* note 80, at 28 (describing necessary appliance conversions in the natural gas changeover).

185. *See* Brooklyn Borough Gas Co. Contract, *supra* note 128 (explaining that "[b]urners that cannot be adapted to the use of natural gas shall be replaced by suitable burners" and "[i]f necessary," new equipment shall be ordered "to replace special equipment, house heating, and space-heating appliances").

provided consumers with "safe and adequate" service.[186] This included regulating the heating value and pressure of gas.[187] Because natural gas had a different heating value than manufactured gas, the utilities could not convert their systems to natural gas without first receiving approval from the PSC.[188] At the same time, the PSC would not approve the utilities' transition to natural gas unless the utilities also converted their customers' appliances because otherwise, the provision of gas would not be "safe and adequate."[189] Thus, in order to take advantage of their new contracts for natural gas—which the utilities had entered into at the direction of the PSC—the utilities first had to convert their consumers' appliances.

The conversion required the utilities to plot out meticulous, multistage plans. First, the utility companies subdivided their area into sections.[190] Second, the utilities surveyed each section to determine what kinds of appliances—residential, industrial, and commercial—were present.[191] Then, they installed sectionalizing valves across the distribution lines, allowing workers to cut off and purge the manufactured gas in the pipes.[192] Natural gas was slowly introduced into the system.[193] Immediately or shortly after the gas changeover, utility workers went door-to-door to retrofit or replace appliance burners.[194] Finally,

186. N.Y. Pub. Serv. Law § 65(1) (McKinney 2023).

187. *See* Report of the Public Service Commission for the Year 1950, *supra* note 180, at 91-93.

188. *See, e.g.*, Order, N.Y. Pub. Serv. Comm'n, No. 15287 (May 2, 1951) (on file with New York State Archives, Reel 809) (noting the Commission's decision to approve Consolidated Edison's request to "change the thermal content of gas supplied by it in certain portions of its system").

189. *See id.*

190. *See, e.g.*, Decision of Hearing Examiner E.A. Bamman, N.Y. Pub. Serv. Comm'n, No. 15287 (May 1, 1951) (on file with New York State Archives, Reel 809) (describing Consolidated Edison's proposal to convert Westchester County and part of the Bronx through "proposed sectionalization of the designated areas which would be converted progressively . . . with one to two days scheduled for each section"); Pratt, *supra* note 11, at 170 ("Conversion proceeded by 'sections,' small areas which could be converted at one time.").

191. This was no easy task: technical specialists were often appointed to determine how to convert complicated industrial and commercial machinery as well as old or unusual home appliances. *See* Report of the Public Service Commission for the Year 1951, *supra* note 118, at 35-36; Pratt, *supra* note 11, at 170.

192. Report of the Public Service Commission for the Year 1951, *supra* note 118, at 35-36; *see also Conversion to Straight Natural Gas Started by Brooklyn Union*, Am. Gas J., Mar. 1952, at 29 (describing the installation of 1,200 sectionalization valves and 3,780 purging points in Brooklyn Union's territory for the purging process).

193. Report of the Public Service Commission for the Year 1951, *supra* note 118, at 35-36.

194. *Id.*

conversion workers tested and readjusted appliances as needed.[195] The conversion of an entire section (which included thousands of households) took around one to two days.[196]

An article in *Business Week* reporting on Consolidated Edison's conversion of Westchester County marveled at the intricacy of the project.[197] The conversion "require[d] more than 1-million visits by Con Edison representatives to the properties of the 207,000 affected customers."[198] A "600-man conversion crew" was hired to enlarge "some 100-million burner ports" and replace "[a]bout 2.5 million brass orifices" on an estimated 350,000 appliances.[199] Consolidated Edison had already laid "18,500 ft. of new pipe" and "install[ed] 2,150 'purge points'" to enable the sectionalization and purging of the county.[200] On the day of the final conversion, starting as early as 5 a.m., Consolidated Edison workers sectionalized the distribution system, purged the manufactured gas, and "swarm[ed] into the homes" to replace all burner appliances.[201] The Westchester conversion was a "milepost in a staggering, carefully planned job" that "involve[d] a precision campaign covering economics, public relations, and operating techniques."[202] A copy of the map prepared by Consolidated Edison for the Westchester County conversion and the section-by-section plan for Westchester are shown in Figures 1 and 2 below.

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195. *Id.*; PRATT, *supra* note 11, at 171.

196. *See* Decision of Hearing Examiner E.A. Bamman, *supra* note **Error! Bookmark not defined.**.

197. *See Con Edison Turns on the Gas*, BUS. WEEK, June 23, 1951, at 108.

198. *Id.* at 110.

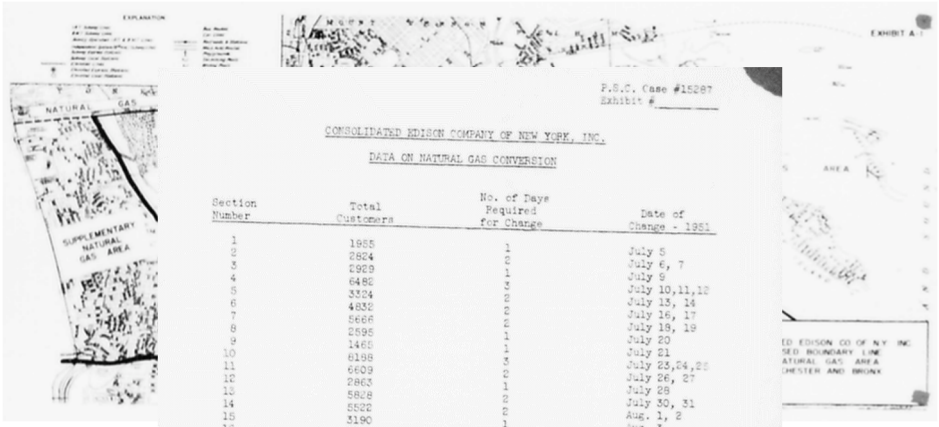
199. *Id.* at 110-12.

200. *Id.* at 112.

201. *Id.* at 113.

202. *Id.* at 108.

FIGURE 1. MAP OF THE PLANNED WESTCHESTER COUNTY CONVERSION PREPARED BY CONSOLIDATED EDISON[203]



P.S.C. Case #15287
Exhibit #

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

DATA ON NATURAL GAS CONVERSION

Section Number	Total Customers	No. of Days Required for Change	Date of Change - 1951
1	1955	1	July 5
2	2824	2	July 6, 7
3	2929	1	July 9
4	6482	2	July 10,11,12
5	3324	2	July 13, 14
6	4832	2	July 16, 17
7	5666	2	July 18, 19
8	2595	1	July 20
9	1465	1	July 21
10	8198	3	July 23,24,25
11	6609	2	July 26, 27
12	2863	1	July 28
13	5828	2	July 30, 31
14	5522	2	Aug. 1, 2
15	3190	1	Aug. 3
16	2551	1	Aug. 4
17	6576	2	Aug. 6, 7
18	4700	2	Aug. 8, 9
19	5215	2	Aug. 10,11
20	7155	2	Aug. 13, 14
21	6536	2	Aug. 15, 16
22 C.I.	4852	2	Aug. 17, 18
23	6151	2	Aug. 20, 21
24	7117	2	Aug. 22, 23
25	6430	2	Aug. 24, 25
26	6211	2	Aug. 27, 28
27	5437	2	Aug. 29, 30
28	5048	2	Aug. 31 & Sept. 1
29	6006	2	Sept. 4, 5
30	6194	2	Sept. 6, 7
31	2510	1	Sept. 8
32	6100	2	Sept. 10, 11
33	5600	2	Sept. 12, 13
34	1800	1	Sept. 14
35	5200	2	Sept. 17, 18
36	5600	2	Sept. 19, 20

CBS:GS
3-26-51

FIGURE 2. CONSOLIDATED EDISON'S PLANNED CONVERSION OF WESTCHESTER COUNTY[204]

Additionally, the utilities conducted concerted public-relations campaigns to gain their customers' cooperation in the conversion. For instance, Brooklyn Union published announcements in newspapers, on the radio, and on television

203. Proposed Boundary Line of Natural Gas Area Westchester and Bronx, N.Y. Pub. Serv. Comm'n, No. 15287 (Oct. 19, 1951) (on file with New York State Archives, Reel 810).

204. The table displays Consolidated Edison's planned conversion for Westchester County, divided into sections and including information about the number of customers to be converted, date of conversion, and estimated time to complete the conversion. Data on Natural Gas Conversion, N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 3, 1951) (on file with New York State Archives, Reel 810).

about the introduction of natural gas into their area.[205] Each customer received a map of the planned conversion process (see Figure 3).[206] Seven days before a customer's scheduled conversion, the customer received a notice in the mail and the utility sent another notice the day before.[207] Consolidated Edison similarly created pamphlets for its customers to explain the conversion process and instruct customers on preparing their appliances for conversion (see Figure 4).

205. *Preparations for Natural Gas Change-Over: As Made by Brooklyn Union*, AM. GAS J., July 1951, at 23, 26.

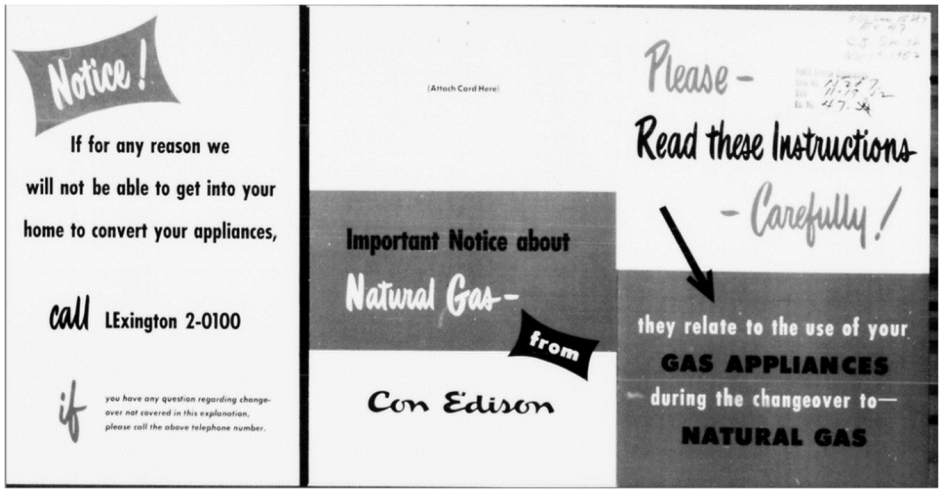
206. *Id* at 23.

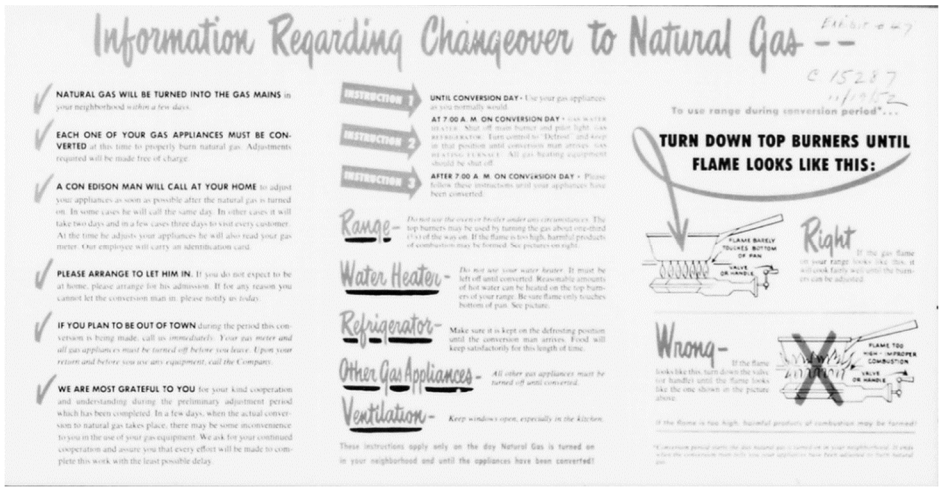
207. *Id.*

FIGURE 3. A MAP OF BROOKLYN UNION'S PLANNED CONVERSION IN PART OF ITS FRANCHISE TERRITORY[208]

208. Schedule of Conversion to Natural Gas: General Conversion Plan: Conversion Schedule: The Brooklyn Union Gas Company (1952), BROOKLYN HIST. SOC'Y, https://mapcollections.brooklynhistory.org/map/schedule-of-conversion-to-natural-gas-general-conversion-plan-conversion-schedule-the-brooklyn-union-gas-company [https://perma.cc/2YDL-LG2U].

FIGURE 4. CUSTOMER BROCHURE DISTRIBUTED BY CONSOLIDATED EDISON COMPANY OF NEW YORK DURING THE APPLIANCE CONVERSION FROM MANUFACTURED TO NATURAL GAS[209]





Notably, some utilities like Consolidated Edison also worked to ensure that the changeover preserved jobs for those previously connected to the manufactured gas industry. Initially, Consolidated Edison had hired an outside firm to perform its conversion.[210] However, as the changeover progressed, Consolidated

209. Information Regarding Changeover to Natural Gas, N.Y. Pub. Serv. Comm'n, No. 15287 (Nov. 19, 1952) (on file with New York State Archives, Reel 810).

210. Decision of Hearing Examiner E.A. Bamman, *supra* note **Error! Bookmark not defined.**.

Edison realized it would be preferable to use the company's own workforce.[211] Among other things, it could ease the transition for workers: "[c]onversion would displace numerous Con Edison employees from their traditional jobs in gas manufacturing and in the service of gas appliances, and the use of these men in the conversion efforts gave the company an interval of about five years to absorb them into jobs in other parts of its operations."[212] Subsequent analyses estimated that the utility's strategy allowed it to avoid laying off any workers during the transition to natural gas.[213]

In total, the appliance changeover for the entire city of New York took approximately five or six years.[214] In that time, Consolidated Edison, the largest utility company in the city, converted approximately 2.35 million appliances for about 1.5 million customers.[215] Brooklyn Borough Gas Company converted

211. Decision of Hearing Examiner E.A. Bamman, N.Y. Pub. Serv. Comm'n, No. 15287 (Dec. 19, 1952) (on file with New York State Archives, Reel 810) (discussing Consolidated Edison's decision to use its own workforce for the conversion process following the Westchester conversion).

212. PRATT, *supra* note 11, at 169-70.

213. Castaneda & Pratt, *supra* note 11, at 245 ("Indeed, Con Edison managed the transition to natural gas in a way that required no lay-offs; as jobs in the manufactured gas plants steadily declined, the work force was reduced through retirement while younger workers were transferred to other activities such as the conversion team.").

214. Natural gas was first introduced into New York City in 1951. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951, *supra* note 118, at 27. Consolidated Edison completed the final stage of converting the Manhattan and Bronx neighborhoods, its largest conversion, in 1956. *See* Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, No. 15287 (May 28, 1959) (on file with New York State Archives, Reel 810). Long Island Lighting Company had some straggling components of its system which it changed over in 1957. *See* Order, N.Y. Pub. Serv. Comm'n, No. 15613 (Apr. 2, 1957) (on file with New York State Archives, Reel 822) (granting Long Island Lighting Company's petition filed on February 1, 1957, requesting to convert the remainder of the company's system to natural gas).

215. Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 6, 1952) (on file with New York State Archives, Reel 810) (estimating Westchester's conversion at 211,757 customers and 397,573 appliances); Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 19, 1954) (on file with New York State Archives, Reel 810) (estimating Riverdale/Marble Hill's conversion at 19,767 customers and 28,554 appliances); Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, No. 15287 (May 21, 1957) (on file with New York State Archives, Reel 810) (estimating Third Ward of Queens's conversion at 100,193 customers and 158,531 appliances); Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, No. 15287 (June 17, 1957) (on file with New York State Archives, Reel 810) (estimating First Ward of Queens's conversion at 84,053 customers and 121,973 appliances); Letter from Andrew Sangster, *supra* note 214 (estimating Manhattan and Bronx's conversion at 1,104,475 customers and 1,643,728 appliances).

approximately 150,000 appliances for an estimated 98,000 customers.[216] Brooklyn Union's conversion involved an estimated 925,000 customers and 2 million appliances.[217] The Long Island Lighting Company and Kings County Lighting Company accounted for several hundred thousand additional customers.[218]

D. Reliability

The transition to natural gas in New York also posed tricky reliability problems. Because it was not immediately clear how much natural gas would be available to New York consumers from the new interstate pipelines,[219] the conversion needed to occur at a pace that balanced the incoming natural gas supply with the retiring manufactured gas supply. This required the PSC to take a more active role in managing gas supplies.

First, in the lead-up to the conversion, when consumer demand for gas was increasing but the utilities had not yet obtained natural gas contracts with the new interstate pipelines, the PSC instituted moratoria on extensions of gas service into new territories and restricted the utilities' ability to provide gas to recently acquired customers.[220] Then, once the utilities obtained these contracts, the PSC carefully managed the utilities' conversion of their territories. Before a utility could convert its territory, it had to receive approval from the PSC. The PSC and its staff conducted lengthy hearings for each of the utilities' proposals, approving changeover plans only once the PSC determined that the utility had a sufficient supply of natural gas.

For instance, Consolidated Edison's first proposal to transition its territory involved only Westchester County and adjacent parts of the Bronx and

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216. Decision of Hearing Examiner E.A. Bamman, N.Y. Pub. Serv. Comm'n, No. 15309 (June 18, 1951) (on file with New York State Archives, Reel 811).

217. *Conversion to Straight Natural Gas Started by Brooklyn Union*, *supra* note 192, at 29.

218. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1951, *supra* note 118, at 37 (displaying a table of "Estimated Costs of Conversion from Manufactured to Natural Gas," as of 1952).

219. *See, e.g.*, REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1947, *supra* note 116, app. A at 272-80.

220. *See id.* app. A at 237-45, 247-55, 261-62 (describing the gas shortage and the Commission's position on service shutoffs). Specifically, the PSC issued restrictions on the use of gas for space heating. The PSC initially did so under its own authority under the New York Public Service Law. But to guarantee that the PSC had the authority to do this, the PSC requested that the New York State Legislature pass a law "clarifying" that these restrictions were within the PSC's authority. *Id.* at 278, 282. The Legislature did so. *See* REPORT OF THE PUBLIC SERVICE COMMISSION FOR THE YEAR 1948, *supra* note 118, at 79-80.

Queens.[221] The company explained to the PSC that its natural gas contract with Transcontinental was, at that time, "not sufficient to supply the requirements of all consumers" in the utility's franchise area, but it was sufficient to serve Westchester Country.[222] Before recommending that Consolidated Edison's request be approved, the hearing commissioner overseeing the utility's proposal verified that Consolidated Edison's contracted supply of natural gas from Transcontinental was more than twice that necessary to satisfy the proposed Westchester County conversion.[223]

By contrast, when Consolidated Edison returned to the PSC several months later requesting to convert additional parts of the Bronx and Manhattan to natural gas, the PSC denied its request.[224] The PSC found that Consolidated Edison had not submitted "proper assurance of continuity of service of natural gas or proper and adequate standby facilities . . . to provide a substitute gas in the event of emergency."[225] Ultimately, this incremental approach meant that the conversion of Consolidated Edison's territory occurred through five separate applications for changeovers over the course of around five years, with the PSC ensuring at each stage that the conversion would not disrupt the provision of gas service to consumers.[226]

The utilities' uncertainty regarding natural gas supplies also led them to keep open and even augment some of their manufactured gas facilities for the conversion period. For instance, even after Consolidated Edison had signed a contract with the Transcontinental pipeline for natural gas, it planned to keep open seventy-four of its more than one hundred manufactured gas plants in expectation

221. *See* Order, *supra* note 188 (granting Consolidated Edison's request to convert Westchester and parts of the Bronx and Queens).

222. Decision of Hearing Examiner E.A. Bamman, *supra* note **Error! Bookmark not defined.**.

223. *Id.*

224. Order, N.Y. Pub. Serv. Comm'n, No. 15287 (Dec. 13, 1951) (on file with New York State Archives, Reel 809).

225. *Id.*

226. The five applications were: the request to convert Westchester County and parts of the Bronx and Manhattan, *see* Order, *supra* note 188; the request to convert the Riverdale and Marble Hill areas of the Bronx and Manhattan, *see* Order, N.Y. Pub. Serv. Comm'n, No. 15287 (Dec. 29, 1952) (on file with New York State Archives, Reel 809) [hereinafter Dec. 29 Order]; the request to convert the Third Ward of Queens, *see* Order, N.Y. Pub. Serv. Comm'n, No. 15287 (Apr. 13, 1953) (on file with New York State Archives, Reel 809) [hereinafter Apr. 13 Order]; the request to convert the First Ward of Queens, *see* Order, N.Y. Pub. Serv. Comm'n, No. 15287 (Oct. 26, 1953) (on file with New York State Archives, Reel 809) [hereinafter Oct. 26 Order]; and the request to convert the remaining portions of the Bronx and Manhattan, *see* Order, N.Y. Pub. Serv. Comm'n, No. 15287 (July 27, 1954) (on file with New York State Archives, Reel 809) [hereinafter July 27 Order].

that it would still be needed to satisfy the city's demand for gas services.[227] Brooklyn Union made a similar calculation.[228]

The piecemeal way in which the transition occurred likely came with some costs. For example, the continued operation and construction of manufactured gas plants during the transition—which would quickly become useless—added to the expense. But the methodical way the PSC and the utilities oversaw the introduction of new supply resources and the closure of old generation assets ensured that customers did not experience a loss of service during the transition.

E. Costs of Conversion

Finally, one of the key questions in the natural gas transition was determining who would pay for the costs. Because this conversion was executed entirely through the tools of public utility regulation, the PSC resolved the cost questions itself through both its authority to regulate the utilities' rates in traditional ratemaking cases[229] and its oversight of the utilities' accounts and financial records.[230]

Using these mechanisms, the PSC adopted a cost-allocation approach that generally attempted to allocate the costs between the ratepayers and the utilities' shareholders—and, in particular, to distribute the costs in a way that likely minimized resistance to the transition. This can be seen through an examination of the PSC's handling of both the overall costs of the conversion and the utilities' stranded manufactured gas assets.

On the first point, the PSC determined that the utilities would pay the upfront costs of the conversion, but the utilities were permitted to amortize those costs through charges to the ratepayers over six to ten years.[231] The conversion

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227. *See* Elliott Taylor, *Natural Gas in New Pastures*, AM. GAS J., Nov. 1949, at 10, 12; *see also* Roland H. Strader, *Con-Edison Increases Water Gas Capacity at Its Astoria Manufacturing Plant*, AM. GAS J., Feb. 1950, at 10, 10 (describing Consolidated Edison's construction of new manufactured gas plants despite the company's contracts for natural gas).

228. *See* Taylor, *supra* note 227, at 12 (reporting Brooklyn Union's plans to continue operation of its manufactured gas plant even after the introduction of natural gas).

229. *See* N.Y. PUB. SERV. LAW § 66(3) (McKinney 2023).

230. *See id.* § 66(4)-(5).

231. *See, e.g.*, Order, *supra* note 188, at 1-2 (authorizing Consolidated Edison to amortize the costs associated with its Westchester conversion over a period of around five years); Dec. 29 Order, *supra* note 226, at 1-3 (authorizing Consolidated Edison to amortize the costs associated with its conversion of the Riverdale and Marble Hill areas over a period of around five years); Apr. 13 Order, *supra* note 226, at 1-3 (authorizing Consolidated Edison to amortize the costs associated with its conversion of the Third Ward of Queens over a period of around six years); Oct. 26 Order, *supra* note 226, at 1-3 (authorizing Consolidated Edison to amortize the costs

costs were treated as "operating expenses" for the utilities, not "capital expenses," which meant that the utilities could recover the conversion costs but could not earn a rate of return on the capital investment from the conversion.[232] Additionally, the amortization of the utilities' upfront conversion costs did not include interest charges to reflect the multiyear amortization period.[233] As a result, both the utilities and the ratepayers paid for the conversion costs. Indeed, one could even argue that the utilities shouldered a greater portion of the expenses.

These expenses were substantial. For instance, examiners estimated the total cost of Consolidated Edison's conversion at around $41.6 million in 1954,[234] or approximately $471 million today.[235] Brooklyn Union, the city's second-largest utility after Consolidated Edison, had conversion costs of around $21 million in 1952,[236] or about $240 million today.[237]

Additionally, the PSC allowed the utilities to recover some, but not all, of the costs associated with their stranded manufactured gas assets. As mentioned, the utilities had invested millions of dollars in constructing manufactured gas plants with the idea that these plants would be used (and paid for) by New York City customers for decades to come. But the introduction of natural gas cut short these plants' operational life. To account for these losses, the PSC allowed the utilities to recover the remaining costs associated with their manufactured gas plants by treating them as "property losses" that could be amortized as operating expenses over the course of several years.[238] But treating these plants as losses

associated with its conversion of the First Ward of Queens over a period of seven years); July 27 Order, *supra* note 226, at 1-3 (authorizing Consolidated Edison to amortize the costs associated with its conversion of Manhattan and the Bronx over a period of ten years); Order, N.Y. Pub. Serv. Comm'n, No. 15309 (June 27, 1951) (on file with New York State Archives, Reel 811) (authorizing the Brooklyn Borough Gas Company to amortize the costs associated with its changeover to natural gas over a period of seven years).

232. *See, e.g.*, Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n (June 5, 1952) (on file with New York State Archives, Reel 810) (recommending that utilities changing over their facilities to natural gas record the costs for the changeover in separate operation and maintenance expense accounts whose amounts would then be amortized over the specified period).

233. *See, e.g.*, Decision of Hearing Examiner E.A. Bamman, N.Y. Pub. Serv. Comm'n (July 19, 1954) (on file with New York State Archives, Reel 810) (breaking down the monthly amortization costs for Consolidated Edison's conversion costs up to its final conversion of Manhattan and the Bronx, which does not include a line item for interest charges).

234. *See id.* at 17.

235. *See Inflation Calculator*, *supra* note 181 (calculating that $1 in 1954 is worth $11.35 in 2023).

236. *Conversion to Straight Natural Gas Started by Brooklyn Union*, *supra* note 192, at 29.

237. *See Inflation Calculator*, *supra* note 181 (calculating that $1 in 1952 is worth $11.48 in 2023).

238. *See, e.g.*, Order, N.Y. Pub. Serv. Comm'n, No. 15309 (Oct. 29, 1952) (on file with New York State Archives, Reel 811) (authorizing the Brooklyn Borough Gas Company to amortize the

also meant that they would not be included in the utilities' "rate base," and thus the utilities would no longer earn a return on their investments associated with these plants.

Through this cost-accounting, the PSC softened the blow of the transition to both the utilities and the ratepayers. The utilities may have shouldered more of the burden of paying for the conversion costs, and they may not have earned the expected returns on their manufactured gas assets. But they did not incur the full costs of the transition. Similarly, the ratepayers may also have been more amenable to the costs of the conversion. From their perspective, those costs were amortized over a long time horizon, and their appliances were converted with no upfront out-of-pocket expenses.

* * *

The New York example illuminates several key points about energy law and energy transitions. First, it suggests that, historically, there was no neat divide between energy and environmental law. Energy regulators could use the tools of energy law to address environmental problems just as much as more traditional energy-related concerns. More than that, the New York example illuminates the ways in which energy regulation—in the form of public utility regulation—was better suited to addressing the underlying structural causes of environmental harms. The PSC led the charge in selecting the fuel choice that would ultimately supply the city's energy needs. This allowed the PSC to, first, identify the broader public interest in having energy infrastructure that relied on a cleaner-burning fuel, and second, orient the construction of the city's energy grid so that it was compatible with this fuel choice. In other words, the PSC used energy-law tools to resolve first-order questions about what type of infrastructure would best provide energy consistent with the public interest, rather than second-order questions about how to deal with the environmental harms of this infrastructure after it had already been chosen. In this way, the tools of energy law may be preferable to those of environmental law in addressing some environmental problems.

Second, the New York example shows how proactive and public-interest-oriented state public utility commission can be important institutions in pushing energy transitions forward at the regional or federal levels. New York's transition involved deep-seated resistance by interests that were likely to be harmed by the transition, including competing industries. These interests concentrated their opposition in proceedings before federal regulators. The PSC provided an

remaining book value of its manufactured gas plants over a period of seven years); Order, N.Y. Pub. Serv. Comm'n, No. 15309 (Dec. 2, 1957) (on file with New York State Archives, Reel 811) (same); *see also* Letter from Andrew Sangster, Chief, Bureau of Utils. Acct., N.Y. Pub. Serv. Comm'n, (Nov. 19, 1957) (on file with New York State Archives, Reel 811) (explaining amortization of property losses associated with natural gas conversion).

important counterweight to these voices, as it marshalled its own resources to advocate for New York's interest at the federal level.

This observation could be helpful in today's transition. As energy-law scholars Alexandra Klass, Joshua Macey, Shelley Welton, and Hannah Wiseman have pointed out, our energy regulation has become siloed across a variety of regional and federal venues.[239] Shelley Welton has also separately highlighted how these fora can be dominated and coopted by industry interests.[240] Given the fractured state of our energy regulation, the New York example suggests that state public utility commissions could play a key coordinating and advocacy role, particularly in pushing back against the discrete interests of industry in favor of the broader public interest.

Third, the PSC was an important first mover in the transition. The PSC had determined that a transition to natural gas would be in the public's interest, but the utilities initially were not on board because of the expense of the transition and concerns about their stranded assets. The PSC overcame these barriers by, first, cajoling the utilities to secure natural gas contracts and, second, adopting a cost-allocation method that reduced the burden on the utilities' stranded assets. The PSC was aided in this effort by the expectation that natural gas would be a cheaper fuel over the long run. It may be important for public utility commissions to play a similar role in today's clean-energy transition, where a clean-energy grid is projected to be cheaper over the long run[241] but short-term barriers could dissuade utilities from transitioning.

Finally, New York's conversion suggests that transitions ought to be viewed as staggered and piecemeal efforts, not immediate transformations. The PSC had to balance incoming natural gas with outgoing manufactured gas to ensure stability of supply. Today's clean-energy transition will likely be similarly

239. *See* Klass et al., *supra* note 1, at 996 (defining "siloing" as "the division of authority over a policy area among different federal agencies, different levels of government, or private and public agencies," and noting that sometimes "the division of authority involves different agencies addressing the same policy issue"); *see also id.* at 996-1005 (describing siloing and its benefits and disadvantages in the context of energy regulation).

240. *See* Shelley Welton, *Rethinking Grid Governance for the Climate Change Era*, 109 CALIF. L. REV. 209, 209 (2021) ("[F]ossil fuel companies essentially run the United States' electricity grid . . . .").

241. *See, e.g.*, Goldman Sch. of Pub. Pol'y, *2035: The Report*, UNIV. OF CAL. BERKELEY 4 (June 2020), https://www.2035report.com/wp-content/uploads/2020/06/2035-Report.pdf [https://perma.cc/7CK5-RMXM] (finding that in an aggressive decarbonization scenario, wholesale electricity costs would be ten percent lower in 2035 than they were in 2020 because of low-cost renewable-energy resources).

staggered.[242] Some energy scholars have labeled the period in which generation capacity is simultaneously added and removed as a "mid-transition" and argue that its unique challenges merit more technical and regulatory attention.[243] The New York example suggests that public utility commissions help balance reliability and speed during mid-transitions.

IV. PUBLIC UTILITY REGULATION'S POTENTIAL

The New York example reveals the ways in which energy regulators used the traditional tools of public utility regulation to address an environmental problem. This Part discusses how that insight is still relevant today. First, it brings the New York story up to the present day by addressing two significant intervening developments: first, the restructuring of our energy systems in the 1990s and 2000s; and second, the appearance of the formal body of environmental law in the 1970s. Although both of these developments changed the legal landscape, they nonetheless preserved the possibility for many state public utility commissions to use the tools of public utility regulation to address environmental problems.

The Part then turns to the modern day. Recognizing that there are important differences between today's clean-energy transition and New York's historical energy transition, the New York example nonetheless suggests that state public utility commissions could play a very different role in today's energy transition—one that is proactive and public-interest oriented. The failure of many state public utility commissions to play that role today is not because energy law is too doctrinally constrained.

Finally, taking a step back, seeing the potential in energy law has never been more crucial. Recognizing that energy and environmental law are intertwined—not divided—allows us to see how developments in environmental law are also connected to energy law. Specifically, a series of recent environmental-law cases have involved a line of reasoning that characterizes federal efforts to regulate greenhouse gases as unbounded uses of agency authority. This line of reasoning reflects the same erroneous paradigm critiqued throughout this Feature—that energy law stops where environmental law starts, and vice versa. Rejecting this

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242. *See, e.g.*, James H. Williams, Ryan A. Jones, Ben Haley, Gabe Kwok, Jeremy Hargreaves, Jamil Farbes & Margaret S. Torn, *Carbon-Neutral Pathways for the United States*, 2 AGU ADVANCES art. no. e2020AV000284, at 20 (2021) (finding that in most carbon-neutral pathways, existing natural gas generating capacity is maintained).

243. *See, e.g.*, Emily Grubert & Sara Hastings-Simon, *Designing the Mid-Transition: A Review of Medium-Term Challenges for Coordinated Decarbonization in the United States*, 13 WIREs CLIMATE CHANGE art. no. e768, at 2 (2022).

paradigm and instead recognizing that energy and environmental regulators play on the same field will be necessary to address greenhouse gases.

A. Public Utility Laws Today

The public utility laws that enabled the New York PSC to oversee and implement an energy transition in the 1940s and 1950s still exist in many states in largely unchanged form. In the intervening years, important developments in energy law have complicated the landscape. But the most significant of these changes occurred at the federal level. At the state level, the traditional model of public utility regulation has remained more consistent.

New York's PSC implemented the city's historical energy transition using traditional tools of public utility regulation: the authority to ensure that the state's utilities charged "just and reasonable" rates and provided "safe and adequate" service, implemented through ratemaking and related proceedings.[244] The very public utility laws under which New York executed its historical energy transition were the model for other states' laws. New York and Wisconsin were the first two states to create statewide public utility commissions with (a) general jurisdiction over their utilities in the state, (b) the authority to ensure that public utilities charged "just and reasonable" rates and provided "safe and adequate" service, and (c) the ability to conduct ratemaking and other proceedings and to monitor and investigate utilities' accounting practices.[245] The Wisconsin and New York laws were "the basis of a large mass of the public utility legislation" enacted by other states.[246]

In the following years, there were important changes in the field of energy law. Most notably, in the 1990s and 2000s, regulators at the federal level

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244. *See supra* Part III.

245. *See* Sharfman, *supra* note 138, at 2-3, 8-18 (summarizing the common attributes of the New York commission model adopted by other states, which included an independent, statewide commission with general jurisdiction over public utilities in the state; authority to enforce a utility's franchise through issuance of certificates of public convenience and necessity; authority to engage in ratemaking, including authority to ensure utilities charge just and reasonable rates; and authority to regulate utilities' accounts and reports).

246. *Id.* at 2 (explaining that New York and Wisconsin were the first states to create public service commissions of their kind and that "[t]he Wisconsin and New York commissions have served, to a large degree, as models for the numerous administrative bodies for the regulation of public utilities that have sprung into being since 1907"); David Nord, *The Experts Versus the Experts: Conflicting Philosophies of Municipal Utility Regulation in the Progressive Era*, 58 WIS. MAG. HIST. 219, 228 (1975) ("The policy of regulation by state commission was, in effect, launched in 1907 when both New York and Wisconsin, under the leadership of Governors Charles Evans Hughes and Robert M. La Follette, passed into law comprehensive programs for statewide regulation by independent commissions. These two programs quickly became models, and other states followed suit . . . .").

"deregulated" or "restructured" the federal components (predominantly wholesale sales and interstate transmission) of our energy systems.[247] The purpose of this restructuring was to introduce more market competition into the energy sector, primarily by opening up the sector to nonutility entities and allowing market forces to determine the cost of energy generation.[248]

However, because of the jurisdictional divide between states and the federal government, states had a choice as to how much restructuring they wanted to incorporate into their energy regulation. Ultimately, the states split, with some electing for greater levels of restructuring and some less. Scholars William Boyd and Ann E. Carlson have divided this split into three categories: traditional states, which maintained much of the same regulatory structure post-restructuring as they had pre-restructuring (approximately twenty states); restructured states, which embraced the greatest degree of competition, including in both wholesale and retail sales of energy (approximately sixteen states); and hybrid states, which chose to participate in competitive wholesale energy markets but maintained traditional regulation of their retail sales of energy (approximately twelve states).[249]

As a result, the availability of traditional tools of public utility regulation today varies from state to state: traditional states—typically located in the southeast and west—generally look the most like the New York model in the 1940s and 1950s, while fully restructured states—typically located in the northeast and Texas—resemble that model the least.

That being said, even amongst the restructured states, many states have retained traditional public utility regulation over significant parts of their energy systems. For instance, all states, regardless of their categorization, preserved the authority to regulate the rates associated with the distribution of energy.[250] All states also continue to regulate the standards of service of electricity providers in their state.[251] And most states still regulate retail sales of energy using traditional ratemaking authorities.[252] However, in the restructured or hybrid states, the

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247. The deregulation or restructuring story has been told many times. For just one thorough discussion, see generally Joseph D. Kearney & Thomas W. Merrill, *The Great Transformation of Regulated Industries Law*, 98 COLUM. L. REV. 1323 (1998).

248. *See id.* at 1325-26, 1344-45, 1353-55.

249. *See* Boyd & Carlson, *supra* note 149, at 835-39.

250. *Id.* at 838.

251. *Id.* at 837 (explaining that, even in restructured states, public utility commissions regulate the terms and standards of service that retail choice providers can offer).

252. *Id.* at 836-39. But even in restructured states, where customers theoretically have a choice to opt out of traditional public utility regulation of their retail rates, most customers do not make that choice, and the public utility commission continues to regulate retail rates. *Id.* at 838; *see*

state public utility commission's control over generation resources is reduced because those states' utilities tend to purchase energy supplies on federally regulated wholesale markets.[253]

Thus, all states today still have some version of a public utility commission that regulates the state's energy utilities.[254] And although it ultimately depends on a state-by-state analysis, many of these commissions have the same sets of authorities over retail rates and service standards that the New York PSC did in the 1940s and 1950s.[255]

Consider, for example, the public utility laws of Maryland, a state that falls somewhere in the restructured- or hybrid-state category.[256] Maryland law gives the state's public utility commission the "power to set a just and reasonable rate" for retail sales of energy from public utilities in the state;[257] to "adopt regulations that prescribe standards for safe, adequate, reasonable, and proper service for any class of public service company" in the state;[258] and to regulate utilities'

also Marc Harnish, *Residential Retail Electric Choice Participation Rate Has Leveled Off Since 2019*, U.S. ENERGY INFO. ADMIN. (Mar. 15, 2023), https://www.eia.gov/todayinenergy/detail.php?id=55820 [https://perma.cc/53P3-EQUV] (finding that, even in states with retail choice, at least fifty percent—and often up to seventy-five percent—of customers are subject to traditional rate regulation). Texas is the exception, where retail choice is mandated by the legislature. *Id.*

253. *See* Boyd & Carlson, *supra* note 149, at 837-39.

254. For a list of these commissions, see *About NARUC: Regulatory Commissions*, NAT'L ASS'N REGUL. UTIL. COMM'RS, https://www.naruc.org/about-naruc/regulatory-commissions [https://perma.cc/2VRY-XCN7].

255. *See* Danielle Sass Byrnett & Daniel Shea, *National Council on Electricity Policy MINI GUIDE: Engagement Between Public Utility Commissions and State Legislatures*, NAT'L COUNCIL ON ELEC. POL'Y 1-2, https://pubs.naruc.org/pub/83C8367C-D538-F18E-A92F-DC638F5E07E9 [https://perma.cc/Z6XM-JTPZ] ("Under state law, PUCs have an obligation to ensure the establishment and maintenance of utility services and to ensure that those services are provided at rates and conditions that are fair, just, and reasonable for all consumers. PUCs typically oversee utility services (e.g., electricity, natural gas, telecommunications, water) by adjudicating utility rate setting, determinations around construction and siting for service-related infrastructure, and resources used to meet consumer needs across a utility's territory. Commissions universally regulate investor-owned utilities, although a few also oversee rural electric cooperatives and municipal electric utilities to varying degrees. Depending on the state, commissions may also engage in statutorily defined rulemaking or regulation-writing processes, quasi-judicial proceedings, and/or non-contested investigatory matters.").

256. Maryland technically offers a retail-choice program, but its participation rates are low enough (less than a quarter of the state's population) that, for most customers in the state, the regulatory apparatus functions as a hybrid one. *See* Harnish, *supra* note 252; *see also* Boyd & Carlson, *supra* note 149, at 838 (identifying the mid-Atlantic states as hybrid states).

257. MD. CODE ANN., PUB. UTIL. § 4-102(b) (West 2023).

258. *Id.* § 5-101(a).

accounting procedures[259] and review their financial activities.[260] The commission also has authority over local distribution system planning.[261] Although Maryland deregulated its energy sector such that its utilities can now purchase electricity generation on federally regulated wholesale markets,[262] the state itself retains the authority to decide which generation resources will be used to satisfy its citizens' energy needs.[263]

Moreover, not only have many state public utility commissions maintained their traditional tools of public utility regulation, but also their state legislatures have given them additional tools in recent years to enable them to better address environmental concerns, including climate change. For instance, some states have passed laws explicitly giving their public utility commissions the authority to consider environmental factors in their energy decisions. Minnesota's public utility statute states that "[e]very rate made, demanded, or received by any public utility" in the state "shall be just and reasonable" and that "[t]o the maximum reasonable extent, the commission shall set rates to encourage *energy conservation and renewable energy use . . . .*"[264] Furthermore, most states have passed some form of a renewable-portfolio or clean-energy standard requiring their utilities to procure a certain portion of their electricity from clean or renewable resources.[265] Maryland is one such state.[266] Finally, some states have passed legislation giving public utility commissions general authority to address climate change and greenhouse-gas emissions.[267]

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259. *See id.* §§ 6-201 to -210.

260. *See id.* §§ 6-101 to -106.

261. *See id.* §§ 7-801 to -804.

262. *See id.* §§ 7-505 to -514 (ordering the state's Public Service Commission to oversee the restructuring of the state's electricity sector); *see also* Hughes v. Talen Energy Mktg. LLC, 578 U.S. 150, 154-55 (2016) (describing Maryland's deregulation of its energy market).

263. *See Hughes*, 578 U.S. at 166 (observing that Maryland has the ability to "encourage development of new or clean generation," including through "tax incentives, land grants, direct subsidies, construction of state-owned generation facilities, or re-regulation of the energy sector").

264. MINN. STAT. § 216B.03 (emphasis added).

265. *See supra* Section I.A.

266. *See* MD. CODE ANN., PUB. UTIL. §§ 7-701 to -714 (West 2023).

267. For instance, in 2021, Massachusetts passed "An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy." 2021 Mass. Acts 7. Among other things, this Act amended the state's public utility law to require the state's Department of Public Utilities to prioritize "safety, security, reliability of service, affordability, equity and reductions in greenhouse gas emissions" when discharging its traditional regulatory responsibilities. MASS. GEN. LAWS ch. 25, § 1A (2023). The New York example suggests that the Massachusetts Department of Public Utilities might be bold in how it interprets this authority. My thanks to Ari Peskoe for pointing out this example.

As such, many state public utility commissions today both maintain the ability to consider environmental factors through their traditional tools of public utility regulation and have a new suite of authorities for addressing climate change in particular.

B. The Emergence of Environmental Law

Another important intervening development since New York's energy transition is the emergence of environmental law as a formal body of law in the 1970s.[268] While this field expanded regulators' ability to address a variety of environmental problems, it did not preempt or supplant state public utility commissions' abilities to consider environmental factors in exercising their traditional tools of public utility regulation.

"Environmental law" may colloquially be thought of as certain environmental agencies in charge of implementing specific environmental statutes—for instance, the U.S. Environmental Protection Agency's (EPA) implementation of the Clean Air Act. But that image reflects only a small part of the environmental-law movement and the environmental law that came from it. One of the central premises of the environmental-law movement was to recognize that a variety of government regulators (even those we might not think of as "environmental" at their core) have an obligation to take environmental factors into account in their deliberations. Environmental law surfaced that obligation and enabled members of the public to enforce it.[269] In other words, environmental law expanded the government's general duty to regulate in the "public interest" to include consideration of environmental factors.[270]

This expansion of the public interest took essentially three forms. First, Congress passed new federal statutes to instill an environmental ethos across the government. For instance, the first major federal environmental law, the National Environmental Policy Act of 1969, required all federal agencies to adopt procedures that would enable them to consider the environmental consequences

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268. *See, e.g.*, LAZARUS, *supra* note 104, at 48-49 (explaining that the field of environmental law is generally said to have originated in the 1970s).

269. *See* SAMUEL HAYS, EXPLORATIONS IN ENVIRONMENTAL HISTORY 6-8, 421-23, 426-27 (1998) (describing the history of the environmental-law movement's effort to force "development"-oriented agencies to incorporate environmental concerns into their regulatory approaches). *See generally* Paul Sabin, *Environmental Law and the End of the New Deal Order*, 33 LAW & HIST. REV. 965 (2015) (describing the role of public-interest lawyers in bringing about this view).

270. *See* Sabin, *supra* note 269, at 985 ("Public interest lawyers [in the environmental-law movement] sought to make federal agencies fulfill broader public missions that included the health of forests and streams and the well-being of the people who used them in different ways.").

of their actions.[271] Second, Congress enacted new federal environmental-protection statutes addressing various topics, ranging from air pollution to national-forest management and charging a bevy of federal and state agencies with implementing statutory requirements.[272] Third, developments in administrative law during this period—including relaxed standing requirements and the formulation of the "hard look" doctrine—allowed environmental public-interest organizations to use litigation and administrative intervention to encourage government agencies to consider environmental interests.[273] On this last point, public-interest litigators, and courts sympathetic to their claims, aimed to hold government agencies of all stripes to account. For example, federal courts held that the Federal Power Commission had an obligation to consider environmental interests in its decisions regarding whether to license the construction of new energy facilities.[274] This obligation came from the Federal Power Act's "public interest" mandate, not a traditional "environmental law" statute.[275]

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271. *See* 42 U.S.C. § 4331 (2018) (establishing a national environmental policy); *id.* § 4332(2) (outlining procedural requirements); *see also* LAZARUS, *supra* note 104, at 68 ("With the strong backing of the courts, [the National Environmental Policy Act's (NEPA)] straightforward requirement that each federal agency assess and consider the significant environmental impacts of its actions and alternative courses of action before the agency acts changed governmental behavior and policy.").

272. *See* LAZARUS, *supra* note 104, at 70 (compiling the major federal environmental-protection statutes enacted in the 1970s).

273. *See id.* at 80-81, 113-14.

274. *See, e.g.*, Udall v. Fed. Power Comm'n, 387 U.S. 428, 450 (1967) (holding that the "test" under the Federal Power Act for licensing new hydropower projects is "whether the project will be in the public interest," and explaining "that determination can be made only after an exploration of all issues relevant to the 'public interest,' including future power demand and supply, alternate sources of power, the public interest in preserving reaches of wild rivers and wilderness areas, the preservation of anadromous fish for commercial and recreational purposes, and the protection of wildlife"); Scenic Hudson Pres. Conf. v. Fed. Power Comm'n, 354 F.2d 608, 615 (2d Cir. 1965) ("The Federal Power Act seeks to protect non-economic as well as economic interests."). On the importance of *Udall* and *Scenic Hudson* in the environmental-law movement, see Sabin, *supra* note 269, at 989. *See generally* ROBERT LIFSET, POWER ON THE HUDSON: STORM KING MOUNTAIN AND THE EMERGENCE OF MODERN AMERICAN ENVIRONMENTALISM (2014) (examining the evolution of environmentalism during the 1960s and 1970s).

275. *See Udall*, 387 U.S. at 450; *Scenic Hudson*, 354 F.2d at 612-16. More recent cases have reaffirmed the notion that the Federal Power Commission (now FERC) can consider environmental factors in its energy decisions. *See, e.g.*, Sierra Club v. Fed. Energy Regul. Comm'n, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (holding that under the Natural Gas Act, FERC has the authority to consider the environmental effects of its decision to certify the construction and operation of an interstate natural-gas pipeline and can "deny a pipeline certificate on the ground that the individual pipeline would be too harmful to the environment"); NAACP v. Fed. Power Comm'n, 425 U.S. 662, 669-70, 670 n.6 (1976) (recognizing that the "public interest" under

In this context, it makes little sense to think that an environmental law or regulator would broadly supplant or preempt the consideration of environmental issues by another government actor. Indeed, when Congress intended to transfer duties previously exercised by one federal agency to another agency, it specified such changes. For instance, when Congress created the EPA, Congress transferred to the EPA a limited set of duties that other federal agencies previously exercised.[276] In other cases, like regulating fuel-economy standards and emission standards for motor vehicles, Congress directed multiple federal agencies to share regulatory authority.[277] And in yet other contexts, like the Federal Clean Air Act, Congress allocated authority between federal and state regulators and declined broadly to preempt state and local government regulation of air pollution.[278]

Against this backdrop, there is no indication that the development of the field of environmental law entailed wholesale preemption of state public utility commissions' ability to take environmental concerns into account. Nor is it likely that such a seismic shift would have flown under the radar, given the traditional division of authority between the states and the federal government in the regulation of energy. In fact, the most prominent federal statute passed during this

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the Natural Gas Act and the Federal Power Act, both administered by FERC, includes "conservation" and "environmental" considerations).

276. *See* Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15623, 15623-25, *reprinted in* 84 Stat. 2086 (specifying authorities to be transferred from other federal agencies to the newly created EPA).

277. *See* 49 U.S.C. § 32902 (2018) (outlining the Department of Transportation's (DOT) authority to set corporate average fuel-economy standards for car and truck fleets); 42 U.S.C. § 7521 (2018) (outlining EPA's authority to set emission standards for mobile sources); Massachusetts v. EPA, 549 U.S. 497, 531-32 (2007) (holding that the EPA and DOT share authority under these provisions to regulate fuel-economy standards and carbon-dioxide emission standards for motor vehicles). Administrative-law scholars have recognized the tendency of Congress to create overlapping and even identical regulatory space across federal agencies and have offered various reasons why this might make sense. *See, e.g.*, Sharon B. Jacobs, *The Statutory Separation of Powers*, 129 YALE L.J. 378, 382 (2019); Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1131, 1134-38 (2012); Jacob E. Gersen, *Overlapping and Underlapping Jurisdiction in Administrative Law*, 2006 SUP. CT. REV. 201, 203; Jason Marisam, *Duplicative Delegations*, 63 ADMIN. L. REV. 181, 182-87 (2011).

278. Under the Clean Air Act, the EPA is tasked with setting national primary and secondary ambient air-quality standards for certain air pollutants, *see* 42 U.S.C. § 7409 (2018), and the states are responsible for developing implementation plans to ensure their compliance with these standards, *see id.* § 7410; *see also* Train v. Nat. Res. Def. Council, 421 U.S. 60, 79 (1975) (explaining that, under the Clean Air Act, the EPA is charged "with the responsibility for setting the national ambient air standards," but states for the most part are in charge of "determining and enforcing the specific, source-by-source emission limitations which are necessary" for the state to meet those national standards). Additionally, the Clean Air Act contains a savings clause that permits states and political subdivisions thereof to adopt air-pollution regulations that are not less stringent than the Act's requirements. *See* 42 U.S.C. § 7416 (2018).

period that touched upon state public utility commissions' traditional authorities, the Public Utility Regulatory Policy Act of 1978 (PURPA), encouraged state public utility commissions to support energy conservation and the development of small, renewable generation resources through their traditional ratemaking authorities.[279] And, consistent with federal deference to the states in this context, PURPA merely encouraged state public utility commissions to consider such changes to their ratemaking authorities; it did not require them to do so.[280]

Nor is there any indication that state legislatures engaged in widespread revocation of their state public utility commissions' authority to consider environmental concerns.[281] In fact, the environmental revolution of the 1970s led to quite the opposite. Several states passed their own versions of environmental-policy acts.[282] State public utility commissions, pushed by many of the same environmental public-interest organizations that had appeared at the national level, adopted new rate designs to encourage energy conservation and the development of alternative energy resources.[283] And, later on, state public utility

279. *See* Pub. L. No. 95-617, 92 Stat. 3117, 3119 (1978) (codified at 16 U.S.C. § 2601). *See generally* Paul L. Joskow, *Public Utility Regulatory Policy Act of 1978: Electric Utility Rate Reform*, 19 NAT. RES. J. 787 (1979) (summarizing the provisions of the Public Utility Regulatory Policies Act).

280. *See* 16 U.S.C. § 2621(a) (2018). Indeed, because of the traditional division of authority between states and the federal government in this context, federal preemption in the field of energy regulation is simply different. This observation became clear in a recent effort by the city of Berkeley, California, to ban natural-gas piping in newly constructed buildings. In a challenge to the city's efforts, the Ninth Circuit held the city's ordinance was preempted by the federal Energy Policy and Conservation Act (EPCA). *See* Cal. Rest. Ass'n v. City of Berkeley, 89 F.4th 1094, 1098-99 (9th Cir. 2024) (denying rehearing en banc and amending panel opinion). But the Court of Appeals was careful to exclude from its preemption analysis state or local government regulation of utility distribution of natural gas, *see id.* at 1103, likely in recognition of the traditional regulatory authority that states have exercised over their public utilities.

281. There may have been changes in individual states' laws that are relevant. For instance, the recent youth-plaintiff climate-change suit in *Held v. Montana* involved a law passed by Montana in 2023 that amended the state's environmental-policy act to prohibit the state's agencies from considering the greenhouse-gas impacts associated with their actions. *See* MONT. CODE ANN. § 75-1-201(2)(a) (2023); Held v. Montana, No. CDV-2020-307, slip op. at 16 (Mont. Dist. Ct. Aug. 14, 2023). Notably, the Montana district court held that this law violated the state's constitution. *See Held*, slip op. at 94-101.

282. For more information on state NEPAs, see, for example, Daniel P. Selmi, *Themes in the Evolution of the State Environmental Policy Acts*, 38 URB. LAW. 949, 953-1001 (2006); Jeffrey T. Renz, *The Coming of Age of State Environmental Policy Acts*, 5 PUB. LAND L. REV. 31, 32-52 (1984); and Nicholas C. Yost, *NEPA's Progeny: State Environmental Policy Acts*, 3 ENV'T L. REP. 50090, 50090-98 (1973).

283. *See, e.g.*, Carolyn Brancato, *New Approaches to Current Problems in Electric Utility Rate Design*, 2 COLUM. J. ENV'T L. 40, 57-76 (1975) (describing several state public utility commission decisions in which utility rates were redesigned to accord with the goals of economic

commissions adopted various forms of long-term resource planning intended to identify energy efficiency, conservation, and alternative energy-generation options.[284] More recently, legal scholars have engaged in a systematic review of state public utility commissions' statutory and regulatory authorities and concluded that most commissions have either explicit or implicit authority to consider environmental factors in their decision making.[285]

Thus, the appearance of the field of environmental law writ large did not doctrinally supplant or preempt state public utility commissions' ability to consider environmental factors in their use of the traditional tools of public utility regulation, just as the New York PSC did more than seventy years ago.

C. Public Utility Commissions and the Clean-Energy Transition

Given the substantial continuity in energy law over the last several decades (with the caveat that the legal landscape varies state-by-state), many state public utility commissions today have the authority to consider environmental factors in their energy decisions. Put differently, at the state level, energy-law tools are available to address environmental problems.

This simple observation suggests two points: first, rather than understanding energy law and environmental law as divided or fundamentally antagonistic, they ought to be understood as deeply connected. Both are fields of law that are capable of addressing environmental problems. Second, drawing from the historical example of New York's natural gas transition, in some cases, using energy-law tools to address environmental issues may be preferable to using the tools of environmental law. In particular, for a clean-energy transition, energy

efficiency, environmental protection, and conservation); David N. Carvalho, *Energy Conservation Through the State Public Utility Commissions*, 3 HARV. ENV'T L. REV. 160, 168-85 (1979) (detailing efforts in state public utility commissions to promote energy conservation and alternative energy resources).

284. *See* Ralph Cavanagh, *Responsible Power Marketing in an Increasingly Competitive Era*, 5 YALE J. ON REGUL. 331, 337 n.23 (1988) (discussing the development of "least-cost planning" initiatives in state public utility commissions to allow for comparison of conservation and generation options); Richard L. Ottinger, Susan E. Babb, Elizabeth Barbanes & Carol Padron, *Least-Cost Utility Planning and Demand-Side Management: A Bibliography*, 6 PACE ENV'T L. REV. 79, 85 (1988) ("The least-cost planning approach also offers an excellent opportunity for consideration of environmental protection and enhancement possibilities in the energy production cycle. In making resource acquisition decisions State public utility commissions are beginning to require that utilities consider environmental consequences beyond the costs of complying with state and federal control requirements.").

285. *See* Michael Dworkin, David Farnsworth, Jason Rich & Jason Salmi Klotz, *Revisiting the Environmental Duties of Public Utility Commissions*, 7 VT. J. ENV'T L. 1, 1-2 (2006); Michael Dworkin, David Farnsworth & Jason Rich, *The Environmental Duties of Public Utility Commissions*, 18 PACE ENV'T L. REV. 325, 326-27 (2001).

regulators have the tools at their disposal to address climate change and may be particularly well-suited to do so.

Admittedly, there are important factual differences between New York's historical natural gas transition and today's clean-energy transition. For example, the sheer scope and scale of today's clean-energy transition are dramatically different. Rather than transitioning one city away from one kind of fuel, the clean-energy transition requires shifting the entire United States' energy system from fossil fuels to clean energy.[286] Additionally, New York's natural gas transition occurred at a time when the grid itself was less complicated. Following the restructuring efforts of the 1990s and 2000s, today's energy grids, the regulatory authorities in charge of them, and the new generation resources and transmission lines they will require are much more complex and interconnected.[287] Furthermore, the environmental concerns at issue are different: in the New York example, local smoke pollution was the primary concern, whereas today's clean-energy transition is concerned with the multifaceted, global problems of climate change. Finally, at a more pragmatic and sociocultural level, it is difficult to imagine the consuming public responding in the same way to a utility-implemented conversion effort where utility workers enter people's homes and change out their appliances. Individual resistance may pose significant barriers.

Some of these differences are more serious than others. For instance, while the scale of the clean-energy transition is certainly more dramatic than the natural-gas transition, it is not unreasonable to imagine that the clean-energy transition will occur in a piecemeal way, city by city, state by state, or region by region, especially since governance over our energy grids is already so fragmented. One bold public utility commission — or one bold municipally-owned utility system — could take inspiration from the New York PSC's example and perhaps make meaningful progress. For example, the city of Albany, California, is currently decommissioning its gas line in cooperation with its utility company to reduce its reliance on gas and create a pilot project replicable in other cities.[288]

Similarly, although the notion of a utility-implemented conversion effort could sound far-fetched, we are already seeing a few utilities engage in

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286. For just a sample of decarbonization pathways, all of which rely on a large-scale shift to clean energy, see generally Eric Larson et al., *Net-Zero America: Potential Pathways, Infrastructure, and Impacts*, PRINCETON UNIV. (Oct. 29, 2021), https://netzeroamerica.princeton.edu/the-report [https://perma.cc/N5MN-4Y2K]; and Williams et al., *supra* note 242.

287. *See generally* Klass et al., *supra* note 1 (providing a nice overview of the complexities of our current grid and the unique difficulties posed by introducing renewable generation into that mix).

288. *See* Ysabelle Kempe, *Plans to Get an Entire Block off the Natural Gas System Take Shape in One California City*, UTIL. DIVE (Nov. 27, 2023), https://www.utilitydive.com/news/albany-ca-gas-pipeline-decommissioning-building-electrification-decarbonization/700349 [https://perma.cc/8MSD-9UR8]. Thanks to Alex Klass for this example.

something similar. For instance, a Vermont utility, Green Mountain Power, has requested authorization from the Vermont Public Utility Commission to provide home battery systems for its customers as both a distributed-generation option and an effort to increase grid reliability in the face of changing weather patterns.[289]

Additionally, the global aspects of climate change may have less relevance when public utility commissions consider the local impacts of climate change on a state's grid. The harms of wildfires in Hawaii or severe winter storms in Texas, for example, are no less local just because intricately connected global processes drive them.

On the other hand, the complexity of our existing grid means that the New York example likely has less to say about constructing high-voltage interstate transmission lines or integrating variable-generation resources onto a regional grid.

The point is not to establish a one-to-one comparison between New York's historical energy transition and the types of actions that regulators or utilities could take today. Rather, the point is to emphasize that public utility commissions could play a very different role in today's clean-energy transition than they are currently playing. They could be proactive, using their control over our energy grids' retail and distribution components to coordinate implementation of new distributed generation like rooftop solar panels or battery storage. They could represent the public interest in debates over what generation resources to build and how to connect them to the grid through new transmission lines—particularly when those debates happen at the regional and federal levels. They could coordinate with utilities to get them on board with the energy transition and calculate cost-allocation methods to reduce parties' resistance to the transition. They could be agents of change rather than symbols of the status quo.

Instead, many public utility commissions have not taken a proactive role in the clean-energy transition. Consider, for example, the proceeding before the Alabama Public Service Commission discussed in Part I.[290] The Commission claimed to reject the environmental intervenors' arguments because "[i]t is not for this Commission to impose 'environmental policy' of any kind."[291] But a closer read of the Commission's decision suggests that policy disagreements, not doctrinal constraints, were the driving force of the Commission's decision. The

289. *See* Diana DiGangi, *Green Mountain Power Proposes Energy Storage for All Vermonters*, UTIL. DIVE (Oct. 10, 2023), https://www.utilitydive.com/news/green-mountain-power-vermont-storage-grid-hardening/696180 [https://perma.cc/22NS-H89Y].

290. *See supra* Section I.A.; *see also* Ala. Pub. Serv. Comm'n Order, Docket No. 32953, at 36-45 (Aug. 14, 2020) (dismissing arguments by environmental intervenors that the utility should not construct new natural gas infrastructure).

291. Ala. Pub. Serv. Comm'n Order, *supra* note 290, at 40 n.139.

Commission stated that, in its view, the utility's fleet of fossil-fired generation "has since the 1970s continuously enabled the [utility] to meet its service obligations to customers" and there "is *no logical reason* for this Commission to conclude that resources of this type, with such a long and consistent operational history, will suddenly cease to be reliable sources of electricity."[292]

Or take the Pennsylvania Public Utility Commission's denial of requests to require Philadelphia's utility to consider the impacts of climate change on the utility's long-term planning.[293] Again, the Commission justified its decision on the ground that requiring utilities to plan for climate change was "beyond our primary jurisdiction."[294] But more candidly, the Commission explained that it was "reticent" to direct the utility to consider climate change "given the uncertain status of the climate change debate in our Commonwealth and across the globe, without clear policy direction from the General Assembly . . . ."[295] Notably, Pennsylvania's legislative and executive branches have been divided on the issue of climate change for years.[296]

Finally, consider the South Carolina Public Service Commission's direction to Duke Energy to exclude carbon-emission-reduction policies in some of the utility's planning models.[297] The Commission's orders to that effect occurred after the state legislature unanimously passed the South Carolina Energy Freedom Act of 2019,[298] intended to encourage the growth of renewable energy in the state.[299] But when Duke Energy proposed long-term planning scenarios that

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292. *Id.* at 36-37 (emphasis added).

293. *See supra* Section I.A; Pa. P.U.C. Opinion and Order, Docket No. R-2020-3017206 (Nov. 19, 2020).

294. Pa. P.U.C. Opinion and Order, *supra* note 293, at 94.

295. *Id.* at 91.

296. *See* Miranda Willson, *Governor's Race Portends Energy Future in Fossil-Heavy Pa.*, E&E News (June 24, 2022), https://www.eenews.net/articles/governors-race-portends-energy-future-in-fossil-heavy-pa [https://perma.cc/YF24-T23D] (describing Pennsylvania's political divide over climate policy, particularly between the Republican-dominated legislature and Democratic Governor Tom Wolf).

297. *See supra* Section I.A.; S.C. Pub. Serv. Comm'n Order No. 2022-643, Docket No. 2019-224, at 7 (Sept. 21, 2022); S.C. Pub. Serv. Comm'n Order No. 2022-332, Docket No. 2019-224-E, at 10-13 (May 5, 2022); S.C. Pub. Serv. Comm'n Order No. 2021-447, Docket No. 2019-224-E, at 1 (June 28, 2021).

298. *See* South Carolina Energy Freedom Act, 2019 S.C. Acts 368.

299. *See* Shelley Robbins & Marriele Mango, *Commentary: With Energy Freedom Act, South Carolina Takes Steps Toward Resilience*, ENERGY NEWS NETWORK (July 25, 2019), https://energynews.us/2019/07/25/commentary-with-energy-freedom-act-south-carolina-takes-steps-toward-resilience [https://perma.cc/W422-QB9N] (summarizing the renewable-energy provisions of the statute).

focused on reducing the utility's carbon emissions consistent with the Act's aims,[300] the Commission rejected those planning scenarios,[301] claiming that they "reflect[ed] an aggressive carbon management strategy that is unsupported by South Carolina law."[302] Tellingly, Duke Energy—a utility that straddles both North and South Carolina—had submitted its plan to satisfy the requirements of North Carolina as well, which has adopted a more aggressive decarbonization policy than South Carolina.[303]

It is beyond the scope of this Feature to provide a thorough accounting of these public utility commissions or to diagnose the political, jurisdictional, or other reasons—likely complex and at times murky—for their slow pace in addressing the challenges of climate change. The point here is simply to observe that the reason is not, as conventional wisdom would have it, a doctrinal divide between energy and environmental law. It is not the law that is holding back innovation by public utility commissions.

On the flip side, of course, the law does not necessarily require public utility commissions to be innovative. Just because public utility commissions are authorized to consider environmental factors in their decisions does not mean they must come out a certain way on those decisions. Public utility commissions exercise a significant amount of discretion, and, keeping in mind that the legal landscape varies state-by-state, that discretion countenances a variety of actions.

But when the potential of public utility regulation is properly understood, it becomes apparent that many public utility commissions could be doing much more to tackle the challenges of climate change. For those who disagree with commissions' current reluctance to act, real change would likely have to come through changes to the political or structural dynamics of the commissions—for example, appointing or electing new commissioners, or pressuring existing commissioners through advocacy or other legal means—not the energy laws that they implement.

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300. *See* DUKE ENERGY CAROLINAS INTEGRATED RESOURCE PLAN 4-26 (2020); S.C. Pub. Serv. Comm'n Order No. 2021-447, Docket Nos. 2019-224-E & 2019-225-E, at 20-21 (June 28, 2021).

301. *See* S.C. Pub. Serv. Comm'n Order No. 2022-332, Docket No. 2019-224-E, at 1 (May 5, 2022), (mandating Duke to use "Portfolio A2" as its selected base plan for long-term planning, which was a planning scenario that included no carbon policy).

302. S.C. Pub. Serv. Comm'n Order No. 2022-643, Docket Nos. 2019-224-E & 2019-225-E, at 7 (Sept. 21, 2022).

303. *See* Duke Energy Carolinas Integrated Resource Plan 6 (2020), Docket No. 2019-224-E (filed Sept. 1, 2020) (explaining how Duke's plan will satisfy North Carolina's goal of achieving 70% reduction in greenhouse gas emissions by 2030); *see also* 2021 N.C. Sess. Laws 2021-165 (setting forth this goal).

D. The Energy/Environmental Law Connection

The revelation that energy and environmental law are connected is important not just to establish that public utility commissions can consider environmental factors in their use of traditional public utility authorities — and therefore to debunk the erroneous notion that energy law is incapable of addressing climate change — but also to illuminate a similar error in environmental law. The failure to see the connection between these two fields has recently led to a sense that climate change falls outside the bounds of environmental law, too.

This phenomenon can be seen in a series of recent environmental-law cases. By way of background, the most obvious and cost-effective way to reduce greenhouse gases is to (1) reduce overall energy consumption through energy-efficiency initiatives, or (2) convert energy sources from fossil-fuel to non-fossil-based sources. But these two techniques are not considered typical tools in the environmental-law toolkit, where direct pollution control (like scrubbers on power plants) is often the norm. When regulators, courts, or regulated entities have confronted the question of whether these techniques can be used to regulate greenhouse gases in an environmental-law context, they have balked, giving the sense that environmental law runs out of options when it comes to regulating greenhouse gases.

For example, in its decision denying a petition for rulemaking that led to the Supreme Court's decision in *Massachusetts v. EPA*, the EPA argued that it could not designate greenhouse gases as "air pollutants" under the Clean Air Act because doing so would require the Agency to regulate greenhouse-gas emissions from motor vehicles by issuing fuel-economy standards.[304] Unlike its traditional emission-control measures, the Agency viewed such fuel-economy standards as energy-efficiency standards that fell under the purview of other agencies.[305] Because this regulatory mechanism appeared foreign to environmental law, the Agency adopted the somewhat dissonant position (one that the Supreme Court

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304. *See* Massachusetts v. EPA, 549 U.S. 497, 513 (2007) ("EPA believed . . . that greenhouse gases cannot be 'air pollutants' within the meaning of the [Clean Air Act (CAA)] . . . [I]f carbon dioxide were an air pollutant, the only feasible method of reducing tailpipe emissions would be to improve fuel economy." (citation omitted)).

305. *See* Control of Emissions from New Highway Vehicles and Engines, 68 Fed. Reg. 52922, 52928 (2003) ("Proposals to reduce CO_2 emissions from these sectors have focused on . . . [i]mprov[ing] fuel efficiency . . . . Congress has already addressed the first approach in other statutes — not the CAA — by giving other Departments and agencies — not EPA — regulatory authority to deal with fuel and energy efficiency. For example, Congress has authorized DOT to set fuel economy standards for motor vehicles and the Department of Energy to set efficiency standards for products such as air conditioners and appliances that consume electricity.").

ultimately rejected) that even if greenhouse gases were air pollutants, the Agency could not regulate them.[306]

Similarly, in *Utility Air Regulatory Group v. EPA* (*UARG*), regulated entities argued that the EPA could not regulate greenhouse-gas emissions from large emitting facilities under the Clean Air Act because doing so might entail the imposition of energy-efficiency measures — something that seemed to fall outside of the Agency's typical regulatory toolkit.[307] The entities argued that the Agency's regulation of large emitting facilities "has traditionally been about end-of-stack controls 'such as catalytic converters or particle collectors'; but applying it to greenhouse gases will make it more about regulating energy use, which will enable regulators to control 'every aspect of a facility's operation and design.'"[308] For the entities, this regulatory mismatch opened a Pandora's box of boundless EPA regulation. If the Agency's traditional regulatory toolkit ran out when it came to greenhouse gases, then authorizing the Agency to regulate greenhouse-gas emissions in this context meant extending "'unbounded' regulatory authority" to the Agency.[309] Again, as in *Massachusetts*, the Supreme Court ultimately rejected this argument.[310]

In *West Virginia v. EPA*, however, the Supreme Court finally accepted a version of this argument in the context of the EPA's effort to regulate greenhouse-gas emissions from stationary sources.[311] Under the Clean Power Plan, the EPA had calculated that greenhouse-gas-emission reductions from stationary sources were best achieved by shifting from fossil-fuel resources with greater carbon intensity (like coal) to less-carbon-intense resources (like natural gas and renewables).[312] The Court was concerned that this approach conflicted with the EPA's typical practice of setting emissions limits "based on the application of measures that would reduce pollution by causing the regulated source to operate more

306. *See id.* at 52925 (concluding that even if carbon-dioxide emissions constituted an "air pollutant" under the Clean Air Act, the statute did not authorize the EPA to regulate such emissions from motor vehicles because such emissions standards "would effectively regulate car and light truck fuel economy," which was the DOT's domain); *Massachusetts*, 549 U.S. at 531-32 (rejecting this conclusion).

307. 573 U.S. 302, 329-31 (2014).

308. *Id.* at 330 (quoting Brief for Petitioner Energy-Intensive Manufacturers Working Group on Greenhouse Gas Regulation at 7, Util. Air Regul. Grp., 573 U.S. 302 (No. 12-1254)).

309. *Id.* at 331.

310. *See id.* at 329-31.

311. *See* 597 U.S. 697, 724-32 (2022).

312. *See id.* at 706 (describing the Clean Power Plan as "a new rule concluding that the 'best system of emission reduction' for existing coal-fired power plants included a requirement that such facilities reduce their own production of electricity, or subsidize increased generation by natural gas, wind, or solar sources"); *see also id.* at 707-18 (providing background information on the Clean Power Plan and legal challenges to it).

cleanly."[313] The EPA had not, in the Court's view, previously set an emissions limit "by looking to a 'system' that would reduce pollution simply by 'shifting' polluting activity 'from dirtier to cleaner sources.'"[314] Because the EPA's approach under the Clean Power Plan did not resemble more "traditional air pollution control measures,"[315] the Court concluded that the EPA was exerting "unprecedented power over American industry."[316] In the Court's view, the EPA would be deciding "how much of a switch from coal to natural gas is practically feasible by 2020, 2025, and 2030,"[317] and "how much coal-based generation there should be over the coming decades."[318] The Court found it unfathomable that any agency could wield such authority.[319] As such, the Court labeled the EPA's claim to this kind of authority a "major question[]"[320] that required "clear congressional authorization"[321] to withstand judicial scrutiny.

In each of these three cases, the same line of reasoning appears. There is, first, the recognition that the regulation of greenhouse gases is at issue; second, that the way to reduce greenhouse-gas emissions is through energy-related measures; and third, the conclusion that, because these energy-related measures do not look like "traditional" environmental law, they must constitute unbounded regulatory authority that falls outside an environmental regulator's purview. This is true even in *West Virginia*, where, despite the Court's statements suggesting otherwise, the authorities it described are longstanding and have been used to address a similar kind of problem before. The example of New York's natural gas transition is case in point: the New York PSC, to address an air-pollution problem, implemented a transition of the city's grid in which it decided how much of a switch from coal to natural gas was feasible over a specific time period, and how much coal-based generation there would be in the city's residential sector.

The line of reasoning that appears in these cases is extralegal. It does not reflect close engagement with the statutory text to determine what the agency is

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313. *Id.* at 725.

314. *Id.* (quoting Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64662, 64726 (Oct. 23, 2015)).

315. *Id.* at 727 (quoting Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. at 64784).

316. *Id.* at 728 (quoting Indus. Union Dep't, AFL-CIO v. Am. Petrol. Inst., 448 U.S. 607, 645 (1980) (plurality opinion)).

317. *Id.* at 729.

318. *Id.*

319. *See id.* at 728-31.

320. *Id.* at 724.

321. *Id.* (quoting Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 324 (2014)).

authorized to do. Rather, it reflects a particular worldview, a paradigmatic way of thinking about environmental law and energy law in which environmental law stops where energy law starts—in much the same way that some legal scholars view energy law and environmental law as divided, as recounted in Part I.[322] Additionally, this line of reasoning is not confined to a certain institutional setting or set of actors—it has been adopted by regulators, regulated entities, and courts at various times across almost two decades. And it always appears in the context of greenhouse gases, where the integrity of this paradigm is at its most vulnerable because the issue involves an obvious air pollutant ("environmental law" territory) that is best addressed through energy-related measures. The result is a kind of greenhouse-gas exceptionalism, where it is acknowledged that greenhouse gases have to be regulated, but they are treated as unregulatable.

There is nothing in the law requiring this kind of thinking. Indeed, once energy and environmental law are recognized as overlapping, with both fields having a history of addressing environmental problems—as this Feature has demonstrated—then this paradigm makes little sense. And if we discard this paradigm, as the Court ultimately did in *Massachusetts* and *UARG*, then all parties can begin to embrace the ways in which environmental and energy regulators are playing on the same field. Such a paradigm shift will be increasingly important as efforts to regulate greenhouse gases continue to appear before agencies and courts.

For now, at least, it is helpful to recognize the connection between energy and environmental law in *West Virginia*, even if the Court did not see it. In the Clean Power Plan at issue in that case, the EPA sought to incentivize (indirectly) an energy transition through environmental law. But the New York PSC, on its own, directly oversaw and implemented a natural gas transition akin to the one the EPA desired. With the EPA's authority diminished, the importance of the tools of energy law at the state level has only grown. With environmental regulators currently hampered, energy regulators in the form of state public utility commissions are likely to be ground zero for addressing the most pressing of today's environmental problems.

CONCLUSION

State public utility commissions will be key players in domestic efforts to reduce greenhouse-gas emissions and facilitate a clean-energy transition. This is for two reasons. First, states play a crucial and often exclusive role in regulating our energy systems. The major federal statutes that govern our natural gas and electricity sectors recognize and carve out separate spheres of state authority. Moreover, these spheres of authority often involve precisely those components

322. *See supra* Section I.A.

of our energy system that we must change to address climate change. State public utility commissions have traditionally been the agencies charged with governing these state-run aspects of our energy systems. Thus, even starting from the simple recognition that mitigating climate change requires transitioning away from a fossil-fuel-based energy grid, state public utility commissions necessarily must be a part of this solution.

Second, the federal response to climate change also indicates that state public utility commissions will likely need to take on an even more prominent role in directing and facilitating a clean-energy transition. Following the Supreme Court's decision in *West Virginia*, federal actors like the EPA have less flexibility to regulate greenhouse gases. And the recently passed Inflation Reduction Act does not change the governance of our energy systems, instead relying on state public utility commissions to accommodate and encourage the uptake of clean-energy resources by the utilities they regulate. In governance terms, then, state public utility commissions will be at the forefront of the clean-energy transition.

With that in mind, this Feature argues that public utility regulators have greater potential to address environmental problems than legal scholars may assume. The Feature makes this point by looking to the past, uncovering the historical energy transition that New York's PSC oversaw and implemented. This historical example helps reveal the ways in which modern conceptions of energy and environmental law are unduly restrictive. It also expands our imagination of what public utility regulation could accomplish, now and in the future.