THE ENVIRONMENTAL PROTECTION AGENCY'S ROLE IN U.S. CLIMATE POLICY—A FIFTY YEAR APPRAISAL

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INTRODUCTION

In 1983, the little-known "Strategic Studies" staff, within the somewhat obscure Office of Policy Analysis in the United States Environmental Protection Agency (EPA), released—at no one's request—a report entitled *Can We Delay a Greenhouse Warming?* The report summarized the results of the most current atmospheric temperature and carbon cycle models,[1] which showed that due to rising atmospheric concentrations of carbon dioxide, global average temperatures could increase by 2 degrees Celsius by the middle of the twenty-first century. This temperature rise, it said, would "likely" be accompanied by "dramatic changes in precipitation and storm patterns and a rise in global average sea levels," significantly altering agriculture, disrupting environmental and economic conditions, and

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* Archibald Cox Professor of Law, Harvard Law School. I am grateful to the following former government officials for consenting to interviews and being so generous with their time: Roger Ballentine, Jim Barnes, Sue Biniaz, Carol Browner, Rob Brenner, James Connaughton, Eileen Claussen, David Doniger, Bill Drayton, Linda Fisher, Dirk Forrister, Jessica Furey, Gary Guzy, David Gardiner, Thomas Gibson, Joe Goffman, Tom Jorling, Jeff Holmstead, Lisa Jackson, Dan Lashof, Michael Leavitt, Andrew Lundquist, Gina McCarthy, Katie McGinty, Richard Morgenstern, Mary Nichols, Bob Perciasepe, Rafe Pomerance, Bill Reilly, Bill Ruckelshaus, Stephen Seidel, Gus Speth, Bob Sussman, Sue Tierney, Lee Thomas, Dennis Tirpak, Karen Wayland, Cathy Zoi, and other former senior officials, who wished to remain anonymous. To the extent that this account relies on the recollections of people directly involved in events, it should be acknowledged that memories can be flawed and perspectives can be partial. My hope is that the account here resonates sufficiently with those most closely involved in these events and that they regard it as, on balance, a fair telling. I have confirmed with interviewees all quotes and attributions made to them personally. Any factual mistakes are mine alone. A shorter version of this Article appears in FIFTY YEARS AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY: PROGRESS, RETRENCHMENT, & OPPORTUNITIES (A. James Barnes, et al. eds., 2020).

1. STEPHEN SEIDEL & DALE KEYES, STRATEGIC STUDIES STAFF, OFFICE OF POLICY PLANNING AND EVALUATION, U.S. EPA, CAN WE DELAY A GREENHOUSE WARMING?: THE EFFECTIVENESS AND FEASIBILITY OF OPTIONS TO SLOW A BUILD-UP OF CARBON DIOXIDE IN THE ATMOSPHERE (1983). The report drew on James Hansen's work at NASA's Goddard Institute, among other sources. The Office of Policy Analysis was within EPA's Office of Policy Planning and Evaluation.

stressing political institutions.[2] The study went on to explore various strategies to slow or limit warming, including some policies that, in retrospect, seem eye-popping for EPA to even have considered internally, let alone discuss in a public report, including a 300% tax on fossil fuels and a ban on both coal and shale oil.[3]

When *Can We Delay?* appeared on the front page of the *New York Times*, it caused a firestorm in the Reagan White House. The President's science advisor disavowed it, calling it "unwarranted and unnecessarily alarmist."[4]

But it wasn't.

This Article tracks EPA's contributions to climate change policy over its fifty-year history, including its work on early reports like *Can We Delay?*, which proved both bold and prescient. It recounts how climate change evolved at the agency, moving from peripheral to central—from a research project of interest to only a handful of curious agency staff in the early 1980s to the agency's top priority by 2010. EPA's approach to climate change over the intervening period is best characterized as *constrained*—hemmed in by congressional politics, limited by successive presidential administrations, and held in check by the courts. For decades, EPA staff contributed to climate policy in a variety of important ways: by researching, modelling, and analyzing climate impacts and mitigation strategies; testifying in Congress, educating the media, and building awareness among the public; actively engaging in the federal government's interagency policy process to inform, advise, and persuade other government officials about the importance of the issue; helping to develop U.S. foreign policy and participating in international climate negotiations; establishing many voluntary programs to reduce greenhouse gases and improve energy efficiency; and implementing air pollution control strategies, like emissions trading, through which the agency developed crucial and relevant expertise. Eventually, the agency did regulate greenhouse gases under the Clean Air Act, but only after the Supreme Court confirmed its legal authority to do so, and only once a sympathetic president, Barack Obama, threw his full weight behind the effort.

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2. *Id.*

3. *Id.*

4. Phillip Shabecoff, *Haste on Global Warming Trend Opposed*, N.Y. TIMES (Oct. 21, 1983), https://perma.cc/K6B7-KK6E.

There are four primary lessons from this account, two about the American governance system generally, and two more specific to climate change. The first lesson is that, within our constitutional system, executive branch agencies cannot take the lead on solving new problems without solid legal authority and strong political support. While that observation may seem banal, it has profound implications. It helps to explain why climate change policy at the federal level has been so incremental. Agencies depend on Congress for authority and funding, and on presidents for political direction and sponsorship. It would have been nearly impossible for the EPA to put climate change at the top of its agenda in the forty years from 1970 to 2010, with Congress unwilling to act, Republican presidents opposed, and even sympathetic Democratic presidents reluctantly putting other priorities first.

The second lesson is that even when agencies are empowered to act, regulation is less durable than legislation. Regulation has the advantage of being flexible: statutes often leave room for interpretation and new administrations may, within certain legal boundaries, adopt legal positions that best align with their political prerogatives. In practice, this means a president can do a lot to change the impact of the law by taking a broader or narrower view of a statute's scope, adopting weaker or stronger regulations, paying lesser or greater attention to cost or public health protection, and exercising enforcement discretion to favor his or her own priorities. Such flexibility has many benefits, but it also creates the potential for significant policy shifts from administration to administration, which brings instability and uncertainty. This state of affairs helps to explain why EPA's trajectory on climate change has zig-zagged over time to track the political preferences of the White House occupant, and why the agency's legacy on climate change is still not settled. For example, while EPA during the Obama administration established the first federal greenhouse gas standards for cars and trucks, powerplants, and oil and gas operations, those standards were vulnerable to reversal during Donald J. Trump's presidency. Indeed, the Trump EPA spent four years systematically rescinding or weakening every Obama-era climate rule. Without new legislation, this pattern will continue. And if the past is any indication, each new round of climate regulations will be subject to litigation. As a result, the last word on U.S. climate policy will come neither from Congress nor from executive branch agencies, but from the courts.

A third lesson concerns the relationship between the domestic and foreign policy of climate change. For decades, the consensus view—at EPA, in Congress, and in the White House— was that an international climate agreement would *precede* domestic regulation of greenhouse gases. That is, a treaty would come first, followed by Senate ratification, after which Congress would adopt implementing legislation, which would empower EPA and other agencies to regulate greenhouse gases and take other actions to fulfill U.S. treaty obligations. That expectation applied, certainly, when the U.S. negotiated the Kyoto Protocol in 1997. But when the Kyoto agreement failed, a new, more "bottom-up" approach emerged that relied on countries to develop their own emissions targets and actions, rather than negotiating them internationally. In the years from the Kyoto Protocol, through the Copenhagen Accord, to the 2015 Paris Agreement, the question became: "What domestic achievements could serve as the basis for an international pledge?" That shift made EPA pivotal to U.S. climate change efforts because the agency manages the Clean Air Act, the most potent regulatory authority the U.S. government currently has to drive significant greenhouse gas emissions reductions. This experience suggests that it is unproductive to think of domestic and international climate policy as separate or sequential—they must be deliberately and strategically aligned to move in tandem.

The final lesson is perhaps obvious but still warrants underscoring: climate change is one of the most complex, vexing, and intractable political challenges of our time. It is demonstrably unlike other international problems to which it is often compared, like stratospheric ozone depletion—which, while difficult, ultimately requires replacing a limited number of consumer products with largely available and affordable substitutes. Climate change presents a more formidable and daunting task with much further-reaching economic, social, political, and strategic consequences. It implicates poverty, growth, development, trade, migration, health, and energy security, among other interests. And the timescale involved requires government planning and commitment over decades; a poor match for the much shorter American political system timeline which operates in two-, four-, and six-year cycles.

Undeniably, fervent industry opposition, and intentional efforts to mislead and confuse the public, have helped to block action and politicize climate change, turning it from a scientific matter to a partisan issue. Yet it still seems overly optimistic to claim that the U.S. was on the precipice of solving climate change in the 1980s, as some

have suggested.[5] The fact is, Congress was not ready, the environmental community was barely engaged on the issue, and the public was not broadly informed, let alone mobilized. At that time, the harms associated with the greenhouse effect were remote and abstract compared to the pollution problems people encountered in their day-to-day lives. The country depended on coal for over fifty percent of its electric power and on oil for virtually all of transportation, and the alternative technologies and advanced energy management practices of today—wind and solar power, demand response, distributed generation, energy storage, advanced batteries, hydrogen fuel cells, co-generation, and the like, and the artificial intelligence necessary to optimize these alternatives—were in their infancy.[6] This additional background is not meant to excuse inaction. Surely, we could have done better; surely, we should have. But it does put EPA's role in a larger political context, which helps to illuminate the constraints under which the agency has labored for all of these years.

I. The 1970s and 1980s: EPA and the Science of Climate Change

A. A Long-Term Research Project

When EPA was created in 1970, climate change was a topic of scientific inquiry but not yet viewed as ripe for policy. In 1965, Lyndon Johnson issued a Special Message to Congress on the need for conservation, which included a specific reference to "a steady increase in carbon dioxide from the burning of fossil fuels," something the president had learned of from a report conducted by his science advisory committee.[7] By 1970, the U.S. had four climate modeling centers, including the nation's premier lab, the National Oceanic and

5. *See generally* Nathaniel Rich, *Losing Earth: The Decade We Almost Stopped Climate Change*, N.Y. TIMES MAGAZINE (Aug. 1, 2018), https://perma.cc/6URT-VSPP [hereinafter Rich, *Losing Earth*] (describing lobbying efforts by environmental activists to spur congressional interest in climate change).

6. *See generally* MICHAEL RATNER & CAROL GLOVER, CONGRESSIONAL RESEARCH SERVICE, U.S. ENERGY: OVERVIEW AND KEY STATISTICS (2014).

7. President Lyndon B. Johnson, Special Message to the Congress on Conservation and Restoration of Natural Beauty, (Feb. 08, 1965); *see also* PRESIDENT'S SCIENCE ADVISORY COMMITTEE, RESTORING THE QUALITY OF OUR ENVIRONMENT: REPORT OF THE PANEL ON ENVIRONMENTAL POLLUTION (Nov. 1965) (including an analysis from Roger Revelle, Director of the Scripps Institution of Oceanography, on the status of atmospheric concentrations of carbon dioxide predicting that concentrations would increase by more than 25% by the year 2000, and that global temperature rise would cause ocean acidification, sea level rise, and other adverse impacts). In his Message, Johnson said, "This generation has altered the composition of the atmosphere on a global scale through . . . a steady increase in carbon dioxide from the burning of fossil fuels."

Atmospheric Administration's Geophysical Research Dynamics Laboratory at Princeton University.[8] President Nixon was also briefed on climate change.[9] He was advised that several cities, including New York and Washington, D.C., would be swamped by sea level rise if it continued unabated.[10] In 1974, Nixon's Domestic Policy Council organized a United States Climate Program to coordinate federal government research on the impact of weather and climate change on society.[11] The next year, the National Academy of Sciences (NAS) produced the first of several reports on atmospheric carbon dioxide concentrations,[12] and the first congressional hearing on the topic was held in 1976.[13] By the late 1970s, various scientific agencies across the U.S. government had established robust climate research programs, as had several leading universities and international research institutes.[14] In 1978, Congress passed the National Climate Program Act, which established a coordinated national effort on climate change research, led by the Department of Commerce.[15] The next year, the World Meteorological Organization and the International Council of

8. The other labs included the National Center for Atmospheric Research in Boulder, Colorado, at UCLA and the Rand Corporation, in Los Angeles, California. and later at NASA's Goddard Space Center in New York, all supported by National Science Foundation funding. Alan D. Hecht & Dennis Tirpak, *Framework Agreement on Climate Change: A Scientific and Policy History*, 29 CLIMATE CHANGE 371, 375 (1995).

9. Every president since Johnson has been briefed on climate change. Corrected Expert Report by James Gustave ("Gus") Speth, Juliana v. United States, 217 F. Supp. 3d 1224 (D. Or. 2016) (No. 6:15-cv-01517-TC) [hereinafter Speth Report].

10. See Memorandum from Daniel Moynihan to John Ehrlichman (Sept. 17, 1969), cited in Speth Report, *supra* note 9. White House advisor Daniel Moynihan sent a memo to President Nixon saying that he "ought to get involved" with climate change). S*ee also generally* DANIEL YERGIN, THE QUEST: ENERGY, SECURITY, AND THE REMAKING OF THE MODERN WORLD (2011).

11. Hecht & Tirpak, *supra* note 8, at 378.

12. *See generally* UNITED STATES COMMITTEE FOR THE GLOBAL ATMOSPHERIC RESEARCH PROGRAM, NATIONAL ACADEMY OF SCIENCES, UNDERSTANDING CLIMATIC CHANGE: A PROGRAM FOR ACTION (1975); *see also* ASSEMBLY OF MATHEMATICAL AND PHYSICAL RESEARCH SCIENCES, NATIONAL RESEARCH COUNCIL, CARBON DIOXIDE AND CLIMATE: A SCIENTIFIC ASSESSMENT REPORT OF AN AD HOC STUDY GROUP OF CARBON DIOXIDE AND CLIMATE (1979) [hereinafter CHARNEY REPORT].

13. *The National Climate Program Act: Hearings Before the Subcomm. on the Env't and the Atmosphere of the H. Comm. on Sci. and Tech.*, 94th Cong. 1 (1976).

14. *See generally* Speth Report, *supra* note 9, at 6; *see also* Hecht & Tirpak, *supra* note 8, at 379.

15. National Climate Program Act of 1978, Pub. L. No. 95-367, 92 Stat. 601 (1978) (as amended at 15 U.S.C. §§ 2901-2908 (2012)).

Scientific Unions combined forces to create the Global Atmospheric Research Program.[16]

During the agency's first decade, EPA officials likewise viewed the greenhouse effect as a phenomenon with potentially serious consequences, which merited ongoing research, but climate change was not on the agenda for near-term action. Indeed, the first few EPA Administrators had other, more pressing, political and legal priorities. The agency's first head, Bill Ruckelshaus, had to launch the new agency. He sought to define EPA's mission, establish its organizational structure, advocate for support in Congress, and demonstrate the EPA's value to the American public.[17] Ruckelshaus also had his hands full implementing the new landmark Clean Air Act Amendments of 1970 and the 1972 Federal Water Pollution Control Act (the modern Clean Air and Clean Water Acts).[18] Each of these statutes called for many complex regulations which would be implemented primarily by the states. For example, the Clean Air Act amendments required EPA to set the first national ambient air quality standards and approve individual state plans for implementation.[19] While over time, the agency would tackle regional air pollution problems (like acid rain) and atmospheric pollution (like stratospheric ozone depletion), initially EPA focused on the most pervasive ground-level pollutants that were fouling the nation's air, and compromising public health.[20]

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16. In 1979, the World Meteorological Organization and the United Nation's Environment Program hosted the first World Climate Conference, which created the World Climate Program to conduct coordinated research. Hecht & Tirpak, *supra* note 8, at 379.

17. Ruckelshaus focused on highly visible pollution problems like pesticides and auto emissions, he said, to show that the agency would enforce the new statutes. Telephone Interview with Bill Ruckelshaus, Former EPA Administrator (May 2, 2019) [hereinafter Ruckelshaus Interview]; *see also* Interview by Michael Gorn of William D. Ruckelshaus (Jan. 1993), https://perma.cc/WE7X-Z387. "The most important imperative, I think, was establishing the credibility of the agency and demonstrating the willingness of the central government, and the political process, to respond to the legitimate demands of the people. I thought these tasks were essential. Second, it was crucial to organize the agency properly and set out some achievable goals. Third, I selected some issues to take on personally, in order to demonstrate the willingness of EPA to step up to its responsibilities. There were also some pressing issues like DDT, which required immediate attention; and enforcement action against three cities." *Id*. *See also generally,* DENNIS C. WILLIAMS, THE GUARDIAN: EPA'S FORMATIVE YEARS, EPA 202-K-93-002 (1993).

18. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970); Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 82 Stat. 844 (1972).

19. 84 Stat. at 1676.

20. It appears from the legislative record, and from the memories of those most closely involved, that climate change did not figure meaningfully in the negotiations over the 1970 Act, although Congress took pains to draft a flexible, precautionary statute that included a capacious definition of "pollutant," which naturally includes greenhouse gases. Rafe Pomerance, who was active on the Hill lobbying for the National Clean Air Coalition, said that he could not recall any

Ruckelshaus's successor, Russell Train, continued the monumental task of producing the required air and water quality standards, while also implementing additional environmental laws Congress continued to pass, including new regimes to regulate pesticides and toxic substances, among other things.[21] This process would take years. When President Carter's EPA head, Doug Costle, took over the agency, he faced a backlog of regulations, a raft of litigation, and pending reauthorizations. In light of these more urgent matters, none of the early EPA administrators treated climate change as a priority.[22]

Climate change did emerge as an issue, however, in debates over energy policy during both the Ford and Carter administrations, particularly in the wake of the 1973–74 OPEC oil embargo against the United States. By then, EPA had established four "policy evaluation" offices specializing in particular topics—one of which was energy.[23] This group represented the agency's interests in internal administration debates over energy policy, including the stringency of sulfur dioxide standards for coal plants, and whether to adopt a synthetic fuels program to help reduce the country's oil dependence.[24]

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discussion of climate change during negotiation of the 1974 and 1977 amendments to the Act. *See* Telephone Interview with Rafe Pomerance, Former Deputy Assistant Secretary of State for Environment and Development (Mar. 12, 2019) [hereinafter Pomerance Interview] ("No, zero, as far as I remember. And I went to many, many markup sessions, hearings, the whole thing. Never was discussed that I recall.") *See* Telephone Interview with Tom Jorling, Former Assistant Administrator for the Office of Water and Hazardous Substances (May 4, 2019) (repeating same and noting that the inclusion of "climate" in the definition of "welfare" in the Act was intended to capture more local impacts such as the heat island effect, and ecological effects such as ozone damaging vegetation).

21. RUSSELL E. TRAIN: ORAL HISTORY INTERVIEW, U.S. EPA, EPA 202-K-93-001 (July 1993), https://perma.cc/8VLJ-XCJ2 (excerpting Interview by Michael Gorn of Russell E. Train (May 5, 1992)).

22. DOUGLAS M. COSTLE: ORAL HISTORY INTERVIEW, U.S. EPA, EPA 202-K-93-001 (Jan. 2001), https://perma.cc/C96R-6URG (excerpting Interview by Dennis Williams of Douglas M. Costle (Aug. 4–5, 1996)) (mentioning climate change only once to note scientific uncertainty). Bill Drayton, Costle's Assistant Administrator for Planning and Management, referred to these statutes as a "wave of legislation." Telephone Interview with Bill Drayton, Former Assistant Administrator for Planning and Management (May 9, 2019). Tom Jorling, who served under Costle as an Assistant Administrator, referred to a "horrendous work load" implementing the basic statutes and then having the Resource Conservation and Recovery Act and the Toxic Substances Control Act to manage too. Telephone Interview with Tom Jorling, Former Assistant Administrator for the Office of Water and Hazardous Substances (May 4, 2019). There was "very little attention on the future—what was coming down the pike, especially in an era of zero-based budgeting, when every program had to argue for every budget item, which diverted a lot of energy and attention." *Id.*

23. Jimmy Carter, Energy and the National Goals—A Crisis of Confidence Televised Address (July 15, 1979).

24. *Id.*

While the energy group was focused primarily on the public health impacts of these pro-coal energy policies, they were "well aware of climate change," and "raised it regularly" in arguments with other administration officials.[25] The synfuels policy, for example, would boost coal liquefaction—a disastrous policy from both a climate and public health perspective.[26] While the Department of Energy was for it, EPA was opposed.

President Carter understood the connection between climate change and energy policy; he had been well briefed by his science advisor, Frank Press,[27] who also asked the National Academy of Sciences (NAS) to investigate climate change. In 1979, in response to Press's request, a NAS panel chaired by MIT's Jules Charney issued a report with some striking projections: carbon dioxide concentrations in the atmosphere would double by 2030, drastically changing the earth's climate, and global average temperatures would be "in the range 1.5° to 4.5° C with the most probable value near 3° C."[28] Along with Press, Gus Speth, the Chair of Carter's Council on Environmental Quality (CEQ), urged the integration of climate considerations into energy policy. Under Speth's leadership, CEQ issued several reports noting the buildup of carbon in the atmosphere, pointing to its potentially severe social and economic consequences, and highlighting the need for conservation and alternative energy sources, such as solar power.[29] To counter the enthusiasm of Energy Department officials for the synfuels program, Speth also commissioned a report from leading scientists, [30] which argued that greater use of coal and other fossil fuels was inconsistent with stabilizing the climate system.[31]

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25. Telephone Interview with Bill Drayton, *supra* note 22.

26. *Id.*

27. *See* Memorandum from Frank Press to the President on Release of Fossil CO_2 and the Possibility of a Catastrophic Climate Change (July 7, 1977) (urging the president to take the "potential CO_2 hazard into account in developing our long-term energy strategy"); *see also* Hecht & Tirpak, *supra* note 8, at 372, 378 ("While attempts to organize a U.S. national climate program began under President Nixon, it was President Carter who fully recognized the importance of both climatic variation and climate change, particularly factors to be considered in setting national energy policy.").

28. CHARNEY REPORT, *supra* note 12, at 16–17.

29. Both Speth and Press had been briefed on climate change by Rafe Pomerance, then head of the environmental group Friends of the Earth, and Gordon MacDonald, a well-respected atmospheric scientist, who urged them to raise the urgency of the matter with the president. Pomerance Interview, *supra* note 20; E-mail from Rafe Pomerance, Former Deputy Assistant Secretary of State for Environment and Development to Jody Freeman, Archibald Cox Professor of Law (Oct. 11, 2019); *see also generally*, Speth Report, *supra* note 9, at 13–15.

30. Speth Report, *supra* note 9.

31. *Id.* at 22.

Carter was influenced by Press and Speth, and he understood the issues. He referred to climate change in speeches, his energy plan included alternatives to fossil energy,[32] and he supported solar power in particular, taking the symbolic step of putting solar panels on the White House.[33] But facing high oil prices, inflation, and a recession, Carter's top energy priority remained the synfuels program,[34] which Congress adopted in the 1980 Energy Act.[35] It was a significant set back for those in the administration who saw climate change as an increasingly serious risk requiring policy action sooner rather than later.

When Carter lost his re-election bid to Ronald Reagan in 1980, the Energy Department was the main federal agency issuing reports on atmospheric concentrations of CO_2 and the potential impacts.[36] Other agencies were conducting climate research too, however, among them EPA, where a small group of entrepreneurial career staff, led by John Hoffman, had launched their own initiative on climate change. Hoffman's group, "Strategic Studies Staff," was located within the agency's Office of Policy Planning and Evaluation, and would come to include people whose names are on the earliest EPA climate studies, including Stephen Seidel, Jim Titus, and Dennis Tirpak.[37] Hoffman himself had worked on early EPA emissions trading concepts, and developed a reputation for being innovative and driven.[38] As a result, he was given considerable leeway to follow his own research agenda,

32. *Id.* at 7–12.

33. *White House Solar Panel*, NAT'L MUSEUM OF AM. HIST., https://perma.cc/AZT5-5EXC.

34. Email Communication from Gus Speth, President Carter's Chairman of the Council on Environmental Quality, to Jody Freeman, Archibald Cox Professor of Law (Nov. 9, 2019) (on file with author).

35. Energy Security Act of 1980, Pub. L. No. 96-264, 94 Stat. 611 (codified in scattered sections of U.S.C.). Congress chartered the SynFuels Corporation to provide financial incentives and loan guarantees to private companies to encourage the production of synthetic fuels as alternatives to oil. As oil prices dropped, its utility came into question and Congress disbanded it in 1986. New York Times Staff, *U.S. Synthetic Fuel Corporation Shuts Down*, NY TIMES (Apr.19, 1986), https://perma.cc/7LP9-LSVZ.

36. *See generally* INST. FOR ENERGY ANALYSIS, PROCEEDINGS OF THE WORKSHOP ON FIRST DETECTION OF CARBON DIOXIDE EFFECTS (1981), *cited in* Speth Report, *supra* note 9, at 33.

37. Telephone Interview with Dennis Tirpak, Former Director of Global Climate Change Policy Division, EPA (Mar. 12, 2019) [hereinafter Tirpak Interview].

38. David Doniger, *Remembering John Hoffman, Ozone Defender and Climate Protector*, NRDC (Oct. 1, 2012), https://perma.cc/3NHB-ZH88; *see also* William Drayton, *Getting Smarter About Regulation*, 59 HARV. BUS. REV. 81,405 (July–Aug. 1981), https://perma.cc/BUN7-WPGH.

and next on that agenda was the greenhouse effect, which he thought was "interesting."[39]

Hoffman was swimming against the tide. The early 1980s was an unlikely time to launch a climate change research program at EPA. The new Administrator, Anne M. Gorsuch, whom Reagan had tapped to lead the agency, was proposing to slash EPA's budget, pulling back on enforcement, and reducing staff levels to such an extent that one former Assistant Administrator complained that she had "demolish[ed] the nation's environmental management capacity."[40] Yet Hoffman's staff, operating largely out of view, pressed on with its work, and in 1983, produced the infamous *Can We Delay?* report, which reviewed the climate science to date, discussed the implications for society, and explored policy options for slowing the projected warming.[41] The report also called for additional research into climate adaptation and more studies to reduce the remaining scientific uncertainties (about greenhouse gas sources, sinks, and thermal sensitivities among other things) as soon as possible.[42] No one in the White House or in senior political leadership at EPA appears to have requested the study, and it was not subject to the normal internal review process. There is no evidence Administrator Gorsuch saw it before its release.[43] But it caused a firestorm.[44]

The Report's tone was substantially more alarming than the latest National Academy of Science Report on the greenhouse effect, which had been conducted at the request of Congress[45] and released just three days later. Although the NAS panel had examined the same studies as EPA and concluded much the same thing—that warming was human-

39. Telephone Interview with Stephen Seidel, former Director of EPA's Stratospheric Protection Division

(Apr. 3, 2019) [hereinafter Seidel Interview].

40. Joanna Brenner, *Neil Gorsuch's Late Mother Almost Annihilated the EPA. Is History Repeating Itself?*, NEWSWEEK (Feb. 1, 2017), https://perma.cc/CJ22-ZY97 (quoting former EPA Assistant Administrator Bill Drayton); *see also* Philip Shabecoff, *U.S. Environmental Agency Making Deep Staffing Cuts*, N.Y. TIMES (Jan. 3, 1982), https://perma.cc/7KMU-TQGL (outlining the proposed budget cuts and employee reductions).

41. SEIDEL & KEYES, *supra* note 1.

42. *Id.*

43. Seidel Interview, *supra* note 39.

44. Seidel, who worked closely with Hoffman, recalls that they were able to produce the Report because climate change was not a high visibility topic. "It was clear that you didn't want to be on the front lines of a regulatory matter but this was a perfect long-term issue. It was so far under the radar, and not even close to being regulated. And we were just a couple of guys in the bowels of EPA." *Id.*

45. *See* The Energy Security Act, Pub. L. No. 96-294, 94 Stat. 611 (1980) (directing the National Academy of Science to conduct a study on climate change).

induced and largely caused by fossil fuel consumption and that if atmospheric CO_2 concentrations continued to rise, there would be significant average global temperature rise with serious consequences—the *synthesis* of the NAS Report, which most people would read, said, "Our stance is conservative. We believe there is reason for caution, not panic."[46] When *Can We Delay?* was leaked to the New York Times, it seemed to contradict this calming tone. The President's science advisor, George Keyworth, promptly repudiated it, emphasizing that "no actions are recommended other than additional research at this time."[47]

Unfazed, Hoffman's group at EPA issued another report days later, this one called *Projecting Future Sea Level Rise*.[48] Citing the National Academies' conclusion that global warming was nearly certain to occur, this report estimated likely sea level rise, based on scenarios ranging from "the very conservative to the less restrictive."[49] Like *Can We Delay?*, Hoffman's report called for additional research on a faster timeline to help coastal planners mitigate the adverse impacts.[50]

It is hard to precisely measure the effect of these reports, written by relatively low level staffers in an agency no one thought of as leading climate research. But given the prominent media attention they received, and the considerable consternation they caused, it seems fair to say that they helped to raise public awareness about climate change, and provided fodder for activists, congressional staffers, and the handful of members of Congress who were pushing for additional hearings on climate change.[51] It bears noting, though, that no one,

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46. NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY OF SCIENCE, CHANGING CLIMATE: REPORT OF THE CARBON DIOXIDE ASSESSMENT COMMITTEE at xiii (1983); see NAOMI ORESKES & ERIK M. CONWAY, MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING at ch. 6 (2010) (recounting the relevant history); *see also* Michael Oppenheimer, Opinion, *To Delay Global Warming*, N.Y. TIMES (Nov. 9, 1983), https://perma.cc/UMN4-QMJB (comparing the two assessments).

47. Shabecoff, *supra* note 4. Joe Cannon, the Assistant Administrator of OPPE overseeing Hoffman's group, was believed to have leaked the report.

48. JOHN S. HOFFMAN, DALE KEYES & JAMES G. TITUS, STRATEGIC STUDIES STAFF, OFFICE OF POLICY PLANNING AND EVALUATION, U.S. EPA, EPA 230-09-007, PROJECTING FUTURE SEA LEVEL RISE: METHODOLOGY, ESTIMATES TO THE YEAR 2100, AND RESEARCH NEEDS (1983).

49. *Id.* at 2.

50. *Id.* at vii.

51. *See, e.g.*, *Ozone Depletion, The Greenhouse Effect, and Climate Change: Hearings Before the Subcomm. on Env't Pollution of the S. Comm. on Env't and Public Works*, 99th Cong. 1, 43, 98, 106, 143, 147 (1986) (discussing the 1983 reports).

including Hoffman's Strategic Studies Staff, was suggesting that EPA embark on a regulatory program to control greenhouse gases.

The EPA was soon in transition. Administrator Gorsuch had been forced to resign in a scandal, and Bill Ruckelshaus returned to the agency at the President's request.[52] Ruckelshaus knew about climate change, and he mentioned it in some important speeches.[53] He also recalled discussing it with President Reagan, whom he described as "a skeptic but with an open mind and willing to listen; genuinely curious about it."[54] But climate change was still relatively abstract—a "question being studied."[55] After Gorsuch's tenure, which was widely viewed as disastrous, Ruckelshaus spent his second tour as EPA administrator rebuilding the agency's relationship with Congress and restoring morale.[56]

When Ruckelshaus stepped down at the end of Reagan's first term, Lee Thomas became Administrator.[57] Thomas had come to EPA from the Federal Emergency Management Administration. He had briefly run EPA's Solid Waste office. But he had little experience with air pollution, had "never dealt with ozone depletion or climate change," and by his own admission "knew nothing about either." [58] After briefings from OPPE staff, however, Thomas came to appreciate the importance of both problems, and recognized that they were connected. Of the two, ozone had gained political traction first, and Thomas would spend most of his tenure advocating for a regulatory response.

In the mid 1970s, scientists had determined that the ozone layer—which absorbs harmful ultraviolet radiation in the upper atmosphere—

52. Steven R. Weisman, *President Names Ruckelshaus Head of Troubled E.P.A.*, N.Y. TIMES (Mar. 22, 1983), https://perma.cc/7BRR-48BC.

53. *See e.g.,* William D. Ruckelshaus, Remarks at Organization for Economic Cooperation and Development, June 21, 1984. Ex. E-57 at 6-7, cited in Speth Report, *supra* note 8.

54. Ruckelshaus Interview, *supra* note 17.

55. *Id.*

56. Gorsuch's impact on EPA career staff morale was satirized famously in a series of Doonesbury cartoons in January 1983, which featured an agency employee sitting out on a ledge and threatening to jump unless the Administrator "publicly admits that the purpose of the Environmental Protection Agency is to protect the environment." Gary Trudeau, *Morale at EPA*, DOONESBURY (Jan. 28, 1982), https://perma.cc/E9UE-M7EG.

57. Philip Shabecoff, *President Names Toxic Waste Chief to Head the E.P.A.*, N.Y. TIMES (Nov. 30, 1984), https://perma.cc/RB6N-LBH2.

58. Telephone Interview with Lee Thomas, Former EPA Administrator (Mar. 28, 2019) [hereinafter Thomas Interview]. He recalled first hearing about CFCs when dealing with the administration's budget even before he was confirmed as Administrator. The Office of Management and Budget had zeroed out funding for the agency to conduct studies of ozone depletion, and, after being briefed, he "went over to OMB and got it restored." *Id.*

was thinning and suspected that the cause was a set of gases called chlorofluorocarbons, which are commonly used in refrigeration, air conditioning, and other consumer products.[59] Loss of the protective ozone layer would mean higher rates of skin cancer and cataracts, along with damage to plants, animals, and agriculture.

Congress held the first hearings on the impact of chlorofluorocarbons on ozone in 1975,[60] and in 1976, the National Academy of Sciences issued their first report on the problem, which reflected the scientific consensus that ozone depletion could cause significant harm to human health and other living organisms.[61] In 1977, when Congress amended the Clean Air Act to address a number of implementation problems, it also adopted new provisions calling for research and cooperation on stratospheric ozone depletion, and authorizing EPA to regulate ozone-depleting substances that could "reasonably be anticipated to pose an endangerment for the public health and welfare."[62] In 1978, EPA used this new authority, issuing an endangerment finding for chlorofluorocarbons, and banning their use in certain aerosol spray cans.[63] Toward the end of the Carter administration, in 1980, EPA signaled that it might limit CFC production more broadly, but momentum slowed once President Reagan took office.[64] During Reagan's first Term, EPA staff worked

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59. *See e.g.*, Mario J. Molina & F.S. Rowland, *Stratospheric sink for chlorofluoromethanes: chlorine atom-catalysed destruction of ozone*, 249 NATURE 810 (1974).

60. *Stratospheric Ozone Depletion: Hearings Before the Subcomm. on the Upper Atmosphere of the S. Comm. on Aeronautical and Space Sci.*, 94th Cong. 1 (1975). For a more detailed history, see Hecht & Tirpak, *supra* note 8, at 376–78. At the time, CFCs were a multi-billion-dollar business for companies like Dupont, Allied, and Union Carbide, among others. The chemical industry argued that regulation would be premature and attacked the research as the work of foreign agents. But Dupont pledged that it would stop producing CFCs if "reputable" science showed it to be harmful. *See* OZONE HOLE: HOW WE SAVED THE PLANET (Windfall Films & PBS 2019).

61. *See* NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY OF SCIENCES, HALOCARBONS, ENVIRONMENTAL EFFECTS OF CHLOROFLUOROMETHANE RELEASE (1976) (asserting that the impacts of ozone reduction could include increased melanoma and other skin cancers and "effects on plants and animals of unknown magnitude").

62. *See* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685, 725–31 (1977) (establishing policies for "Ozone Protection").

63. *See* EPA, Consumer Product Safety Commission & U.S. Food and Drug Administration, Certain Fluorocarbons As Propellants In Self-pressurized Containers: Prohibition On Use, 43 Fed. Reg. 11,301 (Mar. 17, 1978) (describing rules promulgated by the EPA, FDA, and Consumer Product Safety Commission which banned chlorofluorocarbons in a variety of products).

64. *See* EPA, Ozone-Depleting Chlorofluorocarbons; Proposed Production Restriction: Advanced Notice of Proposed Rulemaking, 45 Fed. Reg. 66,726 (Oct. 7, 1980) (proposing a rule to limit CFC production).

closely with the U.S. State Department to support international negotiations over ozone control, which had been launched by the United Nations Environment Program in 1981. Yet by 1984, those negotiations, too, were stalled.[65]

Two events would break the logjam on ozone just before Lee Thomas took the helm at EPA. First, in 1984, environmental groups sued EPA over the delayed CFC regulations. To settle the litigation, EPA agreed to conduct a study on ozone, and issue new regulations by 1987.[66] The promised study was underway, with John Hoffman as the lead, when Thomas became Administrator. (Pivoting temporarily from his climate change research, Hoffman had stepped in to head up the agency's work on ozone.)[67] Second, in 1985, scientists published a paper confirming a giant hole in the ozone layer over Antarctica.[68] The study vividly demonstrated that the impact of CFCs was neither small nor mostly in the future, as some had argued, but significant and happening already.[69] The striking results created a new sense of urgency. By the end of the year, twenty-one industrialized nations, including the United States, had joined the Vienna Convention for the Protection of the Ozone Layer.[70] The treaty was before the United States Senate, awaiting consent to ratification, when Thomas became EPA administrator.[71] Now understanding the threat posed by ozone

65. The alliance between EPA and the State Department forged over the ozone issue would later prove important to establishing the Intergovernmental Panel on Climate Change ("IPCC"), and to negotiating subsequent international climate agreements. *See infra,* notes 88, 89, and accompanying text.

66. Hoffman reportedly persuaded the plaintiffs to stand down, advising them bluntly that they would lose, and urging them to give EPA time to conduct the necessary research and build a broad consensus for regulation. Doniger, *supra* note 38.

67. Hoffman reportedly stepped in after EPA's Toxic Substances Office (which until then had the lead on ozone), circulated a draft notice stating that chlorofluorocarbons posed no further risk to the environment. Email Communication from Stephen Seidel, former Manager of the EPA's Stratospheric Protection program, to Jody Freeman, Archibald Cox Professor of Law (Nov. 11, 2019).

68. *See* J.C. Farman, B.G. Gardiner & J.D. Shanklin, *Large losses of total ozone in Antarctica reveal seasonal ClO_x/NO_x interaction*, 315 NATURE 207, 207–10 (1985) (explaining that O_3 predictions are not global and, in fact, climate change has more rapidly affected the South Pole).

69. *See id.* (describing study results including data over the five years previous); BRITISH ANTARCTIC SURVEY: NATURAL ENVIRONMENT RESEARCH COUNCIL, THE OZONE HOLE (Apr. 1, 2017), https://perma.cc/YY6F-NTQN.

70. Vienna Convention for the Protection of the Ozone Layer, *opened for signature* Mar. 22, 1985, T.I.A.S. No. 11, 097, 26 I.L.M. 1529 (1987).

71. *See Ozone Depletion, The Greenhouse Effect, and Climate Change: Hearings Before the Subcomm. on Env't Pollution of the S. Comm. on Env't and Public Works*, 99th Cong. 199–202, (1986) (Testimony of Lee Thomas, EPA Administrator) (discussing research conducted on ozone

depletion, Thomas supported ratification. He knew that domestic regulation was necessary, and he could not argue for limiting domestic production of CFCs without supporting an international treaty to bind other nations.

Thomas stuck with the issue. After the Vienna Convention was ratified, he spent two years urging President Reagan to sign the follow-on Montreal Protocol, which would cut global CFC production by 50% over ten years.[72] Reagan's cabinet was split over the agreement's proposed mandatory targets. If the U.S. committed to CFC reductions in a treaty, they would become binding as a matter of domestic law, which, opponents pointed out, was not true for European countries. Thomas lobbied hard in support of the Protocol, but others in the Cabinet, including the president's science advisor, remained skeptical. The Secretary of the Interior, Don Hodel, dismissively suggested that the better solution was for Americans to wear hats and sunscreen—a remark that was leaked to the press, making him a laughingstock. [73] Major chemical companies like Dupont by now supported a phase-down, having developed substitutes ahead of their European counterparts.[74] At the urging of Thomas and George Schultz, Reagan's Secretary of State, the president ultimately was persuaded to support a phase-down, and he authorized Thomas to negotiate in Montreal.[75]

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depletion and declaring the administration's support for the Vienna Convention for the Protection of the Ozone Layer).

72. *See* Montreal Protocol on Substances that Deplete the Ozone Layer, *opened for signature* Sept. 16, 1987, S. TREATY DOC. No. 100-10 (1987) (requiring developed countries to achieve a 20% reduction relative to 1986 consumption levels by 1994 and a 50% reduction by 1999); s*ee also* Thomas Interview, *supra* note 58.

73. Robert Gillete, *Suggests Wearing Hats, Sunscreen, Instead of Saving Ozone Layer: Hodel Proposal Irks Environmentalists*, LOS ANGELES TIMES (May 30, 1987), https://perma.cc/K9KC-KA49; *see* Telephone Interview with Eileen Claussen, Former Director of the Office of Atmospheric Programs, Special Assistant to the President for National Security Affairs, and Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs (Mar. 28, 2019) (recalling EPA staff being asked to analyze the cost of sunglasses, which she thought was "crazy.") [hereinafter Claussen Interview].

74. As a consequence, European negotiators generally worked to block the U.S. proposal. As a chemist by training, British Prime Minister Margaret Thatcher understood the problem better than most and appealed for funds to help the developing world afford new technology. *See generally* RICHARD E. BENEDICK, OZONE DIPLOMACY: NEW DIRECTIONS IN SAFEGUARDING THE PLANET (1991); Interview by Charles Stuart Kennedy of Robert Reinstein & Stephanie Kinney at 19 (Oct. 5, 2010), https://perma.cc/3LB9-EG35; OZONE HOLE: HOW WE SAVED THE PLANET (Windfall Films & PBS 2019).

75. Reagan, who had had skin cancer, reportedly said, "If it happens, it's a catastrophe, so let's take out an insurance policy." OZONE HOLE: HOW WE SAVED THE PLANET (Windfall Films & PBS 2019).

This history is worth telling because it laid a critical foundation for EPA's evolving role in climate change. Many of the same small group of agency staff were involved in both ozone and climate research. During the period between the Vienna Convention and the Montreal Protocol, EPA became deeply engaged in the interagency process to develop the U.S. position on ozone controls.

As regulation looked increasingly politically feasible, Hoffman and Seidel, who had worked together on early climate research, moved to EPA's Air Office to work under Eileen Claussen, Thomas's choice to manage the ozone effort.[76] Once there, Hoffman produced a comprehensive risk assessment of skin cancer impacts, which proved instrumental in convincing the Reagan administration that the benefits of regulating CFCs outweighed the cost. The analysis also noted the significant contribution CFCs, which are greenhouse gases, make to climate change.[77] EPA's Science Advisory Board ratified the study's findings. The result was that EPA bolstered the record on climate change while underscoring the need for immediate action on ozone.[78]

Dennis Tirpak, another early member of Hoffman's Strategic Studies staff, had remained in OPPE, EPA's policy shop, to continue climate research. Tirpak and a small group of remaining staff,[79] now working under Dick Morgenstern, continued to model and analyze climate impacts, building on the work Hoffman had begun.[80] Thomas was supportive. He backed his staff's research on climate change, and publicly spoke and testified about the greenhouse effect.[81]

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76. Email Communication from Richard Morgenstern, formerly at the EPA and participant in the Kyoto Protocol negotiations, to Jody Freeman, Archibald Cox Professor of Law (Dec. 5, 2019) (on file with author) [hereinafter Morgenstern Email].

77. JOHN S. HOFFMAN, ED., OFFICE OF AIR AND RADIATION, U.S. EPA, EPA 400/1-87/001C, ASSESSING THE RISKS OF TRACE GASES THAT CAN MODIFY THE STRATOSPHERE (1987); OFFICE OF AIR AND RADIATION, U.S. EPA, REGULATORY IMPACT ANALYSIS: PROTECTION OF STRATOSPHERIC OZONE (1987).

78. *See* STRATOSPHERIC OZONE SUBCOMMITTEE, SCIENCE ADVISORY BOARD, EPA, REVIEW OF EPA'S ASSESSMENT OF THE RISKS OF STRATOSPHERIC MODIFICATION, SAB-EC-87-025 (Mar. 1987) ("The Subcommittee believes that the information summarized in the draft risk assessment supports the conclusion that the possible impact of CFCs on the stratosphere should be considered a high priority issue for further investigation and analysis by EPA and other Federal agencies, and provides a scientific basis for the recently initiated international efforts to address this problem."). EPA's Science Advisory Board was now on record, saying climate change "is real and important." *See also* Seidel Interview, *supra* note 39.

79. The staff included Dan Lashoff and Joel Smith, among others.

80. Morgenstern Email, *supra* note 76.

81. *See e.g.*, Lee M. Thomas, *Global Challenges at EPA*, 12 EPA J. 2, 2–3 (Dec. 1986) ("The burning of coal, oil, and natural gas today adds about five gigatons of carbon dioxide to the atmosphere each year. . . . Many scientists believe that these chemicals are causing important changes in the chemical composition of our atmosphere.").

Tirpak was well-connected to the international scientific community, and he knew climate would be "the next big thing."[82] In 1985, Tirpak had attended a scientific workshop on the greenhouse effect convened by the WMO, UNEP and the International Council of Scientific Unions.[83] The Report from that meeting noted, alarmingly, that the doubling time for atmospheric greenhouse gas concentrations was likely to be much shorter than earlier thought, once gases other than CO_2 were considered.[84] This new appreciation of the problem was "eye-opening" to the scientific community[85] and prompted UNEP Executive Director Mostafa Tolba to write to Secretary of State George Schultz about the need for the U.S. to take action.[86]

The Reagan White House did not support an international climate accord, judging the science to be too uncertain.[87] But at the urging of EPA and the State Department, the administration *did* agree to propose that an intergovernmental body be established to conduct a comprehensive scientific assessment of the issue,[88] which led to the creation of the Intergovernmental Panel on Climate Change (IPCC).[89] The administration's support for the IPCC was strategic: it delayed the need to negotiate an international climate agreement, and put governments, rather than scientists, firmly in control of the international climate research program.[90] Yet from EPA's perspective,

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82. Tirpak Interview, *supra* note 37.

83. *Id.*

84. *See generally* World Meteorological Organization, *Report of the International Conference on the Assessment of the Role of Carbon Dioxide and other Greenhouse Gases in Climate Variations and Associated Impacts,* Report of the Meeting, Villach, Austria (Oct. 9–15, 1985), WMO World Climate Program Report, No. 661. Dennis Tirpak (at that time on leave from EPA) attended the Villach meeting.

85. Telephone Interview with Michael Oppenheimer, Former Senior Scientist at the Environmental Defense Fund and head of its Climate Program (June 20, 2019) [hereinafter Oppenheimer Interview].

86. *See* Hecht & Tirpak, *supra* note 8, at 380.

87. *Id.*

88. *See* Interview by Charles Stuart Kennedy of Robert Reinstein & Stephanie Kinney at 6 (Oct. 5, 2010), https://perma.cc/6P7K-X8J7 (discussing the creation of IPCC).

89. Oppenheimer Interview, *supra* note 84; *see also* Hecht & Tirpak, *supra* note 8, at 381.

90. After the international scientific meeting held in Villach, Austria in 1985, and a follow up meeting in Bellagio, Italy in 1987, a group of international scientists had established the "Advisory Group on Greenhouse Gases" to conduct a series of assessments. "At that time, the U.S. said we need a more comprehensive study and we need an intergovernmental process, and lo and behold the IPCC was born. It was in part because of the administration's concern that the process would get out of control." Tirpak Interview, *supra* note 37. Some participants were concerned that the IPCC would be "rigged against a fair assessment of the science. But we were wrong. The 1st Assessment came out and the IPCC did a great job. It was mostly left alone, except at the end when the governments participated in the summaries. Bert Bolin, the first head of the

it also took a positive step toward building an international consensus for action, which seemed to mirror the ozone process.

Meanwhile, congressional interest in climate change grew steadily.[91] In 1986, Congress held two days of hearings on ozone depletion and climate change, with testimony from EPA Administrator Lee Thomas, NASA's Goddard Space Institute's James Hansen, and then-Senator Al Gore. Gore argued that there was no significant disagreement in the scientific community about whether the greenhouse effect was real.[92] After the hearing, a group of Senators requested two studies from EPA, one on the effects of climate change and the other on possible policy responses—a request that had been pre-arranged by EPA and congressional staffers.[93] In 1987, Congress passed the Global Climate Protection Act, calling for more research, and specifically asking EPA and the State Department to develop policy options.[94] And in 1988, Senator Tim Wirth presided over the dramatic hearing where NASA scientist James Hansen, in a packed hearing room on a sweltering June day, testified to being "99% certain" that climate change was the result of a buildup of carbon dioxide in the atmosphere rather than natural variation, and warned that "it is already happening now."[95] Wirth introduced a far-reaching climate bill calling for twenty percent emissions reductions by 2020,

IPCC understood that the scientific assessments would be more influential if governments bought into them." Oppenheimer Interview, *supra* note 85. Oppenheimer participated in the international meetings and worked on the IPCC 1st Assessment and each one since then.

91. *See generally* Rich, *Losing Earth*, *supra* note 5 (describing lobbying efforts by environmental activists to spur congressional interest in climate change).

92. *Ozone Depletion, supra* note 51, at 8–11; *see also* Hecht & Tirpak, *supra* note 8, at 381.

93. *See* Pomerance Interview, *supra* note 20 (describing cooperation between environmental activists, EPA and congressional staffers to arrange the hearings and request the reports).

94. Global Climate Protection Act of 1987, Pub. L. No. 100-204, 101 Stat. 1408, 1408–09 (1987) (establishing a policy to conduct more research on climate change). After the Act's passage, EPA Administrator Lee Thomas reportedly tried but failed to "capture a policy lead" on climate change. Nevertheless, EPA would help to "provide the essential analytical data necessary for developing consensus in the U.S. on policy actions." Hecht & Tirpak, *supra* note 8, at 400 n.23.

95. Philip Shabecoff, *Global Warming Has Begun, Expert Tells Senate*, N.Y. TIMES (June 24, 1988), https://perma.cc/4GEX-3C8G.

among other things.[96] But a majority of Congress was not yet prepared to regulate greenhouse gas emissions in the U.S. economy.[97]

Many of the key players from the ozone negotiations, both at EPA and the State Department, believed that the experience with CFCs could be a model for approaching climate change.[98] But the analogy with ozone depletion turned out to be flawed.[99] Among other things, there were no ready substitutes for fossil energy, as there had been for the CFCs responsible for deteriorating the ozone layer, let alone substitutes that would disproportionately benefit American companies.[100] And the harms from climate change remained remote, compared to skin cancer rates that would rise because of a thinning ozone layer. In addition, EPA's voice was not unified on climate change. While they recognized the importance of the climate issue,[101] some staffers regarded it as a distraction and a drain on scarce resources.[102] And even if EPA wanted to act, it was not clear which

96. *See,* e.g., National Energy Policy Act of 1988, S. 2667, 100th Cong. (1998) (calling for a twenty percent reduction in emissions by 2020 and an international global agreement on the atmosphere; directing DOE to produce a plan to reduce energy consumption by two percent per year; and requiring the Congressional Budget Office to analyze the feasibility of a carbon tax); *see also* Frontline Hot Politics, *Interview with Tim Worth*, PBS (Jan. 17, 2007) https://perma.cc/26CV-PMRX.

97. *See generally* Rich, *Losing Earth*, *supra* note 5.

98. *See* Hecht & Tirpak, *supra* note 8, at 377 ("With respect to both the issues of CFC and climate change, there were serious questions of scientific uncertainty, conflicting industry and government views, interagency disagreement and international negotiations . . ."); *see also* Richard Benedick, *Lessons from the Ozone Hole*, 16 EPA J., Mar./Apr. 1990, at 41, 41–43 (1990) (describing the similarities between the two issues: potentially serious economic dislocation; skepticism about the science; entrenched interests with financial incentives to oppose policy, and politicians who would rather defer action).

99. *See* Michael A. Toman, Richard D. Morgenstern & John W. Anderson, *The Economics of "When" Flexibility in the Design of Greenhouse Gas Abatement Policies* (Resources for the Future, Discussion Paper 99-38-REV, 1999), https://perma.cc/6A9G-3SC3 ("The relative inflexibility of the [Kyoto] Protocol with respect to these elements may derive, in part, from a misplaced analogy between the global warming issue and the highly successful effort to phase out CFCs under the Montreal Protocol.").

100. *See* James Maxwell and Forrest Briscoe, *There's Money in the Air: The CFC Ban and Dupont's Regulatory Strategy*, 6 BUS. STRAT. AND THE ENV. 276, 276–85 (1988) ("Such industry heterogeneity provides frequent
opportunities for coalitions of 'the green and the greedy', such as that between DuPont and environmental interests.").

101. *See generally* OFFICE OF POLICY ANALYSIS, OFFICE OF POLICY, PLANNING AND EVALUATION, EPA, UNFINISHED BUSINESS: A COMPARATIVE ASSESSMENT OF ENVIRONMENTAL PROBLEMS (1987) (ranking climate change as the top ecological challenge facing EPA).

102. In the 1980s, the EPA program offices "did not recognize climate change as an emerging regulatory issue at all. We went and talked to water office, and said this will be a big impact on water. They were so tied up with mainstream water issues that they didn't want to have anything

office would take the lead.[103] The policy office was focused on research and analysis, and the Air Office had its plate full of other things.[104]

More ominously, the experience with ozone depletion had galvanized industry opposition: by 1989, a powerful coalition of oil, coal, chemical, electric utility, and auto sector companies and their trade associations had effectively woken up. Now, they joined forces, determined to prevent what happened in Montreal on ozone from happening again to them on climate change.[105] Congressional hearings and press coverage of climate change increased throughout the 1980s, and some members of Congress introduced far-reaching bills.[106] But the notion that Congress was on the precipice of passing legislation to regulate greenhouse gas emissions seems overly optimistic.[107] And EPA was not about to get ahead of Congress.

II. George H. W. Bush: The Rio Treaty and Voluntary Programs

A. The 1990 Clean Air Act Amendments

When running for president in 1989, George H. W. Bush sought to distinguish himself from his predecessor by promising to be "the environmental president." He pledged to support a package of amendments to re-authorize the Clean Air Act that were then stalemated in Congress.[108] The amendments would extend the deadlines for states to comply with air quality standards, strengthen auto emissions standards, overhaul what had become an ineffective air toxics program, and adopt provisions to implement the Montreal

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to do with it. And we talked to the solid waste office. We were trying in those early days to garner the interest and support from the mainstream part of the agency, and they were so focused on their main business that they really weren't too interested. We also went over and briefed the Pentagon and said, this will be a defense issue. They laughed us out of the room—not really, but sort of." Tirpak Interview, *supra* note 37.

103. Tirpak Interview, *supra* note 37; Morgenstern Email, *supra* note 76.

104. The Air office was implementing the Montreal Protocol and working on the Clean Air Act re-authorization. *See generally* Claussen Interview, *supra* note 73; *see also*, Morgenstern Email, *supra* note 76 (explaining that the matter was not ripe for regulation).

105. *See generally* DIANNE RAHM, CLIMATE CHANGE POLICY IN THE UNITED STATES: THE SCIENCE, THE POLITICS AND PROSPECTS FOR CHANGE (2009); UNION OF CONCERNED SCIENTISTS, THE CLIMATE DECEPTION DOSSIERS (2015); Neela Banerjee, Lisa Song & David Hasemyer, *Exxon: The Road Not Taken*, INSIDE CLIMATE NEWS (Sept. 16, 2015), https://perma.cc/2GUK-AXRP.

106. *See, e.g.*, National Energy Policy Act of 1988, S. 2667, 100th Cong. (1998).

107. *See generally* Rich, *Losing Earth*, *supra* note 5.

108. *Id.*

Protocol.[109] There would also be a new program to address acid rain.[110] The White House favored a market-based approach and proposed a bill to reduce sulfur dioxides by ten million tons.[111]

The package was highly controversial, drawing intense opposition not only from pro-business Republicans but also from powerful Democrats concerned about the impact on their automotive, coal, and manufacturing constituencies.[112] Negotiations would consume 18 months and require considerable White House effort.[113] The bill was complex, costly, and controversial, and the new acid rain program would be a signature achievement. Yet, while the update to the Act was far-reaching, Congress did not add new provisions on climate change. The amendments included several provisions that would indirectly reduce greenhouse gases, however, including the acid rain program itself, which would help to shift the electricity sector from over 50% reliance on coal to a greater share of natural gas.[114] In addition, there were clean fuels requirements for the transportation sector,[115] and a mandatory phase out of CFCs to address stratospheric

109. *Id.*

110. *Id.*

111. While campaigning in Michigan, Bush declared that it was time to address acid rain. George H. W. Bush, Address on the environment at Erie Metropark, MI (Aug. 31, 1988). Both Boyden Gray, the White House Counsel, and Dick Stewart, an Assistant Attorney General in the Department of Justice, were enthusiastic about the possibility of using market mechanisms to address air pollution, and advanced that view in the White House. *See generally* Gabriel Chan, et al., *The SO_2 Allowance-Trading System and the Clean Air Act Amendments of 1990: Reflections on 20 Years of Policy Innovation*, 65 NATIONAL TAX J. 419, 445–46 (2012); *see also* Eric Lindquist & Ann O'M. Bowman, *The "Convenient" Environmental Presidency of George H. W. Bush: A Kingdonian Assessment* at 6, American Political Science Association 2013 Annual Meeting Paper (2013).

112. Both Representative Dingell (D-Mich.), who managed the Clean Air Act amendment bill in the House, and Senator Byrd (D-W.VA.) the former Senate Majority Leader, opposed a strong bill. At the same, time, Representative Henry Waxman, who chaired the subcommittee on Health and Environment of the House Energy and Commerce Committee, viewed the legislation as too weak, especially its provisions regulating vehicle emissions. The White House was directly involved in both the House and Senate negotiations, which took from June 1989 through October 1990. Senator George Mitchell reportedly played a critical role in Senate negotiations, working with the Bush administration to scale down the bill's cost. For a more detailed account of internal deliberations, see Lindquist & Bowman, *supra* note 111.

113. Telephone Interview with William K. Reilly, Former EPA Adm'r (Mar. 14, 2019) [hereinafter Reilly Interview] (recalling the significant challenges of passing the bill).

114. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. IV, §§ 401–413, 104 Stat. 2584–2634 (Nov. 15, 1990); *see also* Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. VI, §§ 601–603, 104 Stat. 2648–72 (Nov. 15, 1990).

115. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. II, §§ 201–235, 104 Stat. 2471–2531 (Nov. 15, 1990)

ozone, both of which would help reduce greenhouse gases.[116] There was one new provision directly related to greenhouse gases: sources would be required to monitor CO_2 emissions and report emissions data to EPA, which the agency would be required to make public.[117] This was a seed planted with future greenhouse gas regulation in mind.[118]

B. Administration Divisions Over the Rio Treaty

Internationally, with the IPCC's first assessment due, momentum was building for a framework convention on climate change. As a presidential candidate, Bush had invoked "the White House effect" to combat "the greenhouse effect"[119] but he had also said that climate change would require an international solution.[120] Once elected, Bush appointed Bill Reilly, the former President of the World Wildlife Fund, as his EPA Administrator. Reilly argued that the U.S. should support a framework climate treaty "to define the problem and its remedies."[121] Bush's Chief of Staff, John Sununu, opposed the idea, however, "arguing that the threat was too tenuous and the cure too costly to start down the path of international agreements."[122] When news reports surfaced that the White House was sidelining the issue and muzzling climate scientists, the President was embarrassed, and Sununu came under pressure to make things right.[123] He approached Reilly for help, and agreed to his proposal. President Bush would host and attend the first IPCC plenary in January 1990, and the U.S. would host the first session of the U.N. negotiations on a climate treaty, to be held in Virginia in 1991.[124]

Early on in the Bush administration, Reilly appeared to have an ally in James Baker, the Secretary of State. In his first official speech,

116. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. IV, §§ 401–413, 104 Stat. 2584–2634 (Nov. 15, 1990).

117. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. IV, § 412, 104 Stat. 2699 (Nov. 15, 1990).

118. The monitoring proposal was developed by the Environmental Defense Fund, which strongly supported the emissions trading approach in Title IV, and adopted during legislative negotiations. Email Communication from Joseph Goffman to Jody Freeman (Nov. 7, 2019).

119. George H. W. Bush, Address on the environment at Erie Metropark, MI (Aug. 31, 1988).

120. *Id.*

121. *See, e.g.*, Michael Weisskopf, *Bush was Aloof in Warming Debate*, WASH. POST (Oct. 31, 1992), https://perma.cc/H483-UPA7.

122. *Id.*

123. *Id.*

124. Interview by Charles Stuart Kennedy of Robert Reinstein & Stephanie Kinney at 11 (Oct. 5, 2010), https://perma.cc/3LB9-EG35.

Baker had gone surprisingly far in urging action on climate change,[125] encouraging nations to act now rather than waiting "until all the uncertainties have been resolved."[126] Yet those remarks would be Baker's lone intervention on the issue. He subsequently recused himself from deliberations about global warming, citing his investments in the oil industry. The real reason though, was apparent in a message Baker sent Reilly: "Remember Bill, you never beat the White House,"[127] a remark that alluded to Sununu and other members of Bush's senior staff, who adamantly opposed an international climate agreement. Baker was telling Reilly he would be on his own. And Baker was right. With the U.S. now committed to participating in international negotiations, Sununu centralized control. He hand-picked Robert Reinstein, a trade expert opposed to binding emission reduction targets, as the lead negotiator.[128] At Sununu's direction, the United States would accept only voluntary programs that could be defended on their own terms and would oppose transferring funds to the developing world.[129] As Reinstein put it, there were two no-nos: "no targets, no money."[130]

Reilly's staff at EPA were deeply involved in research, analysis, and modeling in the run-up to the U.N. Conference in Rio de Janeiro, where the Convention would be signed. They had produced two major reports, which Congress had requested in the 1986 hearings. The first described potential climate impacts by region and sector.[131] The second analyzed potential stabilization strategies.[132] During this period, EPA staff testified in Congress and participated in inter-agency discussions

125. Baker called for reducing CFC emissions, improving energy efficiency and limiting deforestation, going beyond anything President Bush himself had said while campaigning. *See generally* John M. Goshko, *Baker Urges Steps on Global Warming*, WASH. POST (Jan. 31, 1989), https://perma.cc/G4JU-MQ7G.

126. *Id.*

127. Reilly Interview, *supra* note 113.

128. Interview by Charles Stuart Kennedy of Robert Reinstein & Stephanie Kinney (Oct. 5, 2010), https://perma.cc/3LB9-EG35.

129. *Id.*

130. *Id.*

131. OFFICE OF RESEARCH AND DEVELOPMENT, OFFICE OF POLICY, PLANNING AND EVALUATION, EPA, THE POTENTIAL EFFECTS OF GLOBAL CLIMATE CHANGE ON THE UNITED STATES: REPORT TO CONGRESS, EPA-230-05-89-050 (1989); *see also* William Yardley, *John Hoffman, a Force in Energy Efficiency, Dies at 62*, N.Y. TIMES (Oct. 16, 2012), https://perma.cc/HFR3-6LSR.

132. OFFICE OF POLICY, PLANNING AND EVALUATION, EPA, POLICY OPTIONS FOR STABILIZING GLOBAL CLIMATE: REPORT TO CONGRESS, 21P-2003.1 (1990); *see also* Hecht & Tirpak, *supra* note 8, at 382. Richard Morgenstern calls these reports "highly influential." *See* Morgenstern Email, *supra* note 76.

on climate policy, in which they tried to persuade largely skeptical DOE, DOI, and White House officials about the seriousness of the climate risk.[133] John Hoffman, who had by now turned his attention back to climate change, began developing "voluntary" energy efficiency programs, which could be advertised as business-friendly.[134] This approach was a true innovation: EPA's posture toward polluters had traditionally been adversarial, but these programs relied on incentives.[135] Hoffman was being strategic, searching for measures to reduce greenhouse gases that might attract White House interest, and help to support U.S. participation in international climate negotiations. (Hoffman would send a young staffer, Cathy Zoi, to pitch the programs to OMB officials as a way to "stabilize GHGs with a profit to the U.S. economy."[136]) These initiatives included the Green Lights program, launched in 1991, which encouraged firms to install energy-efficient lighting, and Energy Star, launched in 1992, in which EPA and DOE rated the energy efficiency of many common consumer appliances.[137] Energy Star labels gave consumers a convenient way to compare products and savings.[138] In Reilly's view, these programs embodied a

133. Morgenstern Email, *supra* note 76.

134. *Id.* (noting that Hoffman had begun this work while at OPPE but developed it now at the Air Office).

135. *Id.* The programs were controversial among economists at EPA, who worried about overstating their effectiveness, and among traditional regulators, who thought the programs were unenforceable, and gave firms credit for doing what they were going to do anyway. And they rankled Department of Energy officials, who thought they were in charge of efficiency.

136. Telephone Interview with Cathy Zoi, Former Assistant Sec'y for Energy Efficiency and Renewable Energy, U.S. Dep't of Energy (Sept. 30, 2019) (on file with author). "We would be in these meetings with OMB and CEA and say, here is where we can get all these tons – from lighting and air conditioning, and office management, etc. etc., and they would push back on our assumptions or our math, and we'd come back with more programs and more tons. We outlasted them."

137. *See* EPA, GREEN LIGHTS PROGRAM: THE FIRST YEAR, EPA/400/1-92/003 (Feb. 1992) (describing the first year of the Green Lights Program); EPA, INTRODUCING . . . THE GREEN LIGHTS PROGRAM, EPA 430-F-93-050 (Dec. 1993) (announcing the growth of the Energy Star program out of the Green Lights Program).

138. OFFICE OF COMMUNICATIONS AND PUBLIC AFFAIRS, EPA, ENVIRONMENTAL STEWARDSHIP: EPA'S FIRST TWO YEARS IN THE BUSH ADMINISTRATION at 5, 21K-1006 (May 1991). Other examples of voluntary programs started in the Bush administration include 33-50 (a challenge to industry to reduce their emissions of 17 priority toxic chemicals by 33 percent by 1992 and 50 percent by 1995), the Green Chemistry Program (pollution prevention grants), and the Design for the Environment Program (a green manufacturing program, renamed Safer Choice in 2015). See *id.* at 4; *see also* OFFICE OF POLLUTION PREVENTION AND TOXICS, EPA, GREEN CHEMISTRY PROGRAM FACT SHEET, EPA 742-F-02-003 (Mar. 2002) (describing the Green Chemistry Program); *see also* OFFICE OF POLLUTION PREVENTION AND TOXICS, EPA, DESIGN FOR THE ENVIRONMENT PROGRAM, EPA744-F-00-020 (Mar. 2001) (describing the Design for the Environment Program).

preference for "non-confrontational consensus-building approaches" to solving environmental problems.[139] Voluntary programs fit under the administration's "no regrets" banner and were philosophically aligned with market-based approaches, like the acid rain trading regime the White House had so enthusiastically supported.

Despite Reilly's efforts and EPA's work, from February 1991 to the Rio Summit in June 1992, the U.S. delegation, at Sununu's direction, worked diligently to ensure that the agreement would not commit the U.S. to specific emission targets. At the conclusion of negotiations, the Rio Treaty's stated goal was the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[140] Rather than agreeing to cap emissions at 1990 levels by 2000, as the Europeans had proposed, the U.S. agreed only to "action plans" requiring industrialized nations to submit reports "with the aim" of returning emissions to 1990 levels.[141] Bill Reilly, the most powerful voice for environmental protection in the Bush cabinet, had been rebuffed very publicly during the Rio Convention,[142] and the treaty itself created no mandate for domestic action.

Reilly has lamented that the U.S.'s performance leading up to and during the Rio Convention incurred "lasting and damaging criticism from Americans and many in Europe and elsewhere for environmental obstruction."[143] Here was the world's richest country, with a proud history of significant environmental achievements, refusing to commit to stabilizing greenhouse gases. He felt Rio was a missed opportunity to commit to goals that the U.S. was fully capable of achieving, and at a reasonable cost, by relying largely on the already-signed new Clean

139. *See* Reilly Interview, *supra* note 113, at 30–31, 49 (praising these programs).

140. *United Nations Conference on Environment and Development: Framework Convention on Climate Change*, *in* REPORT OF THE INTERGOVERNMENTAL NEGOTIATING COMMITTEE FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE ON THE WORK OF THE SECOND PART OF ITS FIFTH SESSION, INC/FCCC, 5th Sess., 2d Part, at Annex I, U.N. Doe. A/AC.237/18 (Part II)/Add.1 (May 9, 1992), reprinted in 31 I.L.M. 851.

141. The U.S. delegation also made it clear that the president would not sign the related biodiversity convention out of concern for U.S. biotechnology patents, among other issues. Karen Tumulty, *Bush, Major Differ on Earth Summit Pact: Environment: The biodiversity treaty's financial obligations worry President. Britain's Leader Says Problems can be Worked Out*, L.A. TIMES (June 8, 1992), https://perma.cc/58H7-JWW2.

142. Keith Schneider, *The Earth Summit; White House Snubs U.S. Envoy's Plea to Sign Rio Treaty*, N.Y. TIMES (June 5, 1992), https://perma.cc/PY45-XSLP.

143. Reilly Interview, *supra* note 113.

Air Act amendments.[144] But in an election year, during a recession, and having received little political credit for the Clean Air Act amendments he championed, President Bush would side with the climate naysayers on his staff.[145]

III. The 1990s – Kyoto Protocol and EPA's Evolving Understanding of the Clean Air Act

When Bill Clinton won the 1992 presidential election, the prospects for meaningful U.S. action on climate change seemed to brighten. His running mate, Al Gore, was closely identified with environmental issues, especially climate change, from his days in Congress and had written *Earth in the Balance: Ecology and the Human Spirit*, which was published in the summer of 1992, around the time Clinton picked him.[146] Gore's people filled the administration's key environmental posts: Clinton nominated Carol Browner, Gore's thirty-seven-year-old former Senate legislative director, as EPA administrator, while another young Gore staffer, Katie McGinty, would become a Deputy Assistant to the President and go on to chair the Council on Environmental Quality.[147] At EPA, after twelve years of Republican control, a backlog of issues needed urgent attention: the Superfund program, food quality protection, pesticide regulation, national ambient air quality standards, and more.[148] These were immediate action items linked to clear statutory mandates, court

144. *Id.* ("Administration analysis indicated that the United States would emit about the same level of greenhouse gases in the year 2000 as in the year 1990, i.e., that stabilization posed no burden to the American economy. No new legislation would be necessary. In fact, the vehicle that, along with appliance efficiency standards, forest conservation, and conversion of coal-fired power plants in favor of natural gas, was already at hand; the Clean Air Act. We had designed the law to promote gas and discourage coal and it has done so effectively.").

145. Bush was faulted for failing to engage on the issue. He "never sat for a full-dress scientific briefing" on climate change or exercised control over administration policy even after infighting among administration officials became public or leaders of other industrialized nations pledged action." Weisskopf, *supra* note 123. 121Reilly subsequently criticized the U.S. position in a memorandum to EPA staff. *See* William K. Reilly, *Memorandum to All EPA Employees: Reflections on the Earth Day Summit* 4 (July 15, 1992).

146. ALBERT GORE, JR., EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT (1992).

147. Browner was Gore's legislative director from 1988-1991. See NY Times Politics, *The New Team*, N.Y. TIMES, https://perma.cc/H7TD-VPAR. McGinty reportedly helped Gore research *Earth in the Balance: Ecology and the Human Spirit* and accompanied him to Rio in 1992. Mattie Kahn, *Senate Hopeful Katie McGinty Can Play Ball*, ELLE (Mar. 11, 2016), https://perma.cc/ZH42-WYDN.

148. Telephone Interview with Carol Browner, EPA Adm'r (Mar. 26, 2019) [hereinafter Browner Interview].

deadlines, and congressional demands.[149] "Climate was still seen as more of a scientific issue, and the mechanisms of action were longer-term," recalls Gary Guzy, Browner's Counselor.[150] Browner herself was more focused on domestic environmental issues than her predecessor had been.[151] She knew climate regulation was unlikely and was interested in strengthening what she viewed as weak and overdue pollution rules.[152] Climate change was not at the top of her list.

A. The BTU Debacle and the Return to Voluntary Programs

The White House, meanwhile, had included a climate measure in the president's economic plan: a British Thermal Unit tax, based on an energy source's heat content.[153] While not exclusively designed to address climate change, the tax would raise fossil fuel energy costs and substantially reduce greenhouse gas emissions.[154] EPA's OPPE staff had done the underlying analytic work to model the tax's impact on emissions and the economy. Had it passed, the BTU tax would have been the most important climate policy adopted in the United States to date.[155] But it failed spectacularly. By summer, Democratic leaders told Clinton that its prospects were "extremely gloomy," and key

149. Telephone Interview with Gary Guzy, Former Counselor to the Adm'r and EPA Gen. Counsel (Mar. 20, 2019) [hereinafter Guzy Interview].

150. *Id.* "[Climate] was primarily then in the Office of Policy and the specialty of very few staff. The scientific consensus, imperative, and sense of urgency weren't there, and it was less concrete than stratospheric ozone . . . later, in in the context of the negotiations over the Kyoto Protocol, EPA began thinking about implementation, and the legal authorities it might need. But before that there was only far more general thinking."

151. "Reilly had done an amazing job of putting agency on international agenda. I had gotten a lot of input as I came to EPA about maybe I should start by staying focused on domestic side." Browner Interview, *supra* note 148.

152. "There was bipartisan opposition against [the climate] issue. Carol saw an opportunity to move forward aggressively on traditional regulatory measures and didn't want to spend capital on climate—she realized it wasn't going to happen and was laser focused on conventional pollutants, using command and control regulation to maximum effect. It was just a different time. They came in after H. W. and thought the Clean Air Act tools had been underutilized." Telephone Interview with Roger Ballentine, Former Deputy Assistant to the President for Envtl. Initiatives, and Chairman, White House Climate Change Task Force (Apr. 16, 2019). Others I interviewed confirmed that climate change was not a priority for Browner and noted that some at EPA felt frustrated at what they saw as a lack of support. S*ee e.g.*, Guzy Interview, *supra* note 149.

153. Roger C. Dower & Richard D. Morgenstern, *Energy Taxation in the United States: A Case Study of the BTU Tax Proposal*, 10 INT. J. GLOBAL ENERGY ISSUES 180, 181 (1998) (showing tax would achieve up 25% of U.S. greenhouse gas reductions called for by the UNFCCC).

154. *Id.*

155. *Id.*

Senate democrats were emphatically opposed.[156] In the face of furious lobbying, the administration granted exemption after exemption, trying to salvage the plan. Eventually, recognizing it was too bloodied to survive, Clinton jettisoned the idea. Congress instead imposed a modest gasoline tax of 4.3 cents per gallon and moved on; after defending the tax vociferously for months, the White House backed away from the issue.[157]

The lesson of this experience could not have been lost on Browner: even with a Democratic Congress, the administration could not pass a broad-based energy tax.[158] She would focus on strengthening pollution rules, which would prove challenging enough, and not just because of Republican opposition. Key Democrats in Congress and influential members of Clinton's own team were concerned about the cost of environmental regulations. After Republicans seized control of Congress in the 1995 mid-term elections, EPA found itself even more on the defensive, fighting to preserve its budget, and defending regulations as necessary to protect the public health, and required by science and law.[159]

EPA staff would play a prominent role in what became the administration's default domestic climate policy: voluntary programs. On Earth Day in April 1993, Clinton pledged to voluntarily reduce greenhouse gas emissions to 1990 levels by 2000, consistent with the Rio Treaty's goal of stabilizing emissions. The BTU tax would have produced a significant share of the required emissions cuts, but once it failed, the administration combined over fifty voluntary initiatives into a "Climate Change Action Plan."[160] The programs targeted emissions

156. David Rosenbaum, *Clinton Backs Off Plan for New Tax on Heat in Fuels*, N.Y. TIMES (June 9, 1993), https://perma.cc/HR76-8KG7; *see also* David Hilzenrath, *Miscalculations, Lobby Effort Doomed BTU Tax*, WASH. POST (June 11, 1993), https://perma.cc/5LSN-9E94 (recounting the lobbying effort against the tax and opposition from David Boren (D-OK), a must-have vote on the Senate Finance Committee).

157. Eric Pianin & David Hilzenrath, *Hill Agrees to Raise Gas Tax 4.3 Cents*, WASH. POST (July 30, 1993), https://perma.cc/HA5M-ZZAU.

158. The BTU tax was "as close to a politically possible energy tax as is likely to be constructed in the U.S." Dower & Morgenstern, *supra* note 153, at 189. The tax was a "close second" to a carbon tax in terms of its effectiveness at reducing emissions. *Id*. at 183, 189. Its defeat was not encouraging for the prospects of other instruments that Congress might use to address climate change, all of which would raise energy prices for consumers.

159. Browner recalls the switch to Republican control—while obviously creating significant new obstacles—was in a sense also liberating. The agency could now fight back in a less restrained manner against a Republican majority hostile to its regulatory efforts. Browner Interview, *supra* note 148.

160. WILLIAM J. CLINTON & ALBERT GORE, JR., THE CLIMATE CHANGE ACTION PLAN (1993). From the White House, Katie McGinty led the inter-agency effort to coordinate the Plan.

from the electricity, building, and transportation sectors, and ran the gamut from specific agreements with particular companies to industry- and sector-wide programs.[161] They were designed to demonstrate the emissions reductions potential and economic benefits of energy efficiency and unlock promising technological innovation.[162] A disproportionate share of these programs were already underway at EPA or were now being proposed by EPA staff, the groundwork having been laid in the run-up to Rio by John Hoffman and his team.

B. The Kyoto Protocol

From the mid-1990s on, senior EPA staff were also active in the White House-led inter-agency process to develop the U.S. position in international climate negotiations, aimed at implementing the 1992 U.N. Framework Convention. EPA had a track record of working well with the State Department on the Montreal Protocol and brought substantive expertise to the Kyoto discussions that no other agency possessed.[163] The U.S. negotiating position for Kyoto was that any binding commitment to reduce emissions should rely on flexible market mechanisms, such as cap-and-trade, exactly the kind of approach that EPA was already successfully implementing for acid rain.[164] EPA staff contributed meaningfully to these policy debates: they modeled emissions reductions and cost, helped respond to concerns from Treasury and other agencies over economic impacts, and dueled with the Energy Department modelers over technology

Telephone Interview with Katie McGinty, Former Deputy Assistant to the President and Chair of the Council of Envtl. Quality (June 10, 2019) [hereinafter McGinty Interview].

161. Examples included updated versions of Green Lights (encouraging private sector organizations to install energy-efficient lighting to reduce electricity consumption and associated CO_2 emissions), the Coalbed Methane Outreach Program (encouraging coal mining companies to capture and use as methane from extraction that would otherwise be vented to the atmosphere), the Source Reduction and Recycling Program (encouraging businesses to reduce their solid waste and increase recycling to cut greenhouse gas emissions from manufacturing, transporting, and materials disposal), and the State and Local Outreach Program (granting state and local governments funding to study solutions to global warming and conduct demonstration projects). *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFF., GAO/RCED-97-163, GLOBAL WARMING: INFORMATION ON THE RESULTS OF FOUR OF EPA'S VOLUNTARY CLIMATE CHANGE PROGRAMS 2 (1997); *see also* Janice Mazurek, *The Use of Voluntary Agreements in the United States: An Initial Survey*, OECD ENV/EPOC/GEEI(98)27/FINAL (1998) (evaluating these and other voluntary programs implemented by the U.S. government).

162. U.S. GOV'T ACCOUNTABILITY OFF., GAO/RCED-97-163, GLOBAL WARMING: INFORMATION ON THE RESULTS OF FOUR OF EPA'S VOLUNTARY CLIMATE CHANGE PROGRAMS 3 (1997).

163. McGinty Interview, *supra* note 160 (describing the White House preference for a market-based approach, and the need to persuade the Europeans of its merits).

164. *Id.*

penetration rates.[165] EPA staff were among the most technically capable, thoughtful, and determined contributors to the inter-agency process.[166]

At the first Conference of the Parties meeting in Berlin in April 1995, Undersecretary of State for Global Affairs, former Senator Tim Wirth, agreed on behalf of the administration to the "Berlin Mandate," which called for emissions targets to apply to developed but not developing countries.[167] In follow-on negotiations, the U.S. announced that it would support making those targets legally binding.[168] That decision prompted a strong reaction in the U.S. Congress. In July 1997, five months before the Kyoto negotiations, the U.S. Senate adopted the Byrd-Hagel Resolution by a vote of 95-0. The Resolution was a "sense of the Senate" declaration stipulating that the United States should neither sign any agreement imposing mandatory emission reductions on the developed world without also requiring commitments from developing countries in the same time period, nor do "serious harm" to the U.S. economy.[169] This verdict looked worse than it was: in an effort to blunt its impact, the White House had negotiated the language to make it seem as banal as possible, and even endorsed it.[170] But from the outside, the Byrd-Hagel Resolution

165. Telephone Interview with Sue Biniaz, Former Deputy Legal Adviser and lead climate lawyer, U.S. State Dep't (Apr. 14, 2019) [hereinafter Biniaz Interview]; McGinty Interview, *supra* note 160; Claussen Interview, *supra* note 73("EPA tended to have "the best analysis and best substance.""") .

166. Biniaz Interview, *supra* note 165.

167. *See* U.N. Framework Convention on Climate Change, Rep. of the Conference of the Parties on its First Session, ¶ 2, U.N. DOC. FCCC/CP/1995/7/Add.1 (June 6, 1995), https://perma.cc/5U4W-FWFH. The UNFCCC itself had referred to "common but differentiated responsibilities" in light of different capacities and called for the developed world to take the lead in reducing emissions. *United Nations Framework Convention on Climate Change Article 3.1*., May 9, 1992, 1771 U.N.T.S. 107. Wirth made this commitment after direction from the White House.

168. U.N. Framework Convention on Climate Change, Report of the Conference of the Parties on its Second Session, Held in Geneva from 8 to 9 July 1996, Action Taken by the Conference of the Parties, U.N. DOC. FCCC/CP/1996/15/Add.1, Annex, para. 8 (Oct. 29, 1996), https://perma.cc/5XTY-FUZV.

169. Susan Biniaz, *What Happened to Byrd-Hagel? Its Curious Absence from Evaluations of the Paris Agreement*, SABIN CENTER FOR CLIMATE CHANGE (Jan. 2018), https://perma.cc/2AB5-HMEL.

170. *See* Email from Katie McGinty Former and Chair of the Council of Envtl. Quality to Jody Freeman, Archibald Cox Professor of Law (Nov. 3, 2019) (expressing the view that the 95-0 vote is misleading, since the administration supported a unanimous vote. The Resolution was an anodyne instruction "to only agree to a treaty that was not harmful to the US economy. We had no intention to do anything other than that and were confident that we would negotiate an agreement good BOTH for the economy and the environment."); *see also* Telephone Interview with Roger Ballentine, Former Deputy Assistant to the President for Envtl. Initiatives, and

seemed like a slap in the face, and it presaged the future. The U.S. signed the Kyoto Protocol in 1997, committing to a 7% reduction in emissions by 2012, in an agreement that, as expected, imposed binding targets only on developed countries.[171] And the Clinton administration, recognizing that it could not succeed, would never submit it to the Senate for advice and consent to ratification.[172]

C. EPA's Thinking Evolves

Meanwhile, EPA's thinking about its authority to address climate change was evolving. In 1994, when developing ideas for the Climate Action Plan, a handful of EPA staff had drafted a series of one-page proposals on ideas such as tightening fuel efficiency standards, adopting an energy tax, and capping utility greenhouse gas emissions, among other things.[173] Many of the ideas would require new legislation or depend on other agencies. Some of the one-pagers suggested steps the EPA might take with the existing Clean Air Act, like regulating carbon dioxide as a hazardous air pollutant.[174] These proposals were exploratory, preliminary, and tentative—a thought experiment driven by the hunt for "more tons" to include in the president's climate plan. Each one briefly identified political pros and cons, and implementation

Chairman, White House Climate Change Task Force (Apr. 16, 2019) (recalling that the Democrats thought a 95-0 vote would make the resolution less relevant, but it didn't work out that way).

171. The agreement called for 37 Annex 1 countries (developed countries) to reduce emissions by an average of 5% below 1990 levels by 2012. A variety of flexibility mechanisms were adopted to facilitate compliance, including international emissions trading, Joint Implementation, and the Clean Development Mechanism. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 2303 U.N.T.S. 148.

172. The most optimistic view among those who negotiated Kyoto might have been that follow up work could make the treaty eventually acceptable to Congress—that with time, the administration could show how various things the U.S. already was doing (like reducing CFCs, and good forest practices) would count toward compliance, explain how the cap and trade structure the U.S. had fought for would make its commitment achievable at an acceptable cost, and convince skeptical lawmakers that the developing world would eventually do its fair share. But Kyoto was toxic on the Hill, with hostility coming from powerful Democrats as well as Republicans. Representative Dingell reportedly remarked, "You people are using up all of my patience and you're working on my affection." And he was evidently not alone. Telephone Interview with Roger Ballentine, Former Deputy Assistant to the President for Envtl. Initiatives, and Chairman, White House Climate Change Task Force (Apr. 16, 2019). After Kyoto, the President established a White House task force led by Todd Stern, and later by Roger Ballentine, which focused on pushing forward with domestic initiatives like efficiency standards that could be framed as independent initiatives, not Kyoto implementation.

173. Memorandum from Michael Shelby, Office of Policy, Planning and Evaluation, EPA to Karl Hausker, David Doniger & Dick Morgenstern, EPA on "'More Tons' One Pagers" (May 31, 1994).

174. *Id.*

obstacles, but nothing they included nothing approaching detailed legal analysis.[175]

Indeed, the thought of embarking on a regulatory program at this stage was premature. Browner was occupied with other things, and the White House was developing its strategy for international climate negotiations. That process would or would not produce an international agreement, which EPA would or would not have a role in implementing. The impetus for action would come from the international arena. No one was proposing that EPA regulate CO_2.

After the 1996 presidential election, Mary Nichols, the Assistant Administrator for the Office of Air and Radiation, persuaded Browner to let the Air Office expand their climate work; she wanted to give climate change more attention and support.[176] There had long been tension between the Air and Policy Offices over who "owned" climate change, with some staff from the Air Office thinking that the Policy Office was not sufficiently "action-oriented."[177] Reilly had favored the Policy shop, which was dominated by economists, but Browner favored the regulators in the Air office.[178] She trusted Nichols, and Nichols deputized David Doniger as her representative on all things climate, including in the administration's various inter-agency processes.[179]

The earliest formal expression of the idea that EPA might possess the authority to regulate CO_2 under the Clean Air Act appears in a 1998 EPA memo authored by Doniger for one such inter-agency process, responding to the Department of Energy's plan to seek

175. *Id.* (On a scale of 1 to 10, the proposal to regulate carbon dioxide as a hazardous air pollutant received the lowest possible preference ranking, at 10: "Such aggressive use of Clean Air Act Authority may create a backlash in Congress").

176. Telephone Interview with Mary Nichols, Former Assistant Adm'r for the Office of Air and Radiation, (Mar. 15, 2019) [hereinafter Nichols Interview]. Mary had been given some advice by Eileen Claussen the former head of Atmospheric Programs in the Office of Air and Radiation before leaving for the National Security Council: Eileen told Mary that it was her job to make the Air Office more central to climate work because it had the technical chops and work ethic to actually do something about greenhouse gases. Claussen had discussed the Assistant Administrator job with Browner in 1993 and had asked whether she could "have climate" but Browner hadn't yet decided. Claussen Interview, *supra* note 73.

177. Claussen Interview, *supra* note 73; Nichols Interview, *supra* note 176.

178. Nichols Interview, *supra* note 176; Telephone Interview with David Doniger, Former Counsel to the Assistant Adm'r for Air and Radiation (Apr. 29, 2019) [hereinafter Doniger Interview]; Telephone Interview with Richard Morgenstern, Former Assistant Adm'r for the Office of Policy, Planning and Evaluation and Dir. of the Office of Policy Analysis (Mar. 1, 2019).

179. Doniger Interview, *supra* note 178. "Doniger was omnipresent." Telephone Interview with Roger Ballentine, Former Deputy Assistant to the President for Envtl. Initiatives, and Chairman, White House Climate Change Task Force (Apr. 16, 2019).

legislative authority to restructure the electricity sector.[180] DOE's position was that deregulation would lower electricity costs.[181] EPA argued that, as part of any restructuring, CO_2 should be regulated along with other air pollution from power plants. Doniger recalls DOE officials balking at the idea of including air pollution provisions, especially for CO_2, which they believed was not covered by existing law.[182] So, he set out to write a memo arguing that CO_2 was a pollutant under the Clean Air Act.[183] The memo explained that CO_2 was subject to regulation under various provisions of the Act *if* EPA made a threshold endangerment finding that it posed a threat to public health or welfare. The memo cleverly noted that "existing authorities" did not "easily lend themselves" to EPA regulating CO_2 using a cap and trade approach (EPA's preferred strategy), and argued that the electricity restructuring legislation *should clarify EPA's authority to do so*.[184]

The memo leaked.[185] At a 1998 appropriations subcommittee hearing, Texas Republican Representative Tom Delay, surprised Carol Browner by brandishing a copy of the memo and asking if she agreed that EPA possessed the authority to regulate CO_2.[186] This was 1998, and Delay, along with many other members of Congress, worried that the Clinton administration would try to implement the Kyoto Protocol through executive action, despite not having submitted it for ratification. Browner had not seen the memo[187] but answered without hesitation: "That is a general summary statement about authorities provided in the Clean Air Act which I would agree with. There are

180. *See* Memorandum from Jonathan Z. Cannon, EPA Gen. Counsel, to Carol M. Browner, EPA Adm'r (Apr. 10, 1998) [hereinafter Cannon Memo] (discussing the memo, "Electricity Restructuring and the Environment: What Authority Does EPA Have and What Does it Need"); *see also* MARGO T. OGE, DRIVING THE FUTURE: COMBATING CLIMATE CHANGE WITH CLEANER, SMARTER CARS (2015) (describing the memo).

181. Doniger Interview, *supra* note 178.

182. *Id.*

183. *See generally* Cannon Memo, *supra* note 180.

184. Email Communication from David Doniger to Jody Freeman (Nov. 1. 2019).

185. *See GOP Climate Treaty Critics Step Up Oversight of Administration Strategy*, INSIDE EPA, at 7, 7–8 (Mar. 6, 1998) (referring to anticipated Republican oversight hearings: "In particular, congressional critics are becoming increasingly concerned that the administration may seek to control greenhouse gas emissions through regulation without winning Senate ratification of the accord, citing a recent EPA memorandum which suggests that the agency has the authority to set pollution control requirements for carbon dioxide under the Clean Air Act."); *see also* Doniger Interview, *supra* note 178 (noting that the memo referred to was Doniger's).

186. *See Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations for 1999: Hearings Before the Subcomm. on* VA, HUD, and Independent Agencies of the H. Comm. On Appropriations, 105th Cong. 199–200 (1998).

187. *See* Browner Interview, *supra* note 148 ("I was shocked at the question. Shocked.").

broad authorities granted to EPA to address certain pollutants, including those listed, and many others."[188] Delay asked for a formal legal opinion on the matter, and—with Jon Cannon, EPA's General Counsel, sitting behind her—Browner replied, "certainly."[189]

Delay's request thus produced what came to be known as the Cannon Memo, the EPA General Counsel's opinion published in 1998, which takes the legal position that greenhouse gases are pollutants under the Clean Air Act.[190] Cannon's memo echoes the theme from Doniger's earlier analysis, that a market-based approach would be preferable: "[A] number of specific provisions of the [Clean Air Act] are potentially applicable to control [greenhouse gases] from electric power generation. However . . . these potentially applicable provisions do not easily lend themselves to establishing market-based national or regional cap-and-trade programs, which the Administration favors for addressing these kinds of pollution problems."[191] The memo adroitly walked the line between *claiming* legal authority, and *exercising* it—the latter step, EPA explicitly said, it was not prepared to take.

D. The Seeds of Massachusetts v. EPA

The Cannon Memo formally sent a message, both internally and externally, that EPA viewed greenhouse gases as within the agency's jurisdiction. In doing so, it inadvertently helped an obscure petitioner, the little-known International Center for Technology Assessment,[192] in its bid to force the agency to regulate greenhouse gas emissions for the first time—a petition that would lead, eventually, to the Supreme Court's decision in *Massachusetts v. EPA*.[193] The ICTA petition asked

188. *Id*.

189. *Id.*

190. Cannon Memo, *supra* note 180 (describing EPA authority to regulate CO_2 under the CLEAN AIR ACT).

191. *Id*. at 2.

192. International Center for Technology Assessment, et al., Petition for Rulemaking and Collateral Relief Seeking the Regulation of Greenhouse Gas Emissions from New Motor Vehicles under § 202 of the Clean Air Act (Oct. 20, 1999), https://perma.cc/JZ64-GBQL; *see* Lisa Heinzerling, *Climate Change in the Supreme Court*, 38 ENVTL. L. 1, 4–5 (2008) (referring to the original groups filing the petition as "rather obscure" and explaining that the environmental community disagreed about the best legal strategy for prompting action on climate change).

193. Massachusetts v. EPA, 549 U.S. 497 (2007). Eventually the mainstream environmental movement, along with several states and local governments, coalesced around ICTA's strategy. They filed comments when EPA, at the end of the Clinton administration, put the petition out for comment, and ultimately joined the litigation challenging EPA's decision, in the George W. Bush administration, to deny it. *See* RICHARD J. LAZARUS, THE RULE OF FIVE: MAKING CLIMATE HISTORY AT THE SUPREME COURT (2020) (providing a complete history of the litigation).

EPA to make an endangerment finding for greenhouse gas emissions from new motor vehicles—in the technical terms of the statute, to decide whether they "cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare."[194] Under section 202 of the Clean Air Act, an affirmative endangerment finding would *require* EPA to set emission standards for new cars and trucks and open the door to regulating greenhouse gases from other sectors of the economy, under other parts of the law.[195] The fact that the EPA's General Counsel already had issued a legal opinion stating that greenhouse gases were pollutants under the Act was helpful in that it paralleled the petitioners' view that EPA had authority to act.[196]

The petition presented a conundrum for EPA, however, coming late in the Clinton administration. Granting the request risked provoking a backlash in the Republican-controlled Congress, in the form of an appropriations rider, or worse.[197] Denying it, however, would require the administration to take a position on whether greenhouse gases posed an endangerment to human health and welfare, which the agency was not yet prepared to do.[198] So, EPA chose to let the petition sit; assuming Vice President Gore won the 2000 presidential election, his team would have time to decide whether and how to regulate greenhouse gases.[199]

That plan was too optimistic.

When George W. Bush was declared the winner of the 2000 election, EPA pivoted and put the petition out for public comment.[200] Doing so would create a record and put pressure on the incoming administration to act on the petition—either to grant or deny it—a

194. 42 U.S.C. § 7521 (2012). This section of the Clean Air Act provides that the Administrator of EPA "shall by regulation prescribe . . . standards applicable to the emission of any air pollutant" from any class of motor vehicles "which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." *Id.*

195. *Id.*

196. "Absolutely mattered that Cannon memo was out there. We would have gone forward anyway, but no question, that it paralleled our position made it helpful." Telephone Interview with Joe Mendelson, former Legal Dir., Int'l Ctr. for Tech. Inst. (Nov. 21, 2019) [hereinafter Mendelson Interview].

197. Doniger Interview, *supra* note 178.

198. Telephone Interview with Jonathan Cannon, Former EPA Gen. Counsel (Mar. 5, 2019) (noting that the agency had no process in place to make the endangerment finding).

199. Guzy Interview, *supra* note 149.

200. EPA, Control of Emissions From New and In-use Highway Vehicles and Engines, 66 Fed. Reg. 7486 (Jan. 23, 2001); *see also* Guzy Interview, *supra* note 149; Browner Interview, *supra* note 148.

decision that could be challenged in federal court.[201] On the chessboard of climate strategy, this move would wind up being very shrewd.

IV. The 2000s: The George W. Bush Administration

The Kyoto Protocol further galvanized industry opposition to climate policy, and by the end of the 1990s, climate change became increasingly partisan, even as the scientific consensus about its causes grew stronger.[202] During the 2000 presidential election, Al Gore did not highlight the issue and often found himself on the defensive about his environmental record.[203] George W. Bush, the former oilman from Texas, was critical of the Kyoto Protocol but did say that he favored mandatory limits on carbon dioxide emissions, and would support a "four-pollutant" bill to address air pollution, including CO2, from the electricity sector.[204] It was a clever maneuver to outflank Gore on an environmental issue that should have worked in his favor.

After the election, Bush stoked hopes that he would support climate policy by appointing Christine Todd Whitman, a moderate New Jersey Republican with a strong record on conservation, to lead EPA.[205] Based on what Bush said on the campaign trail, Whitman accepted the EPA job planning to work on new legislation to control power plant carbon emissions, and then use that accomplishment to re-engage the U.S. in international climate negotiations.[206] Although she had not discussed carbon regulation with Bush, the "four-pollutant" bill had appeared in the transition books summarizing the president's campaign commitments, which were handed to incoming political appointees. She felt it was EPA's job to help deliver on that pledge.[207] The White House also convened a cabinet-level committee, under the aegis of the National Security Council, to discuss climate policy. Chaired by Condoleezza Rice, the president's National Security Advisor, the group, which included Whitman, reportedly held over a

201. Guzy Interview, *supra* note 149.

202. Powerful firms and trade associations had opposed mandatory limits on CO_2, including Exxon, the American Petroleum Institute, and the National Coal Association. *See generally* ORESKES & CONWAY, *supra* note 46.

203. John F. Harris & Ellen Nakashima, *Gore's Greenness Fades*, WASH. POST (Feb. 28, 2000), https://perma.cc/2MS9-BEFV.

204. George W. Bush, Speech on Energy Issues at Saginaw, MI (Sept. 29, 2000).

205. David M. Halbfinger, *THE 43rd PRESIDENT; Passion for Politics and the Outdoors—Christine Todd Whitman*, N.Y. TIMES (Dec. 23, 2000), https://perma.cc/HFW5-BXFY (describing her conservation and environmental record in New Jersey).

206. CHRISTINE TODD WHITMAN, IT'S MY PARTY TOO: THE BATTLE FOR THE HEART OF THE GOP AND AMERICA 170 (2005) [hereinafter WHITMAN].

207. *See generally id.*

dozen meetings, in which they received briefings from scientists and reviewed modeling of the economic, energy, and environmental impacts of a "four-pollutant" bill.[208]

This White House committee would be eclipsed by another one, however. In his second week in office, President Bush created the National Energy Policy Development Group (NEPDG), otherwise known as the Energy Task Force, led by Vice President Cheney.[209] Its purpose was to devise a national energy plan to address perceived shortfalls in domestic supply, and reduce what was seen as excessive U.S. dependence on foreign oil.[210] Whitman was a member of this group, too, and reports being amazed at its disdain for environmental regulation.[211] She believed that the electricity sector could deliver reliable and affordable energy while at the same time curbing pollution, including greenhouse gas pollution, which she saw as a serious problem.[212] And she thought Bush thought so too.[213] But many of the Republican party's core constituencies, which had fought against climate policy in the Clinton years, were disgruntled over Bush's campaign commitments. They thought his support for carbon regulation had been a mistake in the first place and now wanted it undone.[214]

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208. Telephone Interview with James Connaughton, Former Chairman of the White House Council on Envtl. Quality and Former Director of the White House Office of Environmental Policy, White House (June 13, 2019) [hereinafter Connaughton Interview].

209. *The President's Energy Legislative Agenda*, The White House (June 2001), https://georgewbush-whitehouse.archives.gov/news/releases/2001/06/energyinit.html.

210. Telephone Interview with Andrew Lundquist, Former Executive Director, National Energy Policy Group (Apr. 29, 2019) ("At the time, the President was facing blackouts in California with electricity and natural gas prices spiking; we thought there would be natural gas shortages, and oil prices were viewed as getting high. This was the number one issue until 9/11.").

211. Whitman's committee service was an "eye-opening encounter with just how obsessed so many of those in the energy industry, and in the Republican Party, have become with doing away with environmental regulation." WHITMAN, *supra* note 206, at 182. Whitman observed that at one meeting after another they blamed the country's energy woes and the California energy crisis on environmental regulation. *Id*. at 182–83.

212. *See* Frontline Hot Politics, *Interview with Christine Todd Whitman*, PBS (Apr. 24, 2007) https://perma.cc/EAM6-88BC ("I didn't want to 'undermine' coal, and I knew coal was always going to be there as part of our energy source. But it was a question of doing it in a way that would still allow us to address the issue of carbon, which I thought we could do, and not totally end the coal mining industry.").

213. *Id.* ("As a governor, [Bush] had imposed carbon caps in Texas, so I noticed.").

214. Connaughton Interview, *supra* note 208. "The group included "conservatives, rural and inner-city democrats concerned about energy price spikes, governors reeling under the California energy crisis and worried they would be next, DOT and DOC constituencies, and all of the Cheney network. There was just massive incoming against carbon regulation.")*; see also* Frontline Hot Politics, *supra* note 212 (recounting industry opposition to carbon caps).

A. Reversing Commitments to Act on Climate Change

The opponents of carbon regulation ultimately prevailed. The President renounced his campaign position almost immediately after Whitman returned from a G8 Ministerial meeting in Italy, where she had given a well-received speech reiterating U.S. support for climate regulation.[215] Whitman was not freelancing: she had cleared her remarks in advance with the White House.[216] But the speech stirred opposition among those who thought she had gone too far, and it created an opportunity to reconsider Bush's position. Shortly after her return, a letter from Senators Hagel, Helms, Roberts, and Craig was delivered to the White House citing Whitman's various remarks on carbon regulation and asking the president for a "clear understanding" of the administration's policy.[217]

It has been widely reported that the letter from the Senators was solicited, if not largely drafted, by the Vice President's office in a setup enabling the president to reverse his position.[218] Indeed, without consulting Whitman, the president proceeded to sign a letter in response to the inquiry, announcing that he was abandoning his pledge to regulate CO_2 from power plants and formally rejecting the Kyoto

215. *Remarks of Governor Christine Todd Whitman, Administrator, Environmental Protection Agency at the G8 Environmental Ministerial Meeting Meeting with Representatives of International Non-governmental Organizations in Trieste, Italy* (Mar. 2, 2001), https://perma.cc/E83S-H59A; Edmund L. Andrews, *Bush Angers Europe by Eroding Pact on Warming*, N.Y. TIMES (Apr. 1, 2001), https://perma.cc/P97Z-7XT3.

216. *See generally* Gregg Easterbook, *Hostile Environment*, N.Y. TIMES MAGAZINE (Aug. 19, 2001), https://perma.cc/XS9C-E28G (noting that a Bush position paper showed he favored controls on carbon dioxide); *see also* WHITMAN, *supra* note 206207, at 171 (noting that Whitman got "the green light" on her speech from both Condoleezza Rice, the president's National Security Advisor, and Andy Card, his Chief of Staff).

217. On the same day, Whitman had sent Bush a frank private letter about the Trieste meeting, in which she urged U.S. leadership in international climate negotiations, which she called "a credibility issue for the administration". See Memorandum from Christine Todd Whitman, EPA Administrator, to the President of the United States on G-8 Meeting in Trieste (Mar. 6, 2001), https://perma.cc/YCX3-32PQ. Whitman recalls writing her memo on the plane home. See WHITMAN, *supra* note 206, at 173. But before she even boarded the plane, the effort had been launched to get Bush to reverse his position. *See id*. at 173–75 (explaining she learned upon her return that there had been internal White House meetings on whether to reverse the president's commitment to regulate carbon, which was supported by the Office of the Vice President and the Secretaries of Energy and Commerce, and that they planned to use the California energy crisis to justify the reversal).

218. *See, e.g*., RON SUSKIND, THE PRICE OF LOYALTY: GEORGE W. BUSH, THE WHITE HOUSE, AND THE EDUCATION OF PAUL O'NEILL 120, 124–25 (2004) ("Still, there was the question of *who had called the shot*. Whitman and O'Neill Swiftly arrived at the same place: Dick Cheney.").

protocol.[219] The letter cited the California energy crisis, uncertainty over climate science, and potential harm to the U.S. economy as reasons for the reversals.[220] It also declared that carbon dioxide is not a pollutant,[221] a declaration clearly aimed at preempting EPA from regulating greenhouse gases under the Clean Air Act.

The president's abrupt policy reversal blindsided and embarrassed Whitman and led Secretary of State Colin Powell to dub her the administration's "wind dummy" on climate policy. "It's a military term for when you are over the landing zone and you don't know what the winds are," Whitman explained. "You push the dummy out the door and see what happens to it."[222] Whitman had taken Bush's campaign commitments seriously and leaned into them. The backlash was severe.

This was March 2001. The Cheney Energy Task Force Report came out soon after, in May.[223] The report included proposals to support nuclear power, invoked the need for energy conservation and energy efficiency,[224] and advocated for tax incentives to promote investment in renewable energy. But it also underscored that renewable energy sources were a fraction of supply and could not come close to meeting the nation's energy needs.[225] The report's main thrust was to advocate for more domestic fossil energy production and exploration, which would require removing existing regulatory hurdles, streamlining review processes, and building new energy

219. *President Bush Discusses Global Climate Change*, Office of the White House Press Secretary (June 11, 2001), https://perma.cc/TC7Q-YFTX; *see also* PETER BAKER, DAYS OF FIRE: BUSH AND CHENEY IN THE WHITE HOUSE 589 (2013) (referring to "a letter Cheney had him sign" to reverse the President's campaign position on climate change and withdraw from Kyoto) [hereinafter BAKER].

220. Connaughton Interview, *supra* note 208 ("The Clinton folks hadn't sent it to Congress. Even Al Gore couldn't get this done. Why should we stick our necks out on this? The Kyoto protocol didn't make sense and needed rethinking.").

221. *See generally President Bush Discusses Global Climate Change*, Office of the White House Press Secretary (June 11, 2001), https://perma.cc/TC7Q-YFTX (distinguishing carbon dioxide from other pollutants).

222. Gregg Easterbook, *Hostile Environment*, N.Y. TIMES MAGAZINE (Aug. 19, 2001), https://perma.cc/XS9C-E28G ("That's what Colin Powell has been calling me at cabinet meetings, the wind dummy.").

223. NATIONAL ENERGY POLICY DEVELOPMENT GROUP, WHITE HOUSE, RELIABLE, AFFORDABLE, AND ENVIRONMENTALLY SOUND ENERGY FOR AMERICA'S FUTURE (2001), https://perma.cc/M64V-UBMV.

224. *Id.* at xi-xv (detailing many proposals in the plan that sought to promote conservation and energy efficiency); Telephone Interview with Andrew Lundquist, Former Executive Director, National Energy Policy Group (April 29, 2019) ("The goal was to remove market barriers to entry for energy production, not just for oil, natural gas, coal and nuclear, but also for renewable resources and energy efficiency.").

225. *Id.* at x.

infrastructure to eliminate what the report framed as market and regulatory barriers to greater supply.[226] Thus, the unmistakable message from the cumulative actions of the first few months of the Bush administration was that fossil energy production would be preeminent, and there would be no effort to mandate reductions in greenhouse gases.[227] The Cheney task force on energy had run over the Rice task force on climate change. And EPA, which had enjoyed a brief ascendance, expecting to implement a new cap-and-trade scheme for carbon, retreated to focus on other things.

At the same time, Bush's formal rejection of the Kyoto Protocol sent a strong message internationally. While it is true that the Clinton administration did not submit the Kyoto Protocol to the Senate for ratification, White House and State Department officials had been committed to international climate negotiations and believed that the treaty could be improved upon over time. Bush's action was an aggressive rebuke of that view, and a direct provocation to the international community. It suggested that the U.S. simply did not care about the issue.[228] In contrast to Clinton and Gore (and to an earlier version of himself), Bush grew increasingly disdainful of climate change. He openly dismissed scientific reports,[229] and allowed White House officials to rewrite agency documents to downplay the risks and

226. *See id.* at 1-1 ("Our national energy policy must be comprehensive in scope. It must protect our environment. It must also increase our supply of domestic oil, natural gas, coal"). Among other things, the Report cited the California energy crisis, which had caused electricity prices to spike, as evidence that barriers to supply needed to be removed. But the events in California had multiple causes – including poor market design in California's effort to deregulate the electricity sector, and market manipulation by firms like Enron to create artificial shortages. *See* Christopher Weare, *The California Energy Crisis: Causes and Policy Options*, Public Policy Institute of California (2003), https://perma.cc/XG29-4UEV ("No single factor can fully account for the crisis. The fault cannot be pinned entirely on the shortage in generating capacity. The worst of the crisis occurred during the winter of 2000–2001, when demand was low and plenty of capacity should have been available.)

227. Going forward, the administration would remove obstacles to supply, while supporting modest improvements in energy efficiency, along with voluntary measures to reduce greenhouse gases. *See* Spencer Abraham, *The Bush Administration's Approach to Climate Change*, 305 SCIENCE 616, 616–17 (2004) (noting the Administration's focus on market- and innovation-based policies).

228. WHITMAN, *supra* note 206, at 181 ("There's no doubt . . . that in foreign capitals—and around dinner tables in Britain, France, and Germany—people resented what they saw as our ready willingness to dismiss their concerns about the future of the planet and their economic futures in favor of our own.").

229. Lloyd Bries, *Bush Disses Global Warming Report*, CBS NEWS (June 3, 2002), https://perma.cc/H3UM-LYE3.

emphasize the uncertainties of climate change.[230] Whitman and her staff at EPA did their best to defend against this kind of meddling. She once opted to delete an entire section on global warming from an EPA report rather than accept major revisions that would have misstated the science.[231]

Whitman remained at EPA for two–and–a half years, overseeing the agency's response to the events of September 11, 2001, supporting and building on EPA's voluntary greenhouse gas reduction programs, and pushing back against administration efforts to weaken pollution rules for power plants.[232] However, her credibility and stature within the administration were badly diminished by the events surrounding the president's about-face on climate policy. She left in mid-2003 to spend more time with her family.[233]

B. Renouncing Legal Authority over CO_2 and Massachusetts v. EPA

Soon after Whitman's departure, the new Acting EPA Administrator renounced the Cannon memo from the Clinton era, officially rejecting the view that greenhouse gases are "pollutants" under the Clean Air Act, which aligned EPA's legal position with President Bush's stated view.[234] In addition, after letting it languish for nearly three years, EPA finally denied the ICTA petition, declining to make an endangerment determination for greenhouse gases from new

230. *See e.g.*, Andrew C. Revkin, *Bush Aide Softened Greenhouse Gas Links to Global Warming*, N.Y. TIMES (June 8, 2005), https://perma.cc/AF3F-K4BT; Jeremy Symons, *How Bush and Co. Obscure the Science*, WASH. POST (July 13, 2003), https://perma.cc/K36X-JLNS; s*ee also* Frontline Hot Politics, *supra* note 212 (recounting Council on Environmental Quality demands to alter the wording of reports).

231. Andrew C. Revkin & Katharine Q. Seeyle, *Report by E.P.A. Leaves out Data on Climate Change*, N.Y. TIMES (June 19, 2003), https://perma.cc/5EEA-XATK. White House officials objected to the Report linking a significant rise in global temperatures to human activity and wanted to delete a reference to a National Academy of Sciences Report. EPA staff concluded that to accept the changes would expose the agency to "severe criticism from the science and environmental communities for poorly representing the science." Whitman dropped it entirely. ENVIRONMENTAL PROTECTION AGENCY, ISSUE PAPER: WHITE HOUSE EDITS TO CLIMATE CHANGE SECTION OF EPA'S REPORT ON THE ENVIRONMENT (Apr. 29, 2003), *published in* UNION OF CONCERNED SCIENTISTS, SCIENTIFIC INTEGRITY IN POLICYMAKING 34–38 (2004).

232. *See* Gregg Easterbrook, *Christie Todd Whitman May Have the Most Thankless Job in Washington*, N.Y. TIMES (Aug. 23, 2001), https://perma.cc/X6G2-WXER (outlining Whitman's career at the EPA).

233. David Stout, *E.P.A. Chief Whitman Resigns*, N.Y. TIMES (May 21, 2003), https://perma.cc/32A8-P9BW.

234. *See* Memorandum from Robert E. Fabricant, EPA General Counsel, to Marianne L. Horinko, EPA Acting Administrator (Aug. 28, 2003) (determining that the EPA does not possess authority to regulate "for global climate change purposes" under the Clean Air Act).

vehicles.[235] Indeed, EPA made clear that it would not regulate greenhouse gases even if they *were* pollutants. The agency "disagree[d] with the regulatory approach urged by petitioners" for several reasons: "the science of climate change is extraordinarily complex and still evolving"; regulation under Section 202 would be an inefficient and piecemeal approach to the climate change issue; and unilateral EPA regulation could "weaken U.S. efforts to persuade key developing countries to reduce the GHG intensity of their economies."[236]

To support its conclusion that the science was too uncertain to warrant regulation, EPA relied on selective and somewhat misleading excerpts from a 2001 report by the National Research Council that emphasized uncertainty while downplaying many statements of certainty or near-certainty that cut against EPA's position.[237] The agency also referred to the President's "comprehensive" global climate change policy, which sought to encourage voluntary emissions reductions and promote technology development and further scientific research to reduce remaining uncertainties.[238] This all fell in line with the president's decision not to pursue a cap on utility sector carbon dioxide, made early in the administration: there would be no mandatory limits on greenhouse gases. They were not pollutants.

In retrospect, denying the petition was a tactical mistake. It converted agency "inaction," which is typically difficult to challenge in court, into agency "action," which courts routinely review.[239] EPA easily could have reversed the Cannon memo to disclaim legal authority and left it at that. But Jeff Holmstead, the Assistant Administrator for the Office of Air and Radiation, argued that the agency ought to "make its position clear that EPA did not have this

235. EPA, Control of Emissions From New Highway Vehicles and Engines, 68 Fed. Reg. 52,925 (Sept. 8, 2003).

236. *Id.* at 52,922, 52,929–31.

237. *Id* at 52,930; *see generally* NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME KEY QUESTIONS (2001). For example, critics pointed out, the agency omitted the *opening line* of the Report, which reads: "Greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise." *Id.* at 1; *see* Brief of Climate Scientists David Battisti, et al. as Amicus Curiae in Support of Petitioner at 3, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05-112) (pointing out EPA's mishandling of NAS Report and disregard of weight of evidence).

238. EPA, Control of Emissions From New Highway Vehicles and Engines, 68 Fed. Reg. 52,930 (Sept. 8, 2003).

239. *See* RONALD A. CASS, COLIN S. DIVER, JACK M. BEERMANN & JODY FREEMAN, ADMINISTRATIVE LAW: CASES AND MATERIALS 248-9 (7th ed. 2015) (discussing the difference between inaction and action for purposes of judicial review).

authority."[240] Denying the petition spurred a coalition of plaintiffs, including several states, cities, and environmental and public health organizations, to join the original petitioners in the case that would become *Massachusetts v. EPA*.[241]

The history of this litigation has been comprehensively and compellingly recounted by others, and there is no space to do it justice here.[242] It was a somewhat risky case to bring to the Supreme Court for a variety of reasons, including the high bar plaintiffs must clear to show their legal standing to sue, which is harder when the harm alleged is widespread. [243] In addition, plaintiffs would need to overcome the principle known as *Chevron* deference—named for the case in which it was announced—which instructs courts to defer to an agency's interpretation of an ambiguous statute, as long as the interpretation is reasonable, which could weigh in favor of EPA's narrow view of "pollutant."[244] Another problem was that a few years earlier, in *FDA v. Brown & Williamson*, the Supreme Court had rules that the Food and Drug Administration could not regulate nicotine as a "drug" because agencies may not assert new, expansive regulatory authority over matters of high political and economic salience without express congressional authorization.[245] Both *Chevron* and *Brown & Williamson* seemed to pull against the petitioners and in favor of EPA.[246] Finally, it was hard to predict how the Court would view EPA's argument that even if greenhouse gases *were* pollutants, the agency could, for policy reasons, lawfully decline to make the endangerment finding. Perhaps a majority would treat that decision—a decision not to regulate—as discretionary and defer.

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240. Telephone Interview with Jeff Holmstead, Former Assistant Administrator for the Office of Air and Radiation, EPA (Apr. 23, 2019) [hereinafter Holmstead Interview].

241. *See* Massachusetts v. EPA, 415 F.3d 50, 51–52 (D.C. Cir. 2005), *rev'd*, 549 U.S. 497 (2007) (describing the purpose of the suit). The Petition for Review was first filed on October 23, 2003, little more than a month after EPA denied the rulemaking petition. See Petition for Review, Massachusetts v. EPA, 415 F.3d 50 (D.C. Cir. 2005) (No. 03-1361). "The plan was to let the states appeal first, and then everyone joined." Mendelson Interview, *supra* note 196.

242. *See generally* LAZARUS, *supra* note 193.

243. *See* Lisa Heinzerling, *Climate Change in the Supreme Court*, 38 ENVTL. L. 1, 5–6 (2008) (describing the risks); *see also* Jody Freeman & Adrian Vermeule, Massachusetts v. EPA*: From Politics to Expertise*, 2007 SUP. CT. REV. 51, 51–60 (2007) (explaining each element of the standing test: that the injury be actual or imminent, not speculative; "fairly traceable" to the challenged government action; and likely to be redressed if the plaintiff wins, is hard to demonstrate with an incremental, cumulative and global phenomenon like climate change).

244. *Cf.* Freeman & Vermeule, *supra* note 243, at 53, 84–85 (discussing the majority opinion).

245. *See* FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120 (2000) (outlining court's rationale behind this decision).

246. *See* Freeman & Vermeule, *supra* note 243, at 51–60 (explaining the legacy of both cases).

As a result, the outcome of *Massachusetts v. EPA* was far from a foregone conclusion, and its importance is hard to overstate. By a narrow 5-4 margin, the Supreme Court did three amazing things: grant standing to a state petitioner complaining that a federal agency's failure to act on climate change was unlawful; hold that greenhouse gases are pollutants subject to regulation under the Clean Air Act; and reject each of the Bush administration's reasons for refusing to decide on endangerment.[247] Justice Stevens' opinion for the Court also helped to legitimize the scientific consensus on climate change at a time when the Bush administration had undermined it. Legally and symbolically, *Massachusetts v. EPA* was the biggest win for the environmental movement ever. The Court's decision also thrust EPA into the leading role on national climate policy, positioning the agency to act, if an administration were ever inclined to regulate greenhouse gases.

C. Responding to the Court

By the time *Massachusetts v. EPA* was decided, Stephen Johnson had become EPA Administrator after the short tenure of former Utah Governor Mike Leavitt. Leavitt had earned considerable praise for being highly effective administrator but had focused on things other than climate.[248] Johnson lacked the political acumen of Leavitt and did not have the stature of other prior administrators, but he was in step with the White House, which considered him to be a "loyal soldier."[249] While *Massachusetts v. EPA* was pending, agency lawyers in the General Counsel's Office and the Air and Radiation Office had been "working on a Plan B" in case EPA lost. They considered, for example, adding carbon dioxide to the administration's plan to regulate mercury

247. *See id.* (explaining the significance of the decision).

248. Leavitt was well-liked and respected, and he worked the halls of the White House to garner support for his agency. He was "the most impressive executive I have ever worked for," said Jeff Holmstead. Holmstead Interview, *supra* note 240240. But Leavitt could read the politics on climate change. "It was clear that they wanted to deal with climate in the White House, and it was mostly dealt with by Connaughton out of CEQ. I did my best to manage what was happening in agency. There were lots of other things to occupy my time and interest, and that was just fine." Telephone Interview with Michael Leavitt, Former EPA Administrator (July 15, 2019). About the prospect of regulating CO_2, Leavitt also remarked, "It was not ripe for governance. People were on all sides of it. It started to ripen more in the second term, but this was the first term when they were positioning for reelection and needed coal country." *Id.*

249. *See* John Shiffman & John Sullivan, *An Eroding Mission at EPA*, PHIL. INQUIRER (Dec. 2, 2008), https://perma.cc/Y2ZM-TLU8 ("It's sad to see," said former New Jersey Gov. Christine Todd Whitman, who resigned in 2003 as Bush's first EPA administrator after repeated clashes with the White House. "It's a good agency, and there's a lot of good people there who will help you as long as they think you want to move forward. But if they think you're not serious about protecting the environment, they'll turn on you.").

pollution using a cap-and-trade approach.[250] That possibility evaporated, however, when the Supreme Court struck down the mercury proposal.[251] The White House was split over how to respond. Jim Connaughton, the CEQ chair, argued for turning lemons into lemonade, by issuing the endangerment finding during Bush's final months, and taking credit for moving forward on climate change.[252] Connaughton reasoned that doing so could help the president deliver on something he had said in his 2006 State of the Union speech, when he declared that "America is addicted to oil," and called for the country to "break this addiction."[253] Connaughton won—sort of. The White House instructed EPA to take only the first step: prepare an Advanced Notice of Proposed Rulemaking (ANPRM) on the endangerment finding, soliciting comments on how to respond to the Supreme Court decision in *Massachusetts v. EPA*.[254]

Alas, Johnson would become the second EPA wind dummy of the Bush administration. EPA staff worked for months on the massive rulemaking package, conducting a thorough assessment of the climate science, and concluding, unequivocally, that the record supported a finding that greenhouse gases endanger human health and welfare.[255] But when Johnson sent the draft Advanced Notice to the White House for regulatory review, the Office of Information and Regulatory Affairs, knowing generally what it contained and aware that accepting it would make it a public document, initially refused to open it. OIRA eventually did accept the email but only to request that EPA "withdraw" it from formal regulatory review. [256] Susan Dudley, the OIRA director, returned it to EPA with a letter waiving the normal review process and stating that, "the staff draft cannot be considered administration policy or representative of the views of the administration."[257] Jason Burnett, the young Associate Deputy

250. Connaughton Interview, *supra* note 208.

251. New Jersey v. EPA, 517 F.3d 574, 577 (D.C. Cir. 2008) (striking down EPA's proposal to delist mercury as a hazardous air pollutant and regulate it using a cap-and-trade approach under Clean Air Act 111(d)).

252. Connaughton Interview, *supra* note 208; Holmstead Interview, *supra* note 240.

253. George W. Bush, President of the United States, The State of the Union Address by the President of the United States (Jan. 31, 2006).

254. Connaughton Interview, *supra* note 208.

255. Shiffman & Sullivan, *supra* note 249.

256. *Id*.

257. *See* Letter from Susan Dudley, Administrator, OIRA, to Stephen L. Johnson, Administrator, EPA (July 10, 2008), https://perma.cc/28TH-JUBW (noting that due to an inability to reach consensus during inter-agency review, the draft ANPRM does not represent

Administrator who had overseen the Advance Notice process at EPA, resigned in protest.[258]

Johnson had the legal power to issue the Notice as written, but he bent to the White House and issued a drastically different revised version. The new draft omitted the statement that lingering doubts about climate change were irrelevant in the face of the overwhelming evidence, and it no longer proposed to make the endangerment finding. Now, the regulatory package began with the EPA administrator disavowing his own agency's work,[259] followed by several letters—from the Director of OMB, the Chairs of the National Economic Council and the Council on Environmental Quality, and the heads of the Departments of Agriculture, Commerce, Energy and Transportation—all saying that, regardless of the science, and despite the Supreme Court's decision in *Massachusetts v. EPA*, the Clean Air Act was "fundamentally unsuited" for reducing greenhouse gases.[260] The press declared this turn of events "the low-water mark of a tumultuous era that has left the EPA badly wounded, largely demoralized and, in many ways, emasculated."[261] Johnson, the only career scientist ever to lead EPA, was reportedly "upset and disgusted" to have been put in that position.[262]

While George W. Bush deserves credit for backing legislation to raise energy efficiency and fuel efficiency standards,[263] his

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administration policy; EPA would withdraw it from review and OIRA would waive review under Exec. Order No. 12866).

258. *See* Felicity Barringer, *A New (and Unlikely) Tell-All*, NY TIMES (July 22, 2008), https://perma.cc/HVV3-Z7DG (underscoring the idea that Burnett was a former employee).

259. The "Preface from the Administrator" said that the Clean Air Act is ill-suited for regulating GHGs and that none of the views in the Notice represented agency decisions or recommendations. EPA, *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354, 44,354–55 (July 30, 2008). Johnson had "brought the program offices together and said we would do an ANPRM, maybe we can use the Clean Air Act to regulate GHGs. . . And the staff believed him. He gave them 6 months and they worked so hard to think through all the elements of the Act. People could not go on vacation, worked around the clock, no vacations. When he brought them to his office to tell them what he did, they thought it was most depressing thing he could have done. They were all disgusted. Especially as former career person he dishonored the agency and his people. He should have resigned." Telephone Interview with Margo Oge, former Office Director, Office of Transportation and Air Quality (Nov. 20, 2020).

260. Dudley, *supra* note 257.

261. Shiffman & Sullivan, *supra* note 249.

262. Holmstead Interview, *supra* note 240. "What happened to Johnson was what happened to Whitman – he was sent on an errand by people in the White House that hadn't anticipated the pressure they'd come under. The rug got pulled out from under him." *Id.* Administrator Johnson did not respond to several emails requesting an interview.

263. *See* Energy Independence and Security Act of 2007, Pub. L. 110-140, 121 Stat. 1492 (2007) (creating higher energy efficiency and fuel efficiency standards).

administration did more to set back climate policy than advance it. His time in office was bookended by two consequential decisions to block EPA: early on, by withdrawing his support for a bill that would have authorized EPA to regulate CO_2 emissions from power plants, and at the end of his tenure, by repudiating the endangerment finding for greenhouse gases. Before leaving office, President Bush gave a speech in which he argued there was a "wrong way and a right way" for Congress to approach climate legislation.[264] The speech was intended to signal his support for "market-based" regulation of greenhouse gases, such as through a cap-and-trade approach.[265] But the speech was inscrutable.[266] Cheney's office had muddled the language so badly that no one could tell what the president was proposing.[267]

V. The Obama Administration: EPA Unleashed

A. Hope and Change

By the time Barack Obama clinched the Democratic nomination for president in 2008, the states had become the driving force of U.S. climate policy. For example, in 2002, California directed its Air Resources Board to set greenhouse gas emission standards for new cars and trucks—the nation's first.[268] Seven states signed a memorandum of understanding in 2005 to reduce CO_2 emissions in the northeast and mid-Atlantic region, an agreement that would evolve into the Regional Greenhouse Gas Initiative.[269] In 2006, California set an ambitious target to reduce greenhouse gas emissions.[270] Other states began experimenting with a variety of renewable energy, energy efficiency,

264. George W. Bush, President of the United States, Address on Climate Change and the Environment at the White House Rose Garden (Aug. 16, 2008), https://perma.cc/9R87-LLHU.

265. *Id.* ("The right way is to promote more emission-free nuclear power and encourage the investments necessary to produce electricity from coal without releasing carbon into the air . . . the incentive should be technology neutral . . . the incentive should be long-lasting. It should provide a positive and reliable market signal . . . the incentive should be carbon-weighted to make lower emission power sources less expensive relative to higher emissions sources.").

266. James Connaughton recalls drafting the speech and regrets that it was not more specific in mentioning cap-and-trade. Connaughton Interview, *supra* note 208.

267. Late in his second term, Bush had authorized a small team of close advisors to develop a climate policy that would cap electricity-sector emissions—the very policy he had jettisoned at the start of his administration. BAKER, *supra* note 219, at 589–90.

268. A.B. 1493, 2001–2002 Leg., Reg. Sess., 2002 Cal. Stat. ch. 200 (codified as amended at CAL. HEALTH & SAFETY CODE § 43018.5(a)).

269. *A brief history of RGCI*, REG'L GREENHOUSE GAS INITIATIVE (2020), https://perma.cc/6K8C-BXW7.

270. *See* The California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38501 *et seq*. (establishing a state-wide CO_2 cap-and-trade system and setting targets).

and emissions reduction policies.[271] Climate change had also, by this time, entered the courts. States, cities, and other plaintiffs were suing the major electric utility companies, oil companies, and auto manufacturers for their contributions to the harms caused by global warming.[272]

During the campaign, both Obama and McCain made climate change one of their top issues and pledged support for greenhouse gas regulation.[273] In particular, Obama promised to reconsider the endangerment finding for greenhouse gases under the Clean Air Act, which Bush's EPA had refused to make, and revisit EPA's refusal to issue California a preemption waiver to set its own standards for vehicle greenhouse gas emissions.[274]

In his speech claiming victory in the primary as well as in his inaugural address, Obama spoke of climate change with a sense of urgency and obligation to future generations.[275] He also tapped Carol Browner, Clinton's former EPA chief, to lead a new White House Office of Energy and Climate Change.[276] It seemed that, along with health care and a stimulus plan to boost the battered economy, climate change would be a top legislative priority. It would be difficult to get a climate bill through Congress, though, even with both Chambers under Democratic control. During negotiations over the bill, the administration used EPA as a threat: if Congress did not pass new legislation, the agency would be forced to regulate using the Clean Air Act.[277] Everyone knew that the Clean Air Act did not lend itself to

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271. *See* J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1525 (2007) (describing state initiatives to regulate GHGs).

272. *See, e.g.*, Connecticut v. Am. Elec. Power, 406 F. Supp.2d 265 (S.D.N.Y. 2005); Comer v. Murphy Oil USA, Inc., 2007 WL 6942285 (S.D. Miss. Aug. 30, 2007); People of State of California v. Gen. Motors Corp., 2007 WL 2726871 (N.D. Cal. Sept. 17, 2007).

273. *Andrew* C. Revkin, *On Global Warming, McCain and Obama Agree: Urgent Action Is Needed*, NY TIMES (Oct. 19, 2008), https://perma.cc/67W2-D9N8. McCain had co-sponsored a bipartisan climate bill in Congress known as the McCain-Lieberman Climate Stewardship Act of 2003, S. 139, 108th Cong. (2003).

274. *See id*. (describing the environmental promises made by the candidates).

275. *See, e.g.*, Barack Hussein Obama, Address in St. Paul upon winning Democratic Party primary (June 3, 2008); Barack Hussein Obama, President of the United States, Inaugural Presidential Address (Jan. 21, 2009).

276. Carol E. Lee, *Carol Browner*, POLITICO (Dec. 03, 2009, 11:59 PM), https://www.politico.com/story/2009/12/carol-browner-030061. This was not entirely positive. Jackson hadn't known about Browner's appointment when she accepted the EPA job, and it limited her influence to have climate policy led from the White House.

277. *See* Barack Hussein Obama, President of the United States, The State of the Union Address by the President of the United States, 1 Pub. Papers 97 (Feb. 12, 2013) ("But if Congress

optimal, cost-effective regulation because it did not expressly allow EPA to implement an economy-wide emissions trading scheme. Surely Congress would rather pass a fresh and comprehensive approach.

The prospect of a new climate bill caused some anxiety at EPA. By this time, agency career staff felt strong ownership of the climate issue. The Supreme Court had ratified the agency's regulatory authority, and the Office of Air and Radiation had done a huge amount of work preparing a greenhouse gas endangerment finding, only to see it blocked by the Bush White House. EPA staff were eager to rectify that debacle and move forward with setting standards. And while new climate legislation would be exciting, EPA's role remained uncertain. Congress might authorize EPA to implement an economy-wide emissions trading regime, but it might give DOE, Treasury, or other agencies a prominent role.[278] There was also concern that Congress might preempt EPA's regulatory authority as part of the deal. Many EPA officials argued for retaining the agency's regulatory authority as a backstop, in case the cap and trade scheme being negotiated did not reduce emissions sufficiently—what some called a "belt and suspenders" approach. It did not help matters that the president's political strategy on climate change was being driven by the White House, without as much EPA involvement as top agency officials would have liked. Carol Browner's role as "climate czar" could not help but diminish the influence of Lisa Jackson and her team at EPA.

The House of Representatives passed the American Clean Energy and Security Act on a partisan vote in June 2009.[279] The bill established an economy-wide cap on greenhouse gases to reduce emissions 20% below 2005 levels by 2020 (with stringency increasing over time);[280] a

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won't act soon to protect future generations, I will. I will direct my cabinet to come up with executive actions we can take, now and in the future. . . ."); Amanda Little, *EPA chief Lisa Jackson on mountaintop removal, climate legislation, toxics, and more*, GRIST (June 24, 2009), https://perma.cc/MS3S-TSP6 ("I would like to see new legislation. The president has called for new energy and climate legislation. It's extremely important for our country. . . That being said, I thought it was a solemn responsibility that I had as administrator of the EPA to follow the law. . . [a]nd certainly if we find that greenhouse gases endanger public health and welfare, that requires EPA to act from a regulatory standpoint.").

278. "Some would call it territorialism but if you've been in trenches fighting and feeling alone and now climate is one of new president's signature issues, you react like 'welcome to party' and it's frustrating to see that a new bill might send things over to DOE to implement; EPA worry that they would lose turf. But at the time, the agency was in good place to support any legislation from analysis and modeling perspective." Telephone Interview with Former Senior Administration Official.

279. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009) (passing the U.S. House of Representatives on a vote of 219-212).

280. *Id.* at Section 311, 702.

clean energy standard requiring electric utilities to meet 20% of electricity demand through renewable sources by 2020;[281] and a variety of investments in clean technologies.[282] Yet, after Henry Waxman and his staff shepherded the bill through the House, painstakingly working through allowance allocation formulas, and other complicated design issues to solve member concerns, and after Nancy Pelosi skillfully whipped the votes, Democratic leaders in the Senate were never able to put together a credible legislative package.[283] The bill was dead by the spring of 2010.

There was plenty of blame to go around for this failure, and the White House got the lion's share: the president had spent too much political capital on health care, and that bill had taken too long;[284] the White House never sent a draft climate bill, or even draft principles, to the Hill—a sharp contrast to what the first Bush administration had done to get the 1990 Clean Air Act Amendments passed;[285] the administration inexplicably gave away a number of concessions, like opening up offshore drilling and providing loan guarantees for nuclear power, without linking them to a legislative deal;[286] Carol Browner was the wrong messenger to the Hill and lacked influence in the West Wing; the Chief of Staff and other senior White House officials did not have the same fire in the belly on climate change that they had for health care; and so on.[287]

But it wasn't all the White House's fault. Environmental groups had failed to deliver on a promised advertising blitz to reward members of the House who had taken a hard vote for the bill. The members had gotten pummeled back in their districts, which left Pelosi furious, and sent the wrong message to Democratic Senators, who would also need

281. *Id.* at Section 101, 103.

282. *See generally id.* at Title I.

283. *See* David Robert, *Why Did The Climate Bill Fail?*, GRIST (July 27, 2010), https://perma.cc/8FW7-P8YL.

284. *See, e.g.*, Randy Rieland, *The Blame Obama Game*, GRIST (July 27, 2010), https://perma.cc/4TRU-7SMM (collecting a variety of articles that blamed President Obama); Tim Dickinson, *Climate Bill, R.I.P.*, ROLLING STONE (July 21, 2010, 12:15 PM), https://perma.cc/4ZN9-3C44; Darren Samuelsohn, *Battle Over Health Care Leaves 'Blood in the Water' for Climate Bill*, N.Y. TIMES (July 22, 2009), https://perma.cc/QY5Q-RACL.

285. *See, e.g.*, Ryan Lizza, *As the World Burns*, THE NEW YORKER (Oct. 11, 2010), https://perma.cc/79D4-AQMN; Editorial Board, *With a Whimper*, N.Y. TIMES (July 22, 2010), https://perma.cc/8SU6-W4UE.

286. *See, e.g.*, Robert, *supra* note 283; Lee Wasserman, *Four Ways to Kill a Climate Bill*, N.Y. TIMES (July 25, 2010) https://perma.cc/HZ5K-Y64M.

287. *See* Lizza, *supra* note 285 (analyzing reasons the bill failed to pass).

political cover to vote for a climate bill.[288] Barbara Boxer, who chaired the Senate committee with jurisdiction over the bill, lacked a process for knitting together the necessary support, and her staff did not manage the bill well.[289] And the cap and trade approach to CO_2 emissions reductions at the heart of the House bill was an easy target for Republicans, who attacked it as a "cap and tax" scheme (ironic, since the emissions trading idea originally came from Republicans).[290] Nor did it help, after the 2008 financial crisis, that a market-based plan with emissions "allowances" and complex trading rules sounded like something the financial industry could game.[291] When Boxer's bill failed to materialize, John Kerry, Lindsay Graham, and Joe Lieberman tried to piece an alternative together, but they too failed.[292] The result was no climate bill—which meant falling back on the Clean Air Act, and EPA.

B. Leveraging the Clean Air Act

Even before Waxman-Markey failed to pass, the administration was working on another track: using executive power to make progress on climate change. This strategy would rely heavily on EPA, since it could utilize the Clean Air Act—the most potent regulatory tool for reducing greenhouse gas emissions from the transportation, electricity, manufacturing and industrial sectors of the economy. In the first few months of 2009, the White House Office of Energy and Climate change had quietly led a process to set the first federal greenhouse gas standards for new cars and light trucks, delivering on the promise of *Massachusetts v. EPA*, the case in which environmental plaintiffs had

288. *See* Kate Sheppard, *Conservative activists wage war on Republicans who voted for climate bill*, GRIST (July 2, 2009), https://perma.cc/3NKZ-RCJS (describing opposition to the bill); *see* Carl Hulse & David M. Herszenhorn, *Democrats Call Off Climate Bill Effort*, N.Y. TIMES (July 22, 2010), https://perma.cc/9NU4-8X4R (noting Pelosi's response to the bill's failure).

289. Lisa Lerer & Manu Raju, *Dems raise concerns about Boxer*, POLITICO (July 23, 2009 4:13 AM), https://perma.cc/V75Y-JP6M; Darren Samuelsohn, *Boxer Loses Key Committee Staffer, Cap-And-Trade Expert*, N.Y. TIMES (Oct. 6, 2009), https://perma.cc/U3HN-AYGE.

290. *See* John M. Broder, *'Cap and Trade' Loses Its Standing as Energy Policy of Choice*, N.Y. TIMES (Mar. 25, 2010), https://perma.cc/6G9S-7GFA (noting the Tea Party'.s use of cap and trade as an example of everything "wrong with Washington").

291. Margaret Kriz, *Financial Crisis Dims Chances for U.S. Climate Legislation*, YALE ENV'T 360 (Oct. 6, 2008), https://perma.cc/RP5C-F4JA.

292. Keith Johnson, *Climate Bill: Kerry, Graham and Lieberman's Compromise Plan*, WALL ST. J. (Dec. 10, 2009), https://perma.cc/G87Q-VUCB; Eric de Place, *Kerry-Lieberman climate bill: The details*, GRIST (May 14, 2010), https://perma.cc/N33D-DW7A; Alexander Bolton, *Liberal activists say good riddance to Kerry-Lieberman climate legislation*, THE HILL (July 24, 2010 11:09 PM), https://perma.cc/94GG-CREE.

petitioned the agency to set precisely these standards.[293] The plan was for EPA and the National Highway Traffic Safety Administration, which sets Corporate Average Fuel Economy standards,[294] to issue the rules jointly, in something of a grand bargain: the harmonized federal standards would require auto companies to make improvements in fuel efficiency of about 5% annually through 2016. In exchange, compliance would be greatly simplified.[295] While California would be granted a preemption waiver to set its own vehicle greenhouse gas standards—preserving its formal legal authority to do so, as Obama had suggested he would do—California would agree to treat compliance with the federal standards as compliance with the state's standards, since a national approach would produce greater emissions reductions overall.[296] All of the states that had opted into California's vehicle greenhouse gas standards would follow California's lead. In exchange for the certainty and predictability of this single national regime, the auto industry would agree to not challenge the new rules in court and drop their pending preemption challenges against California.[297] And all

293. Jody Freeman, *The Obama Administration's National Auto Policy: Lessons from the "Car Deal"*, 35 HARV. ENVTL. L. REV. 343, 344 (2011).

294. *See* Energy and Independence Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007) (codified as amended in scattered sections of 42 and 49 U.S.C.) (providing EPA with CLEAN AIR ACT authority to regulate mobile sources of emissions); Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, 89 Stat. 871 (1975) (codified as amended in scattered sections of 42 and 49 U.S.C.) (providing NHTSA with authority to set fleetwide average fuel economy standards).

295. Freeman, *supra* note 293, at 344–46.

296. It was in California's interest to agree, since the cumulative emissions reductions would exceed what could be accomplished by California and the states that would opt-in to California's standards on their own. *Id.*

297. The same framework would be used in 2012 to set another round of standards covering 2016-2025. White House Office of the Press Secretary, *Obama Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards* (Aug. 28, 2012), https://perma.cc/E9CE-JJN2; 2017; *see* Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62,624 (Oct. 15, 2012) (finalizing the announced rule). All told the standards were projected to double fuel efficiency to 54.5 mpg by 2025, save consumers trillions in gasoline costs, and save the country billions of barrels in imported oil. *See* Jody Freeman, *The Auto Rule Rollback That Nobody Wants, Except Trump*, NY TIMES (Sept. 9, 2019), https://perma.cc/JMM7-QYZW (describing the benefits of the deal); White House Office of the Press Secretary, *Obama Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards* (Aug. 28, 2012), https://perma.cc/E9CE-JJN2. The administration would also use the same approach to strengthen standards for medium and heavy-duty trucks. Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 76 Fed. Reg. 57,106 (Sept. 15, 2011).

of this would be accomplished through "letters of commitment" that each company would make directly to the agency heads.[298]

It is tempting to believe that the auto companies were forced to agree to the new standards as a condition of the Obama administration's financial rescue of the industry. At the time, two of the Big Three U.S. companies, GM and Chrysler, were at risk of collapse and had received bailout funds from the government.[299] But Ford had not. And the agreement, with all of its component parts—which required every company, agency, and state involved to take action on faith that another participant would deliver on their promises—was not a foregone conclusion by any stretch. Indeed, the auto industry might have adopted a united front, and argued that, given the economic headwinds, this was not the time to strengthen regulations. But they did not. The advantages of a single national standard and the prospect of at least a temporary truce in the legendary battles over fuel economy standards prevailed. The agreement was announced in a Rose Garden ceremony in May of 2009.[300]

EPA's role in what came to be known as the Car Deal was extremely impressive. Agency career staff in the Office of Transportation and Air Quality, including experts from the agency's state-of-the-art "car lab" in Michigan,[301] worked tirelessly under huge pressure to model the impacts of the new standards; reconcile their numbers with NHTSA's own modeling; present their projections of technology penetration, cost, and other impacts to various White House officials; and respond to countless internal demands for more data.[302] It was a potent demonstration of the expertise housed within the agency, and the eagerness of the career staff to act on climate change.

At the same time, EPA's Office of Air and Radiation was thoroughly reviewing and updating the endangerment finding that had been scuttled by the Bush administration, to ensure it reflected the latest science, which was important to rank-and-file staff. In December

298. *See* EPA, 2011 Commitment Letters for 2017-2025 Light-Duty National Program, https://perma.cc/J7H9-GX3L (listing the 16 letters received from companies for the 2017 to 2025 period).

299. Kimberly Amadeo, *Auto Industry Bailout*, THE BALANCE (June 29, 2020), https://perma.cc/34AW-LPGM.

300. *See generally* Barack Hussein Obama, Remarks on Fuel Efficiency Standards, 1 PUB. PAPERS 672 (May 19, 2009).

301. *See About the National Vehicle and Fuel Emissions Laboratory (NVFEL)*, U.S. EPA, https://perma.cc/26VQ-VJXM (describing the lab).

302. Freeman, *supra* note 293, at 344–46.

2009, Lisa Jackson signed the decision making the endangerment finding for greenhouse gases, determining it was warranted on the basis of the overwhelming scientific consensus. This step provided a kind of moral vindication for the agency and established the legal foundation for the vehicle standards and other greenhouse gas rules, which were to follow.[303]

Thus, within the first year, the Obama administration had shown that it could successfully use the Clean Air Act to regulate greenhouse gas emissions from the transportation sector—the fastest growing share of emissions in the U.S. economy. The administration proved to Congress that it would act if the climate bill failed, and signaled to the international community, in advance of the 2009 United Nations Climate Change Conference in Copenhagen, that the U.S. was committed to reducing domestic emissions.[304]

C. Dominoes

EPA's endangerment finding, and its greenhouse gas standards for cars and trucks, had tipped the first dominoes toward regulating greenhouse gas pollution from stationary sources, like power plants and refineries. Section 111 of the Clean Air Act directs EPA to develop what are called New Source Performance Standards—standards for new, modified, and reconstructed stationary sources of air pollution.[305] EPA sets these standards for sources in industrial categories, that emit pollution which EPA concludes poses an endangerment to public health and welfare.[306] It stands to reason that if greenhouse gases from cars and trucks pose a danger to health and welfare, surely greenhouse gases from stationary source categories, like powerplants, would too. If so, EPA should require stationary sources to control their CO_2

303. *See* Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,496 (Dec. 15, 2009) ("The Administrator finds that six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations.").

304. The Copenhagen meeting was the Fifteenth Conference of the Parties to the United Nations Framework Convention on Climate Change. President Obama attended the Copenhagen meeting, and pledged the U.S. to achieve greenhouse gas emissions reductions "in the range of 17%" below 2005 levels by 2020, based on what the Waxman-Markey bill was projected to achieve. *See generally* White House Office of the Press Secretary, *Support for President's Copenhagen Announcement Receives Immediate Support* (Nov. 25, 2009), https://perma.cc/63SX-DSWS.

305. CLEAN AIR ACT § 111; 42 U.S.C. § 7411(b)(1)(B) (2012) (defining the term Standards of Performance as emissions standards reflecting the amount of emission reduction achievable through the use of the "Best System of Emissions Reduction"); 42 U.S.C. § 7411(a)(1) (2012) (defining "standard of performance").

306. 42 U.S.C. § 7411(a)(1) (2012).

emissions, just as they must control their emissions of conventional pollution. Indeed, states and environmentalists had already sued EPA in 2006 for failing to include CO_2 in their New Source Performance Standards for powerplants. In 2010, the agency signed a consent decree agreeing to do so.[307]

But EPA had a more immediate problem: what to do about the prospect that tens of thousands of sources may be triggered into a fairly small Clean Air Act program known as "prevention of significant deterioration" (PSD), which is designed to limit air quality deterioration in areas that meet or exceed the national ambient air quality standards.[308] For purposes of this program, the Act defines a "major" source as emitting as few as 100 tons per year of "any air pollutant."[309] Sources emitting amounts of pollution over the statutory threshold must go through "new source review," a process requiring them to obtain permits and install the "best available control technology"—not only for the pollutant that triggered them into the program but for *all* pollutants regulated under the Act.[310] And here is where the complication arose: now that greenhouse gases were "pollutants" subject to regulation under the Act (for which EPA had set mobile source emission standards), did that mean thousands of small sources producing as few as 100 tons per year of greenhouse gases would require a permit to operate, conditioned on installing the best available control technology? At the same time, how should EPA handle the possibility that *millions* of very small sources emitting only greenhouse gases but no other pollution might now need a Clean Air Act operating permit for the first time because they met the Act's threshold definition of "major" source, which is having the potential to emit 100 tons per year of "any pollutant."[311]

These possibilities were so administratively unmanageable and politically unappealing that EPA opted to administratively *raise* the

307. *See* New York v. EPA, 443 F.3d 880 (D.C. Cir. 2006) (deciding state brought action to compel EPA to place limits on carbon dioxide emissions from new electric power plants). For background, see *States Sue EPA (Again) Over Regulation of Carbon Dioxide Emissions*, MARTEN LAW (May 17, 2006), https://perma.cc/F4J3-6N9G. The consent decrees, both issued on December 21, 2010, covered two distinct categories of sources: boilers and refineries. *See* Nathan Richardson, *EPA Greenhouse Gas Performance Standards: What the Settlement Agreement Means*, RESOURCES FOR THE FUTURE (Feb. 2011), https://perma.cc/8GUR-NGWR (describing the consent decrees and their effects).

308. *See* 42 U.S.C. § 7470 (2012) (stating the purpose of the PSD program).

309. *See* 42 U.S.C. § 7602(j) (2012) (defining major emitting facility as having the potential to emit 100 tons per year of "any" air pollutant).

310. CLEAN AIR ACT § 165(a)(1)–(4); 42 U.S.C. § 7476(a)(1)–(4) (2012).

311. *Id*.

numerical threshold to 100,000 tons per year for greenhouse gases so that only very large sources would be triggered into the PSD New Source Review program and require an operating permit.[312] To defend this decision, EPA adopted a legal theory of "administrative necessity," saying that it was necessary to avoid absurd results that Congress could never have intended.[313]

There were vigorous internal administration debates over the wisdom of this strategy, with some officials arguing that EPA should avoid the legal fight entirely and disclaim authority to regulate greenhouse gases under the program, since it was unlikely to yield substantial incremental emissions reductions anyway. Others argued in the opposite direction, that EPA should not even raise the threshold and instead take the position that it planned to issue millions of new permits but would phase them in over time. How to manage this problem, and with what legal theory, was a major preoccupation of both EPA and several White House officials for months, requiring hours and hours of meetings.[314] In the end, the agency raised the numerical thresholds.[315]

When the Supreme Court rejected EPA's approach as unlawful,[316] it was, in the words of Gina McCarthy, then Assistant Administrator for Air and Radiation, "the best decision I ever lost."[317] The Court spared EPA the headache of regulating millions of new sources by reading "any pollutant" in the definition of major source to exclude

312. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010).

313. *See* Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 312 (2014) ("Those steps were necessary, [EPA] said, because the PSD program and Title V were designed to regulate 'a relatively small number of large industrial sources,' and requiring permits for all sources with greenhouse-gas emissions above the statutory thresholds would radically expand those programs, making them both unadministrable and 'unrecognizable to the Congress that designed' them.").

314. As a Deputy in the White House Office of Energy and Climate Change, the author participated in these debates.

315. "After years of implementing the PSD program to pollutants *other* than the six national ambient air quality standards, however, and after *Massachusetts v. EPA* had interpreted 'pollutant' to include greenhouse gases as a default matter, the agency was not going to unilaterally disarm." Telephone Interview with Joseph Goffman, Former Associate Assistant Administrator for Climate and Senior Counsel in the Office of Air and Radiation, EPA (July 2, 2019) [hereinafter Goffman Interview].

316. Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 319–20, 323–25 (2014) (holding that greenhouse gases are not an "air pollutant" for purposes of the PSD program, but that once a source triggers into the program because it emits over the threshold amount of *another* pollutant, the source must meet Best Available Control Technology for "any pollutant subject to regulation under the Act," including greenhouse gases).

317. Telephone Interview with Gina McCarthy, Former EPA Administrator (June 18, 2019) [hereinafter McCarthy Interview].

greenhouse gases. As a result, sources emitting greenhouse gases *only* would not trigger into the program. As a practical matter, though, the decision allowed EPA to regulate the overwhelming majority of greenhouse gas emissions from the largest sources anyway. By a vote of 7-2, the Supreme Court held that sources triggered into the program because of their emissions of *conventional* pollution would need to control all of their emissions, including greenhouse gases.[318] Above all, the Court had not reconsidered *Massachusetts v. EPA* or disturbed the agency's endangerment finding.

D. Next Step: The Clean Power Plan

By late 2010, however, the White House's appetite for bold regulatory action on greenhouse gases seemed to wane. The midterm elections had flipped control of the House of Representatives to the Republicans, who also gained seats in the Senate, in an electoral result the president himself deemed a "shellacking."[319] Even before the midterms, climate and energy politics were becoming more fraught. The Deepwater Horizon rig had exploded in the Gulf of Mexico, causing the worst environmental disaster in U.S. history[320] and prompting the president to impose a highly unpopular moratorium on offshore drilling in states where his popularity already was not high.

The Department of the Interior then withdrew its recently announced five-year offshore drilling plan, which had proposed to open more areas to oil and gas leasing, in a bid to attract Republican support for climate legislation. That position was no longer politically defensible in the aftermath of the spill.[321] By fall, after the 2010 mid-term elections, the constituencies needed to support comprehensive clean energy and climate legislation were pulling farther apart. The White House began to turn its attention to re-election. EPA officials

318. Jody Freeman, *Symposium: Soft Landings and Strategic Choices*, SCOTUSBLOG (Feb. 5, 2014), https://perma.cc/VXF6-PALC. The Court held, by a vote of 7-2, that sources emitting over the statutory threshold amount of conventional pollution (e.g., 100 or 250 tons depending on the source) would be required to obtain a permit and control their emissions of *all* pollutants regulated under the Act, including their greenhouse gas emissions. *See, e.g.*, Nina Totenberg, *EPA Gets A Win From Supreme Court On Global Warming Emissions — Mostly*, NPR (June 23, 2014 4:07 PM), https://perma.cc/JME7-W92T.

319. William Branigin, *Obama Reflects on 'shellacking' in Midterm Elections*, WASH. POST (Nov. 3, 2010), https://perma.cc/ECX9-RBTU.

320. David Barstow, David Rohde & Stephanie Saul, *Deepwater Horizon's Final Hours*, N.Y. TIMES (Dec. 25, 2010), https://perma.cc/WSU5-2UMT.

321. Scott Neuman, *Obama Ends Ban on East Coast Offshore Drilling*, NPR (Mar. 31, 2010), https://perma.cc/FG6B-NYKG; Bettina Boxall & Richard Simon, *Obama Administration Withdraws Offshore Drilling Plan*, LA TIMES (Dec. 2, 2010), https://perma.cc/6QPD-TUWG.

perceived that the White House's appetite for additional greenhouse gas regulation was waning.[322]

The agency did, however, move ahead with other air pollution rules. For example, in 2011, after many years of delay, the agency proposed the Mercury and Air Toxics rule to reduce hazardous air pollutants from power plants.[323] While not directly relevant to climate policy, the rulemaking had some unexpected benefits for the agency's greenhouse gas agenda by creating an opportunity for EPA to work closely with DOE, FERC, and regional managers of the nation's transmission grids.[324] They modelled the rule's impacts on the electricity sector, and worked on implementation issues, and, "without realizing it, they were building a political and intellectual infrastructure that would be instrumental for the administration's later effort to set standards for CO_2 from the electricity sector. EPA figured out that it could spend time with DOE, FERC, and PJM [a regional transmission organization], and find common language and jointly work to the solution."[325] In March 2012, the agency also set standards for volatile organic compounds (VOC) from oil and gas processing facilities, requiring them to perform green completions.[326] Again, the rule was not directly focused on greenhouse gases, but reducing VOCs would

322. Goffman Interview, *supra* note 315; McCarthy Interview, *supra* note 317; Email Communication from Robert Sussman, Former EPA Deputy Administrator (May 5, 2019) (on file with author).

323. Mercury & Air Toxics Proposed Rule, 76 Fed. Reg. 24,976 (proposed May 3, 2011) (to be codified at 40 C.F.R. pt. 60, 63). EPA had completed a public health study of mercury's effects in 1998 and concluded in 2000 that regulation of power plants was "appropriate and necessary." *See* Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,825–26 (Dec. 20, 2000) (finding "regulation of HAP emissions from coal- and oil-fired electric utility steam generating units under section 112 of the CLEAN AIR ACT is appropriate and necessary"). However, in 2005, the George W. Bush Administration sought to revoke this finding, delist mercury as an air toxin, and establish a cap-and-trade scheme to control its emission. This rule was struck down by the D.C. Circuit, leaving the task of designing a replacement to the next administration. *See generally* New Jersey v. EPA, 517 F.3d 574, 580, 583 (D.C. Cir. 2008).

324. Goffman Interview, *supra* note 315; *see also*, Jody Freeman, *The Uncomfortable Convergence of Energy and Environmental Law*, 41 HARV. ENVTL. L. REV. 339, 404–05 (2017) (describing the impact of the MATS process on the Clean Power Plan).

325. Goffman Interview, *supra* note 315. The MATS rule also helped to force hard decisions about which among the older units industry ought to shut down, versus update. "That meant that when we got the Clean Power Plan, the conversation was already happening and many of the hard decisions had been made. All of this was possible because of fracking and cheap natural gas." McCarthy Interview, *supra* note 317.

326. "Green Completions" are systems designed to recover and process methane released during natural gas production. EPA, *Reduced Emission Completions (Green Completions)* (Aug. 30, 2005), https://www.epa.gov/sites/production/files/2017-09/documents/3_reduced_emission_completions.pdf.

also reduce methane emissions—another collateral benefit for climate policy.[327]

State and environmental petitioners, meanwhile, kept pressing EPA to set standards for greenhouse gas emissions for the power sector, as the agency had committed to do in the 2010 settlement agreement for both new and existing power plants.[328] EPA officials realized that they would have to proceed with new sources first and delay action on existing ones.[329] Setting standards for the existing fleet of older coal- and natural gas-fired power plants, it became clear, would raise a number of difficult issues and invite substantial controversy. The agency would need to convene a stakeholder process and do extensive outreach, which realistically could not happen before the 2012 presidential election. It was also clear that a proposal of this importance would require explicit White House backing. So, in 2012, EPA officials issued the proposal for new sources, and "hibernated" until after the election.[330]

In his second term, President Obama re-engaged on climate change. He told Gina McCarthy that climate action was the reason he wanted her to lead the agency[331] and appointed Denis McDonough, a known climate hawk, as Chief of Staff.[332] Obama, more than ever,

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327. Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,490, 49,492 (Aug. 16, 2012) (estimating reduction of 1.0 million tons of methane as a non-monetized benefit of the rule). *See also id.* at 49,513 (noting that EPA is "not taking final action with respect to regulation of methane" but acknowledging that "the control measures that the EPA is requiring for VOC result in substantial methane reductions as a co-benefit").

328. Petitioners had originally filed suit in 2006 to challenge EPA's omission of CO_2 from its New Source Performance Standards for powerplants. After the Supreme Court decided *Massachusetts v. EPA* in 2007, EPA sought a voluntary remand to reconsider its exclusion of CO_2. In 2010, the agency entered settlement agreements promising to establish a rulemaking schedule for greenhouse gas standards for refineries and power plants. Settlement Agreement, New York v. EPA, No. 06-1322 (D.C. Cir. Dec. 23, 2010); Settlement Agreement, Am. Petrol. Inst. v. EPA, No. 08-1277 (D.C. Cir. Dec. 23, 2010). For background, see MARTEN LAW, *supra* note 307. The consent decrees, both issued on December 23, 2010, covered two distinct categories of sources: boilers and petroleum refineries. *See* Nathan Richardson, *EPA Greenhouse Gas Performance Standards: What the Settlement Agreement Means*, Resources for the Future (Feb. 2011), https://perma.cc/8GUR-NGWR (describing the consent decrees and their effects).

329. Goffman Interview, *supra* note 315.

330. Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 Fed. Reg. 22,392 (Apr. 13, 2012) (to be codified at 40 C.F.R. 60); Goffman Interview, *supra* note 315.

331. McCarthy Interview, *supra* note 317.

332. *See* Carol Davenport, *The Man Who Could Put Climate Change on the Agenda*, NATIONAL JOURNAL (Apr. 4, 2013), https://perma.cc/9U3L-6UZA. Neither Rahm Emanuel, nor Bill Daley, Obama's first two Chief of Staffs, were regarded by senior officials at EPA as having a deep commitment to climate change.

viewed climate change as part of his legacy. His 2013 State of the Union speech again pledged that if Congress would not act, he would use executive power.[333] By June, the White House had announced a comprehensive Climate Action Plan as a roadmap for his second term.[334] There were regular climate events planned to maintain momentum and keep the Plan in the news. Now, the EPA Administrator was not the only one talking about climate risks; the Joint Chiefs were too.[335] The White House climate and energy brief belonged to Obama's Counselor, former Clinton Chief of Staff John Podesta, a deeply experienced political operator with unquestioned stature. And upon his departure in 2015 to lead Hillary Clinton's presidential campaign, the role went to Brian Deese, a young White House star, whom the president trusted to get things done.[336] Together, Podesta, McDonough, and Deese would provide crucial support for McCarthy and her agency as EPA delivered major climate rules.[337]

EPA's most important climate initiative of the second term was, by far, the rulemaking to limit carbon dioxide from the nation's existing power plants, known as the Clean Power Plan,[338] which the president directed the agency to finalize by 2015.[339] As EPA had anticipated before the election, setting standards for the existing fleet would be a hugely controversial rulemaking, consuming countless hours of

333. *See* Barack Hussein Obama, Second Inaugural Presidential Address (Jan. 21, 2013); President Barack Hussein Obama, The State of the Union Address by the President of the United States (Feb. 12, 2013) ("I urge this Congress to get together, pursue a bipartisan, market-based solution to climate change . . . [b]ut if Congress won't act soon to protect future generations, I will.").

334. EXEC. OFF. OF THE PRESIDENT, THE PRESIDENT'S CLIMATE ACTION PLAN (June 2013), https://perma.cc/JH8K-583F [hereinafter OBAMA CLIMATE ACTION PLAN].

335. "The president had established a green cabinet and he would sit at the head of the table and tell them they had to participate." McCarthy Interview, *supra* note 317.

336. *Id.*

337. *Id.*

338. EPA had initiated the rule for new sources in 2012, but now withdrew it and re-proposed standards for both new and existing sources. Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units, 80 Fed. Reg. 64,510 (Oct. 23, 2015); Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Final Rule, 80 Fed. Reg. 64,662 (October 23, 2015).

339. The President's Climate Action Plan had included a separate Presidential Memorandum directing EPA to set carbon standards for powerplants using its Clean Air Act Authority, specifying deadlines, and instructing the agency to conduct broad stakeholder outreach. OBAMA CLIMATE ACTION PLAN, *supra* note 334.

painstaking work by senior career staff and political appointees, including the EPA Administrator herself.[340]

Section 111 of the Clean Air Act defines performance standards as the level of emission control achievable by applying the "best system of emission reduction" that the Administrator determines has been "adequately demonstrated," taking into account energy requirements among other considerations.[341] EPA first issued a standard for *new* power plants under the Clean Air Act based on the successful demonstration of carbon capture and sequestration technology at sites in the U.S. and Canada.[342] That first rule was most significant, however, because it would trigger regulation of *existing* power plants[343]—the far more important regulatory target, since the oldest and dirtiest power plants produce the largest share of electricity sector greenhouse gas emissions.[344]

In the Clean Power Plan, EPA adopted a broad interpretation of "best system," which conceived of power plants as interconnected, as if they were a single giant machine. The agency considered the CO_2 reductions achievable if electric utilities took advantage of the same broad set of opportunities they already had been using on the regionally-interconnected electricity grids to meet pollution limits for sulfur dioxide and nitrogen oxides.[345] Following this approach, EPA set separate emission limits for coal and gas-fired plants, which they calculated by applying three factors: (1) the potential emission reductions achievable by improving the efficiency of the units themselves; (2) additional emission reductions achievable by

340. The effort was organized and managed by Assistant Administrator Janet McCabe. The key architects were a team of core staff from the Office of Air Quality Planning and Standards, the Office of Atmospheric Programs, and the Office of General Counsel, coordinated by Associate Assistant Administrator for Climate and Senior Counsel, Joe Goffman. Goffman Interview, *supra* note 315.

341. *See* CLEAN AIR ACT § 111(a), 42 U.S.C. § 7411(a)(1) (defining "standard of performance").

342. Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units, 80 Fed. Reg. 64,510 (Oct. 23, 2015) [hereinafter CPP Final Rule].

343. Section 111(d) requires the states to set performance standards for existing sources of a pollutant when: (1) standards have been set for that pollutant from new sources; (2) the pollutant is not already subject to regulation under the national ambient air quality program; and (3) when it is emitted from a source not already regulated under the air toxics program. CLEAN AIR ACT § 111(d), 42 U.S.C. § 7411(d) (2012).

344. CLEAN AIR ACT § 111(d), 42 U.S.C. § 7411(d) (2012); Steven Mufson, *Vintage U.S. Coal-Fired Power Plants Now an 'Aging Fleet of Clunkers*', WASH. POST (June 13, 2014), https://perma.cc/BM59-98AD.

345. CPP Final Rule, *supra* note 342.

substituting natural-gas fired electricity for coal-fired electricity; and (3) reductions achievable by displacing both coal- and gas-fired units with more renewable energy.[346]

This approach to "best system," which contemplated fuel substitution, was controversial. Broadening emission reduction opportunities beyond the so-called "fence-line" of the powerplant to include the greater opportunities presented by grid management strategies would inevitably produce stricter standards than taking a narrower view that looks only at efficiency improvements made locally at the source. But EPA reasoned that its approach reflected how the grid already worked in practice.[347] In any event, ambition was the point: EPA wanted to build on the shift from coal to natural gas-fired power already underway in the electricity sector, which was the result of the fracking revolution, and the trend toward renewable energy spurred by state renewable portfolio standards, and other policies. The Clean Power Plan would send a strong market signal to cement that shift, support state renewable and energy efficiency policies, and, EPA believed, drive emissions reductions deeper over time.[348] EPA thought its interpretation of "best system" was reasonable, appropriate, and legally defensible. But the agency knew that it would be sued.

Finalizing the Clean Power Plan was a massive undertaking. EPA staff conducted innumerable meetings with various stakeholders in an unprecedented outreach effort and received hundreds of thousands of comments on its proposal. Administrator McCarthy pushed her staff hard to complete the rulemaking on the schedule the President had laid out, ahead of the international climate meeting in Paris, knowing the U.S. would rely on it for negotiating leverage to achieve an international climate agreement.[349]

346. *Id.*

347. In EPA's view, there was no logical reason why performance standards in section 111 must be limited to engineering solutions that can be installed to units on-site, if off-site measures might reduce emissions from such units cost-effectively. *See* CPP Final Rule, *supra* note 342, at 64,717–811 (describing EPA's approach to Best System of Emission Reduction and its "building block" methodology).

348. "The CPP was a market signal that said, this will be the least that will happen. That's what you do with regulations— signal where you need to head. The utilities are smart and can figure it out. It also gave them an excuse to make politically controversial decisions in states where they operate, to shut down old units and blame us." McCarthy Interview, *supra* note 317.

349. *Id.*

E. The Paris Agreement and the Obama Legacy

At the Paris climate talks in 2015, nearly 200 nations pledged to mitigate their greenhouse gas emissions.[350]The Agreement was one of the Obama administration's signature achievements. Its design had overcome the structural limitations of the Kyoto Protocol by committing all of the world's major economies, for the first time, to reduce their greenhouse gas emissions, lower the carbon intensity of their economies, and shift to cleaner energy.[351] .

The agreement was also a victory for EPA. Along with the vehicle emission standards set in the first term, the Obama administration relied on projected reductions from the Clean Power Plan to set U.S. targets. These two EPA policies were key pillars of the U.S. commitment to reduce greenhouse gas emissions between 26 and 28 percent by 2025, compared to 2005 levels.[352]

When President Obama left office, he had done more on climate change than any of his predecessors, and the success was largely due to the career staff and political appointees at EPA. While the president's Climate Action Plan had included many measures led by other agencies, its two signature domestic policies - the vehicle greenhouse gas and fuel efficiency standards and the Clean Power Plan - relied on EPA.[353] The administration had taken a sector-by-sector approach, rather than the economy-wide plan envisioned by the Waxman-Markey bill, and brought nearly two-thirds of the nation's emissions under a regulatory framework. EPA had adopted, in addition, rules to control methane leaks from oil and gas facilities, and replace, at least

350. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104, https://perma.cc/4UWL-2DVA [hereinafter Paris Agreement].

351. The agreement is voluntary—each State decides how much progress it can achieve domestically, which is the basis for its pledge. This "pledge and review" design was meant to ensure that, unlike Kyoto, the agreement would be durable, flexible, and increasingly effective over timeFor an overview and assessment of the Paris Agreement, see Sue Biniaz, *The Paris Agreement – Au Revoir?*, COLUMBIA LAW SCHOOL CLIMATE LAW BLOG (May 24, 2019), https://perma.cc/F7X4-AX8Q (describing and responding to common criticisms of the Accord); Sue Biniaz, *The Paris Agreement at Three Years Old, The Doctor's Report*, HARVARD LAW SCHOOL ENVIRONMENTAL & ENERGY LAW PROGRAM (Dec. 17, 2018), https://perma.cc/XG35-37RU (reviewing the history of the Paris Agreement and assessing its performance to date).

352. UNITED STATES, INTENDED NATIONALLY DETERMINED CONTRIBUTION SUBMITTED IN ACCORDANCE WITH ART. 4, PARA. 12 OF PARIS AGREEMENT (Mar. 9, 2016), https://perma.cc/UF89-AR4A. While the U.S. had no obligation to achieve its pledge through these two policies, it was widely expected that they would be implemented.

353. OBAMA CLIMATE ACTION PLAN, *supra* note 334.

incrementally, hydrofluorocarbons.[354] And it had issued air pollution rules, like the Mercury and Air Toxics Standards and the Cross-State Pollution Rule, which had collateral climate benefits.[355] Without question, at the end of Obama's tenure, EPA was firmly ensconced as the lead federal agency for U.S. climate policy.

All of this would change drastically after the 2016 presidential election.

VI. Donald J. Trump

Soon after taking office, President Trump began dismantling the Obama climate legacy. He revoked the Obama Climate Action Plan[356] and announced that the U.S. would withdraw from the Paris Agreement.[357] The Obama administration's Clean Power Plan would never be implemented.[358] After the rule was stayed by the Supreme Court—and while it was pending in the D.C. Circuit Court of appeals—President Trump issued an executive order directing EPA to review it for consistency with the administration's "energy dominance" agenda,

354. In the fall of 2016, the U.S. delegation, led by EPA Administrator McCarthy, negotiated the Kigali Amendment to the Montreal Protocol, creating a global framework to comprehensively phase-out hydroflourocarbons. U.N. Env't Programme, *Report of the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer*, U.N. Doc. UNEP/OzL.Pro.28/12, Annex I (Nov. 15, 2016); Coral Davenport, *Nations, Fighting Powerful Refrigerant That Warms Planet, Reach Landmark Deal*, N.Y. TIMES (Oct. 15, 2016), https://perma.cc/P8JT-463R.

355. *See, e.g.*, Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826 (Dec. 20, 2000); Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208 (Aug. 8, 2011); National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial Institutional, and Small Industrial Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,303 (Feb. 16, 2012); Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 77 Fed. Reg. 49,490 (Aug. 16, 2012).

356. Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 31, 2017) ("Promoting Energy Independence and Economic Growth").

357. Letter from Nikki Haley, U.S. Representative to the United Nations, to the Secretary-General of the United Nations (Aug. 4, 2017), https://perma.cc/RZC8-3RBF.

358. After the Supreme Court took the extraordinary step of staying the rule before the D.C. circuit's three-judge panel had heard oral argument, the D.C. Circuit opted to hear the case *en banc*. After that day-long argument, the consensus view among experts was that a majority of the full court likely would vote uphold the rule, over what was expected to be a strong dissent from then-Judge Kavanaugh. *See, e.g.*, Harvard Law's Lazarus and Freeman discuss federal court power plan hearing, E&ETV (Apr. 20, 2015), https://perma.cc/F86B-LBY9; Jonathan H. Adler, *The en banc D.C. Circuit Meets the Clean Power Plan*, WASHINGTON POST (Sept. 28, 2016), https://perma.cc/X8A2-2BTX. *But see* Robinson Meyer, *How Obama Could Lose His Big Climate Case*, THE ATLANTIC (Sept. 29, 2016), https://perma.cc/M5VR-CQQ7.

and the Department of Justice asked the D.C. Circuit to suspend the litigation.[359] No court would ever rule on its legality. EPA eventually rescinded the rule and substituted a far more modest proposal based on a narrower reading of "best system" that required only marginal on-site efficiency upgrades.[360] By EPA's own estimates, its new standards would achieve, at best, a 1.5% emission reduction—at worst, they could increase emissions.[361] The replacement rule also delegates discretion to the states over whether and to what extent to limit power plant carbon dioxide emissions.[362]

The Trump administration also embarked on a mission to revoke or weaken other federal greenhouse gas rules.[363] EPA rescinded standards for methane emissions from oil and gas operations on private and public land;[364] lowered the greenhouse gas and fuel efficiency standards for light duty vehicles (requiring only 1.5% annual fuel economy improvement, down from 5% in the rescinded rule and, by their own estimates, increasing both costs for consumers and premature deaths).[365] The agency also sought to disable California from independently setting greenhouse gas standards for the transport sector by revoking the state's Clean Air Act preemption waiver to set its own vehicle greenhouse gas standards and adopting the legal position that California is permanently preempted from setting such

359. Notice of Executive Order, EPA Review of Clean Power Plan and Forthcoming Rulemaking, and Motion to Hold Case in Abeyance, West Virginia v. EPA, No. 15-1363 (D.C. Cir. Mar. 28, 2017).

360. Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32,520 (July 8, 2019).

361. *Id.* at 32, 534–32, 541 (discussing EPA's BSER findings under the new ACE Rule).

362. *Id.* at 32, 561 (Table 3) (showing projected CO2, SO2 and NOX Electricity Sector Emission Impacts).

363. For a list of these initiatives, see HARVARD L. SCH. ENV'TL & ENERGY L. PROGRAM, REGULATORY ROLLBACK TRACKER, https://perma.cc/E27V-SP7R (select "View the live page" at the top of the perma link for a live view).

364. *See* Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, 85 Fed. Reg. 57,018 (Sep. 14, 2020) (rescinding Obama-era regulations of methane gas emissions for oil-and-gas producers); Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 Fed. Reg. 49,184 (Sep. 28, 2018) (rescinding in part the 2016 Waste Prevention Rule, eliminating measures that would have resulted in natural gas savings). BLM's Revised Rule was vacated in a recent district court decision, which is currently on appeal in the Ninth Circuit. California v. Bernhardt, No. 4:18-cv-05712-YGR, 2020 WL 4001480 (N.D. Cal. July 15, 2020), *sub. nom.* Cal. Air Res. Bd. v. Am. Petrol. Inst., No. 20-16801 (9th Cir. Sep. 17, 2020).

365. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (Apr. 30, 2020).

standards by the Energy Policy Conservation Act.[366] The Department of Justice also launched a preliminary antitrust investigation into four auto companies that had voluntarily agreed to ignore the federal rollback and meet California's vehicle standards voluntarily.[367] In addition to these specific deregulatory actions, the administration sought to undermine the scientific basis for EPA rules—for example, by replacing qualified experts on its advisory committees, excluding relevant science from its decision-making, changing its regulatory benefit calculations, and limiting the scientific information it shares with the public.[368]

The administration did not fare well in litigation challenging its regulatory rollbacks. Courts rejected EPA decisions to suspend or delay rule implementation, finding that the agency had failed to follow required legal procedures.[369] The agency lost other cases on the merits, for being arbitrary.[370] However, litigation challenging the most

366. Letter from Stephen G. Bradbury, General Counsel, U.S. Department of Transportation, and Matthew Z. Leopold, General Counsel, Environmental Protection Agency, to Mary Nichols, Chair, California Air Resources Board (Sept. 6, 2019), https://perma.cc/X2WY-RPW7.

367. Timothy Puko & Ben Foldy, *Justice Department Launches Antitrust Probe into Four Auto Makers*, WALL ST. J., (Sept. 6, 2019), https://perma.cc/8CQ9-QK2V. The Department of Justice also sought to block California's agreement with Quebec to jointly implement an emissions trading regime to reduce greenhouse gases, though that effort has so far failed. United States v. California, No. 2:19-cv-02142, 2020 WL 4043034 (E.D. Cal. July 17, 2020) (on appeal as of this writing).

368. For a list of initiatives intended to undermine EPA's core capacities, see HARVARD L. SCH. ENV'T & ENERGY L. PROGRAM, EPA MISSION TRACKER, https://perma.cc/GHW6-F9ZY (select "View the live page" at the top of the perma link for a live view).

369. *See, e.g.*, Fred Barbash & Deanna Paul, *The real reason the Trump administration is constantly losing in court*, WASH. POST (Mar. 19, 2019), https://perma.cc/LQB5-7KLB ("Federal judges have ruled against the Trump administration at least 63 times over the past two years, an extraordinary record of legal defeat that has stymied large parts of the president's agenda on the environment, immigration and other matters. In case after case, judges have rebuked Trump officials for failing to follow the most basic rules of governance for shifting policy, including providing legitimate explanations supported by facts and, where required, public input."). The Institute for Policy Integrity at the New York University School of Law found that the Trump administration has lost 87% of challenges to its regulations, guidance documents, and agency memoranda. *See Roundup: Trump-Era Agency Policy in the Courts*, Inst. Pol'y Integrity (Sep. 23, 2020), https://perma.cc/ADT8-BFWK (finding Trump administration has lost 87% of challenges to its regulations guidance documents, and agency memoranda); *see also* Samantha Gross, *What is the Trump administration's track record on the environment?*, BROOKINGS (Aug. 4, 2020), https://perma.cc/58WL-VMYN.

370. *See, e.g.*, Physicians for Social Responsibility v. Wheeler, 2020 WL 1921539 (D.C. Cir. 2020) (striking down an EPA directive prohibiting scientists in receipt of certain EPA grants from serving on EPA's federal advisory committees). *See* Scott Pruitt, *Strengthening and Improving Membership on EPA Federal Advisory Committee* (Oct. 31, 2017), https://perma.cc/NA77-QKPK; *see also* Fred Barbash & Deanna Paul, *The Real Reason the Trump Administration is Constantly*

important Trump policy reversals related to climate change—including the new powerplant, fuel efficiency, and methane standards—is still pending.[371]

At the time of writing, Joe Biden has won the 2020 presidential election, but has yet to be sworn in as President. The results of the election are hugely consequential for many reasons—because of the covid-19 pandemic and the economic havoc it has wreaked, but also because of the impact on federal climate policy. Had President Trump won re-election, the litigation over his climate change rules would have played out. The D.C. Circuit Court of Appeals, and perhaps the Supreme Court, would have decided, for example, whether the Trump EPA's narrow view of its authority to regulate existing powerplants within the fence line is the *only* correct view of the Clean Air Act, and likely would have ruled on the administration's theory that California is preempted from regulating transportation sector greenhouse gases.

While these issues may one day reach the courts, the Department of Justice in the incoming Biden administration will, no doubt, request that pending litigation be held in abeyance until the agencies can reconsider the underlying rules.[372] And presumably, based on his campaign positions, President Biden will reverse the Trump reversals, shifting back to a more ambitious greenhouse gas regulatory

Losing in Court, WASH. POST (Mar. 19, 2019), https://perma.cc/LQB5-7KLB (describing administration losses and highlighting environmental cases).

371. On October 8, 2020, the D.C. Circuit heard oral argument in the challenge to EPA's rescission of the Clean Power Plan and its replacement with the Affordable Clean Energy Rule. *See* Order, Am. Lung Ass'n v. EPA, No. 19-1140 (D.C. Cir. Aug. 3, 2020). Other challenges are still being briefed at the time of writing, such as litigation over EPA & NHTSA's SAFE Vehicles Rule. *See* California v. Wheeler, No. 20-01167 (D.C. Cir. May 27, 2020); Order, Union of Concerned Scientists v. NHTSA, No. 19-1230 (D.C. Cir. May 20, 2020) (briefing completed Oct. 27, 2020). EPA Methane Rollbacks were finalized in September 2020, *see* Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, 85 Fed. Reg. 57,018 (Sep. 14, 2020) (codified in 40 C.F.R. pt. 60), Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration, 85 Fed. Reg. 57,398 (Sep. 15, 2020) (codified in 40 C.F.R. pt. 60), and are facing challenges in the D.C. Circuit. EDF v. Wheeler, No. 20-01359 (D.C. Cir. Sep. 14, 2020). BLM's 2018 Revision Rule, rescinding the bulk of the 2016 Methane Waste Prevention Rule, was vacated by the Northern District of California. California v. Bernhardt, No. 4:18-cv-05712 (N.D. Cal. July 15, 2020). This decision has revived litigation over the 2016 Rule, which will come into effect on October 13, 2020, unless it is stayed or vacated by another court before that date. Order Lifting Stay, Wyoming v. U.S. Dep't of the Interior, No. 2:16-CV-00285 (D. Wyo. July 21, 2020) (briefing completed Sep. 4, 2020); BLM, *Methane & Waste Prevention Rule*, https://perma.cc/XB7V-PCH2.

372. Courts have historically acceded to such requests. *See, e.g.*, Order Granting Abeyance, West Virginia v. EPA, No. 15-1363 (D.C. Cir. Apr. 28, 2017) (involving challenge to CPP and granted even after oral argument); Order Granting Abeyance, Am. Petrol. Inst. v. EPA, No. 13-1108 (D.C. Cir. May 18, 2017) (involving challenge to oil and gas methane standards).

program.[373] The new administration will be looking to do so while minimizing legal risks, and preventing, to the extent possible, the adverse outcomes described above.

CONCLUSION

I. The Limits of Agency Power

The first lesson from this account is that EPA's handling of climate change essentially tracks congressional and presidential politics, which should not be surprising, since executive branch agencies are creatures of statute, answerable to congressional oversight committees, the president, and the courts. During the 1970s and 1980s, the agency conducted research into the greenhouse effect at a time when both Congress, and the presidents of that era, viewed the issue as longer-term. In the Clinton administration, EPA developed voluntary initiatives to reduce greenhouse gases; supported the administration's work to negotiate the Kyoto Protocol; and, toward the end of the second term, issued a legal opinion asserting regulatory authority over greenhouse gases. But realistically, even in the late 1990s, EPA was in no position to take the next step and set standards: The White House had lost the battle on the Kyoto Protocol, and congressional opposition was fierce. Whatever momentum was building at the end of the Clinton administration would require a Gore presidency to come to fruition. That hope was extinguished by George W. Bush, who very conspicuously abandoned the climate issue.

The Supreme Court's 2007 ruling in *Massachusetts v. EPA* shifted the momentum again by confirming that climate change fit within EPA's mission, opening the door to greenhouse gas regulation. Still, it took a committed president to back the agency with his own political capital to move federal policy a quantum leap forward. Obama made clear that he was prepared to use executive power to reduce greenhouse gases if Congress did not act, and he made good on that commitment by the end of his two terms.[374] As a result, for a time, the

373. *The Biden Plan for a Clean Energy Revolution and Environmental Justice*, https://perma.cc/Q47D-VWD8; *The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*, https://perma.cc/WE7K-5KPC.

374. *See* Massachusetts v. EPA, 549 U.S. 497 (2007) (holding that greenhouse gases are pollutants under the Clean Air Act and rejecting EPA's reasons for refusing to make the threshold endangerment finding under Clean Air Act § 202). For a comprehensive account of the *Massachusetts v. EPA* litigation see LAZARUS, *supra* note 193.

Clean Air Act would serve as the U.S. government's most potent instrument for tackling climate change.[375]

The evolution toward regulating greenhouse as pollutants may seem entirely natural in retrospect, but as this account makes clear, it was not inevitable. The EPA administrators from the 1970s, 80s, and 90s whom I interviewed for this article—without in any way diminishing the importance of climate change—said that they had other pressing issues to manage when taking over the agency and that existing statutory mandates, court deadlines, budget imperatives, and other near-term crises dominated their tenures.[376] Climate change seemed abstract and theoretical compared to many other concrete and compelling environmental problems, like chemical soups seeping into people's basements, pesticides poisoning the food supply, deadly local air pollution, and highly polluted rivers catching on fire. Stratospheric ozone depletion and acid deposition had more immediate and visible consequences and commanded more urgent attention.

A number of administrators who led the agency over the decades, both Republican and Democratic, deserve credit for the things they *did* do, which directly or indirectly helped to lay the foundation for EPA to take a leadership role on climate. Lee Thomas courageously advocated within President Reagan's cabinet for the Montreal Protocol, which set a precedent for international environmental cooperation and helped to cultivate expertise in the agency that would later prove critical on climate policy. The agency's experience on ozone depletion helped EPA to build crucial relationships with the State Department, which would bear fruit in later international negotiations on climate. Bill Reilly, a natural globalist and big thinker, pressed hard for a stronger U.S. commitment to the Rio Convention, despite concerted efforts by senior White House aides to torpedo his efforts. That agreement launched the international process that would ultimately lead, after twists and turns, to the 2015 Paris Agreement.

In the Clinton administration, a fast-thinking Carol Browner, put on the spot in a hostile congressional hearing, answered yes to the

375. Over the course of two terms, the agency deployed its authority under the Clean Air Act to issue the first federal standards for greenhouse gas emissions from both the transportation and electric power sectors, which represented at the time nearly two-thirds of the economy's emissions. These steps also helped to create the domestic foundation for the U.S. pledge to the international climate change accord known as the Paris Agreement, signed by most of the world's governments in 2015.

376. In virtually every administration, EPA administrators took over the agency only to encounter some crisis. This includes Love Canal, the Bhopal disaster, the Exxon Valdez oil spill, the 9/11 terrorist attacks, the BP Deepwater Horizon Oil Spill, and more.

surprise question whether EPA had authority over carbon dioxide—even before she had a legal opinion to that effect. Although Browner herself had prioritized regulating conventional pollutants during her tenure, her instinctive reaction to Delay's provocation was a crucial first step toward EPA ultimately issuing the first federal rules to regulate greenhouse gases, though no one at the time, including Browner, imagined how that process might unfold.

Christine Todd Whitman advocated for a "four pollutant bill" to regulate CO_2 from the power sector and fought to restore U.S. leadership in international climate negotiations but was blocked by the White House. Lisa Jackson repaired the all-important "endangerment finding," the scientific basis and legal predicate for regulating, and presided over the first federal greenhouse gas rules in the United States. Her successor, Gina McCarthy, built on that beginning, with the support of the White House, to fully leverage the power of the Clean Air Act.

These administrators might be faulted for not doing more, but as we have seen, they were constrained by the political contexts of their time. It is a lesson: executive branch agencies in the United States' constitutional system are creatures of statute, answerable to their congressional overseers, the president, and the courts. They cannot afford to stick their necks out too far for fear of losing their heads.

II. Climate Regulation versus Climate Legislation

The second lesson is that regulation, while a powerful tool, is less durable than legislation. It is typical to see regulatory pendulum swings between administrations of different parties—with Democratic administrations tending to support stronger environmental regulation that Republican administrations describe as too burdensome and tend to roll back. These swings are possible because courts have traditionally afforded significant—though not unbounded—discretion to agencies to administer the statutes Congress has entrusted to them, including by filling gaps, ambiguities and silences, on the theory that Congress has explicitly or implicitly delegated that power to agencies, and not to courts, in the first instance, and that both agency expertise and democratic accountability norms also support allowing agencies certain interpretive leeway.[377] Reviewing courts also generally allow agencies significant room to make policy decisions—such as setting

377. *See* Chevron U.S.A. v. Nat. Res. Def. Council, 467 U.S. 837 (1984) (explaining when an agency's interpretation of a statute should receive deference).

regulatory standards more or less stringently—subject to review only for arbitrariness. And agencies may pursue their enforcement priorities largely as they see fit.[378] Due to these doctrines, agency policies can shift significantly from one administration to the next. Regulatory standards can tighten, only to loosen again, every four to eight years. The Trump administration's deregulatory program was an exaggerated version of this dynamic, and it highlights the vulnerability of agency rules to reversal. Executive power alone is an unstable basis for climate policy.

Agencies like EPA, in particular, face rigorous judicial scrutiny as they seek to adapt old laws to new developments, which they believe fall within their jurisdiction and must be addressed as part of their mission but which Congress did not fully anticipate or design for.[379] The Supreme Court has increasingly taken a more skeptical posture toward deferring to agencies in such instances, viewing it as more appropriate to send what they consider to be major questions of social and economic importance back to Congress for a clear statement of its views.[380] While entirely sensible-sounding on its face, this theory of interpretation can frustrate the goals of broadly-framed statutes adopted by an earlier enacting majority and disable agencies from doing all but the most incremental things. And because it is hard to pass legislation—and getting ever harder in an era of unprecedented partisanship—this approach, adopted systematically, is a one-way ratchet to regulatory stasis.

EPA became so central to U.S. climate policy because Congress refused to act. The Supreme Court's decision in *Massachusetts v. EPA* and the follow-on case *American Electric Power v. Connecticut* ratified the agency's authority to regulate greenhouse gases.[381] Yet the

378. *See* Motor Vehicles Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 42 (1983) (emphasizing that agencies must be given "ample latitude" to adapt policies to changing circumstances); Heckler v. Chaney, 470 U.S. 821, 831–32 (1985) (discussing presumption of unreviewability for agency decision not to enforce).

379. *See, e.g.*, FCC's Net Neutrality Rule, Protecting and Promoting the Open Internet, 80 Fed. Reg. 19,737 (Apr. 13, 2015) (codified at 47 C.F.R. pt. 1, 8, 20). The FCC has to adapt the 1996 Telecom Act to deal with modern challenges posed by the internet and must classify the internet using categories created before it existed. *See id.* at 19,744 (reclassifying broadband Internet access service as a telecommunications service under Title II of the Communications Act).

380. *See e.g.,* FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120 (2000); Util. Air Regulatory Grp. v. EPA, 573 U.S. 302 (2014).

381. Am. Elec. Power Co. v. Connecticut, 564 U.S. 410, 424 (2011) (finding Clean Air Act's delegation of authority to EPA to regulate greenhouse gases displaced federal common law public nuisance claims for harms from climate change).

flexibility EPA has to manage greenhouse gases may be shrinking because the Court's composition has changed. The majority of Justices on the Court now appear to adhere to a brand of textualism that requires agencies to root every exertion of regulatory authority in clear and explicit statutory text. The Court has increasingly portrayed agencies as dangerous behemoths, with vast regulatory powers that must be checked to a greater extent by the courts.[382] It will be harder, going forward, for a president wanting to act on climate change to use executive power in bold ways, such as interpreting existing statutes like the Clean Air Act expansively. In the absence of congressional action, the Supreme Court will have the last say on federal climate policy. As a result, perhaps the strongest blow President Trump will have dealt to climate policy, is his appointment of three conservative Justices who are skeptical of the administrative state.[383]

382. *See* City of Arlington, Tex. V. FCC, 133 S. Ct. 1863, 1875 (2013) ("Where Congress has established a clear line, the agency cannot go beyond it; and where Congress has established an ambiguous line, the agency can go no further than the ambiguity will fairly allow."); *see also* Gutierrez-Brizuela v. Lynch, 834 F.3d 1142, 1149 (10th Cir. 2016) (Gorsuch, J. concurring) ("But the fact is *Chevron* and *Brand X* permit executive bureaucracies to swallow huge amounts of core judicial and legislative power and concentrate federal power in a way that seems more than a little difficult to square with the Constitution of the framers' design. Maybe the time has come to face the behemoth."). In recent years, the Court has shown an openness to striking down statutes that delegate agencies broad power without sufficient legislative guidance. *See, e.g.*, Gundy v. United States. 189 S. Ct. 2116 (2019) The Court has also voted to vastly limit deference to agency interpretations of their own ambiguous rules. *See* Kisor v. Wilkie, 139 S. Ct. 2400, 2415 (2019) (holding that *Auer* deference is limited when agencies interpret their own ambiguous rules). A majority of Justices have also shown a growing antipathy to the idea that agencies should get deference for reasonable interpretations of statutes even after a court has spoken, as long as the court has not precluded the agency's reading. *See* National Cable & Telecommunications Ass'n v. Brand X Internet Services, 545 U.S. 967, 982 (2005) (arguing that if the Court has ruled that there is only one lawful way to read a statute, then that reading blocks a new administration's preferred interpretation).

383. *See, e.g.*, Benjamin J. Hulac, *Environmental Action, Laws May Face New Hurdles on HighCcourt*, ROLL CALL (Sep. 29, 2020), https://perma.cc/FX4T-2GT7; Michael Livermore, *Judge Kavanaugh and the Environment*, SCOTUSBLOG (July 18, 2018 1:27 PM), https://perma.cc/R4ZP-G7VR; Peter J. Henning, *Gorsuch Nomination Puts Spotlight on Agency Powers*, N.Y. TIMES (Feb. 6, 2017), https://perma.cc/J4UG-48FC; Evan Bernick, *Judge Amy Coney Barrett on Statutory Interpretation: Textualism, Precedent, Judicial Restraint, and the Future of Chevron*, YALE J. REGUL. NOTICE & COMMENT BLOG (July 3, 2018), https://perma.cc/7NMM-VXS4. Jody Freeman, *What Amy Coney Barrett's Confirmation Will Mean for Environmental Law and Joe Biden's Climate Plan*, Vox (Oct. 21, 2020 12:30 PM), https://perma.cc/4BJP-BQN2.

III. The Connection between Domestic and International Climate Policy

A third lesson from this account is the tight linkage between domestic and international climate policy.[384] Climate change seems to have been viewed by EPA throughout the 1980s and 1990s as a matter appropriately addressed by an international treaty akin to the Montreal Protocol. Once ratified, a treaty would, in turn, require implementing legislation, which would lead, ultimately, to domestic regulation. That view—that an international solution would come first and drive domestic policy—largely persisted into the Clinton administration.

But EPA evolved in its thinking and came to see climate change as properly falling within its existing authority. That period, toward the tail end of the Clinton years, during which EPA began to *consider* potential regulatory tools, turns out, in retrospect, to be a crucial pivot point in the history of American and, indeed, global climate policy.[385] After the Supreme Court decided *Massachusetts v. EPA*, EPA became the federal agency with the greatest potential to mitigate greenhouse gas emissions via regulation. The Obama EPA delivered on that promise, by making the endangerment finding, and issuing federal greenhouse gas standards for the transportation and power sectors.

This development coincided with a significant shift in U.S. diplomatic strategy: in the years after the Kyoto Protocol, it became clear that to attract broad-based support, a new approach to an international climate accord would be necessary, one that could accommodate the distinctions in national circumstances among the world's major economies. Rather than Kyoto's stark divide between Annex I ("developed") countries, which were subject to targets and timetables, and non-Annex I ("developing") countries, which were

384. Asked about what lessons might be drawn from the UNFCCC negotiations, Reinstein said, "Work the domestic process simultaneously with, not after, you do your negotiations. Know what you can deliver, what you can actually ratify and implement honestly before you agree to anything. Know how much it's going to cost, who's going to pay. . .And consult with the people who are going to be affected, who are the ones whose businesses and lives are going to be affected, and the people who represent them in the [C]ongress." Interview by Charles Stuart Kennedy of Robert Reinstein & Stephanie Kinney (Oct. 5, 2010) at 56

385. The Clean Air Act of 1990 was critical to the U.S.'s ability to ratify the Montreal Protocol because "it was the treaty-implementing legislation for the U.S." Interview of Reinstein & Kinney, *supra* note 384, at 31. Targets in original protocol were negotiated simultaneously with industry and Congress so coming home from Montreal, ratification was guaranteed. All of the stakeholders had already been included in the process. Not so with climate. Climate change is not like the ozone issue, where there were "eight chemicals, 90% of them manufactured by six companies in the world." *Id.*

exempted from new commitments, a more inclusive agreement would need to be flexible, allowing for a variety of national situations.[386] What emerged was a "pledge and review" approach, which allowed each Party to design its own commitment, in light of its unique domestic capacities and political context. As a result, the relevant question for the U.S. became, what could be achieved *domestically* to provide the basis for an international pledge? This switch from a top-down to a bottom-up process made EPA essential. Now that the agency could harness the Clean Air Act, it had the regulatory power to deliver significant emissions reductions toward the U.S. pledge.

This experience shows that domestic action can drive international climate progress rather than the other way around. The more we are prepared to do, the more leverage we will have with other nations. By the same token, our credibility internationally hinges on our ability to deliver meaningful emission reductions through domestic policies. What we pledge to the international community, and when we can pledge it, will need to be timed to coincide with, and aligned with, our domestic political agenda. With a conservative Supreme Court likely to cabin EPA's power to regulate greenhouse gases going forward, it will be more challenging than ever to generate the scale of reductions necessary using only the president's executive authority. (Even the additional contribution from states, cities, and leading private sector companies, cannot accomplish the deep, economy-wide reductions that ambitious national policy could.) Congress must pass climate and clean energy legislation, if we hope to strengthen the Paris Agreement.

IV. Climate Change is Hard

The final lesson is that global climate change is an unprecedented policy challenge with no ready analog. Despite a passing resemblance, it is comparable neither to stratospheric ozone depletion nor acid deposition, both environmental policy challenges of international scope and consequence, but which aroused more intense public concern more quickly and for which there were readier solutions.[387]

386. *See generally,* Susan Biniaz, SABIN CTR. FOR CLIMATE CHANGE L., *I Beg to Differ: Taking Account of National Circumstances under the Paris Agreement, the ICAO Market-Based Measure, and the Montreal Protocol's HFC Amendment* (2017), https://perma.cc/7GTP-4A2S.

387. For example, in the case of ozone depletion, the risk of skin cancer was a direct prod to action: scientists had produced "smoking gun" evidence linking ozone deterioration to chlorine gases traceable to everyday consumer products like freon used in refrigeration and aerosols used in deodorant and hairspray; and major industry players like Dupont, ultimately supported a phase-out of ozone-depleting substances once they had developed substitutes ahead of their European competitors. Interview of Reinstein & Kinney, *supra* note 384, at 72. For acid

Global warming is, by comparison, a more formidable problem with much farther-reaching economic, social, political, and strategic implications.

It is true that the basic science of the greenhouse effect was understood by the American political elite in the 1970s. Yet awareness alone was insufficient to make the problem ripe for policymaking. The implications of the science took time to gel and disseminate beyond a small cadre of informed experts.[388] Second, while congressional hearings on climate change began as early as the 1970s and intensified in the 1980s,[389] and although a subset of prominent members of Congress—with names like Baucus, Bentsen, Chaffee, Durenburger, Gore, Leahy, Mitchell, Stafford, and Wirth—pressed for policies to address the problem, introducing legislation is not the same as passing it. It overstates things to suggest that Congress was on the precipice of bold action then. Congress was only moved to call for more research, not adopt a legislative plan to address global warming's root causes.[390]

The economic and technological context of that time also tells part of the story. In the late 1980s, the nation's fleet of fossil fuel plants, which represented billions of dollars of utility sector investments, was a mix of mid-life and newer units, with many plants having come online in the 1970s.[391] The Carter administration had proposed, and Congress had adopted, an energy policy that specifically subsidized, and in some

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deposition, the number of sources was relatively few, there was available technology to control sulfur dioxide and nitrogen oxides, and the solution required only regional cooperation. *But see* Richard Benedick, *Lessons from the Ozone Hole*, 16 EPA J., Mar./Apr. 1990, at 41, 41–43 (1990) (arguing that despite being more complex, global warming shares some attributes of the threat to the ozone layer).

388. Pomerance, who helped to organize early congressional hearings working with staffers and members on Capitol Hill, recalled that "in 1979 nobody who even knew term the greenhouse effect. It took time to get this stuff out. It didn't gel for a long time." Telephone Interview with Rafe Pomerance, Former Deputy Assistant Secretary of State for Environment and Development (Mar. 12, 2019).

389. The first congressional hearings dedicated to climate change were in 1976. *See generally The National Climate Program Act: Hearings Before the Subcomm. on* the Environment and the Atmosphere of the H. Comm. on Science and Technology, 94th Cong. 1 (1976). There were also hearings in 1977, 1979, 1981, 1982, 1984, 1985, 1986 (at which EPA officials testified), 1987, 1988, and 1989. James Hansen, the NASA scientist testified in 1982, 1986, and 1988 where he made his famous statement that he was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere, and that it is "already happening now." Philip Shabecoff, *Global Warming Has Begun, Expert tells Senate*, N.Y. TIMES (June 24, 1988), https://perma.cc/4GEX-3C8G.

390. *See, e.g.*, Global Climate Protection Act of 1987, Pub. L. No. 100-204, 101 Stat. 1408, 1408–09 (1987) (establishing a policy to conduct more research on climate change).

391. *Most Electric Generating Capacity Additions in the Last Decade Were Natural Gas-Fired*, U.S. ENERGY INFO. ADMIN. (July 5, 2011), https://perma.cc/6ZQT-9QSV.

circumstances required, coal use.[392] Coal supplied over half of the nation's electric power,[393] and the electricity sector was about to embark on a process of deregulation, which, while it would ultimately help to integrate renewable energy into the nation's grids, initially created new markets for and boosted the profitability of cheap coal.[394] Hydraulic fracturing and horizontal drilling had yet to be deployed at scale to access the nation's abundant natural gas reserves, which would make relatively cleaner natural gas more competitive than coal for electric power.[395] A modest price on carbon, had Congress been able to produce it, would have been helpful in promoting alternatives. But renewable energy technologies, which had been rapidly developing for only about ten years, still faced technical, institutional, and economic barriers to broad deployment.[396] The country's transportation sector was 97% dependent on oil, with not a glimmer of the electric vehicle penetration potential we now see on the horizon.[397] Oil prices in the 80s and 90s were low, which did not help the quest for alternatives. It was a very different era.

Some of the delay must be attributed to the doubt and confusion sown by organizations like the Global Climate Coalition, which worked assiduously to oppose regulation of greenhouse gases both domestically and internationally. Oil and gas industry researchers had conducted their own climate modeling in the 1970s and 1980s and

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392. *See e.g.,* Powerplant and Industrial Fuel Use Act of 1978, 42 U.S.C. §§ 8341(b), 8342(a), 8343; *see generally,* Erik Dryburgh, *Coal Conversion and the Powerplant and Industrial Fuel Use Act of 1978*, 8 Ecology L. Q. 774, 776 & nn. 15–17 (1980).

393. *September 2020 Monthly Energy Review*, U.S. ENERGY INFO. ADMIN. 129 Table 7.2a (Sep. 24, 2020), https://perma.cc/7BBB-3FTT.

394. Between 1988 and 1990, FERC made several decisions approving market-based rates, with only some assurances that the seller and any of its affiliates lack market power or mitigate any existing market power. *See, e.g.*, Ocean State Power, 44 FERC 61,261 (1988); Commonwealth Atlantic Limited Partnership, 51 FERC 61,368 (1990); Citizens Power & Light Company, 48 FERC 61,210 (1989)*; see also* Energy Policy Act of 1992, Pub. L. 102-486, 106 Stat. 2776 (codified as amended in scattered sections of U.S.C.)

395. T. Wang, *Cost of Coal and Natural Gas for Electric Generation in the U.S. from 1980 to 2018*, STATISTA (Aug 9, 2019), https://perma.cc/9M37-Z3K9

396. *See, e.g.,* Stanley R. Bull & Lynn L. Billman, *Renewable Energy: Read to Meet Its Promise?*, NATIONAL RENEWABLE ENERGY LABORATORY (Dec. 7, 1998), https://perma.cc/W8HF-LEFZ.

397. While electric vehicles were invented in the 19th Century and were a significant portion of the early American vehicle market at the beginning of the 20th Century, they had all but disappeared by the 1930s. There was a resurgence of interest in electric vehicles in the 1970s, but significant market penetration began only after a renaissance in the 1990s. Rebecca Matulka, *The History of the Electric Car*, DEPT. OF ENERGY (Sep. 15, 2014), https://perma.cc/8ZBN-GUAZ; *see also generally,* DAVID KIRSCH, THE ELECTRIC VEHICLE AND THE BURDEN OF HISTORY (2000).

participated in domestic and international scientific meetings. Privately, they agreed with the scientific consensus.[398] Yet, once regulation seemed more likely, the fossil fuel industry began a campaign of obfuscation and obstruction aimed at delay.[399] Exxon (later ExxonMobil), which played a leading role in the coalition, invested heavily in casting doubt about the validity of climate science that its own internal documents revealed to be solid. These efforts by all accounts succeeded in confusing the public, helped to politicize the issue, and gave members of Congress an excuse not to act, even in the face of ever-more compelling national and international scientific assessments indicating that the global climate was warming primarily as a result of human causes.[400]

Finally, climate change poses a profound global coordination challenge. The fact that the developed world bears a disproportionate share of historical responsibility for the problem, while the developing world will be responsible for the majority of emissions going forward, raises the vexing question of how to equitably allocate the burden of reducing emissions, especially when access to adequate energy is still a

398. The history of Exxon conducting leading climate change science in the 1970s and 1980s, and its pivot to undermining the science was described in a six-part series published by *Inside Climate News* based largely on primary sources including Exxon's own internal documents. *See*, Neela Banerjee, Lisa Song & David Hasemyer, *Exxon: The Road Not Taken*, INSIDE CLIMATE NEWS (Sept. 16, 2015), https://perma.cc/2GUK-AXRP ("Since the late 1970s, Exxon scientists had been telling top executives that the most likely cause of climate change was carbon pollution from the combustion of fossil fuels, and that it was important to get a grip on the problem quickly. Exxon Research & Engineering had launched innovative ocean research from aboard the company's biggest supertanker, the Esso Atlantic. ER&E's modeling experts, by the early 1980s, had confirmed the consensus among outside scientists about the climate's sensitivity to carbon dioxide."). Similar findings were reached independently by a team based at the Columbia Journalism School in partnership with the Los Angeles Times. Sara Jerving, Katie Jennings, Masako Melissa Hirsch & Susanne Rust, LA TIMES (Oct. 9, 2015), https://perma.cc/2A2G-Q3KH.

399. *See generally* NAOMI ORESKES & ERIK M. CONWAY, MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING (2010)*; see also* Neela Banerjee, *Exxon's Oil Industry Peers Knew About Climate Dangers in the 1970s, Too*, INSIDE CLIMATE NEWS (Dec. 22, 2015), https://perma.cc/HL7F-83AW; Kathy Mulvey & Seth Shulman, *The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation*, UNION OF CONCERNED SCIENTISTS (July 2015), https://perma.cc/89CD-R5W7.

400. On the evolution of the science, it took until Second IPCC Assessment for the international body to announce without reservation the link between human activity and the warming effect. IPCC, IPCC SECOND ASSESSMENT: CLIMATE CHANGE 1995 xi (1995) ("[C]arbon dioxide remains the most important contributor to anthropogenic forcing of climate change; projections of future global mean temperature change and sea level rise confirm the potential for human activities to alter the Earth's climate to an extent unprecedented in human history; and the long time-scales governing both the accumulation of greenhouse gases in the atmosphere and the response of the climate system to those accumulations, means that many important aspects of climate change are effectively irreversible.").

challenge in many parts of the world. The hard question is how can we efficiently, effectively and equitably replace a massive, costly, and entrenched global energy system on which the world's economies currently depend?

We are in a better position to answer that question today, with alternative energy technologies rapidly developing and dropping in price;[401] modern grids that possess the flexibility to integrate a significant share of renewable energy and demand response—and which, with the right scale of investment, could ultimately support a largely electrified transportation fleet;[402] and energy storage research continuing apace.[403] The public has now also suffered or witnessed catastrophic event after catastrophic event—historic floods, hurricanes, and fires—which, it can be shown, are made worse by rising global temperatures. American industry generally, and the oil and gas industry in particular, recognizes that they can no longer just say no.[404] The 2020s are not the 1980s. We are ready, as a society, to tackle climate change.

Going forward, EPA's role in U.S. climate policy and greenhouse gas regulation policy is uncertain. Congress may eventually adopt a carbon tax, set an economy-wide cap on carbon, or take a sector-by-sector approach to reducing emissions. But until Congress acts, EPA will remain the default regulator, along with the leading states. If this history teaches anything, it is that EPA career staff, dogged and professional, will keep at it, within the constraints allowed by the president, and subject to limits imposed by the federal courts.

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401. Mike Scott, *Solar And Wind Costs Continue To Fall As Power Becomes Cleaner*, FORBES (Apr. 30, 2020 10:00 AM), https://perma.cc/C543-6F89; *Average U.S. Construction Costs for Solar and Wind Generation Continue to Fall*, U.S. Energy Info. Admin. (Sept. 16, 2020), https://perma.cc/WK57-BGYR.

402. Michael I. Henderson, et al., *Electric Power Grid Modernization Trends, Challenges, and Opportunities*, IEEE (Nov. 2017), https://perma.cc/8T5T-8PLL; Mike O'Boyle, *How A Smart Grid Relies On Customer Demand Response To Manage Wind And Solar*, FORBES (Mar. 13, 2017 1:03 PM), https://perma.cc/3ZLN-9N43.

403. *See generally, Energy Storage Research*, NAT'L RENEWABLE ENERGY LAB'Y, https://perma.cc/2ZTS-NMLC.

404. There is increasing bipartisan support among leading U.S. companies, including oil and gas companies, for a carbon tax. *CLC's Mission*, CLIMATE LEADERSHIP COALITION, https://perma.cc/5QCL-T3MN.