

Bostock and the End of the Climate Change Double Standard

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Greenhouse gases have never been given their rightful place at the regulatory table. Despite the statute's text and legislative history, anti-regulation groups have consistently argued that the modern Clean Air Act does not apply to these contaminants. In Massachusetts v. EPA, the Court held that greenhouse gases are air pollutants for the purposes of the Clean Air Act. Thereafter, the Environmental Protection Agency found that greenhouse gases "endanger" public health and welfare and, thus, could be regulated under the Act. These two events should have definitively resolved the issue. Instead, greenhouse gases have been subjected to a double standard and treated as regulatory pariahs. Perhaps motivated by the presence of four dissenters in Massachusetts v. EPA, opponents of greenhouse gas regulation have pushed hard during the last decade to limit the reach of that case, even though no such limitation could fairly be derived from the decision's text. They have also raised ill-defined and amorphous "major question" roadblocks that are at odds with the structure of the Clean Air Act.

The Supreme Court's decision in Bostock v. Clayton County opened the door to ending this pernicious greenhouse gas exceptionalism, and ensured that, going forward, greenhouse gases are treated like all other pollutants that meet the requirements for regulation. Although the majority and the two dissents in Bostock set forth different interpretive approaches for how to deal with a half-century-old statute, the interpretive reasoning of each approach, if applied to the Clean Air Act, reinforces the appropriateness of greenhouse gas regulation. Guided by the blueprint of all three Bostock opinions, this Article performs a deep dive into the legislative materials surrounding the enactment of the Clean Air Act of 1970, uncovering a treasure trove of sources that had not previously been part of the public discourse. It shows how, under the interpretive approach of each of the three opinions, greenhouse gases are

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unquestionably pollutants for the purposes of the Clean Air Act. Because the approaches in the majority and dissents in Bostock—and thus a majority of the current Court—all point in the same direction, the era of greenhouse gas exceptionalism should now be over.

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I. INTRODUCTION

Greenhouse gases,¹ the most significant drivers of climate change, are today’s most pressing environmental challenge.² Opponents of

1. Greenhouse gases comprise a class of atmospheric constituents that trap radiation emitted by the Earth’s surface, causing the troposphere and surface temperatures to warm. *See Which Gases are Greenhouse Gases?*, AM. CHEM. SOC’Y, available at <https://perma.cc/J822-JEXX> (last accessed Jan. 6, 2021).

2. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT: SUMMARY FOR POLICYMAKERS 4 (2018),

greenhouse gas regulation have, for decades, aggressively litigated the question of whether, and to what extent, greenhouse gases fall within the regulatory reach of the Clean Air Act. This should never have been a serious question in the first place, and now the Supreme Court’s significant statutory interpretation decision in *Bostock v. Clayton County*,³ should put it to rest for good. *Bostock* involved the interpretation of another half-century-old statute, and the interpretive approaches of all the Justices—both in the majority and the dissent—should firmly establish that greenhouse gases are proper subjects for regulation under the Clean Air Act, just like other air pollutants.

When Congress enacted the modern version of the Clean Air Act in 1970,⁴ it decided not to name the specific pollutants that would be subject to regulation so that the Environmental Protection Agency (EPA)—the agency charged with administering the statute—could make determinations over individual substances as science developed over time.⁵ Instead, Congress defined a regulatory trigger consisting of two elements: First, the substance subject to regulation must be an “air pollutant,” and, second, it must “be anticipated to endanger public health or welfare,”⁶ with “effects on welfare” explicitly defined

available at <https://perma.cc/9ZJ3-BQYZ>; *see also* *Climate Change Indicators: Greenhouse Gases*, EPA, *available at* <https://perma.cc/T8UY-HGNX> (last accessed July 27, 2020) (“Greenhouse gases from human activities are the most significant driver of observed climate change since the mid-20th century.”). *See also* WORLD METEOROLOGICAL ORG., WMO STATEMENT ON THE STATE OF THE GLOBAL CLIMATE IN 2019 4 (2020), *available at* <https://perma.cc/KK6Y-8BA9> (statement of United Nations Secretary-General António Guterres); *see also* *Global Issues: Climate Change*, UNITED NATIONS, *available at* <https://perma.cc/DU58-U56U> (last accessed July 27, 2020) (“Climate Change is the defining issue of our time and we are at a defining moment.”).

3. 140 S. Ct. 1731 (2020).

4. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970).

5. For example, the Senate Report noted that the criteria pollutants would likely expand beyond those already designated by the EPA: “Other contaminants of broad-national impact include fluorides, nitrogen oxides, polynuclear organic matter, lead, and odors. Others may be added to this group as knowledge increases. . . . If the Secretary subsequently should find that there are other pollution agents for which the ambient air quality standards procedure is appropriate, he could list those.” S. Rep. No. 91-1196, at 8 (1970). The Supreme Court further explained this decision in *Massachusetts v. EPA*, noting “[w]hile the Congresses that drafted § 202(a)(1) might not have appreciated the possibility that burning fossil fuels could lead to global warming, they did understand that without regulatory flexibility, changing circumstances and scientific developments would soon render the Clean Air Act obsolete.” *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007). *See also* Sarah Alves & Joan Tilghman, *EPA Authority to Consider Cumulative Effects and Cumulative Risk Assessments in Decision Making Under the Clean Air Act*, 28 J. ENVTL. L. & LITIG. 151, 204 (2013), *available at* <https://perma.cc/YSF9-G4MP> (noting that EPA is able to decide “whether to restrict pollutants based on the latest scientific advancements affecting the EPA’s understanding of health effects.”).

6. 42 U.S.C. § 7521(a)(1) (2018) (regulation of mobile sources). For similar formulations, *see* § 7408(a)(1)(A) (2018) (National Ambient Air Quality Standards

in the statute as including “effects on . . . climate.”⁷ Pollutants that meet both these requirements are subject to regulation under a variety of different Clean Air Act programs.⁸

With respect to the first element, the statute defined “air pollutant” simply as “an air pollution agent or combination of such agents.”⁹ In the 1977 amendments, Congress added an additional clause: “which is emitted into or otherwise enters the ambient air.”¹⁰ The statute does not (and did not) provide a definition of “air pollution,” but according to a standard dictionary definition, air pollution consists of “harmful substances in the air.”¹¹ In 2007, consistent with the statute’s broad language, the Supreme Court held in *Massachusetts v. EPA* that the term “air pollutant” encompasses “airborne compounds of whatever stripe,” including greenhouse gases.¹²

As to the second, “endangerment” element, while the scientific link between greenhouse gases and negative “effects on climate” may have been sufficiently well understood to support an endangerment finding in 1970,¹³ the matter was fully put to rest by 1990. That year, the Intergovernmental Panel on Climate Change (IPCC)—an organization of governments, including the United States, formed to study the scientific basis for climate change—completed its First Assessment Report.¹⁴ This report found strong scientific evidence for the connection between the emission of greenhouse gases and both climate change and the adverse impacts of climate change.¹⁵

The Clean Air Act’s ordinary meaning, its express reference to “climate” as an element of “welfare,” and the IPCC’s first report should have put an end to any controversy about the regulatory status of greenhouse gases. Instead, fueled by anti-regulatory academics, think tanks, and industry groups, a narrative developed suggesting that, in 1970, Congress was focused on pollutants that had local effects and did not intend to extend the Clean Air Act’s regulatory reach to

(NAAQS)), and § 7411(b)(1)(A) (2018) (New Sources Performance Standards (NSPS)).

7. 42 U.S.C. § 7602(g) (2018).

8. *See, e.g.*, 42 U.S.C. §§ 7411(b) (2018), 7411(d) (2018) (emissions standards for existing stationary sources), 7412 (2018) (emissions standards for mobile sources).

9. *See* Clean Air Act Amendments of 1970 § 15(a)(1), 84 Stat. at 1710.

10. 42 U.S.C. § 7602(g) (2018).

11. *Air Pollution*, CAMBRIDGE DICTIONARY, available at <https://perma.cc/PAT8-2VG4> (last accessed Dec. 4, 2020).

12. *Massachusetts v. EPA*, 549 U.S. at 529.

13. *Infra* Part II.B & C.

14. *About the IPCC*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, available at <https://perma.cc/9RNQ-3FCZ> (last accessed Dec. 4 2020).

15. *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE: THE IPCC IMPACTS ASSESSMENT 1-5 (1990), available at <https://perma.cc/W9GU-RSMA>.

greenhouse gases, despite the clear statutory reference to “climate.”¹⁶ Eventually, in 2007, *Massachusetts v. EPA* rejected the “local pollutant” narrative, dismissing a variety of industry arguments about why regulation was inappropriate given the global nature of greenhouse gases, the legislative activity following the enactment of the Clean Air Act in 1970, and the separate regulatory jurisdiction of other federal agencies.¹⁷ The Court, therefore, established the first of the two elements for regulation, that greenhouse gases are air pollutants for purposes of the Clean Air Act. And, in 2008, shortly following the Supreme Court’s decision, the EPA Administrator determined that greenhouse gases “endanger public health and welfare.”¹⁸ While this proceeding was not finalized before the end of the Bush administration, the Obama administration moved quickly to make the finding official the following year.¹⁹ The D.C. Circuit upheld the finding,²⁰ and the Supreme Court denied certiorari on the endangerment question.²¹ The second element was thus established as well.

That should have definitively resolved the issue. Yet, greenhouse gases are still not treated like other substances that meet the statutory “air pollutant” test and “endanger public health and welfare.” Such substances are often the subject of vigorous debate about the appropriate regulatory stringency,²² but there is never any debate about whether they should be regulated at all. All of this controversy has cast a pall over the regulatory treatment of greenhouse gases and led to a kind of “greenhouse gas exceptionalism,” under which these substances are treated as less deserving—or not deserving at all—of regulatory action.

16. *Infra* Part I.A.

17. *Massachusetts v. EPA*, 549 U.S. at 532 (“Because greenhouse gases fit well within the Clean Air Act’s capacious definition of “air pollutant,” we hold that EPA has the statutory authority to regulate the emission of such gases from new motor vehicles.”).

18. See RICHARD L. REVESZ, ENVIRONMENTAL LAW AND POLICY 588 (4th ed. 2019).

19. See *id.*

20. See *Coal. for Responsible Reg., Inc. v. EPA*, 684 F.3d 102, 117 (D.C. Cir. 2012) (“We ultimately conclude that the Endangerment Finding is consistent with *Massachusetts v. EPA* and the text and structure of the CAA, and is adequately supported by the administrative record.”), *rev’d in part on other grounds sub nom.* *Util. Air Reg. Grp. v. EPA*, 573 U.S. 302 (2014).

21. See *Util. Air Reg. Grp. v. EPA*, 571 U.S. 951 (2013).

22. See, e.g., *Mississippi v. EPA*, 744 F.3d 1334 (D.C. Cir. 2013) (consolidated petitions for review of EPA’s ozone NAAQS, in which one set of petitioners—several states and NGOs—argued that EPA’s rule was not stringent enough, while the other set of petitioners—several states and industry groups—argued that EPA’s rule was too stringent); *Am. Farm Bureau Fed’n v. EPA*, 559 F.3d 512 (D.C. Cir. 2009) (consolidated petitions for review of EPA’s Particulate Matter NAAQS revision, in which similar competing arguments about stringency were raised by opposing groups of petitioners).

Opponents of greenhouse gas regulation, including most Republican state attorneys general, the Trump administration, and anti-regulatory academic and interest groups, have tried to limit the reach of the *Massachusetts v. EPA* holding. For example, because *Massachusetts v. EPA* arose in response to a petition to regulate the greenhouse gas emissions of vehicles,²³ some opponents have suggested that the reach of the ruling might not apply to stationary sources.²⁴ This argument ignores the fifty-year history of the Clean Air Act, which provides no support for distinguishing between pollutants subject to regulation under the statute's mobile source provisions and those subject to regulation under the stationary source provisions.

Opponents have also raised regulation-specific arguments against the most significant effort to regulate the greenhouse emissions of stationary sources: the Clean Power Plan, promulgated during the Obama administration to constrain the emissions of existing power plants.²⁵ In particular, they have argued that regulatory techniques repeatedly used in connection with other pollutants are somehow inappropriate for greenhouse gases.²⁶ They have also argued, invoking the "major questions" doctrine, that the EPA needs explicit statutory authorization to regulate greenhouse gases because of the "vast economic and political significance" of such regulation.²⁷

These arguments advance the view that Congress in 1970 was primarily focused on pollutants that have local effects on human health, and not those that have global impacts on the environment.²⁸ Even though these arguments did not carry the day in *Massachusetts v. EPA*, they were subsequently repurposed and used in the more targeted ways against the regulation of stationary sources.²⁹ These tactics are akin to guerrilla activity undertaken by a defeated army, which, having lost a war, resorts to last-ditch efforts to inflict harm.

Perhaps this activity against greenhouse gas regulation was fueled in part by the Court's division in *Massachusetts v. EPA*, which was a 5-4 decision with Chief Justice Roberts—regarded as the median Justice after the retirement of Justice Kennedy in July 2018 until the appointment of Justice Barrett in October 2020³⁰—joining Justice

23. *Massachusetts v. EPA*, 549 U.S. at 510.

24. *Infra* Part I.B.

25. See Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,707 (Oct. 23, 2015), available at <https://perma.cc/AX2M-C656> [hereinafter Clean Power Plan].

26. *Infra* Part I.C.1.

27. *Infra* Part I.C.2.

28. *Infra* text accompanying notes 48-104.

29. *Infra* Part I.C.2.

30. Alicia Thomson-DeVaux, *Roberts Is the New Swing Justice*, FIFTYTHIRYEIGHT (July 18, 2020), available at <https://perma.cc/8SRH-UYMU>; *The Supreme Court's Chief Justice Is Poised to Decide a Clutch of Controversies*, ECONOMIST (Feb. 17, 2020), available at <https://perma.cc/G9H8-VR66>.

Scalia’s dissent on the statutory issue.³¹ Later, anti-regulation activists were likely further encouraged when the Supreme Court embraced in dicta arguments consistent with greenhouse gas exceptionalism, including “major questions” theories.³²

The Supreme Court’s decision in *Bostock v. Clayton County*,³³ although a seemingly unrelated event, has unexpectedly opened the door to developing legal arguments capable of finally defeating the guerrilla campaign against greenhouse gas regulation. Of course, *Bostock* itself did not directly resolve any issues concerning the legality of greenhouse gas regulation or even mention greenhouse gases; its sole focus was on sex discrimination under the Civil Rights Act. But it dealt with an analogous situation: a half-century old statute that had not been enacted for the primary purpose of addressing a current controversy. The methods of interpretation laid out in the *Bostock* opinions, when applied to the Clean Air Act, could end the double standard affecting greenhouse gases and ensure that, going forward, they are treated like all other pollutants that meet the requirements for regulation.

In the process of answering the question of the civil rights statute’s reach, the *Bostock* majority and the two dissents each set forth multiple interpretive tests, which provide roadmaps for definitively answering the question about the status of greenhouse gas regulation under the Clean Air Act. The majority stresses that the statutory text overrides any considerations beyond the text, that the statutory language at issue should be interpreted according to its ordinary public meaning at the time of the enactment, and that one should be wary about the probative value of post-enactment legislative action.³⁴ The dissenters, in turn, focus on how the reach of the language being interpreted was generally understood at the time of the enactment: Was the concept of “sex discrimination” generally understood to extend to discrimination based on “sexual orientation” or “gender identity”?³⁵ In addition, they pay attention to the legislative history, which, they find “seriously undermines” the Court’s interpretation.³⁶ The dissenters also ascribe different significance to post-enactment events than does the majority.³⁷

If the Justices who wrote the majority and dissenting opinions in *Bostock* follow their respective interpretive approaches, greenhouse gas regulation could have the unanimous support of the Justices who

31. *Massachusetts v. EPA*, 549 U.S. at 549 (Scalia, J., dissenting). Chief Justice Roberts also authored a dissent on the standing of the petitioners. *Id.* at 535 (Roberts, C.J., dissenting).

32. *Util. Air Regulatory Grp.*, 573 U.S. at 324.

33. 140 S. Ct. 1731 (2020).

34. *Id.* at 1737–1739.

35. *Id.* at 1828 (Kavanaugh, J., dissenting).

36. *Id.* at 1776 (Alito, J., dissenting).

37. *Id.* at 1822–1823 (Kavanaugh, J., dissenting).

were then on the Court.³⁸ The *Bostock* Court held, on a 6-3 vote, that Title VII of the Civil Rights Act of 1964, which prohibits “discrimination . . . because of . . . sex,” extends to discrimination on the basis of sexual orientation and gender identity.³⁹ Justice Gorsuch, writing for the majority, argued that it did not matter that Congress might not have specifically focused on these applications of the statutory language at the time of the enactment because the statute “is written in starkly broad terms”—which “guaranteed that [new] applications would emerge over time.”⁴⁰ The analogous argument for regulation of greenhouse gases under the Clean Air Act is even stronger because of the Clean Air Act’s explicit statutory reference to “effects on . . . climate,” which greenhouse gases “endanger;” the Civil Rights Act, in contrast, lacks an explicit statutory reference to the groups that received Title VII protection as a result of the *Bostock* decision. But beyond this straightforward point, and as described below,⁴¹ there is considerable nuance in Justice Gorsuch’s opinion that further supports the appropriateness of greenhouse gas regulation.

Most significant for ending the double standard affecting greenhouse gas regulation is not the *Bostock* majority opinion but the dissents, which shed additional light on how three sitting Justices approach questions about the reach of a half-century-old statute.⁴² As suggested above, divided Supreme Court opinions often fail to bring definitive resolutions to controversial legal issues. But a fair application of the interpretive tests of the *Bostock* dissenters to the legislative materials accompanying the Clean Air Act of 1970 establishes the coverage of greenhouse gases under the Act.

With these interpretive roadmaps in mind, this Article undertakes a thorough review of the legislative materials surrounding the passage of the Clean Air Act of 1970. These include statements by the sponsors of the bills and other legislative leaders, extensive testimony by Executive Branch officials and prominent experts, excerpts of authoritative reports submitted to the record by Senators and Representatives with significant responsibilities for the shepherding of the legislation and by prominent witnesses, and the full documents containing those excerpts.⁴³ Many of the legislative materials relevant to *Bostock*’s various interpretive tests uncovered by this inquiry have never been part of the public discourse surrounding the greenhouse gas controversy, perhaps because the legal

38. Justice Amy Coney Barrett was not on the Court at the time *Bostock* was decided.

39. *Bostock*, 140 S. Ct. at 1737, 1739.

40. *Id.* at 1753.

41. *Infra* Part III.A.1.

42. *See* *Bostock*, 140 S. Ct. at 1754 (Alito, J., joined by Thomas, J., dissenting); *id.* at 1822 (Kavanaugh, J., dissenting).

43. *Infra* text accompanying notes 187-190, 192-196, 200-204, 215-220.

significance of these sources have been less clear before *Bostock*.⁴⁴ These important legislative materials are not mentioned or relied upon in a number of important documents bearing on this subject, including the memorandum of former EPA General Counsel Jonathan Cannon⁴⁵ and the brief of the petitioners in *Massachusetts v. EPA*, the most high-stakes proceeding on this matter. Nor are these materials discussed in the academic literature that has developed around this issue over the last two decades.⁴⁶

When the expanded set of legislative materials is evaluated under the approaches of the *Bostock* majority and that of each of the two dissents, the conclusion is clear. According to the majority's approach, the regulation of greenhouse gases under the Clean Air Act is a fortiori a case for coverage under the statute's plain text. And none of the factors that the dissenters found problematic with respect to the Civil Rights Act's protection against discrimination on the basis of sexual orientation and gender identity are implicated in the case of greenhouse gas regulation under the Clean Air Act's reach. Even in the only case to partly hold otherwise—*Utility Air Regulatory Group v. EPA*—greenhouse gases were deemed beyond the reach of the Clean Air Act for a very limited purpose, and only so deemed because EPA had taken the extraordinary step of rewriting the statute's terms, not because of any factor identified by the *Bostock* dissents.⁴⁷ The legislative materials show that when Congress included the “effects on . . . climate” language in the statute, it understood that adverse climatic effects could occur on a global scale and that carbon dioxide emission, the most prevalent greenhouse gas, could cause global warming and climate change. The claim by regulatory opponents that Congress was focused only on local impact is simply wrong.

This Article proceeds as follows. Part I analyzes the claims of academic, interest-group, and think-tank opponents of the regulation of greenhouse gases under the Clean Air Act. It shows how the across-the-board arguments raised before *Massachusetts v. EPA* were transformed into more targeted anti-regulation claims after the Court's decision. And, in this process, the arguments also acquired additional bells and whistles, including ostensible constitutional concerns embodied in the “major questions” doctrine. Part II does a deep dive, with the *Bostock* roadmap in mind, into the legislative materials accompanying the enactment of the Clean Air Act of 1970. Part III applies the various interpretive tests that emerge from an analysis of the majority opinion and the two dissenting opinions in

44. *Infra* text accompanying notes 177-185.

45. Cannon was the EPA General Counsel during the Clinton administration, and his memorandum was the first official government pronouncement that greenhouse gases are subject to regulation under the Clean Air Act.

46. *Infra* text accompanying notes 177-185.

47. *Util. Air Reg. Grp. v. EPA*, 573 U.S. 302 (2014).

Bostock to these legislative materials and shows how each Justice's interpretive approach in *Bostock* inexorably points to the conclusion that greenhouse gases are proper subjects for regulation under the Clean Air Act like all other "air pollutants" that are "anticipated to endanger public health and welfare."

II. ATTACKS ON GREENHOUSE GAS REGULATION

This Part underscores how the opponents of greenhouse gas regulation under the Clean Air Act changed their strategy as a result of the Supreme Court's landmark decision in *Massachusetts v. EPA*, which rejected their core argument that greenhouse gases are not "air pollutants" subject to regulation under the Clean Air Act.⁴⁸ Instead of accepting their defeat, these opponents subtly transformed their arguments and continued to press them with great vigor. They added constitutional dimensions along the way, and have been waging relentless warfare against greenhouse gas regulations, particularly of stationary sources.

Section A explains how, prior to the Court's decision in *Massachusetts v. EPA*, the regulatory opponents of greenhouse gas regulation argued that Congress had not intended to include greenhouse gases within the definition of "air pollutant." They stressed that, when Congress enacted the Clean Air Act, it had in mind pollutants with local, instead of global, impacts, and that it had focused on pollutants for which the harm was contemporaneous to the emissions and not lagged over long periods of time. Opponents of regulation also focused on the supposed institutional problems that would arise in the Executive Branch if the EPA regulated greenhouse gases. And they claimed that Congress's decision to not regulate greenhouse gas emissions under the Clean Air Act amendments of 1990 and the Senate's rejection of the Kyoto Protocol add evidence that greenhouse gases are not within the regulatory reach of the Clean Air Act of 1970.

Section B explores how, even after *Massachusetts v. EPA* explicitly held that greenhouse gases are "air pollutants" for the purposes of the Clean Air Act and was reaffirmed in *American Electric Power v. Connecticut*,⁴⁹ critics repackaged the very same arguments that the Supreme Court had rejected and invoked them against every effort to regulate greenhouse gas emissions. In particular, opponents argued against regulating greenhouse-gases

48. *Massachusetts v. EPA*, 549 U.S. at 529 ("Carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons are without a doubt 'physical [and] chemical . . . substance[s] which [are] emitted into . . . the ambient air.' The statute is unambiguous.").

49. *Am. Elec. Power v. Connecticut*, 564 U.S. 410, 424 (2011) ("*Massachusetts* made plain that emissions of carbon dioxide qualify as air pollution subject to regulation under the Act.").

from sources other than vehicles, which were the sources at issue in the *Massachusetts v. EPA* litigation.

Section C details how the fervor of opponents of greenhouse gas regulation reached a climax in connection with the Clean Power Plan,⁵⁰ the Obama administration’s regulation of the greenhouse gas emissions of existing power plants, and the most ambitious climate change initiative involving stationary sources to date.⁵¹ Perhaps most strikingly, in testimony before Congress, Professor Laurence Tribe argued that, as a result of the Clean Power Plan, President Obama was “burning the Constitution” as part of his national energy policy.⁵² The day the challenge was argued before the U.S. Court of Appeals for the D.C. Circuit, the opponents hired an advertising truck to drive around the courthouse with an enormous image of a pile of burning Constitutions.⁵³ In court, where hyperbole of this sort typically does not play well, opponents argued vigorously that the Clean Air Act bars particular regulatory techniques, even ones that the EPA had used for other pollutants and had been upheld by the Supreme Court.⁵⁴ They leveled against the Clean Power Plan an amorphous and uncabined “major questions” doctrine that bears little relation to the use of this doctrine in other contexts.

In sum, the era since *Massachusetts v. EPA* has been characterized, despite the Supreme Court’s decision, by greenhouse gas exceptionalism—a double standard that treats greenhouse gases as regulatory pariahs, somehow less worthy than other pollutants of the Clean Air Act’s regulatory reach.

A. Pre-*Massachusetts v. EPA* Arguments

Prior to *Massachusetts v. EPA*, opponents of greenhouse gas regulation argued that these pollutants are outside the regulatory reach of the Clean Air Act of 1970 and that subsequent legislative developments confirmed this exclusion. These arguments are made in the most sustained way in briefs to the Supreme Court opposing

50. Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,510 (Oct. 23, 2015).

51. See Brad Plumer, *Obama Releases His Most Ambitious Climate Policy Yet—The Clean Power Plan*, VOX (Aug. 3, 2015), available at <https://perma.cc/367F-PLQU>.

52. *EPA’s Proposed 111(d) Rule for Existing Power Plants: Legal and Cost Issues: Hearing Before the S. Comm. on Energy and Power of the H. Comm. on Energy and Commerce*, 114th Cong. 16 (2015) (statement of Laurence H. Tribe).

53. Jack Lienke, *Here’s Why Supporters of the Clean Power Plan Are Feeling Optimistic*, GRIST (Oct. 5, 2016), available at <https://perma.cc/7J3D-9HYY>.

54. *Infra* Part I.C.

the coverage of greenhouse gases, as there was little academic literature on the subject at the time.⁵⁵

1. Covered Pollutants

Although the Clean Air Act does not explicitly exclude greenhouse gases from its regulatory reach, the Bush administration and its amici in the *Massachusetts v. EPA* litigation emphasized primarily that the intended scope of the statute was local and regional, not the global effects caused by greenhouse gas pollution.⁵⁶

In particular, the Bush administration argued that the “key provisions” of the Clean Air Act cannot “be cogently applied” to greenhouse gas emissions.⁵⁷ It claimed that the Clean Air Act primarily addressed emissions that have local or regional effects,⁵⁸ whereas carbon dioxide, the most pervasive greenhouse gas, is “well-mixed globally throughout the atmosphere.”⁵⁹ It also argued that the National Ambient Air Quality Standards, which are a centerpiece of the statute, have “traditionally been directed at controlling pollutants at or near the surface of the earth,”⁶⁰ whereas the initial impact of greenhouse gases is not at ground level.⁶¹ Furthermore, the Bush administration asserted, greenhouse gases persist in the atmosphere for a long period of time, implying that other paradigmatic pollutants on which the Clean Air Act focuses are more short-lived.⁶² It concluded that “greenhouse gas emissions ‘simply do not fit,’ within

55. Professor Richard Lazarus provides a possible reason for this lack of attention. See RICHARD J. LAZARUS, *THE RULE OF FIVE: MAKING CLIMATE CHANGE HISTORY AT THE SUPREME COURT* 21–23 (2020). He notes that the EPA under the Clinton Administration had stated in 1998 that greenhouse gases fell within the definition of “air pollutant,” but it had declined to regulate them at that time. See *id.* at 17. He also discusses how environmentalists were encouraged to “not rock the boat” and to wait to raise climate change issues until Al Gore took office in 2001. *Id.* at 22–23.

56. See Brief for the Federal Respondent at 44, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) [hereinafter Federal Respondent Brief]; Brief for Respondent CO[2] Litigation Group at 21, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) [hereinafter CO[2] Brief]; Brief for Respondent Utility Air Regulatory Group at 82, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) [hereinafter UARG Brief].

57. Federal Respondent Brief, *supra* note 56, at 42. In criticizing the Supreme Court’s decision in *Massachusetts v. EPA*, Professor Jason Johnston largely echoed the arguments in the Bush administration’s brief. See Jason Scott Johnston, *Climate Change Confusion and the Supreme Court: The Misguided Regulation of Greenhouse Gas Emissions Under the Clean Air Act*, 84 NOTRE DAME L. REV. 1, 19 (2008).

58. See Federal Respondent Brief, *supra* note 56, at 44. For discussion of how the Bush administration developed its legal position, see LAZARUS, *supra* note 55, at 36–53.

59. Federal Respondent Brief, *supra* note 56, at 45.

60. *Id.* at 44.

61. UARG Brief, *supra* note 56, at 83; CO[2] Brief, *supra* note 56, at 23.

62. See Federal Respondent Brief, *supra* note 56, at 45.

key aspects of the regulatory regime” established by the Clean Air Act.⁶³

Industry respondents echoed the Bush administration’s position that greenhouse gases are substantially different than the air pollutants Congress sought to regulate in 1970, emphasizing the particularities of greenhouse gas pollution. One of the industry respondents argued that the “core provisions” of the Clean Air Act “are structured to address pollution in the ambient air, not global climatological phenomena.”⁶⁴ It explained that the “ambient air” is the portion of the atmosphere “to which the public has access,”⁶⁵ claiming that the concept of “air pollutant” is limited to substances which “enter the ambient air, i.e., the air at or near ground level that the general public breathes.”⁶⁶ As a result, this respondent argued that the Clean Air Act “provides no basis to regulate substances due to their presence in the upper atmosphere—a determinative fact in the global climate change context.”⁶⁷ Similarly, an amicus brief by the Cato Institute and several law professors claimed that the clear intent of the Clean Air Act “when first enacted in 1967 and as subsequently amended in 1970 . . . is to control local and regional air pollution. . . .” and not pollution dispersed in the “global atmosphere.”⁶⁸ Along the same lines, in an amicus brief, William H. Taft IV, former legal advisor for the State Department, compared lead, particulate matter, and benzene on the one hand to greenhouse gases on the other, arguing that the former all “directly injure health” while greenhouse gases do not, and claimed that the Clean Air Act was concerned with the former and not the latter.⁶⁹

2. Institutional Issues

In addition to setting forth the differences between greenhouse gases and the typical pollutants regulated by the Clean Air Act, the Bush administration also asserted that the regulation of the greenhouse gas emissions from motor vehicles, which were at issue in the *Massachusetts v. EPA* litigation, would create serious institutional

63. *Id.* at 47.

64. UARG Brief, *supra* note 56, at 83.

65. *Id.*

66. *Id.*

67. *Id.*

68. Brief of the Cato Institute and Law Professors Jonathan H. Adler, James L. Huffman, and Andrew P. Morriss as Amici Curiae in Support of Respondents at 38, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120); *see also* Brief of Union for Jobs and the Environment as Amicus Curiae in Support of Respondents at 15, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) (arguing that most emissions occur in the “ambient air over a defined geographic area,” unlike GHG emissions which occur in the “upper atmosphere”).

69. Brief of Amicus Curiae William H. Taft, IV, in Support of Respondents, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120).

problems for the Executive Branch. It argued that “the only practical way to reduce tailpipe emissions” of carbon dioxide “is to improve fuel economy.”⁷⁰ But it claimed that any involvement of the EPA in this area “would subvert” the Department of Transportation’s responsibilities under the Energy Policy and Conservation Act to set fuel economy standards for motor vehicles.⁷¹ The problem, it claimed, would be particularly acute for light trucks and sport utility vehicles because any decision by the EPA to impose standards more stringent than those the Department of Transportation determined to be the “maximum feasible” standards would give rise to a direct “clash” between the two agencies.⁷²

In its *Massachusetts v. EPA* brief, the Bush administration also argued that any EPA role with respect to the regulation of the greenhouse gas emissions of motor vehicles would have significant negative policy consequences. For example, it claimed that the Department of Transportation gave automakers substantial flexibility “to choose appropriate methods of meeting fleetwide standards,” implying that this flexibility was desirable and would be lost if the EPA took on a related role.⁷³

Along similar lines, the Alliance of Automobile Manufacturers claimed that the Energy Policy and Conservation Act “reflects a political compromise that carefully sets maximum feasible fuel economy standards by balancing matters of environmental [policy,] . . . engineering design, safety, national energy policy, international competitiveness and trade.”⁷⁴ Any EPA role with respect to the regulation of carbon dioxide, it claimed, “would shatter that delicate political balance.”⁷⁵

3. Subsequent Legislative Initiatives

Invoking subsequent legislative developments to further support its position, the Bush administration noted in its *Massachusetts v. EPA* brief that only three provisions of the Clean Air Act referred explicitly to greenhouse gases and all three were adopted as part of the 1990 amendments.⁷⁶ First, section 103(g)(1) refers to carbon dioxide in the context of a new program to improve “nonregulatory strategies and technologies.”⁷⁷ Second, section 602(e) directs the EPA

70. See Federal Respondent Brief, *supra* note 56, at 13.

71. *Id.* at 46.

72. *Id.* at 46–47.

73. *Id.*

74. Brief for Respondents Alliance of Automobile Manufacturers, Engine Manufacturers Association, National Automobile Dealers Association, and Truck Manufacturers Association at 73, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120) (internal quotations omitted).

75. Federal Respondent Brief, *supra* note 56, at 74.

76. See *id.* at 48–50.

77. See 42 U.S.C. § 7403(g)(1) (2018).

to evaluate the “global warming potential” of certain substances.⁷⁸ Third, section 821 calls on the agency to gather and publish information about carbon dioxide emissions from regulated utilities.⁷⁹ The Bush administration asserted that the non-regulatory nature of these provisions “strongly suggest a congressional understanding that EPA lacks authority under the Act to regulate greenhouse gas emissions for the purpose of addressing global climate change.”⁸⁰

The Bush administration also contended that Congress had dealt with other pollutants threatening international welfare and requiring international cooperation in separate provisions of the Clean Air Act.⁸¹ It focused on the provisions governing ozone-depleting substances,⁸² which give the President authority to enter into international agreements in order to set standards and regulations for ozone-depleting substances.⁸³ The Bush administration argued that, in light of the approach of ozone-depleting substances, “it would be anomalous to conclude that Congress intended the EPA to address global climate change” without a specific provision “recognizing the international dimension of the issue and any solution, and no express authorization to regulate” greenhouse gases.⁸⁴

Finally, the Bush administration argued that the Senate’s explicit rejection of the Kyoto Protocol was further evidence of congressional intent to not regulate greenhouse gas emissions under the Act.⁸⁵ The Kyoto Protocol set binding emission reduction goals of six greenhouse gases for thirty-seven industrialized countries and the European Community.⁸⁶ In addition to relying on national regulation

78. 42 U.S.C. § 7461a(e) (2018).

79. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 821(a), 104 Stat. 2399, 2698 (1990).

80. Federal Respondent Brief, *supra* note 56, at 50.

81. *See id.* at 52; UARG Brief, *supra* note 56, at 75.

82. *See* 42 U.S.C. §§ 7671a–7671d (2018); Federal Respondent Brief, *supra* note 56, at 52.

83. *See* 42 U.S.C. § 7671p (2018); Steven J. Shimberg, *A Review of Major Provisions: Stratospheric Ozone and Climate Protection: Domestic Legislation and the International Process*, 21 ENVTL. L. 2175 (1991).

84. Federal Respondent Brief, *supra* note 56, at 54.

85. *Id.*

86. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3(1) Dec. 10, 1997, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol] (“The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.”). For further discussion, *see* Petra Lea Láncos, *Flexibility and Legitimacy—The Emissions Trading System Under the Kyoto Protocol*, 9 GERMAN L. REV. 1625 (2008); Harro van Asselt & Joyeeta Gupta, *Stretching Too Far? Developing Countries and the Role of Flexibility Mechanisms Beyond Kyoto*, 28 STAN. ENVTL. L.J. 311 (2009);

to reduce emissions, the Protocol established three international, market-based trading mechanisms for carbon dioxide reduction.⁸⁷ The Protocol also required the United States to reduce its emissions during the period from 2008 to 2012 by 7%, as compared to its 1990 emissions baseline.⁸⁸ According to the Bush administration, the Senate's failure to ratify the Protocol reflected opposition by Congress "to any unilateral action by EPA to regulate greenhouse gas emissions within the United States."⁸⁹

B. Repackaging the Arguments Following *Massachusetts v. EPA*

In its *Massachusetts v. EPA* opinion, the Court addressed and explicitly rejected each of the categories of arguments made by the Bush administration and its supporters. With respect to the covered pollutants, the Court held that greenhouse gases are unambiguously included in the Act's "sweeping definition of air pollutant."⁹⁰ It thereby rejected the Bush administration's contention that "Congress designed the original Clean Air Act to address *local* air pollutants rather than a substance that 'is fairly consistent in its concentration throughout the *world's* atmosphere.'" ⁹¹ The Court noted that Congress underscored its intent to embrace "airborne compounds of whatever stripe" by the repeated use of the word "any" throughout the statute.⁹² And, the Court added that while the Act may not have been enacted with the harms of climate change in mind, the "breadth" of the Act reflected Congress's intent to include greenhouse gases within the Clean Air Act's regulatory reach.⁹³

On the institutional front, the Court was unpersuaded by the Bush administration's concerns about possible conflicts between the roles of the EPA and the Department of Transportation.⁹⁴ It rejected this contention in unambiguous language: "that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities."⁹⁵

And the Court similarly rejected the Bush administration's argument about the significance of subsequent legislative initiatives.⁹⁶

Eric Shaffner, *Repudiation and Regret: Is the United States Sitting Out the Kyoto Protocol to Its Economic Detriment*, 37 ENVTL. L. 441 (2007).

87. Kyoto Protocol, *supra* note 86, arts. 6, 12, 17 (outlining the procedures by which parties may collaborate to earn and trade emissions reductions units which contribute to meeting the parties' Kyoto emissions limitation or reduction).

88. *Id.* at app. b (indicating that the United States' emission limitation/reduction commitment is 93% of its emissions from the base year 1990).

89. See Federal Respondent Brief, *supra* note 56, at 55.

90. *Massachusetts v. EPA*, 549 U.S. at 528.

91. *Id.* at 512.

92. See *id.* at 528-29.

93. *Id.* at 532.

94. See *id.* at 531-32.

95. *Id.* at 532.

96. See *id.* at 529-30.

Again, the Court was unmistakably clear: “Even if such postenactment legislative history could shed light on the meaning of an otherwise-unambiguous statute, EPA never identifies any action remotely suggesting that Congress meant to curtail its power to treat greenhouse gases as air pollutants.”⁹⁷

Opponents of greenhouse gas regulation were not deterred by the Court’s decisive, across-the-board rejection of all three categories of arguments. In fact, they kept making the very same arguments in subsequent proceedings, no longer wielding them to oppose the specific regulatory program at issue in *Massachusetts v. EPA* (regulation of vehicle emissions), but instead to oppose the regulation of stationary sources. And they did so even though nothing about the way in which the Court rejected these categorical arguments was limited to the vehicle context. The subsequent subsections explore the repackaging of the opponents’ arguments in connection with the two most significant efforts, both undertaken by the Obama administration, to regulate the greenhouse gas emissions of stationary sources: (1) Best Available Control Standards for new and modified major emitting facilities in areas covered by the Clean Air Act’s Prevention of Significant Deterioration Program, and (2) the Clean Power Plan, which sought to reduce the greenhouse gas emissions of existing power plants.⁹⁸

The repackaging of arguments on which pollutants are covered by the Clean Air Act is illustrated most clearly by industry’s challenge to EPA’s attempt to regulate greenhouse gases through its Best Available Control Standards authority. EPA included greenhouse gases as an air pollutant in a 2010 regulation⁹⁹ of the Best Available Control Standards for new and modified major emitting facilities.¹⁰⁰ These standards limit the emissions of “each pollutant subject to regulation under [the Clean Air Act].”¹⁰¹ However, there should never have been any controversy about the coverage of greenhouse gases after the Court’s holding in *Massachusetts v. EPA* and EPA’s subsequent endangerment finding, which had the combined effect of making it clear that greenhouse gases are “pollutant[s] subject to regulation” under the statute.

Nonetheless, despite the breadth of the “any air pollutant” statutory language, one commentator claimed that Best Available Control Standards are appropriate only for pollutants that are

97. *Id.* at 529.

98. See REVESZ, *supra* note 18, at 609.

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

100. 42 U.S.C. § 7475(a)(4) (2018).

101. 42 U.S.C. § 7479(3) (2018).

“primarily local in nature,”¹⁰² rather than ones with global effects. And, in challenging the EPA’s decisions that Best Available Control Standards required limitations on greenhouse gases, an industry trade association argued that these standards were intended to limit only those pollutants “people breathe” in the “ambient air”¹⁰³—the precise argument that the Supreme Court had rejected in *Massachusetts v. EPA* in 2007.¹⁰⁴ The industry group’s efforts, however, were somewhat rewarded in *Utility Air Regulatory Group v. EPA*. There, although the Supreme Court rejected the group’s argument, the group garnered the votes of two dissenters, who reaffirmed their views that *Massachusetts v. EPA* had been wrongly decided.¹⁰⁵

On the institutional front, arguing for the illegality of the Clean Power Plan, the Trump administration claimed, in a brief filed in June 2020, that this Obama administration initiative would interfere with the functions of the Federal Energy Regulatory Commission.¹⁰⁶ The Trump EPA admitted that any environmental regulation that increases the cost of producing electricity in a particular manner results in “generation shifting”¹⁰⁷ to other forms of producing this electricity. It acknowledged that this form of generation shifting is unproblematic: “[I]t is one thing for *some* generation shifting to occur as a result of imposing an at-the-source environmental control (for instance, because imposing those controls changes the marginal costs of production).”¹⁰⁸ The Trump administration argued, however, that what interferes with the Federal Energy Commission’s authority is not the effect of the rule but, instead, its intent: “It is quite another [thing] for EPA to devise a rule designed to *intentionally* change . . . the marginal cost of production, thereby shifting the aggregate mix of electric generation dispatch from various existing sources.”¹⁰⁹ Given the Trump administration’s concession about effects, which the Bush administration had not done in *Massachusetts v. EPA* in connection

102. See Teal Jordan White, *Clean Air Mayhem: EPA’s Tailoring Rule Stitches Greenhouse Gas Emissions into the Wrong Regulatory Fitting*, 18 TEX. WESLEYAN L. REV. 407, 436 (2011).

103. See UARG Brief, *supra* note 56, at 46. Brief of Petitioner Util. Air Regulatory Group at 25, *Util. Air Reg. Grp. v. EPA*, 573 U.S. 302 (2014) (No. 12-1146).

104. *Util. Air Reg. Grp. v. EPA*, 573 U.S. 302 (2014).

105. *Id.* at 343-44 (Alito, J., joined by Thomas, J., concurring in part and dissenting in part).

106. See Proof Brief for the U.S. Environmental Protection Agency, and EPA Administrator Andrew Wheeler at 6,111, *Am. Lung Ass’n. v. EPA*, No. 19-1140 (D.C. Cir. filed July 8, 2019) [hereinafter Proof Brief].

107. Amanda Shafer Berman, *EPA’s New Approach to Power Plant GHG Regulation: An “ACE” in the Hole, or EPA Out-foxed?*, AM. BAR ASS’N (Sept. 1, 2019), available at <https://perma.cc/ET7Q-KAB9> (“e.g., using the interconnected power grid to shift generation on a fleet-wide basis from coal to natural gas or renewables”).

108. *Id.*

109. *Id.*

with the asserted clash with the Department of Transportation, the institutional conflict allegedly caused by the Clean Power Plan's intent to produce electricity generation shifting is even less compelling than the one the Court rejected with respect to the Department of Transportation in *Massachusetts v. EPA*.

As to subsequent legislative initiatives, opponents of greenhouse gas regulation argue that EPA does not have the authority to administer, for example, as the Clean Power Plan did,¹¹⁰ an emissions trading scheme for greenhouse gases, because of the defeat, in 2010, of the Waxman-Markey bill, which would have established a nationwide cap-and-trade scheme for greenhouse gases.¹¹¹ For example, Peter Glaser and Carroll McGuffey argue that “any reasonable prospect” of greenhouse gas cap-and-trade legislation ended with the defeat of the Waxman-Markey bill.¹¹² As a result, they criticize the Obama administration for attempting in the Clean Power Plan to “shoe-horn” an interstate cap-and-trade program into Clean Air Act Section 111(d) after Congress had rejected such an approach.¹¹³

C. New Attacks on the Clean Power Plan

In addition to the repackaging of arguments that had been rejected by *Massachusetts v. EPA*, which are discussed in the prior section, the subsequent arguments raised by opponents of the Clean Power Plan, led by Republican attorneys general and industry groups, as well as by the Trump administration itself, provide further examples of the greenhouse gas double standard.¹¹⁴ The double standard manifests itself in arguments for restrictions of the permissible regulatory approaches that depart from the EPA's

110. Clean Power Plan, *supra* note 25.

111. See H.R. 2454, 111th Cong. § 703 (2009) [hereinafter Waxman-Markey Bill]. For discussion of the bill and of the legislative battles surrounding its consideration, see ERIC POOLEY, *THE CLIMATE WAR: TRUE BELIEVERS, POWER BROKERS, AND THE FIGHT TO SAVE THE EARTH* (2010); Ryan Lizza, *As the World Burns*, *NEW YORKER* (Oct. 3, 2010), available at <https://perma.cc/3YZ8-VFJM>; Tom Mounteer, *Comprehensive Federal Legislation to Regulate Greenhouse Gas Emission*, 39 ENVTL. L. REP. 11,068, 11,072 (2009).

112. Peter S. Glaser & Carroll W. McGuffey III, *Regulating Greenhouse Gases under the Clean Air Act: Is the Bubble About to Burst?*, 6 GEO. WASH. J. ENERGY & ENVTL. L. 1, 2 (2016); see Phil Kerpen, *The Heat Is On: Global Warming And The EPA (Part 2)*, CONSTITUTING AMERICA, available at <https://perma.cc/W8ZA-GNN6> (last accessed Dec. 4, 2020) (“Obama is telling the EPA to just pretend the [Waxman-Markey] bill passed and regulate away.”).

113. See Glaser & McGuffey, *supra* note 112, at 9.

114. See Robert Walton, *Final Clean Power Plan Rule Published; 24 States Sue EPA*, UTILITY DIVE (Oct. 23, 2015), available at <https://perma.cc/5XP2-V6MS>. Umair Irfan, *Trump's EPA Just Replaced Obama's Weaker Signature Climate Policy with a Much Weaker Rule*, VOX (Jun. 19, 2019), <https://www.vox.com/2019/6/19/18684054/climate-change-clean-power-plan-repeal-affordable-emissions>.

standard regulatory practices, even ones upheld by the Supreme Court, and in invocations of the “major questions” doctrine in a manner that is both unprecedented and frivolous.

1. A Wholly New Approach?

In defending its Affordable Clean Energy Rule, which repealed the Clean Power Plan and replaced it with a significantly weaker substitute,¹¹⁵ the Trump administration argues that the Clean Power Plan was illegal.¹¹⁶ It maintains that the regulatory structure of the Clean Power Plan “represented a wholly new approach” that had never before been used in the history of regulation under the Clean Air Act.¹¹⁷ This section, however, explains that two prominent examples of prior EPA regulations rely on the types of broader, system-wide approaches used in the Clean Power Plan: the Clean Air Act’s Mercury Rule and regulations under the Act’s Good Neighbor Provisions.

At issue in the challenge to the Clean Power Plan is the definition of Best System of Emission Reduction in Section 111(a)(1), which imposes on regulated sources an emission limitation reflecting the “best system of emission reduction,” taking into account cost and other factors.¹¹⁸ The Clean Power Plan determined that the “best system of emission reduction” for regulating the carbon dioxide emissions of existing power plants consisted of three elements.¹¹⁹ The first aimed to improve the efficiency—measured by heat rate—of coal-fired plants.¹²⁰ The second aimed to “substitut[e] increased generation from lower-emitting existing natural gas . . . units for generation from higher-emitting affected steam generating units.”¹²¹ In other words, it sought to reduce the proportion of electricity produced from coal and correspondingly increase the proportion produced from natural gas, which is a cleaner fuel.¹²² And the third aimed to “substitut[e] increased generation from new zero-emitting . . . generating capacity

115. See Richard L. Revesz, *Trump’s EPA Chooses Coal Over the American People*, THE HILL (Sept. 13, 2018), available at <https://perma.cc/2TFT-AVFF>.

116. See 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, 32,523 (July 8, 2019) (“Because the CPP significantly exceeded [EPA’s] authority, it must be repealed.”); Proof Brief, *supra* note 106, at 1 (“In the simplest terms, the Clean Power Plan (CPP) exceeded the authority Congress granted to EPA.”).

117. See Proof Brief, *supra* note 106, at 38.

118. 42 U.S.C. § 7411(a)(1) (2018).

119. See Clean Power Plan, *supra* note 25, at 64,707.

120. See *id.*

121. *Id.*

122. See *id.* at 64,766.

for generation from affected fossil fuel-fired generating units.”¹²³ Here, the required shift was from coal *and* natural gas to renewables.¹²⁴

The Trump administration and other Clean Power Plan opponents challenge the second and third elements as unlawful because these elements are not emissions reduction measures that can be achieved at a particular source through the use of technology.¹²⁵ They claim that the Clean Air Act limited the applicability of the regulatory standard at issue in the Clean Power Plan to “sources” and not to actions that owners and operators of sources “might take . . . *beyond the source itself.*”¹²⁶ This type of regulation is sometimes described as “beyond-the-fenceline” regulation.¹²⁷ Under a beyond-the-fenceline regulatory scheme, an affected source may reduce emissions through “operational improvements and equipment upgrades” or by “reduc[ing] generation” at its facility.¹²⁸ Or, it can obtain reductions from other facilities, by “purchasing full or partial interest in existing” assets that are lower emitting, or “rate-based emissions credits from other affected” sources.¹²⁹ According to opponents of greenhouse gas regulation, because the statute clearly defines source “as an individual physical building, structure, facility, or installation[,]”¹³⁰ EPA is explicitly precluded from requiring the latter options, as they are not “requirements . . . that can be applied to a particular existing source itself.”¹³¹

Opponents of greenhouse gas regulation also refer to the Clean Power Plan’s regulatory approaches as consisting of impermissible “generation shifting,” arguing that the only way in which a coal-fired power plant can meet the standard is by operating less, with cleaner sources operating more.¹³² Under Section 111(d), EPA’s role, as described above, is to establish the “best system of emissions

123. *Id.* at 64,707.

124. *See id.* at 64,766.

125. *See* Proof Brief, *supra* note 106, at 70 (“For purposes of Section [1]11(d), the [best system of emissions reduction] must be add-on devices and other controls and measures that are applied to *particular existing sources themselves.*”) (emphasis added); Proof Brief of State and Industry Intervenors for Respondent Regarding Affordable Clean Energy Rule at 12, *Am. Lung Ass’n v. EPA*, No. 19-1140 (D.C. Cir. filed July, 8, 2019) [hereinafter State and Industry Brief] (explaining that the statute “excludes measures the source’s owner or operator (or anyone else) would apply at some other location, such as generation shifting to low- or non-emitting sources, which § [1]11 does not authorize EPA to require”).

126. Opening Brief of Petitioners on Core Legal Issues at 43, *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019) [hereinafter Petitioners’ Opening Brief].

127. *See* Richard L. Revesz, Denise A. Grab & Jack Lienke, *Familiar Territory: A Survey of Legal Precedents for the Clean Power Plan*, 46 ENVTL. L. REP. 10, 190 (2016).

128. Clean Power Plan, *supra* note 25, at 64,709.

129. *Id.*

130. Petitioners’ Opening Brief, *supra* note at 126, at 44.

131. Proof Brief, *supra* note 106, at 66.

132. *See* Petitioners’ Opening Brief, *supra* note 126, at 41.

reduction” for states to then use to set “standards of performance” for existing sources.¹³³ For opponents, performance implies operation, and therefore, the best system of emissions reduction “should improve the source’s *performance* as it operates.”¹³⁴ “Generation shifting,” they say, does something else entirely: “replacing or reducing the operation” of particular sources, as opposed to requiring improved performance, which the statute does not allow.¹³⁵

In response to the claims that the Clean Power Plan is illegal because of the beyond-the-fenceline and generation shifting features, the plan’s supporters argue that these techniques take “account of the unique characteristics of [carbon dioxide] pollution and the electric power industry.”¹³⁶ Because of those unique characteristics, “[p]ower companies and grid operators routinely shift generation among facilities” on their own accord.¹³⁷ And they do so specifically because it is the “*least expensive* manner of reducing carbon dioxide emission.”¹³⁸ Ignoring this, supporters say, would be to deny the fact that “generation shifting” is a “well-demonstrated system[] of emissions reduction . . . that power plants are already using” and “would be contrary to basic principles of rational agency rulemaking.”¹³⁹

An important component of the argument by the Trump administration and its allies in challenging the Clean Power Plan rests on the claim that its beyond-the-fenceline and generation shifting-features “depart[] from 45 years of consistent agency practice.”¹⁴⁰ According to them, the Clean Air Act’s regulatory approaches have always been restricted to within the fenceline measures—that is, to reductions that sources could achieve through the application of particular technology.¹⁴¹ In making this argument, the Clean Power Plan’s opponents ignore several important prior regulatory measures, used for pollutants other than greenhouse gases over decades by

133. See 42 U.S.C. § 7411(d) (2018).

134. State and Industry Brief, *supra* note 125, at 6.

135. Petitioners’ Opening Brief, *supra* note 126, at 41.

136. Final Brief of Intervenor Environmental and Public Health Organizations in Support of Respondents at 6, *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019).

137. *Id.*

138. Brief for State and Municipal Intervenor in Support of Respondents at 27, *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019) (emphasis in original).

139. *Id.* at 29.

140. Petitioners’ Opening Brief, *supra* note 126, at 48; see also Proof Brief, *supra* note 106, at 72 (the Clean Power Plan “abandoned EPA’s unbroken practice across some seventy Section [1]11 rules over nearly forty-five years”).

141. See Proof Brief, *supra* note 106, at 89 (“For roughly forty-five years across some seventy regulations, EPA’s . . . consistent approach reflected a straightforward understanding that . . . can be applied to reduce a source’s emissions from a source [include] add-on controls, operational changes, clean fuel requirements, and the like.”).

administrations of both parties, that demonstrate otherwise.¹⁴² Thus, the opponents apply a double standard to greenhouse gas regulation, holding it to strictures that have never been applied to other pollutants.

There are two prominent examples of prior EPA regulations that rely on the types of broader, system-wide approaches used in the Clean Power Plan. One is the Clean Air Act Mercury Rule, promulgated by the George W. Bush administration, which limits the emissions by power plants of hazardous air pollutants.¹⁴³ The other example consists of regulations, under three different administrations pursuant to the Clean Air Act's Good Neighbor Provisions, which constrain emissions from upwind states that lead to violations of ambient standards in downwind states.¹⁴⁴

The Clean Air Act Mercury Rule established “standards of performance for mercury for new *and existing* coal-fired electric generating units.”¹⁴⁵ As part of the scheme to achieve emissions reductions, the rule embraced a “cap-and-trade approach.”¹⁴⁶ The Clean Power Plan incorporated a similar approach, allowing “emissions trading [as] one mechanism by which owners of affected EGUs [Electric Generating Units]” could achieve their standard of performance.¹⁴⁷ Trading is inherently a beyond-the-fenceline form of regulation, as individual sources can reduce emissions by purchasing credits from other sources. In this way, an individual source can achieve emissions reductions from activity that happens outside its own four walls. And as is especially relevant here, the Clean Air Act Mercury Rule did not simply allow this kind of trading; it declared it to be the best system of emissions reduction.¹⁴⁸

142. See Revesz, Grab & Lienke, *supra* note 127.

143. See Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606, 28,606 (2005) [hereinafter CAMR].

144. Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,356, 57,358, 57,456 (Oct. 27, 1998) [hereinafter Ozone Transport Rule]; the 2005 Clean Air Interstate Rule, promulgated under the Bush administration, see Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone; Revisions to Acid Rain Program; Revisions to the NO_x SIP Call, 70 Fed. Reg. 25,162, 25,162, 25,229 (May 12, 2005) [hereinafter Clean Air Interstate Rule]; and the 2011 Cross-State Air Pollution Rule, promulgated under the Obama administration, see Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208, 48,210 (Aug. 8, 2011) [hereinafter Cross-State Air Pollution Rule].

145. CAMR, *supra* note 143, at 28,606.

146. *Id.*

147. Clean Power Plan, *supra* note 25, at 64, 739.

148. See CAMR, *supra* note 143, at 28,617 (“EPA has determined that a cap-and-trade program based on control technology available in the relevant timeframe is the best system for reducing Hg emissions from existing coal-fired Utility Units.”).

This example explicitly undermines the very argument advanced by opponents of the Clean Power Plan eleven years later. In promulgating the Clean Air Act Mercury Rule, the EPA found that “[t]he term ‘standard of performance’ is not explicitly defined to include or exclude an emissions cap and allowance trading program.”¹⁴⁹ On that basis, the EPA then used its discretion to interpret the statute to allow one, finding that Section 111(d)(1) could “readily accommodate a cap-and-trade program”—a paradigmatic beyond-the-fenceline approach.¹⁵⁰

Second, Section 110(a)(2)(D) provides yet another example demonstrating that beyond-the-fenceline regulation is within the Clean Air Act’s regulatory ambit. That section, commonly referred to as the “Good Neighbor Provision,” requires states to include provisions in their State Implementation Plans (SIP) “prohibiting . . . any source or other type of emissions activity within the State from emitting any air pollution in amounts which will contribute significantly to nonattainment” of ambient air quality standards in another state.¹⁵¹ As a result, upwind states must take measures to prevent sources within their borders from polluting in downwind states.

Employing this provision, the EPA has established statewide emission limits for the power sector and created programs through which emissions credits could be traded.¹⁵² Particularly relevant here, Section 111(d) directs the Administrator to “establish a procedure similar to that provided for by Section 110,”¹⁵³ suggesting that if trading programs—or put differently, beyond-the-fenceline systems of emission reduction—are allowed under Section 110, they are also allowed under Section 111. Under the interpretation advanced by the Trump administration and its allies, because Section 110(a)(2)(D), like Section 111(d), uses the word “source,”¹⁵⁴ trading schemes would be precluded under both sections.¹⁵⁵ But the Supreme Court’s approval of the Cross-State Air Pollution Rule,¹⁵⁶ a rule promulgated under Section 110(a)(2)(D) that embraced “increased

149. *Id.* at 28,616.

150. *Id.* at 28,617. The rule was eventually vacated, but only on grounds unrelated to the trading program or EPA’s interpretation of Section 111(d). *See New Jersey v. EPA*, 517 F.3d 574, 577–78 (D.C. Cir. 2008).

151. 42 U.S.C. § 7410(a)(2)(D)(i)(I) (2018).

152. *See Ozone Transport Rule*, *supra* note 144, at 57, 358 (setting forth the “NO_x Budget Trading Program”); *Clean Air Interstate Rule*, *supra* note 144, at 25,162 (adopting a model cap-and-trade-program for power plants); *Cross-State Air Pollution Rule*, *supra* note 144, at 48, 210 (“This rule achieves . . . reductions through FIPs that regulate the power section using air quality assured trading programs.”).

153. 42 U.S.C. § 7411(d)(1) (2018).

154. 42 U.S.C. § 7410(a)(2)(D) (2018).

155. *See supra* notes 125–131 and accompanying text.

156. *See EPA v. Homer City Generation, LP*, 134 S. Ct. 1584 (2014).

dispatch of lower-emitting generation” as an emissions reduction technique—and thus explicitly embraced a trading scheme—specifically refutes that interpretation.¹⁵⁷

In the face of these contrary examples, it is remarkable that opponents of the Clean Power Plan advanced the argument that Section 111(d) does not support beyond-the-fenceline regulation. Yet the incongruous nature of their position, while not defensible, is more easily explained if one focuses on the regulated pollutant instead of the regulatory mechanism. For mercury, nitrogen oxides, ozone, and particulate matter—the pollutants at issue in the rules discussed above—beyond-the-fenceline regulation was uncontroversial. When applied to carbon dioxide, a greenhouse gas, however, the very same regulatory technique encountered vehement opposition. This opposition illustrates the greenhouse gas double standard.

2. A “Major Questions” Doctrine Made to Order

Under the “major questions” doctrine, which is generally traced to a statement in *FDA v. Brown & Williamson Tobacco Corp.*, a court should not defer to an agency’s interpretation of the statute that it is empowered to administer where the agency asserts jurisdiction to “regulate an industry constituting a significant portion of the American economy.”¹⁵⁸ The Court added that “[g]iven the economic and political significance of the tobacco industry . . . , it is extremely unlikely that Congress could have intended to place tobacco within the ambit of the Food and Drug Administration’s regulatory jurisdiction.”¹⁵⁹ Restating this doctrine in *Utility Air Regulatory Group v. EPA*, the Court indicated that it expects “Congress to speak clearly if it wishes to assign to an agency decisions of vast ‘economic and political significance.’”¹⁶⁰

The Trump administration relies on this latter standard in justifying its repeal of the Clean Power Plan and the replacement of this Obama administration regulatory initiative with the Affordable Clean Energy Rule. The invocation of the “major question” rule in this context provides a strong illustration of the attack of the Clean Power Plan through the application of a greenhouse gas double standard.

In its June 2020 brief defending the Affordable Clean Energy Rule and the repeal of the Clean Power Plan, the Trump

157. Cross-State Air Pollution Rule, *supra* note 144, at 48, 252.

158. *See* Util. Air Reg. Grp., 573 U.S. at 324 (citing *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 159 (2000)).

159. *Brown & Williamson*, 529 U.S. at 160. In a recent dissent from denial of certiorari, Justice Kavanaugh has suggested the “major questions” doctrine is not a constitutional constraint, but rather a rule of statutory interpretation. *See Paul v. United States*, 140 S. Ct. 342, 342 (2019) (Kavanaugh, J., concurring).

160. *Id.* at 324.

administration argues for the application of the “major questions” doctrine to the Clean Power Plan as a result of its economic significance.¹⁶¹ To support the claim of economic significance, the brief states that “[a]t the time the [Clean Power Plan] was promulgated, its generation-shifting scheme was projected to have billions of dollars of impact on regulated parties and the economy.”¹⁶² Specifically, it notes that, under one scenario, the annual costs would be \$8.4 billion and, under the other, they would be \$5.1 billion.¹⁶³

There are two serious problems with that assertion. First, the Trump administration does not explain what annual costs reach the threshold for “major questions” status. Costs of that sort are not exceptional for important environmental regulations. In fact, the Mercury and Air Toxic Standards, which limited the emissions of hazardous air pollutants from power plants, had higher costs: \$9.6 billion per year.¹⁶⁴ And while the Supreme Court in *Michigan v. EPA* remanded these standards for the agency to determine whether “the costs are not disproportionate to the benefits”¹⁶⁵ (a relationship that the Clean Power Plan had clearly established, with benefits that were several times higher than the costs¹⁶⁶), the Court did not find the standards problematic on “major questions” grounds.

Second, in justifying the Affordable Clean Energy Rule, the Trump administration claims, wrongly it turns out, that the repeal of the Clean Power Plan would have no costs and no benefits as a result of market changes that had put the United States on track to meet the Clean Power Plan’s goals even without the Clean Power Plan.¹⁶⁷ Without this assumption that the consequences of the Clean Power Plan should be determined at the time of its repeal rather than at the time of its promulgation, the Trump administration would have had to acknowledge the significantly negative consequences of the Clean Power Plan’s repeal, calling the legality of its action into question for that reason.¹⁶⁸

161. Proof Brief, *supra* note 106, at 98.

162. *Id.* at 103.

163. *Id.*

164. *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015).

165. *Id.* at 2710.

166. Clean Power Plan, *supra* note 25, at 64,680.

167. See Jack Lienke & Richard L. Revesz, *EPA Will Say Anything to Avoid Addressing Climate Change*, REG. REV. (July 29, 2019).

168. See *Michigan v. EPA*, 135 S. Ct. at 2707 (“No regulation is ‘appropriate’ if it does more harm than good.”); *United States v. Ripley*, 926 F.2d 440, 448 (5th Cir. 1991) (describing the “golden rule[] of statutory interpretation . . . that unreasonableness of the result produced by one among alternative possible interpretations . . . is reason for rejecting that interpretation in favor of another which would produce a reasonable result”) (internal quotation omitted). I co-authored a brief making this argument in the pending litigation over the legality of the Affordable Clean Air Rule. See Brief for the Institute of Policy Integrity, Am. Lung Ass’n v. EPA, No. 19-1140 (D.C. Cir. filed July 8, 2019).

To invoke its “major questions” objection to the Clean Power Plan, however, the Trump administration makes the opposite assumption: that “the validity of the Clean Power Plan must be judged on the[] record at the time of [its] . . . promulgation,”¹⁶⁹ not at the time of its repeal. This is precisely the type of internal inconsistency that leads courts to set aside agency actions as “arbitrary and capricious.”¹⁷⁰ More importantly, it vividly illustrates the contortions undertaken by opponents of greenhouse gas regulation to invoke the “major questions” doctrine.

And, moreover, the Trump administration is wrong about the relevant date for determining the validity of the Clean Power Plan for “major questions” purposes. As the Supreme Court recently explained, “[i]t is a ‘foundational principle of administrative law’ that judicial review of agency action” is based on “the grounds that the agency invoked when it took the action.”¹⁷¹ If a court were reviewing a challenge to the Clean Power Plan, the record supporting the rule’s initial promulgation would be the relevant one. But the validity of the Clean Power Plan is not before a court because the Trump administration asked the D.C. Circuit to place in abeyance the pending litigation over its legality.¹⁷² Instead, what is being determined in the pending litigation over the validity of the Affordable Clean Energy Rule is whether its repeal of the Clean Power Plan is valid. That inquiry must be conducted with respect to the record at the time of the promulgation of the Affordable Clean Energy Rule, not the record at the time of the promulgation of the Clean Power Plan. So, the economic impacts that the Trump administration finds sufficiently compelling to invoke the “major questions” doctrine involve, according to its own estimate, the imposition of no costs at all.

The problems with the Trump administration’s invocation of the “major questions” doctrine do not end with this inconsistency and with the use of the wrong baseline. As another prong of its “major questions” argument, the Trump administration states that “there can be no question that EPA’s authority to impose ‘generation shifting’ raises a major question of agency power.”¹⁷³ But, as mentioned above, the Trump administration concedes, as it has to, that run-of-the-mill environmental regulations produce generation shifting by imposing regulatory costs on dirtier ways to produce electricity, like through the burning of coal.¹⁷⁴ So, it argues that what was different about the Clean

169. Proof Brief, *supra* note 106, at 103 n.29.

170. *See* *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011).

171. *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 140 S. Ct. 1891, 1907 (2020) (quoting *Michigan v. EPA*, 135 S. Ct. at 2710).

172. *See* *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019).

173. Proof Brief, *supra* note 106, at 99.

174. Berman, *supra* note 107.

Power Plan was that “generation shifting” was not the “incidental” effect of the EPA’s regulatory action, but, instead, the agency’s “intentional[]” aim.¹⁷⁵ Thus, in a manner wholly untethered to any case law, the Trump administration transforms a “major questions” inquiry that, by its terms, is effects-based (“vast economic . . . significance”) into an intent-based inquiry.

In sum, with respect to both the claim that the regulatory approach of the Clean Power Plan is unprecedented and the invocation of the “major questions” doctrine to justify its repeal, the Trump administration, respectively, misrepresents the regulatory history of the Clean Air Act and creates, out of whole cloth, an amorphous doctrine to which it assigns a familiar label but that in fact bears no resemblance to its prior invocations. For these reasons, the treatment of the Clean Power Plan is perhaps the best example of the greenhouse gas double standard.

III. GREENHOUSE GASES AND THE CLEAN AIR ACT OF 1970: A TREASURE TROVE OF UNEXPLORED MATERIALS

When Congress enacted the Clean Air Act of 1970, it was both aware of and concerned about the adverse impact of air pollutants, particularly greenhouse gases like carbon dioxide, on global warming and climate change. Yet advocates for greenhouse gas regulation and academics studying the field have failed to highlight this portion of the Act’s history and its bearing on the Act’s meaning.

The awareness of and concern about climate change appear extensively in the legislative history accompanying the statute’s enactment, including in statements by congressional leaders and other members; testimony by high-ranking administration officials and prominent scientific experts; excerpts from reports submitted to the record by legislators and witnesses; and the full reports from which these excerpts were obtained. This Part analyzes this treasure trove of legislative materials, most of which had never previously entered the public discourse.

Section A describes the scope of the research. It explains that this Part focuses on Congress’ attention to climate, which involves changes in long-term meteorological patterns, as opposed to weather, where the changes are short-term.¹⁷⁶ And it explains how the bulk of the legislative materials relevant to Congress’ awareness of and concern

175. Proof Brief, *supra* note 106, at 3.

176. A dictionary from the time of the Clean Air Act of 1970’s passing defines climate as “the average course . . . of the weather at a particular place over a period of many years as exhibited [by] temperature, wind velocity, precipitation, and other weather elements,” whereas it defines weather as “state of the atmosphere at a definite time and place with respect to heat or cold, wetness or dryness, calm or storm, clearness or cloudiness.” WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE, UNABRIDGED 423 (Philip Babcock Gove et al. eds., G. & C. Merriam Co. 1971).

about the adverse impact of air pollutants on climate had not previously been brought to light in the academic literature or in public debates and judicial proceedings on the Clean Air Act's regulatory reach. Section B focuses on the connection between air pollution and climate change. Section C undertakes a similar inquiry for the connection between greenhouse gases, particularly carbon dioxide, and global warming.

A. Scope of the Inquiry

The inquiry in this Part focuses on Congress' discussion of changes to climate, not effects on weather. Congress understood the difference between these two concepts, as evidenced in the Clean Air Act's separate mention of climate and weather in its definition of welfare.¹⁷⁷ Testimony by congressional members, administration witnesses, and scientific experts further underscore the clarity of this distinction.¹⁷⁸ This Part restricts its analysis to the legislative materials dealing with climate change.

Despite the abundance of legislative history demonstrating Congress' awareness of and concern about climate change, much of the evidence was not brought to bear in arguments supporting the Act's authority to regulate greenhouse gases. Notably, the Cannon memorandum,¹⁷⁹ briefs of the parties that supported the regulation of greenhouse gases in *Massachusetts v. EPA*, and relevant academic literature do not discuss the bulk of this evidence.¹⁸⁰ Even when they refer to some of these sources, the references are typically cryptic. The analysis of the legislative history undertaken here, therefore, is

177. 42 U.S.C. § 7602(h) (2018) (“All language referring to effects on welfare includes, but is not limited to, effects on . . . weather . . . and climate.”).

178. See, e.g., *Hearing Before the Subcomm. on Air & Water Pollution of the S. Comm. on Pub. Works on Air Quality Criteria*, 90th Cong. 2, 797–803 (1968) (statement of Dr. Fredrick Sargent II) [hereinafter *Hearing on Air Quality Criteria*]. During the debates on the Clean Air Act of 1970, Dr. Fredrick Sargent II, member of the Air Quality Criteria Advisory Committee, testified about “weather” as distinct from global atmospheric changes. Compare *Hearing on Air Quality Criteria*, (discussing how air pollution can result in “heat waves, cold waves, and the sudden changes of weather”), and *Hearing on Air Quality Criteria*, (discussing particulate matter pollution and stating that “[r]eflection of incoming solar radiation could lead to cooling of the earth’s atmosphere. Since 1940, the mean global temperature has been falling. Some authorities suggest that manufactured dust and other particles are the main factors responsible for this thermal decline.”).

179. Memorandum from Jonathan Z. Cannon, EPA General Counsel, to Carol M. Browner, EPA Administrator (Apr. 10, 1998), available at <https://perma.cc/46VY-4HV4> [hereinafter Cannon Memorandum].

180. Even Leon Billings, Senator Edmund Muskie’s long-time chief of staff and an ardent supporter of the Clean Air Act, failed to take account of these materials when recalling the events surrounding the statute’s passage years later. See RICHARD L. REVESZ & JACK LIENKE, *STRUGGLING FOR AIR: POWER PLANTS AND THE “WAR ON COAL”* 116 (2016) (Billings “has written that he does ‘not recall any talk about global warming’ when the Clean Air Act was passed, in 1970.”).

largely new to the dialogue surrounding the Clean Air Act's authority to regulate greenhouse gases and provides considerable evidence of the scope of Congress' awareness of issues involving global climate change preceding the time of the passage of the Act.

In April 1998, Jonathan Cannon, the EPA General Counsel, wrote a memorandum establishing that greenhouse gases are subject to regulation under the Clean Air Act. This was the government's first authoritative pronouncement on this issue. He focused on the broad definition of "air pollutant" in the text of the statute but did not discuss any of the legislative materials discussed in this Part.¹⁸¹

Similarly, none of these materials were discussed in the opening brief of petitioners in *Massachusetts v. EPA*.¹⁸² Moreover, their reply brief and final brief refer only to one of the statements from the legislative history analyzed in this Part: that of Senator Caleb Boggs, who entered into the record a portion of the First Annual Report of the Council of Environmental Quality. In the reply brief, this reference was made only in a footnote.¹⁸³ The petitioners argue that the EPA thus provided no affirmative legislative history that showed Congress' intent to exclude greenhouse gases and, further, that the EPA provided no discussion of the 1970, 1977, and 1990 amendments legislative history at all. However, in their own discussion of the 1970 legislative history, the petitioners go no further than quoting the portion of Senator Boggs's submission of the First Annual Report acknowledging carbon dioxide's potential to have "dramatic and long-term effects on world climate."¹⁸⁴ In their briefs, the petitioners instead focus primarily on the text of the statute to establish the Act's authority to regulate greenhouse gases as air pollutants.¹⁸⁵

181. Cannon Memorandum, *supra* note 179, at 5 (concluding that carbon dioxide is "within the scope of EPA's authority to regulate" under the Clean Air Act).

182. Brief of Appellant-Petitioner, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120), 2006 WL 2563378 [hereinafter Initial Brief].

183. Reply Brief of Appellant-Petitioner at 36 n.12, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120), 2006 WL 3367871 [hereinafter Reply Brief] (noting that "[d]uring debate on the 1970 Amendments, which added the terms 'climate' and 'weather' to the definition of 'welfare,' Senator Boggs introduced into the record a White House Report stating that: 'Air pollution alters climate and may produce global changes in temperature. . . . [T]he addition of particulates and carbon dioxide in the atmosphere could have dramatic and long-term effects on world climate.' This evidences an affirmative awareness of the problem of global climate change at the time Congress added the words 'climate' and 'weather' to the definition of 'welfare.'" (citation omitted).

184. Final Brief for Petitioners at 22, *Massachusetts v. EPA*, 549 U.S. 497 (2007) [hereinafter Final Brief] (quoting the same portion of the First Annual Report that they quoted in the Reply Brief, *supra* note 183, which Senator Boggs submitted to the record).

185. This statutory text includes Section 202(a)(1) of the Clean Air Act of 1970's grant of authority to the EPA to regulate any "air pollutant" that, under the Administrator's judgement, may "cause, or contribute to, air pollution which may

The leading academic articles on the Clean Air Act's use of the word "climate" also fail to rely on the legislative history described in this Part when arguing in support of the Act's authority to regulate greenhouse gases. Though plenty of scholarship discusses the meaning and scope of the term "climate" in the text of the Clean Air Act to support its arguments that the Act authorizes the regulation of greenhouse gases,¹⁸⁶ few articles refer to the legislative history at all. Those that do either fail to include the testimony discussed below or do so through passing, conclusory statements.¹⁸⁷

Despite the virtual lack of discourse surrounding the references to climate change in the legislative history of the Clean Air Act of

reasonably be anticipated to endanger public health or welfare;" Section 302(g)'s definition of "air pollutant" as "including any physical [or] chemical . . . substance or matter which is emitted into or otherwise enters the ambient air"; and Section 302(h)'s definition of "effects on welfare" as including "effects on . . . climate." 42 U.S.C. §§ 7521, 7602 (2018). It also includes text added in the 1990 amendments to the Clean Air Act, including Section 103(g)'s naming of carbon dioxide as an "air pollutant." 42 U.S.C. § 7403 (2018). See Initial Brief, *supra* note 182, at 32-42; Reply Brief, *supra* note 183, at 31-41; Final Brief, *supra* note 184, at 15-17.

186. See, e.g., Christopher T. Giovinazzo, *Defending Overstatement: The Symbolic Clean Air Act and Carbon Dioxide*, 30 HARV. ENV'T L. REV. 99, 133 (2006); Curtis A. Moore, *Existing Authorities in the United States for Responding to Global Warming*, 40 ENV'T L. REP. 10,185, 10,191-93 (2010); Elise Korican, *Massachusetts v. Environmental Protection Agency, Exploring the Merits of Greenhouse Gas Regulation*, 28 J. NAT'L ASS'N L. JUD. 193, 236 (2008); Janine Maney, *Carbon Dioxide Emissions, Climate Change, and the Clean Air Act: An Analysis of Whether Carbon Dioxide Should Be Listed As A Criteria Pollutant*, 13 N.Y.U. ENV'T L.J. 298 (2005); Kevin M. Davis, *The Road to Clean Air Is Paved with Many Obstacles: The U.S. Environmental Protection Agency Should Grant a Waiver for California to Regulate Automobile Greenhouse Gas Emissions Via Assembly Bill 1493*, 19 FORDHAM ENV'T L. REV. 39, 66 (2009); Lisa Heinzerling, *Climate Change and the Clean Air Act*, 42 U.S.F. L. REV. 111 (2007).

187. See, e.g., Adam Babich, *Back to the Basics of Antipollution Law*, 32 TUL. ENV'T L.J. 1, 46-48 (2018) (discussing the legislative history of the Clean Air Act as indicative of Congress' broad intent for the EPA to protect both health and welfare, but failing to include statements from the legislative history that provide evidence of Congress' specific awareness of climate change at the time of the Act's passing); Nicholle Winters, *Carbon Dioxide: A Pollutant in the Air, but Is the EPA Correct that It Is Not an "Air Pollutant"?*, 104 COLUM. L. REV. 1996, 2013 (2004) (referencing Senator Boggs and quoting a brief segment of the First Annual Report of the Council on Environmental Quality, but failing to mention any other legislative materials included in this Part). *Contra* Arnold W. Reitze Jr., *Global Warming*, 31 ENV'T L. REP. 10,253, 10,261 n.152 and accompanying text (2001) (arguing that "a review of the legislative history of the 1970 CAA Amendments reveals no concern about global warming; only the possibility of global warming was discussed at the time," and supporting this statement with reference to the Senate Committee of Public Works' Report, but failing to mention or analyze any of the legislative materials included in this Part). See also *id.* n.153 (quoting the First Annual Report of the Council on Environmental Quality's conclusion that "the future effect of carbon dioxide on climate must be uncertain because the function of carbon dioxide that will enter the ocean is unknown" to conclude that Congress had "no real concern" about global warming, but failing to introduce any of the legislative materials in this Part that suggest otherwise).

1970,¹⁸⁸ the legislative materials included in this Part provide considerable evidence that Congress understood, and was concerned about, issues surrounding climate change during the time of the Act's debate and passing. Sections B and C explore in detail the abundance of legislative materials accompanying the enactment of the Clean Air Act of 1970 that manifest Congress' substantial understanding of climate change and the adverse climatic effects of carbon dioxide and other greenhouse gases.

B. Air Pollutants and Global Climate Change

Several statements from bill sponsors, committee members, and scientific experts prior to the passage of the Clean Air Act of 1970 demonstrate not only that Congress was aware that certain air pollutants could negatively affect the climate on a global scale, but that they were concerned about this prospect. On September 21, 1970, during the debate of the Senate bill that would eventually become the Clean Air Act of 1970, Senator Edmund Muskie (D-ME), manager of the bill and chair of the Public Works Subcommittee on Air and Water Pollution, which was considering the bill, made direct statements about climate change. Urging the Senate to pass the bill, he stated that, every year, pollution would “destroy more plant and animal life, and threaten irreversible atmospheric and climatic changes.”¹⁸⁹ He warned, quoting President Nixon's opening address in the Council on Environmental Quality's First Annual Report, that “[u]nless we arrest the depredations that have been inflicted so carelessly on our natural systems . . . we face the prospect of ecological disaster.”¹⁹⁰ Following Senator Muskie's statement, Senator Caleb Boggs (R-DE), ranking minority member of this subcommittee, entered into the record a portion of the Council on Environmental

188. Representative Gerald E. Connolly (D-VA) wrote a letter in 2011, which is one of the few sources that refers to multiple statements relating to climate change from the legislative history surrounding the Clean Air Act of 1970. *See* Letter from Gerald Connolly, Representative, U.S. Cong. (Jan. 5, 2011), *available at* <https://perma.cc/4GTT-NC4M> [hereinafter Connolly, *Dear Colleague Letter*]. Representative Connolly provides little analysis for these references, however, and his letter has never been cited in the academic literature or by the courts.

189. 116 Cong. Rec. 32,901 (1970) (statement of Sen. Edmund Muskie, Chairperson, S. Pub. Works Subcomm. on Air & Water Pollution). This statement was cited in an amicus brief that Leon Billings and Thomas Jorling submitted in support of the respondents in *West Virginia v. EPA*. No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019). The amici referred to this statement in a parenthetical to describe the meaning of “climate” in the definition of “welfare” in §302(h) of the Act, but did not mention any of the other legislative history included in this Part. *See* Brief of Leon G. Billings and Thomas C. Jorling as Amici Curiae in Support of Respondents at 15, *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. dismissed Sept. 17, 2019).

190. 116 Cong. Rec. 32,901 (1970) (statement of Sen. Edmund Muskie, Chairperson, S. Pub. Works Subcomm. on Air & Water Pollution).

Quality's First Annual Report, which stated that air pollution "alters climate and may produce global changes in temperature."¹⁹¹

During that same debate, Senator Boggs also submitted a statement on behalf of Senate minority leader Hugh D. Scott (R-PA) urging for the control of pollution and arguing that unless pollution is controlled, "scientists tell us we may very well experience irreversible atmospheric and climatic changes capable of producing a snowballing adverse effect to the health and safety of our citizens."¹⁹² These statements confirm that congressional leaders from both sides of the political aisle were aware of and concerned about irreversible climate change, and that the entire Senate was exposed to the possibility of this phenomenon through testimony during the debates of the bill. Tellingly, no dissenting voices were raised.

A few months earlier, on March 17, 1970, the Senate Public Works Subcommittee on Air and Water Pollution had held hearings on three predecessor bills to the eventual bill that amended the Clean Air Act. Testimony at these hearings indicated a significant scientific understanding of the potential for pollutants to modify global climate. Senator Jennings Randolph (D-WV), cosponsor of two of the bills and Chairman of the full Senate Committee on Public Works, the parent body for Senator Muskie's subcommittee, entered into the record a study about pollution from the combustion of fossil fuels.¹⁹³ Discussing pollution from fine particulates, the article declares that these pollutants, when suspended and accumulated in the upper atmosphere, "could lead to significant climate changes."¹⁹⁴ Later on, the article reiterates that "fine particulates tend to remain in suspension in the upper atmosphere," where their continued buildup could reduce visibility, inhibit global solar radiation, and "produce unacceptable worldwide climate changes."¹⁹⁵

In an appendix to the hearings, the U.S. Department of Health, Education, and Welfare (HEW), the government office primarily responsible for dealing with air pollution before the establishment of EPA in 1970,¹⁹⁶ answered questions about the pending legislation submitted by Senator Muskie. In discussing the effects of lead on health and welfare, HEW stated that "[t]he automobile is by far the major source of lead in the atmosphere," and that, beyond lead pollution's impact on health, "[p]articles in this size range may also

191. *Id.* at 248.

192. 116 CONG. REC. 33,102 (1970) (statement of Sen. Hugh D. Scott, Member, S. Pub. Works Subcomm. on Air & Water Pollution).

193. *Hearing Before the Subcomm. on Air and Water Pollution of the S. Comm. on Pub. Works on S. 3229, S. 3466, S. 3546*, 91st Cong. 1 (1970) (statement of Sen. Randolph) [hereinafter *Hearing on S. 3229, S. 3466, S. 3546*].

194. *Id.*

195. *Id.*

196. See Reorganization Plan No. 3 of 1970, 84 Stat. 2086 (1970) (establishing the EPA and transferring to it the environmental functions, including those related to air pollution, carried out by HEW).

be a factor in climate modification.”¹⁹⁷ During these hearings, testimony by Dr. Vincent Schaefer, Director of the Atmospheric Sciences Research Center at the State University of New York in Albany, further detailed the potential for pollutants to modify climate in a way that adversely affected welfare. In response to a question by Senator Muskie, Dr. Schaefer indicated that leaded gasoline should be eliminated, adding: “I think that the leaded gasoline could lead us to problems, I mean, serious problems in terms of climate . . . I could be wrong about that, but the more data I gather, the more concerned I become, that we are already in a situation that might be producing atmospheric change.”¹⁹⁸ Senator Muskie also introduced to the record an article by Schaefer, which referred to inadvertent weather modification from particulate matter and posited: “Whether such effects will eventually cause changes in climate can only be determined by much more intensive research.”¹⁹⁹ This statement not only demonstrates a scientific understanding of weather as distinct from climate, but also shows an awareness of the potential for pollution to have an impact on climate. And it shows, despite some uncertainty in the data, that experts were concerned about the potential of air pollution to cause negative climate change effects and that they clearly and effectively transmitted these concerns to Congressional leaders, who engaged in the discussion and took actions to ensure that these concerns were reflected in the legislative record.

On March 26, 1970, during hearings on the same three Senate bills to amend the Clean Air Act, Senator Boggs, at the request of the Automobile Manufacturers Association, entered into the record a recent speech made before the National Association of Manufacturers’ Congress of American Industry in New York by Thomas C. Mann, President of the Automobile Manufacturers Association, entitled “Clean Air and the Automobile.” In his speech, Mann elaborated on scientific speculation about climate change by describing three news reports he had read recently. One scientist “was reported to have theorized that air pollution could, by trapping energy from the sun, cause the polar ice cap to melt and bring on earthquakes, volcanic eruptions, flooding and other calamities.”²⁰⁰

197. *Hearing on S. 3229, S. 3466, S. 3546, supra* note 193, at Appendix—Part I.

198. *Id.* at 95.

199. *Hearing on S. 3229, S. 3466, S. 3546, supra* note 93, at 111 (entering into the record Vincent J. Schaefer, *Some Effects of Air Pollution on Our Environment*, 19 BIOSCIENCE 896, 897 (1969)). Schaefer elaborates on this concept, stating: “Since the weather systems of our planet are interconnected on a global scale, these effects may lead to an ever-increasing impact on the climatic patterns of the world.” *Id.* at 111-12. This statement further underscores the distinction between weather and climate.

200. *Hearing on S. 3229, S. 3466, S. 3546, supra* note 193 (statement of Thomas A. Mann).

On the other hand, another scientist “reached the opposite conclusion—that air pollution, by reflecting the sun’s rays away from the earth, would cool the earth and lead to the formation of glaciers, icebergs and ice.”²⁰¹ A third scientist posited “that air pollution from both man-made and natural sources caused global temperatures to increase by 0.6 degrees centigrade between the 1880’s and 1940’s.”²⁰² After the 1940s, according to the third scientist, global temperatures decreased by about 0.3 degrees centigrade and “the buildup of atmospheric turbidity was thought to deflect more heat away from the earth than the increase of carbon dioxide in the atmosphere retains.”²⁰³ Thus, that scientist believed that “the effect of different pollutants were thought to counteract each other to some extent.”²⁰⁴ Although Mann warned in his speech of the dangers of relying upon speculation, rather than scientific facts, his discussion of these different scientific theories identified the growing research and concern among scientists about the potential for climate change, even if they were not certain of the precise pathways under which its effects would occur.

The House of Representatives was also exposed to information about climate change during the floor debate preceding the passage of the Clean Air Act of 1970. On June 10, 1970, during the debate on the House bill, Representative Paul Rogers (D-FL), the bill’s sponsor, expressed concern about global climate change. He stated that air pollution in the country was so severe that experts predicted that “the layers of smog are creating a wall between the Sun and the Earth so that sunlight may be blocked, in whole or in part, thus affecting the temperature of the Earth and the growth patterns of our vegetation.”²⁰⁵ His testimony thus reflects concern by a legislative leader about pollution potentially affecting the amount of radiation reaching the Earth and, consequently, global temperatures; this concern was expressed to all House members during the floor debate.

Several months before Congress considered the House and Senate bills, the Senate Public Works Subcommittee on Air and Water Pollution held hearings as part of its oversight function under the Clean Air Act of 1963 and the Air Quality Act of 1967.²⁰⁶ The purpose of these hearings was to receive testimony from medical and scientific experts about the general assumptions and methodology surrounding the development of air quality criteria, which are scientific compilations of the adverse impacts of air pollutants.²⁰⁷ On July 30, 1968, as part of these hearings, testimony from Dr. Fredrick

201. *Id.*

202. *Id.*

203. *Id.* at 1279-80.

204. *Id.* at 1280.

205. 116 CONG. REC. 19,210 (1970) (statement of Rep. Rogers).

206. *Hearing on Air Quality Criteria*, *supra* note 178.

207. *Id.* at 798 (statement of Dr. Fredrick Sargent II).

Sargent II, Dean of the College of Environmental Sciences at the University of Wisconsin and member of the National Air Quality Criteria Advisory Committee, acknowledged the potential for pollutants to modify climate on a global scale by causing atmospheric cooling.

Dr. Sargent described how the accumulation of “human airborne detritus” in the atmosphere “has global dimensions.”²⁰⁸ He indicated that “[r]eflection of incoming solar radiation could lead to cooling of the earth’s atmosphere” as a result of the blocking of solar radiation by pollution-induced cloud formations.²⁰⁹ This effect, he warned, would interfere with photosynthetic processes, such that “atmospheric oxygen would be expected to decline, the biological productivity of the ecosystem would be disrupted, and indirectly man’s welfare would be placed in jeopardy.”²¹⁰ This testimony expressed to Congress a scientific understanding of the potential for pollutants to alter the global climate—in this case through the cooling of the atmosphere—and that this climate alteration could jeopardize human welfare.

Other scientific experts articulated concerns about climate change during subsequent hearings. On October 27, 1969, Dr. David M. Gates, Director of the Missouri Botanical Garden, testified before the Senate Subcommittee on Air and Water Pollution during hearings on the problems and programs associated with air pollution control.²¹¹ In his testimony, he stated that “[t]he atmosphere above the United States is now persistently dirty, with the result that the global climate, as well as local climate, is changed.”²¹² This form of pollution, Gates concluded, resulted in “more clouds, more rain, less sunshine, and a less healthy climate.”²¹³

Lewis Green, former Chairman of the Air Conservation Commission of Missouri, also testified during these hearings, describing the global nature of pollution and arguing that the federal government should assume primary responsibility for air pollution control.²¹⁴ He stated that it was “currently fashionable, but quite misleading, to assert that air pollution is a ‘regional problem.’”²¹⁵ Contrary to this mistaken notion, Green insisted that “air pollution is a national problem, and a hemispheric problem, and indeed a global problem,” and a problem that could lead to the global alteration of atmospheric temperatures. Green argued that the concept of air

208. *Id.*

209. *Id.* at 800.

210. *Id.* at 801.

211. *Hearing Before the Subcomm. on Air and Water Pollution of the S. Comm. On Pub. Works on Problems and Programs Associated with the Control of Air Pollution*, 91st Cong. 1 (1969) [hereinafter *Hearing on Air Pollution*].

212. *Id.* at 17 (statement of Dr. David M. Gates).

213. *Id.*

214. *Id.* at 132 (statement of Lewis Green).

215. *Id.*

quality management as a regional concept “totally ignores the larger view: the national, hemispheric, or global effect of the great quantities of particulates, carbon dioxide . . . and other pollutants dumped into our atmosphere.”²¹⁶

In summary, statements by both Congressional leaders and expert witnesses demonstrate that Congress was exposed to considerable evidence of the adverse impacts of air pollution on climate change. Legislative leaders expressed concern about these possible effects when they debated the Clean Air Act of 1970.

C. Greenhouse Gases and Global Warming

Not only was Congress aware of and concerned about pollution’s ability to affect global climate, but it was also exposed to significant testimony that specifically described how greenhouse gases, including carbon dioxide, could cause global warming.²¹⁷ Indeed, prominent members of Congress expressed concern about this prospect.

On March 26, 1970, during hearings before the House subcommittee that was considering the bill to amend the Clean Air Act, Representative James Hastings (R-NY), co-sponsor of the House bill that resulted in the 1970 Clean Air Act, asked Charles Johnson, Administrator of HEW’s Environmental Health Service,²¹⁸ about the potential for and effects of extreme thermal pollution from supersonic transport airplanes.²¹⁹ Johnson (testifying in favor of the bill) responded that there were two schools of thought about the long-term effects of pollution: “whether or not we are going to heat up the atmosphere so that we melt the ice caps and have flooding of our land or whether we are going to do the reverse in terms of holding out radiant energy.”²²⁰ He explained that “the carbon dioxide balance might result in the heating up of the atmosphere,” while “the

216. *Id.* at 136.

217. Legislative materials indicate that members of Congress were aware of the problem of climate change even before the consideration of the 1970 Clean Air Act. See 111 CONG. REC. 25,061 (daily ed. Sep. 24, 1965) (statement of Rep. Helstoski) (“It has been predicted that by the year 2000, the amount of atmospheric carbon dioxide may have increased by about 50 percent; and many believe that this will have a considerable effect on the world’s climate.”).

218. See Reorganization Plan No. 3 of 1970, *supra* note 196 and accompanying text.

219. *Air Pollution Control and Solid Waste Recycling: Hearing on H.R. 12934 and H.R. 14960 Before H. Subcomm. On Pub. Health & Welfare of the H. Comm. on Interstate and Foreign Commerce*, 91st Cong. 1 (1969) (statement of Charles Johnson, Administrator of the Environmental Health Service, Department of Health, Education, and Welfare) [hereinafter *Hearing on H.R. 12934 and H.R. 14960*].

220. *Id.* at 300 (statement of Charles Johnson). This statement was referenced by Representative Connolly in a 2011 Dear Colleague Letter, written in support of the Clean Air Act’s authority to regulate greenhouse gases. See Connolly, *Dear Colleague Letter*, *supra* note 188.

reduction of the radiant energy through particulate matter released to the atmosphere might cause reduction in radiation that reaches the earth.”²²¹ He assured the Subcommittee that his department was concerned about both of these outcomes, and that it was “watching carefully . . . the kind of calculations that the scientists make to look at the continuous balance between heat and cooling of the total earth’s atmosphere.”²²² Johnson’s testimony indicates that at the time of the Clean Air Act of 1970’s consideration, the Cabinet department with principal responsibility over air pollution control was aware of—and concerned about—the potential for carbon dioxide emission to result in rising atmospheric temperatures.

On that same day, during joint hearings before the Senate Commerce Committee and the Senate Subcommittee on Air and Water Pollution on three predecessor bills to amend the Clean Air Act, Senator Boggs, the subcommittee’s ranking minority member, introduced into the record an article written by Frank M. Potter Jr., Executive Director of Environmental Clearinghouse, Inc., which described the “greenhouse effect.”²²³ In the article, Potter discusses “massive climatic change” and the “greenhouse effect,” which “tends to raise atmospheric temperature as a function of increased carbon dioxide production.”²²⁴ He then describes a related concern: “increased amounts of pollution in the air, which tend[] to raise atmospheric temperature by decreasing the amount of solar radiation reaching the Earth’s surface.” Potter warned that, within ten years, “large scale climatic changes may be irreversible.”²²⁵ Potter also criticized Congress for its failure to act, despite the scientific evidence of climate change.²²⁶ Senator Boggs’ inclusion of this article in the record provided yet another opportunity for Congress to learn about global warming, and illustrates that members of the scientific community, as well as members of Congress, were concerned about the consequences of global warming.

Several months earlier, in October 1969, during hearings before the Senate Subcommittee on Air and Water Pollution on the problems and programs associated with air pollution control,²²⁷ members with leadership responsibilities were also exposed to the prospect of climate change and its associated negative consequences. Senator Thomas Eagleton (D-MO), who chaired field hearings in St. Louis, Missouri, entered into the record a then-recent *New York Times Magazine* article about Dr. Gates, the Missouri Botanical

221. *Hearing on H.R. 12934 and H.R. 14960*, *supra* note 219 (statement of Charles Johnson).

222. *Id.*

223. *Id.* at 1197.

224. *Id.* at 1204.

225. *Id.*

226. *Id.*

227. *Hearing on Air Pollution*, *supra* note 211, at 1.

Garden's director, which described his research on pollution's effect on Earth's ecosystem.²²⁸ "If there were not enough oxygen in the atmosphere to filter out ultraviolet rays," the article explains, "the seemingly benevolent sun would destroy life on earth."²²⁹ The article elaborates on Dr. Gates's discussion of plants, which "help keep the atmospheric balance by absorbing carbon dioxide from the air." But human beings interfere with this process by burning "ever-increasing quantities of oil and coal, filling the air with carbon dioxide." The article then poses the rhetorical question: "How long will it be before the earth's plants are unable to produce enough oxygen—or absorb enough carbon dioxide—to hold back the ultraviolet rays?"²³⁰ This discussion provides information to Congress about how carbon dioxide can interfere with Earth's process of filtering out ultraviolet rays.

Former Missouri Air Conservation Commission Chairman Lewis Green also discussed carbon dioxide in his testimony before the Subcommittee on Air and Water Pollution during these 1969 hearings. "[F]or many years," he remarked, "the excessive carbon dioxide dumped into the earth's atmosphere appeared in such quantities and for such duration that caused the entire temperature of the earth to rise steadily."²³¹ Green noted that the consequences of this trend, such as "melting glaciers and other phenomena," could be "foreseen only dimly," but he expressed his confidence that "further research will disclose additional examples of the global consequences of the wastes we are dumping in the ambient air."²³²

Green also argued for replacing the concept of "air quality management" with the concept of "clean air." He explained that "the air quality management concept is misguided in terms of both time and space."²³³ In terms of time, it is misguided because it attempts to "curtail emissions only to the extent supposedly required to render the air generally endurable," inviting disaster "when a prolonged thermal inversion creates a short-term peak, or 'episode.'"²³⁴ In terms of space, it is misguided because it "totally ignores the larger view: the national, hemispheric, or global effect of the great quantities of particulates, carbon dioxide, sulfur oxides, lead, pesticides, and other pollutants dumped into our atmosphere."²³⁵ This statement reveals Green's understanding, relayed to members of Congress during these

228. *Id.* at 20–25 (entering into the record Robert W. Stock, *Saving the World the Ecologist's Way*, N.Y. TIMES MAG., Oct. 5, 1969)).

229. *Id.* at 21.

230. *Id.*

231. *Id.* at 132.

232. *Id.* at 132–33.

233. *Id.* at 135–36.

234. *Id.*

235. *Id.* at 136.

hearings, not only of pollution's impact on the global atmosphere, but also of carbon dioxide's direct role in that process.

Congress also obtained significant information about the prospects for climate change and its adverse consequences through the detailed, authoritative information presented in the First Annual Report of the Council on Environmental Quality, the White House agency that was established in 1970 pursuant to the National Environmental Policy Act (NEPA) to develop and recommend national policies that promote the improvement of environmental quality in accordance with national goals.²³⁶ During the Senate floor debate on the bill that resulted in the Clean Air Act of 1970, Senator Boggs entered into the Congressional Record a section of the report stating that air pollution was "no longer solely a local, regional, or even national problem,"²³⁷ and explaining that "[a]ir pollution alters climate and may produce global changes in temperature."²³⁸ This reprinted section stated that Chapter V of the report dealt more extensively with climate change.²³⁹ In turn, another section of the report submitted to the Congressional Record mentioned the report's Chapter V as well: "As discussed in Chapter V," the reprinted portion states, "the addition of particulates and carbon dioxide in the atmosphere could have dramatic and long-term effects on world climate."²⁴⁰ These references to Chapter V established in the record that the Council on Environmental Quality had devoted an entire chapter of its report to the discussion of climate change. Thus, the floor debate signaled to all the Senators both the significance of climate change and the availability of authoritative information on the topic prepared by the new government agency with significant responsibilities over issues related to pollution.

The first section of Chapter V of the Council on Environmental Quality's report refers to evidence on how human "activities and . . .

236. See COUNCIL ON ENVTL. QUALITY, FIRST ANNUAL REPORT 1 (1970) (explaining how NEPA's establishment of CEQ included a provision requiring CEQ to "transmit to the Congress annually an Environmental Quality Report setting forth the status and condition of the Nation's Environment," which should "trace current environmental trends" and "suggest ways of remedying the deficiencies of existing programs and activities.").

237. 116 CONG. REC. 32,907 (1970) (referencing COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 71)(statement of Sen. Boggs). This report is referenced in a handful of subsequent arguments about the Clean Air Act's authority to regulate carbon dioxide, but these arguments do not provide an analysis or detailed discussion of it. See, e.g., Reply Brief, *supra* note 183, at 36 n.12; Final Brief, *supra* note 184, at 22; Connolly, *Dear Colleague Letter*, *supra* note 188.

238. 116 CONG. REC. 32,907 (1970) (referencing COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 71).

239. COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 71 (referencing air pollution's ability to alter global climate and stating that "Chapter V of this report deals with that subject.").

240. 116 CONG. REC. 32,907 (1970) (referencing COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 71).

growing populations alter the chemical composition of the earth's atmosphere and change its heat balance," and that "these two alterations, in tandem, change weather and climate."²⁴¹ The chapter also discusses the "delicate balances within the atmosphere and the history of climatic change in the past," which suggest that "through his inadvertent actions" human activity "may be driving the atmosphere either to a disastrous ice age—or as bad—to a catastrophic melting of the ice caps."²⁴² Discussing climate in terms of the average annual temperature at the Earth's surface, the chapter explains that this average temperature has been experiencing an "irregular climb" since 1890, averaging 1.1 degrees Fahrenheit higher by 1940. This temperature then fell about 0.5 degrees Fahrenheit over the following 30 years up until 1970. The chapter also details the adverse consequences that were associated with rising temperatures: the shifting of frost and ice boundaries, increases in rainfall in previously arid continental regions, and colder temperatures that substantially diminished fishing and agricultural output in North Atlantic regions. It indicates that "[t]hese experiences illustrate dramatically how sensitive the complex pattern of human activity is to relatively small shifts in climate."²⁴³

The chapter's next section describes how human activity can alter climate, explaining that it can "significantly affect climate in at least seven ways," which include increasing the "carbon dioxide content of the atmosphere by burning fossil fuels"²⁴⁴ and heating "the atmosphere by burning fossil and nuclear fuels."²⁴⁵ These statements are unequivocal in their identification of carbon dioxide as a critical component of climate change and of the burning of fossil fuels as an important cause.

Carbon dioxide's specific effect on the Earth's atmosphere is further explained in the chapter's section entitled "Carbon Dioxide—An Earth Warmer?" It describes how the absorption of solar radiation through Earth's surface and atmosphere is a primary source of Earth's energy, which in turn affects climate. To maintain its thermal balance and prevent overheating due to the increased surface temperature that results from the absorption of solar radiation, Earth radiates energy back into space in longer wavelengths. Carbon dioxide interferes with this process. "[V]irtually opaque to some long-wave radiation that is emitted by the earth's surface," carbon dioxide blocks this emitted radiation and reduces the heat loss that would otherwise occur from Earth's surface, a process that the report describes as the "greenhouse effect."²⁴⁶ This detailed description of

241. COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 93.

242. *Id.*

243. *Id.* at 94.

244. *Id.* at 95.

245. *Id.*

246. *Id.*

the greenhouse effect negates any argument that scientists and members of Congress were unaware of global warming during the Clean Air Act debates.²⁴⁷

The chapter also discusses then-recent studies and attempts to determine how increased carbon dioxide in the atmosphere will affect the average surface temperature. It describes certain findings from Sweden and from the Environmental Science Services Administration (ESSA), the U.S. government agency that was replaced in 1970 by the National Oceanic and Atmospheric Administration, which indicated that a larger portion of carbon dioxide output was absorbed by the oceans as opposed to retained by the atmosphere. However, observations from ESSA, the Scripps Institution of Oceanography, and Swedish scientists also showed that carbon dioxide concentration in the atmosphere had jumped 0.7 parts per million from 1958 to 1970, a rate that, if continued, “would double manmade carbon dioxide accumulations in the atmosphere in about 23 years.”²⁴⁸ The chapter noted that at the current time, “[a]ny attempt to extrapolate the future effect of carbon dioxide on climate must be uncertain because the fraction of carbon dioxide that will enter the ocean is unknown.”²⁴⁹ However, the report is unequivocal in its prediction of the adverse effects of a carbon dioxide increase. Indeed, based on an estimate of the maximum amount of carbon dioxide that could be introduced into the atmosphere,²⁵⁰ the chapter states that even one-half of that maximum would cause Earth’s average temperature to rise about 2 to 3 degrees Fahrenheit. “Such a rise,” the chapter concludes, “if not counteracted by other effects, could in a period of a few decades, lead to the start of substantial melting of ice caps and flooding of coastal regions.”²⁵¹ These predictions surely signal to Congress that global warming poses a threat to welfare.

Moreover, the chapter’s section entitled “Energy Output—Disappearing Ice Cap?” discusses how human energy consumption, if it continues to increase, could cause polar ice to disappear.²⁵²

247. See *infra* text accompanying notes 348–366.

248. COUNCIL ON ENVTL. QUALITY, *supra* note 236, at 96.

249. *Id.*

250. This figure was determined by estimating the total available fossil fuels. One estimate calculated 7.6 thousand billion metric tons (7.6×10^{12}) as the maximum available coal; approximately 2 thousand billion barrels of oil (2×10^{12}), though other researchers estimate a lower figure of approximately 1.35 thousand billion barrels (1.35×10^{12}). The report states that these fossil fuels, if burned, would produce 3.3 million trillion grams (3.3×10^{18}) of carbon dioxide. *Id.* at 97.

251. *Id.*

252. The chapter calculates that, in the United States, each individual consumes the equivalent to 10,000 watts of energy on average. If the world population grows to 5 billion, and if the worldwide average energy consumption increases to this 10,000-watt figure, “manmade energy input into the atmosphere would reach almost one-hundredth that of the natural net radiation balance over land areas.” *Id.* at 100. The chapter calculates that if energy consumption

Increased human energy output would cause a global temperature increase, because it heats the global atmosphere, increasing the amount of radiation into space and thus altering the “annual difference between solar radiation absorbed by the earth and long-wave radiation reflected from earth into space,” also known as the thermal budget.²⁵³ “The combined effect of carbon dioxide pollution and heat pollution,” the chapter concludes, “is strongly in the direction of warming the earth’s atmosphere.”²⁵⁴ Although the chapter also discusses the potential cooling of the Earth’s atmosphere through particulate matter pollution,²⁵⁵ and expresses uncertainty about which pollution effect—global warming through heat and carbon dioxide pollution, or global cooling through particle pollution—will ultimately dominate, it is adamant that these questions will be critical in the future, and that more research is required “if we are to manage our global climate wisely.”²⁵⁶

Finally, the chapter’s concluding section, titled “What Needs To Be Done,” lists four action items to deal with the long-term problems of climate alteration, including worldwide recognition of the long-term effects of manmade atmospheric alterations; worldwide monitoring of carbon dioxide, turbidity, and water vapor distribution, particularly in oceanic areas; satellite monitoring of how changes in carbon dioxide, albedo, and particulate matters are altering the thermal balance; and more research on these thermal and dynamical processes.²⁵⁷ The chapter’s emphasis on carbon dioxide provides clear evidence that Congress was exposed to concrete data regarding

continues to increase at the present rate of 4 percent per year, then the artificial energy input into the atmosphere would reach one-third of the natural radiation balance in 200 years; if energy consumption increased at 10 percent per year, then this one-third figure would be reached in 100 years. *Id.*

253. *Id.* at 99.

254. *Id.* at 100.

255. In Chapter V’s subsection “Particle Pollution—An Earth Cooler?” the report explains that the emission of small particles or “cloud condensation nuclei” into the atmosphere through industrial processes and forest fires can cause temperature drops. Small raindrops can form around these cloud condensation nuclei, creating low cloud layers, increasing the frequencies of fog and thereby decreasing atmospheric transparency. Although the large-scale climatic effect of these formations depends on “abundance, size, distribution, and altitude of the particles,” some researchers estimated that “a decrease of atmospheric transparency of only 3 or 4 percent could lead to temperature reduction of 0.7° F.” *Id.* at 97. Evaluating current studies on this trend, the report states that data on global cloud cover is incomplete, and currently “there exists no proof that urban, industrial, and agricultural pollution is the principal cause of the recent cooling trend.” *Id.* at 98. However, it continues to state that if pollution were responsible for this cooling, the world would face a crucial problem of manmade global modification, and it argues that, with respect to the substantial increase of atmospheric pollution, there are currently “no acceptable means of impeding its growth on a global scale.” *Id.*

256. *Id.* at 100.

257. *Id.* at 104.

carbon dioxide's impact on global atmospheric temperatures and the resulting impact on human welfare.

In summary, numerous statements made during the Congressional hearings surrounding the passing of the Clean Air Act of 1970 establish that leading members of Congress were deeply aware of the potential for pollution to result in global climate change and that they expressed significant concern at this prospect. Moreover, Congress was exposed to significant testimony and research on carbon dioxide's impact on the atmosphere and its ability to initiate a "greenhouse effect" that results in global warming.

IV. *BOSTOCK* AND GREENHOUSE GAS REGULATION

This Part explores the ways in which the approaches of the majority and two dissenting opinions in the Supreme Court's recent decision in *Bostock v. Clayton County* eliminate any possible doubts about whether the regulatory reach of the Clean Air Act extends to climate change regulation. The application of the double standard that deprived greenhouse gases their rightful place at the regulatory table should now come to an end.

In *Bostock*, the Supreme Court held that "[a]n employer who fires an individual for being homosexual or transgender fires that person for traits or actions it would not have questioned in members of a different sex. Sex plays a necessary and undisguisable role in the decision, exactly what Title VII forbids."²⁵⁸ Specifically, Title VII makes it "unlawful . . . for an employer to fail or refuse to hire or to discharge any individual, or otherwise to discriminate against any individual . . . because of such individual's race, color, religion, sex, or national origin."²⁵⁹ The Court reached this conclusion despite evidence that, in 1964, Congress "might not have anticipated their work would lead to this particular result."²⁶⁰ There are obvious similarities in the interpretive issues that the Court focused on in *Bostock* and those at stake with respect to greenhouse gas regulation under the Clean Air Act. Both statutes are roughly half a century old. When enacting the two statutes, Congress was not primarily focused on the modern-day issues that have given rise to controversy more recently. This includes discrimination on the basis of sexual orientation and gender identity in the case of the Civil Rights Act.²⁶¹ Similarly, the Clean Air Act of 1970 was primarily focused (though, as Part II makes abundantly clear, not exclusively focused) on local pollutants that have a direct impact on public health,²⁶² rather than on

258. *Bostock*, 140 S. Ct. at 1737.

259. 42 U.S.C. § 2000e-2(a)(1) (2018).

260. *Bostock*, 140 S. Ct. at 1737.

261. *Id.* at 1751.

262. See Richard L. Revesz, *Toward a More Rational Environmental Policy*, 39 HARV. ENVTL. L. REV. 93, 94 (2015).

global pollutants. Moreover, in the case of both statutes, there was relevant subsequent legislative activity, both unsuccessful and successful. For this reason, *Bostock* provides a good roadmap for analyzing the Clean Air Act problem that is the focus of this Article.

In some ways, the interpretive questions at stake concerning whether greenhouse gases are covered by the Clean Air Act's regulatory reach are far more straightforward than those at issue in *Bostock*. After all, the Clean Air Act expressly covers any "air pollutant" that is "anticipated to endanger public health or welfare" and "effects on welfare" is explicitly defined in the statute to include "effects on . . . climate." In contrast, the Civil Rights Act of 1964 does not state explicitly that "sex discrimination" includes discrimination on the basis of sexual orientation and gender identity. But, as explained in Part I, the Clean Air Act's textual reference to "effects on . . . climate" did not put an end to the controversy, either before *Massachusetts v. EPA*,²⁶³ or thereafter.²⁶⁴ Now, the various interpretive tests in *Bostock*, if fairly applied, should provide the definitive answer. And most importantly, *Bostock* should put an end to this controversy not only with respect to the approaches of the six Justices in the majority, which is the subject of Section A, but also of the three Justices who authored two dissents, which are analyzed in Section B.²⁶⁵

A. Relevance of the Majority Opinion

The majority opinion in *Bostock* focuses primarily on two matters in determining the applicability of the Civil Rights Act of 1964 to discrimination on the basis of sexual orientation and gender identity. First, as discussed in Section 1 below, the Court adopts an interpretive approach under which the express terms of the statute override any extratextual considerations, such as the applications that Congress in 1964 might have expected the statute to have.²⁶⁶ Similarly, unexpected applications are consistent with the statute's broad language.²⁶⁷ In the context of greenhouse gas regulation under the Clean Air Act, this means that the focus for interpretation should be on the express terms of the statute, which are similarly broad, covering "effects on . . . climate," not on whether members of Congress in 1970 expected the statute to be used specifically to address climate change regulation (even though, as Part II explains, there is very strong evidence that it did).

And, as discussed in Section 2, in *Bostock*, the Court also considered the significance of post-enactment developments, finding

263. *Massachusetts v. EPA*, 549 U.S. at 532.

264. *See supra* Parts I.A, I.B.

265. *See Bostock*, 140 S. Ct. at 1754 (Alito, J., joined by Thomas, J., dissenting); *id.* at 1822 (Kavanaugh, J., dissenting).

266. *Id.* at 1737.

267. *See id.* at 1752.

that later failures to amend the statute to explicitly add sexual orientation to the reach of the statute did not mean that such authority had previously been lacking.²⁶⁸ Extrapolating to the Clean Air Act, the failure of the Waxman-Markey bill does not imply that the EPA had lacked the legal authority to tackle climate change regulation. In fact, the case for determining that the failure of subsequent legislation should have no relevance is significantly stronger in the case of the Clean Air Act, because one of the failed amendments to the Civil Rights Act proposed to “add sexual orientation to Title VII’s list of protected characteristics,”²⁶⁹ whereas no such targeted amendment was defeated in the context of greenhouse gas regulation under the Clean Air Act. The Court in *Bostock* took a similar approach with respect to legislation that was subsequently enacted, finding that these later developments have no bearing on the interpretation of the original statute.²⁷⁰ By analogy, later legislation dealing with greenhouse gases does not affect the interpretation of the Clean Air Act’s original terms.

1. Interpretive Approaches

The *Bostock* majority applies four distinct interpretive approaches. First, it focuses on the text of the statute, emphasizing that when the text is clear on an issue, it should override any extratextual considerations that point to a different conclusion.²⁷¹ Second, it considers the ordinary public meaning of the terms of the statute, using contemporaneous dictionary definitions.²⁷² Third, the majority focuses on the actual breadth of the statutory text as opposed to narrower applications that Congress might have focused on at the time of the enactment.²⁷³ Fourth, the Court determines that even though the terms “sexual orientation” and “gender identity” were not expressly included in the Civil Rights Act, they were within the boundaries of the broad language of the statute, even if these applications were not anticipated by Congress,²⁷⁴ and, as a result, the resort to the legislative history is unnecessary.²⁷⁵ These interpretive approaches are equally relevant for the determination of the status of greenhouse gases under the Clean Air Act.

The *Bostock* opinion first explains that “only the written word is law” and “[w]hen the express terms of a statute give us one answer and extratextual considerations, such as what members of Congress

268. *See id.* at 1747.

269. *Id.*

270. *See id.*

271. *See id.* at 1737.

272. *See id.* at 1738.

273. *See id.* at 1752.

274. *See id.* at 1747.

275. *See id.* at 1749.

were anticipating at the time of the enactment, suggest another, it's no contest."²⁷⁶ In particular, what Congress might have thought in 1964 about the issue now in dispute does not matter, only the text matters.²⁷⁷ The majority in *Bostock* holds that a different interpretation that stems from considerations beyond the text, such as the drafters' understanding of the reach of the terms or expectations for its applications, should not prevail over the interpretation of the text of the statute itself.²⁷⁸

Applying these principles to the Clean Air Act, the relevant inquiry concerns the meaning of the statutory text, not Congress's understanding in 1970 about which specific types of pollutants might be covered by the statute's reach.²⁷⁹ The focus is only on the express terms, which include "air pollution which may reasonably be anticipated to endanger public health or welfare,"²⁸⁰ with "welfare" in turn defined as including "climate."²⁸¹ Because the text gives a clear answer, extratextual considerations, such as the extent to which Congress might have focused on greenhouse gases or climate change, do not matter.

Second, the majority opinion addresses the point that the Court should interpret a statute according to "the ordinary public meaning of its terms at the time of its enactment."²⁸² The Court stresses, however, that this inquiry is different from one under which the only proper applications of the statute are those that were understood at the time of its enactment.²⁸³ The former approach, which the Court embraces, says that the ordinary public meaning of the statute's terms in 1964 should be used for interpreting the text.²⁸⁴ The latter, rejected by the Court, seeks to limit the application of those terms based on the imagination of the statute's drafters.²⁸⁵ The opinion goes on to interpret the relevant terms of the statute, looking at the 1964 understandings of the terms "sex," "because of," and "discriminate," primarily using definitions from a dictionary published in 1964.²⁸⁶ It concludes that, given these terms, discrimination on account of sexual orientation and gender identity is included in the meaning of

276. *Id.* at 1737.

277. *See id.*

278. *See id.*

279. *See, e.g.,* Doug Obey, *Critics Cite New High Court Rulings in Vehicle GHG Preemption Case*, INSIDE EPA (Jun. 29, 2020), <https://insideepa.com/daily-news/critics-cite-new-high-court-rulings-vehicle-ghg-preemption-case>; Curt Barry, *Legal Experts Weigh High Court's "Textual" Focus for EPA Rollback Cases*, INSIDE EPA. (Jun. 25, 2020), <https://insideepa.com/weekly-focus/legal-experts-weigh-high-court-s-textual-focus-epa-rollback-cases>.

280. 42 U.S.C. § 7521(a)(1) (2018).

281. 42 U.S.C. § 7602(h) (2018).

282. *Bostock*, 140 S. Ct. at 1738.

283. *See id.*

284. *See id.*

285. *See id.* at 1737.

286. *Id.* at 1739-41.

“discrimination on account of sex” and is therefore prohibited by the Act.²⁸⁷ That Congress, at the time, might not have focused on these specific applications simply does not matter.²⁸⁸

The same method of interpretation can be used for the relevant provision of the Clean Air Act: “air pollution which may reasonably be anticipated to endanger [climate].”²⁸⁹ It demonstrates that the ordinary public meaning of these terms covers adverse impacts on climate, even if Congress did not specifically focus on particular pathways, such as the impact of greenhouse gases like carbon dioxide.²⁹⁰ To interpret the Clean Air Act of 1970, a dictionary from 1971, which is very close in time to when the statute was enacted, sheds considerable light on the ordinary public meaning of the relevant terms. The Merriam-Webster Dictionary published in 1971, defines “air” as “a mixture of invisible, odorless . . . gases composed chiefly of nitrogen and oxygen . . . that surrounds the earth”²⁹¹ and “pollution” as “defilement, desecration, impurity.”²⁹² In the same dictionary, “anticipated” is defined as “to consider in advance,”²⁹³ “endanger” as “imperil or threaten danger to,”²⁹⁴ and “climate” as “the average course . . . of the weather at a particular place over a period of many years as exhibited [by] temperature, wind velocity, precipitation, and other weather elements.”²⁹⁵ Taken together, these definitions demonstrate that the meaning of this provision was to address substances emitted into the air that could be expected to cause adverse long-term meteorological changes.

Third, the *Bostock* majority focuses on the breadth of the original statute and compares it to the applications that, at the time of the enactment, Congress might have expected the statute to have.²⁹⁶ The Court forcefully explains that, even though the legislators who enacted the Civil Rights Act would not have considered all of the eventual consequences of the legislation, including a prohibition on discrimination on the basis of motherhood or a ban on sexual harassment, that does not prevent those actions to be within the statute’s purview.²⁹⁷ As the opinion succinctly puts it, “the limits of the drafters’ imagination supply no reason to ignore the law’s demands.”²⁹⁸ Going even further, the Court notes that “many, maybe

287. *See id.* at 1743.

288. *See id.* at 1737.

289. 42 U.S.C. § 7521(a)(1) (2018).

290. 42 U.S.C. §§ 7521(a)(1), 7602(h) (2018).

291. WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE, UNABRIDGED, *supra* note 176, at 45.

292. *Id.* at 1756.

293. *Id.* at 94.

294. *Id.* at 748.

295. *Id.* at 423.

296. *See Bostock*, 140 S. Ct. at 1749.

297. *See id.* at 1737.

298. *Id.* at 1737.

most, applications of Title VII's sex provision were 'unanticipated' at the time of the law's adoption."²⁹⁹ It indicates that these applications cannot be ignored simply because Congress's imagination in 1964 did not extend that far.³⁰⁰

In the context of the Clean Air Act, this principle implies that Congress's failure in 1970 to consider the impact of carbon dioxide or other greenhouse gases on global warming as an aspect of air pollution negatively affecting climate, even if that had been the case, would be irrelevant to the Act's application in that area. Specifically, it would not matter if Congress had not explicitly contemplated that "air pollution which may reasonably be anticipated to endanger [climate]"³⁰¹ included carbon dioxide emissions that cause global warming and other forms of climate change with undesirable consequences. The express terms of the respective statutes, not the predictions of their writers, establish the scope of the legislative authority.

Fourth, the Court in *Bostock* also rejects the argument that, "because homosexuality and transgender status" cannot be found in the list of prohibited discrimination, those characteristics are not protected by the Act.³⁰² The Court explains that "when Congress chooses not to include any exceptions to a broad rule, courts apply the broad rule."³⁰³ Relatedly, the Court rejects the arguments of employers based on the legislative history, claiming that in 1964 Congress did not intend the Act to cover sexual orientation.³⁰⁴ The Court explains that legislative history can be used only to clear up ambiguity, not to create it, and that "when the meaning of the statute's terms is plain, our job is at an end."³⁰⁵ As the Court had already found that the text of the Act was clear on this question, any legislative history, even if it pointed to a different conclusion, would be irrelevant to the decision.³⁰⁶

Likewise, with respect to the Clean Air Act, the fact that the statutory language does not explicitly name greenhouse gases does not imply they are not subject to regulation under the statute. In fact, that would have been extremely odd, given that the statute did not explicitly name any particular pollutant, instead delegating to the EPA the task of determining which substances are "air pollutants" for the purposes of the statute. Moreover, given the breadth of the statutory language, under the approach of the *Bostock* majority, greenhouse gases would be within the regulatory reach of the Clean Air Act even

299. *Id.* at 1752.

300. *See id.*

301. 42 U.S.C. § 7521(a)(1) (2018).

302. *Bostock*, 140 S. Ct. at 1746.

303. *Id.* at 1747.

304. *See id.* at 1749.

305. *Id.*

306. *See id.*

if the legislative history pointed in the opposite direction, which, as Part II underscores, it definitely does not.

2. Subsequent Legislative Initiatives

The majority opinion also addresses the fact that, in the years following the passage of the Civil Rights Act of 1964, Congress considered amendments that would have explicitly added sexual orientation to the list of protected characteristics, “but no such amendment has become law.”³⁰⁷ According to the employers arguing that the reach of the Civil Rights Act of 1964 did not extend to discrimination on the basis of sexual orientation, these post-enactment developments are significant for interpreting the meaning of “sex discrimination” under the Act. The employers argue that these developments “should tell us something,” implying that sexual orientation was excluded from the original version of the Act, because if the Act protected that category already, there would have been no need for the subsequent proposals for amendments to expressly add those categories to the list.³⁰⁸

The *Bostock* majority rejects these arguments, determining that the post-enactment developments do not shed any light on the question and, in particular, do not imply the exclusion of discrimination based on sexual orientation from the coverage of the 1964 Act. Instead, the majority notes, there are several possible reasons for why sexual orientation would have not been added explicitly at a later time to the list of forms of discrimination prohibited in 1964. For one, “[m]aybe some in the later legislatures understood the impact Title VII’s broad language already promised for cases like ours and didn’t think a revision [was] needed.”³⁰⁹ According to the Court, there is “no authoritative evidence” to explain why later Congresses chose not to amend the Civil Rights Act.³¹⁰ As a result, it concludes that examining why a later Congress chose not to amend the statute is not helpful for interpreting a statute enacted by a prior Congress.³¹¹

The *Bostock* Court thus provides a clear blueprint for rejecting the argument, made forcefully by opponents of greenhouse gas regulation concerning the failure of Congress to enact the Waxman-Markey bill,³¹² which would have regulated the greenhouse emissions of broad sectors of the economy through a nationwide cap-and-trade scheme.³¹³ Following the approach in *Bostock*, the failure of Congress

307. *Bostock*, 140 S. Ct. at 1747.

308. *Id.*

309. *Id.*

310. *Id.*

311. *See id.*

312. Waxman-Markey Bill, *supra* note 111.

313. *See id.*

in 2010 to adopt a provision to regulate greenhouse gases says nothing about whether greenhouse gases were included within the regulatory reach of the Clean Air Act of 1970.

In fact, the argument against crediting particular meaning to the failure of subsequent legislation is even stronger for the Clean Air Act than for the Civil Rights Act. In the case of the Civil Rights Act, if it had been crystal clear that the 1964 provision covered discrimination against on the basis of sexual orientation, the subsequent legislation would have been unnecessary. That is not the case with respect to the coverage of greenhouse gases under the Clean Air Act. Even if it had been crystal clear that the Clean Air Act of 1970 covered greenhouse gases, the Waxman-Markey bill would have been necessary to authorize the nationwide cap-and-trade scheme for greenhouse gas emissions and for setting the complex rules under which permits were to be allocated.³¹⁴ Indeed, the Clean Air Act authorized a nationwide trading scheme of this sort only for sulfur dioxide, under the statute's acid rain provisions, not for any other pollutants.³¹⁵

Similarly, the Court's approach in *Bostock* establishes that, contrary to the arguments presented by opponents of greenhouse gas regulation,³¹⁶ the rejection by the Senate of the Kyoto Protocol in 1997 does not support the argument that greenhouse gases were not included within the regulatory reach of the Clean Air Act of 1970. As indicated above, the Kyoto Protocol set binding emission reduction goals for six greenhouse gases for thirty-seven industrialized countries and the European community and would have obligated the United States to reduce its emission during the period from 2008 to 2012 by 7% relative to a 1990 baseline.³¹⁷ The Clean Air Act of 1990 did not mandate any such explicit percentage reduction requirements for greenhouse gases, or for any other pollutants. So, once again, even if it had been crystal clear that the Clean Air Act of 1970 covered greenhouse gases, the Kyoto Protocol would have been necessary to drive the specific percentage reductions.

The majority opinion in *Bostock* also addresses the fact that, following the passage of the Civil Rights Act of 1964, Congress successfully enacted statutes relating to sexual orientation.³¹⁸ The employers seeking to deny protection to individuals based on their sexual orientation argued that these developments shed light on the meaning of "sex discrimination" in the Act because later Congresses would not have legislated in this manner if such protections had already been included in the Civil Rights Act.³¹⁹ But the majority

314. *See supra* text accompanying notes 111-113.

315. *See* 42 U.S.C. §§ 7651-7651o (2018).

316. *See supra* text accompanying notes 85-89.

317. Kyoto Protocol, *supra* note 86, app. b.

318. *See Bostock*, 140 S. Ct. at 1747.

319. *See id.*

makes the same argument against the relevance of successful subsequent legislation as it had had about the relevance of failed subsequent legislation, explaining why these statutes that were later passed have no bearing on the meaning of the original Act.³²⁰ As the Court states, there is no “authoritative evidence explaining why later Congresses adopted other laws on different topics that do reference sexual orientation but didn’t amend this one.”³²¹

For the same reason, an examination of the three provisions on which the Bush administration and amici had relied to oppose greenhouse gas regulation³²² underscores why they have no bearing on whether greenhouse gases were covered within the regulatory reach of the Clean Air Act of 1970. For example, section 103(g)(1) has a reference to carbon dioxide in the context of a new program to improve “nonregulatory strategies and technologies.”³²³ To suggest that this provision would have been unnecessary if greenhouse gases were already within the Clean Air Act’s regulatory reach is simply frivolous because carbon dioxide is not the only pollutant mentioned in the provision, and all of the others, “sulfur oxides, nitrogen oxides, heavy metals, PM-10 (particulate matter), [and] carbon monoxide,” were already being regulated by NAAQS under Section 108 of the Clean Air Act.³²⁴ In turn, heavy metals were regulated under Section 112 of the Clean Air Act,³²⁵ which deals with hazardous air pollutants.³²⁶ The purpose of the provision was to encourage EPA to consider nonregulatory approaches, as opposed to the regulatory approaches that are the hallmark of the Clean Air Act of 1970.³²⁷

In turn, Section 602(e) directs EPA to evaluate the “global warming potential” of certain substances,³²⁸ while Section 821 asks EPA to gather and publish information about carbon dioxide

320. *See id.*

321. *Id.*

322. *See supra* Part I.A.

323. *See* 42 U.S.C. § 7403(g)(1) (2018).

324. *See* Kimberly M. Castle & Richard L. Revesz, *Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations*, 103 MINN. L. REV. 1349, 1355 (2019).

325. 42 U.S.C. § 7412 (2018).

326. Henry A. Waxman, *Overview and Critique: An Overview of the Clean Air Act Amendments of 1990*, 21 ENVTL. L. 1721, 1787 (1991).

327. H.R. Res. 535, 101st Cong. (1990), *reprinted in* ENVIRONMENT AND NATURAL RESOURCES POLICY DIVISION OF THE CONG. RESEARCH SERV. OF THE LIBR. OF CONG. *A Legislative History of the Clean Air Act Amendments of 1990* at 1250 (1998) (“Under the existing Clean Air Act, EPA has broad authority to conduct research. In practice, however, most of EPA’s research up to now has been narrowly focused on efforts to support specific regulatory requirements, not on understanding the broad effects of air pollution. The research and development provision of the Clean Air Act will reinvigorate EPA’s long-term air pollution research.”).

328. 42 U.S.C. § 7671a(e) (2018).

emissions from regulated utilities.³²⁹ But, the Clean Air Act of 1970, regardless of whether it covered greenhouse gases, did not have any explicit provisions requiring EPA to collect information of this sort. Thus, Congress's interest in 1990 to have this information collected and disseminated is altogether inapposite to the question of whether Congress in 1970 had intended to include greenhouse gases within its regulatory reach.³³⁰

Similarly inapposite to the interpretive question is the 1990 addition of Title VI, which addresses ozone-depleting substances.³³¹ Title VI instructs the EPA to designate and list ozone-depleting substances and monitor domestic and international usage,³³² and gives the President authority to enter into international agreements in order to set standards and regulations for ozone-depleting substances.³³³ The Bush Administration had argued in *Massachusetts v. EPA* that Congress would have provided similar authority for greenhouse gases if these pollutants were proper subjects for regulation under the Clean Air Act.³³⁴ But the fact that Congress in 1990 did not require EPA in 1990 to monitor international usage of greenhouse gases says nothing about whether Congress in 1970 gave EPA discretion to regulate greenhouse gases. Similarly, the fact that Congress in 1990 did not give the President the authority to enter into an international agreement for greenhouse gas reductions, as Congress did for ozone-depleting substances, sheds no light on whether Congress in 1970 gave EPA the discretion to reduce the level of greenhouse gases and do so using domestic mechanisms.³³⁵

B. Relevance of the Dissenting Opinions

As indicated in Section A, the *Bostock* majority's interpretive approach and treatment for subsequent legislation strongly support the proposition that greenhouse gases are covered within the regulatory reach of the Clean Air Act of 1970. But in terms of putting an end to the era of greenhouse gas exceptionalism that gave rise to the pariah status of these pollutants, it is equally important to note that the factors the three dissenting Justices relied on to argue against a broad interpretation of the Civil Rights Act of 1964 are either not present—in the case of the Clean Air Act—or point strongly in the

329. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 821(a), 104 Stat. 2399, 2698 (1990).

330. See Initial Brief, *supra* note 182, at 12.

331. See 42 U.S.C. §§ 7671–7671q (2018).

332. See 42 U.S.C. §§ 7671a–7671b (2018).

333. See 42 U.S.C. § 7671p (2018); Steven J. Shimberg, *Stratospheric Ozone and Climate Protection: Domestic Legislation and the International Process*, 21 ENVTL. L. 2175 (1991).

334. See Federal Respondent Brief, *supra* note 56, at 7.

335. See Initial Brief, *supra* note 182.

opposite direction. Section 1 analyzes their interpretive methods and Section 2 analyzes their use of subsequent legislative initiatives.³³⁶

1. Interpretive Approaches

The two dissenting opinions in *Bostock*, one by Justice Alito and joined by Justice Thomas,³³⁷ and the other by Justice Kavanaugh,³³⁸ set forth four different interpretive approaches to support their conclusion that the Civil Rights Act of 1964 does not prohibit discrimination on the basis of sexual orientation and gender identity. In contrast, the factors that motivated their narrow interpretation of the Civil Rights Act point in favor of an interpretation of the Clean Air Act of 1970 that brings greenhouse gases within their regulatory reach.

First, Justice Alito resorts to contemporaneous dictionaries to determine whether they defined “sex” to mean “sexual orientation, gender identity, or ‘transgender status.’”³³⁹ He notes that a “[d]etermined searching has not found a single dictionary” defining sex in this manner.³⁴⁰

The situation is altogether different with respect to whether the reach of the Clean Air Act of 1970 extends to greenhouse gases. As indicated above, the relevant inquiry concerns whether greenhouse gases are “air pollutant[s]” that are “anticipated to endanger public health or welfare,”³⁴¹ with “welfare” defined in the statute to include “effects on . . . climate.”³⁴² This inquiry is composed of a scientific determination and a statutory determination. The former—whether these actually “endanger public health or welfare”—is delegated to EPA, which made the “endangerment” determination in 2009.³⁴³ The statutory question is whether “effects of climate” encompasses climate change. A contemporaneous dictionary answers the question in the affirmative. Indeed, the 1971 Merriam-Webster dictionary defines “climate” as “the average course . . . of the weather at a particular place over a period of many years as exhibited [by] temperature, wind

336. For criticism of the dissenters’ approach in *Bostock*, see Andrew Koppelman, Essay, *Bostock, LGBT Discrimination, and the Subtractive Moves*, 105 MINN. L. REV. HEADNOTES 1 (Jul. 13, 2020).

337. See *Bostock*, 140 S. Ct. at 1754 (Alito, J., joined by Thomas, J., dissenting).

338. See *id.* at 1822 (Kavanaugh, J., dissenting).

339. *Id.* at 1756 (Alito, J., joined by Thomas, J., dissenting).

340. *Id.*

341. 42 U.S.C. § 7521(a)(1) (2018) (regulation of mobile sources). For similar formulations, see 42 U.S.C. § 7408(a)(1)(A) (2018) (National Ambient Air Quality Standards); 42 U.S.C. § 7411(b)(1)(A) (2018) (New Source Performance Standards).

342. 42 U.S.C. § 7602(h) (2018).

343. See *supra* text accompanying notes 18–19.

velocity, precipitation, and other weather elements.”³⁴⁴ This dictionary definition confirms that if a substance causes adverse changes in the long-term (over “a period of many years”) to meteorological patterns (like “temperature, wind velocity, and precipitation”), it is an “air pollutant” for the purposes of the Clean Air Act. Thus, Justice Alito’s concern in the context of whether the Civil Rights Act of 1964 provided protection on the basis of sexual orientation and gender identity is inapposite to the question of whether greenhouse gases are within the regulatory reach of the Clean Air Act of 1970 and the contemporaneous dictionary definition supports the coverage of these substances.

Second, Justice Alito turns to the public meaning of the relevant term at the time of the enactment, seeking to determine what it meant to “reasonable people” at the time when the statute was written.³⁴⁵ He argues that “if every single living American had been surveyed in 1964, it would have been hard to find any who thought that discrimination because of sex meant discrimination because of sexual orientation—not to mention gender identity.”³⁴⁶ Along similar lines, Justice Kavanaugh concludes that “few in 1964 . . . would describe a firing because of sexual orientation as a firing because of sex.”³⁴⁷

Again, the situation is altogether different with respect to whether the provisions of the Clean Air Act of 1970 cover greenhouse gases. As explained in detail in Part II, the hearings before the House and the Senate reveal significant public understanding of both the connection between air pollutants and global climate change,³⁴⁸ and of how greenhouse gases, including carbon dioxide, could cause global warming.³⁴⁹ Many witnesses, including distinguished scientists, testified on both matters.³⁵⁰ In their testimony, they discussed significant academic literature on these questions.³⁵¹ Moreover, the two agencies with responsibility for regulating air pollution expressed concern about the problem,³⁵² with one of them preparing an extensive report documenting the problem.³⁵³ Perhaps most tellingly, the principal government witness at the hearings, who expressed serious concern about climate change, testified in favor of the bill.³⁵⁴ Presumably, given his expressed concern, he would have argued for

344. WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE, UNABRIDGED, *supra* note 176, at 423.

345. *Bostock*, 140 S. Ct. at 1755 (Alito, J., joined by Thomas, J., dissenting).

346. *Id.*

347. *Id.* at 1828 (Kavanaugh, J., dissenting).

348. *See supra* notes 191–219.

349. *See supra* notes 220–261.

350. *See supra* text accompanying notes 191, 210–11, 217–29, 231–33, 242–46.

351. *See supra* text accompanying notes 202–07, 210–12, 226–33.

352. *See supra* text accompanying notes 221–25, 239–60.

353. *See supra* text accompanying notes 239–61.

354. *See supra* text accompanying notes 221–25.

an amendment if he had believed that the bill did not cover greenhouse gases. It is definitely not the case, to use Justice Alito's words, that it would have been hard to find a "single living American" who thought that substances that had an adverse impact on climate were air pollutants. The extensive hearings on the Clean Air Act of 1970 clearly reveal otherwise.

Third, turning to the legislative history, Justice Alito finds that "there is not a shred of evidence that any Member of Congress" in 1964 "interpreted the statutory text" of the Civil Rights Act to provide protection to homosexual or transgender individuals."³⁵⁵ Justice Alito adds that "[a]ny assessment of congressional intent or legislative history seriously undermines the Court's interpretation"³⁵⁶ and concludes that "[f]or those who regard congressional intent as the touchstone of statutory interpretation, the message of Title VII's legislative history cannot be missed."³⁵⁷

Once again, the situation is totally different with respect to the Clean Air Act's coverage of greenhouse gases. Like the witnesses in the Congressional hearings, the sponsors of the legislation, the ranking members of the respective subcommittees, and other legislative leaders, in expressing their support for the bills, revealed an understanding and concern with the impact of greenhouse gases on climate change. Part II extensively documents the statements by Senator Muskie (the Senate bill's sponsor and the chair of the subcommittee considering the bill),³⁵⁸ Senator Boggs (ranking member of the subcommittee),³⁵⁹ Senator Scott (minority leader),³⁶⁰ Senator Randolph (chair of the full committee with jurisdiction over the bill),³⁶¹ and Representative Rogers (the House bill's sponsor).³⁶² Also, Senator Eagleton (while chairing a field hearing) introduced into the record a study on the adverse consequences of climate change,³⁶³ and Representative Hastings (a co-sponsor of the House bill) asked a senior government witness a question about the potential negative consequences of climate change.³⁶⁴ As Part II details, leading members of Congress were deeply aware of the potential for pollution to result in global climate change and they expressed significant concern at this prospect. These concerns were brought to light not only in committee hearings, but also in floor debate in the House.³⁶⁵ The situation is a far cry from Justice Alito's assertion, in the context

355. Bostock, 140 S. Ct. at 1757 (Alito, J., joined by Thomas, J., dissenting).

356. *Id.* at 1776.

357. *Id.* at 1777.

358. *See supra* text accompanying notes 191-92.

359. *See supra* text accompanying notes 193, 229, 241.

360. *See supra* text accompanying note 194.

361. *See supra* text accompanying note 196.

362. *See supra* text accompanying note 207.

363. *See supra* text accompanying notes 231-33.

364. *See supra* text accompanying notes 221-25.

365. *See supra* text accompanying notes 191, 230-233.

of the Civil Rights Act, about the absence of even a “shred of evidence” of congressional attention to the issue at stake.³⁶⁶ Indeed, both rank-and-file members and legislative leaders alike referred explicitly to the problem of climate change and to the greenhouse gas pathway in speaking in favor of the Clean Air Act of 1970. They did so not just in isolated instances, but repeatedly.

Fourth, Justice Alito criticizes the majority for failing to consider that its decision “is virtually certain to have far-reaching consequences” because there are more than one hundred other statutes that prohibit discrimination on the basis of sex, and that the application of each of them to questions of sexual orientation and gender identity is likely to present thorny questions.³⁶⁷ As examples, he lists controversies involving bathrooms and locker rooms, women’s sports, housing, employment by religious organizations, healthcare, and freedom of speech.³⁶⁸ According to Justice Alito, “The Court’s brusque refusal to consider the consequences of its reasoning is irresponsible.”³⁶⁹

Interpreting the regulatory reach of the Clean Air Act of 1970 to include greenhouse gases does not give rise to comparable complications. In fact, in its three forays into the area, the Supreme Court has largely defined the legal landscape. As indicated above, in *Massachusetts v. EPA*, the Supreme Court held, in a case involving the regulation of new mobile sources,³⁷⁰ that greenhouse gases are “air pollutants” for the purposes of the Clean Air Act.³⁷¹ In *American Electric Power v. Connecticut*, the Court reaffirmed this holding, in a case involving existing stationary sources.³⁷² Furthermore, in *Utility Air Regulatory Group v. EPA*, the Court held that in instances in which Best Available Control Technology limitations are required for new or modified stationary sources, these limitations must apply to greenhouse gases.³⁷³ Thus, the Court has already decided, in the affirmative, the applicability of the Clean Air Act of 1970 to greenhouse gases with respect to the three principal categories of polluting sources: new mobile sources, existing stationary sources, and new and modified stationary sources.

The Court excluded greenhouse gases from the Clean Air Act’s regulatory reach in only one instance, deciding that they were not “air pollutants” for determining when Best Available Control Technology standards are required.³⁷⁴ In that case, the Obama administration, in

366. *See supra* text accompanying note 365.

367. *Bostock*, 140 S. Ct. at 1778 (Alito, J., joined by Thomas, J., dissenting).

368. *See id.* at 1778–83.

369. *Id.* at 1778.

370. *Massachusetts v. EPA*, 549 U.S. at 506.

371. *See id.* at 532.

372. *See American Elec. Power*, 564 U.S. at 418.

373. *Util. Air Regulatory Grp.*, 573 U.S. at 331.

374. *See id.* at 315–28.

arguing for the coverage of greenhouse gases under the Act's Prevention of Significant Deterioration program, had conceded that applying the statutory emissions thresholds to determine when BACT standards were required—100 tons and 250 tons per year, depending on the type of category of emitting source—would lead to “unreasonable results” and instead used a 100,000 tons per year threshold.³⁷⁵ The Court was not willing to let EPA rewrite a statutory threshold—only Congress can do that. The current state of the case law is that greenhouse gases are “air pollutants” for the purposes of the Clean Air Act, except in the case of provisions for which their coverage would lead to “unreasonable results.” The concerns that worried Justice Alito in the context of the Civil Rights Act are simply not present here.

2. Subsequent Legislative Initiatives

Both dissents, like the majority opinion,³⁷⁶ also analyze the relevance of post-enactment developments, though they reach a diametrically different conclusion. According to Justice Alito, the failure of a bill that would have defined sex discrimination as including gender identity and sexual orientation, as well as several other previous attempts to add sexual orientation and gender identity as their own categories on the list of protected grounds, demonstrates that these groups were not originally protected.³⁷⁷ Similarly, Justice Kavanaugh argues these failures are significant because they demonstrate that “[t]he political branches are well aware of this issue” and have considered making changes, but every one of those attempts has failed.³⁷⁸ Because Congress and the President, not the Court, must make these changes, these failures are a clear indication that the meaning of the original text as it stands does not include sexual orientation or gender identity.³⁷⁹ According to the dissenting Justices, the attempts to add sexual orientation to the list of prohibited grounds only clarifies that it was not already included.³⁸⁰

The legislative developments following the Clean Air Act differ from those of the Civil Rights Act of 1964 in significant ways. As indicated above,³⁸¹ neither the Waxman-Markey bill nor the Kyoto Protocol dealt with the question of whether greenhouse gases could be regulated under the tools set in the Clean Air Act of 1970. Instead, they would have provided altogether different tools, which definitely

375. *See id.* at 325.

376. *See supra* text accompanying notes 315–343.

377. *See* Bostock, 140 S. Ct. at 1755 (Alito, J., joined by Thomas, J., dissenting).

378. *Id.* at 1822 (Kavanaugh, J., dissenting).

379. *See id.*

380. *See id.* at 1777 (Alito, J., joined by Thomas, J., dissenting).

381. *See supra* text accompanying notes 320–25.

were not within the scope of the 1970 legislation: a nationwide cap-and-trade scheme for the former,³⁸² and a framework for a binding international agreement for the latter.³⁸³

The dissents also point out that other unrelated bills introduced in Congress, following the enactment of the Civil Rights Act of 1964, list “sexual orientation” as its own distinct category rather than defining sex discrimination as including sexual orientation discrimination.³⁸⁴ Justice Kavanaugh’s dissent states that, “[a]s demonstrated by all of the statutes covering sexual orientation discrimination, Congress knows how to prohibit sexual orientation discrimination.”³⁸⁵

Regardless of the merits of this argument in the context of the Civil Rights Act of 1964, it has no bearing on whether greenhouse gases are within the regulatory reach of the Clean Air Act of 1970. As already indicated,³⁸⁶ none of the successful subsequent amendments related to greenhouse gases would have been superfluous even if the Clean Air Act of 1970 had explicitly defined the term “air pollutant” to include greenhouse gases.

In summary, under the *Bostock* majority’s interpretive approaches and treatments of subsequent legislative developments, greenhouse gases are unquestionably “air pollutants” for the purposes of the Clean Air Act of 1970. In fact, the Clean Air Act presents an even stronger case for a broad interpretation. Perhaps even more important for the purposes of ending the greenhouse gas double standard is the analysis of the three *Bostock* dissenters. None of the factors that they relied on in support of their narrow interpretation of the Civil Rights Act are present for the Clean Air Act. Quite to the contrary, in the case of the Clean Air Act, some of these factors point in the opposite direction, for a broad interpretation that encompasses the regulation of greenhouse gases.

V. CONCLUSION

Of course, this Article will not make all of the controversy associated with greenhouse gas regulation go away. For every regulatory program that imposes significant costs on a regulated industry, there are inevitable disputes about the stringency of the regulation, the form the regulation takes, the flexibility that it provides, and a myriad of other factors. Those controversies will continue to rage for greenhouse gas regulation, as they do for the regulation of other pollutants.

382. *See supra* text accompanying notes 112–14.

383. *See supra* text accompanying notes 86–88.

384. *See Bostock*, 140 S. Ct. at 1830.

385. *Id.*

386. *See supra* text accompanying notes 326–38.

But this Article puts greenhouse gases on the same footing as other pollutants subject to regulation under the Clean Air Act, ending the pariah status of greenhouse gas regulation. As a result, regulatory opponents should now understand that relitigating *Massachusetts v. EPA* is no longer a plausible course of action. Each of the Justices in *Bostock* set forth interpretive approaches that, if applied fairly to greenhouse gas regulation, foreclose that possibility. And the extensive legislative materials accompanying the enactment of the Clean Air Act of 1970 should put an end to efforts to limit the scope of *Massachusetts v. EPA* or erect pollutant-specific constitutional barriers.