TULANE ENVIRONMENTAL LAW JOURNAL

VOLUME 32 WINTER 2018 ISSUE 1

Back to the Basics of Antipollution Law

Adam Babich*

> "[T]here is no magic way to write legislative language that is so precise that it anticipates every potential inequity or every potential unusual situation. I do not have any way to do it. If I am going to desist from legislating or writing laws until I find such a way, then one great hoped-for objective will be achieved: We will stop writing laws."
>
> —Senator Edmund S. Muskie[1]

INTRODUCTION

An appealing slogan for reform of federal antipollution regulation is "Back to Basics," which translates to implementing "environmental laws

Professor of Law, Tulane Law School.

1. 123 CONG. REC. 18,499 (1977).

as Congress intended" with an emphasis on "basic statutory obligations" and "cooperative federalism."[2] Who can argue with that? The question, then, is what did Congress intend the modern era of antipollution regulation to accomplish? Did Congress want to be humble and incrementally improve environmental quality? Or did Congress seek to fundamentally reform our relationship with the environment? Should EPA, then, be pushing for consistently clean air, water, and soils? Or only for an attractive benefit-cost ratio?[3] Should EPA aggressively oversee state implementation of antipollution programs? Or did Congress want the agency to set up a basic framework and then step back, out of the states' hair?[4]

These are not philosophical questions. They are questions of legislative intent that, by and large, should be ascertainable by looking at plain statutory language and "employing traditional tools of statutory construction."[5] Statutory commands should, of course, be read to advance congressional goals.[6] This Article shows that Congress, when launching

---

2. EPA, FY 2018-2022 EPA STRATEGIC PLAN 2 (Feb. 12, 2018).

3. As of this writing, one might also ask, should we consider all benefits when comparing costs and benefits? Or only those that relate directly to the regulatory initiative at issue? *See* EPA, Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process, 83 Fed. Reg. 27,524, 27,527 (advance notice of proposed rulemaking, June 13, 2018) (asking, "to what extent should EPA develop a general rule on how the Agency will weigh the benefits from reductions in pollutants that were not directly regulated (often called 'co-benefits' or 'ancillary benefits')").

4. *See* EPA, NEW SOURCE REVIEW PRECONSTRUCTION PERMITTING REQUIREMENTS: ENFORCEABILITY AND USE OF THE ACTUAL-TO-PROJECTED-ACTUAL APPLICABILITY TEST IN DETERMINING MAJOR MODIFICATION APPLICABILITY 8 (Dec. 7, 2017) (announcing that EPA "does not intend to substitute its judgement for that of the owner or operator by 'second guessing' the owner or operator's emissions projections [when determining whether a modification will exceed regulatory thresholds for new source review (NSR)]," and noting that "implementation of the NSR program is one example of cooperative federalism under the CAA under which the state regulations have primacy once they are approved by the EPA").

5. *See* Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, 467 U.S. 837, 843 n.9 (1984) ("If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention . . . that intention is the law and must be given effect.").

6. *See* King v. Burwell, 135 S. Ct. 2480, 2492 (2015) ("[T]he words of a statute must be read in their context and with a view to their place in the overall statutory scheme." (quoting Util. Air Regulatory Grp. v. EPA, 134 S. Ct. 2427, 2441 (2014), which in turn was quoting FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 133 (2000))). The *Burwell* Court explained, "A provision that may seem ambiguous in isolation is often clarified by the remainder of the statutory scheme . . . because only one of the permissible meanings produces a substantive effect that is compatible with the rest of the law." 135 S. Ct. at 2492 (quoting United Sav. Assn. of Tex. v. Timbers of Inwood Forest Assocs., Ltd., 484 U.S. 365, 371 (1988)). Under the line of cases cited above, earlier cases, which used the *Chevron* doctrine to justify deference to interpretations that were out-of-step with a statute's purpose, are arguably outdated. *But see* Friends of Everglades v. S. Fla. Water Mgmt. Dist., 570 F.3d 1210, 1226 (11th Cir. 2009) (noting that courts "interpret and apply statutes, not congressional purposes" (internal quotation marks omitted)).

the modern era of antipollution regulation, displayed a can-do attitude and adopted an aggressive agenda for reform. Congress intended "to recognize [a] crisis and generate a sense of urgency"[7] and to impose "a drastic remedy."[8] Sacrifice was a part of the mix. Senator Jennings Randolph warned, "The implementation of the policies that are contained in this measure will test the determination in this country to achieve a livable environment, not only for ourselves but for future generations."[9]

The 1970 Clean Air Act Amendments are the paradigm for modern antipollution regulation.[10] They are built around an almost un-stretchable command: to protect public health with "an adequate margin of safety," and to safeguard public welfare—not only from known impacts but from any "anticipated adverse effects."[11] In those amendments, Congress mandated that *all* areas in the Nation[12] attain health protection standards

---

7. S. Deb. on S. 4358, 116 CONG. REC. 32,901 (Sept. 21, 1970) (statement of Sen. Muskie), *reprinted in* COMM. ON PUBLIC WORKS, 1 A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1970, at 223, 225 (1974) [hereinafter 1970 LEGIS. HIST. vol. 1].

8. Union Elec. Co. v. EPA, 427 U.S. 246, 256 (1976). Senator Muskie stated,

> We have been conscious, I think, since early June that what we were considering writing into law could result in drastic changes in the pattern of the life we live in the urban areas of America. We felt that just such changes were essential if we were really to come to grips with the problem of air pollution.

S. Deb. on S. 4358, 116 CONG. REC. 32,903 (Sept. 21, 1970), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 231-32. Representative Ken Hechler said, "We can no longer afford the pussyfooting, artful dogging, delays, end runs, and outright flouting of the intent of the legislation which has characterized the history of air pollution control." H. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,521 (Dec. 18, 1970), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 116.

9. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,392 (Dec. 18, 1970) (statement of Sen. Randolph), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 145.

10. "Congress commenced the modern era of federal environmental regulation with the Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, now codified as amended at 42 U.S.C. §§ 7401 *et seq*." United States v. Shell Oil Co., 605 F. Supp. 1064, 1070 (D. Colo. 1985); Daniel Riesel, *Forecasting Significant Air Act Implementation Issues: Permitting and Enforcement*, 14 PACE ENVTL. L. REV. 129, 129 (1996) ("[As amended in 1970, the Clean Air Act] was the original or flagship statute of the 1970 environmental revolution. All environmental statutes subsequent and prior to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) are closely based on the 1970 CAA pattern.").

11. *See* 42 U.S.C. § 7409(b) (2018) (mandating national ambient air quality standards); *see also* Christopher T. Giovinazzo, *Defending Overstatement: The Symbolic Clean Air Act and Carbon Dioxide*, 30 HARV. ENVTL. L. REV. 99 (arguing that the Act "instructs EPA to do the impossible: to set standards strict enough to clean the air"); RICHARD L. REVESZ & JACK LIENKE, STRUGGLING FOR AIR POWER PLANTS AND THE "WAR ON COAL" 3 (2016) ("In 1970 a nearly unanimous Congress passed the Clean Air Act of 1970, which had the remarkably ambitious aim of eliminating essentially all air pollution that posed a threat to public health and welfare.").

12. For implementation purposes, states are divided into "air quality control regions," which together make up "the entire geographic area comprising [each] State." *See* 42 U.S.C. § 7407(a)-(b).

within a decade[13] after identification of each air pollutant that is present in ambient air due to emissions "from numerous or diverse mobile or stationary sources," and that EPA concludes "*may* reasonably be anticipated to endanger public health or welfare."[14] Thus, stripped down to the "basics," the governing principle of U.S. antipollution law is to minimize risks to public health, welfare, and the environment, even when that task is difficult and expensive.[15]

---

13. EPA must publish criteria for pollutants "within 12 months" after they are identified and listed. *Id.* § 7408(a)(2). At the same time, EPA must publish proposed health protection standards for ambient air, i.e., "national ambient air quality standards." *Id*. § 7409(a)(2). After that, the Act gives EPA "no later than 90 days" to promulgate standards. *Id*. § 7409(a)(1)(B), (2). Under the 1970 amendments, states had nine months after promulgation of a national ambient air quality standard to submit an implementation plan for EPA approval. Clean Air Act Amendments of 1970 § 110(a)(1), 84 Stat. 1680 (1970). EPA could extend this deadline "for a period not to exceed 18 months." *Id*. § 110(b), 84 Stat. 1681. EPA then had four months to approve or disapprove the plan. *Id*. § 110(a)(2), 84 Stat. 1680. The deadline for attainment was three years after that, *id*. § 110(a)(2)(A)(i), which deadline EPA could extend for "not more than two years." *Id*. § 110(d), 84 Stat. 1682. Also, a state's governor could apply to postpone the applicability of a source-specific requirement for up to one year. *Id*. § 110(f). So that is a total of about 118 months or somewhat under ten years, and under seven years if the provisions for extraordinary extensions and postponements under section 110(d) and (e) are not counted. As the Act reads today, states then have "3 years" after promulgation of a health protection standard to submit their implementation plans (rather than nine months). 42 U.S.C. § 7410(a)(1); *see also id*. § 7502(b) (providing for submission of nonattainment plans three years after a designation of nonattainment). EPA can still extend this deadline for up to "18 months." *Id*. § 7410(b). Within six months after submission, EPA must determine whether a state's plan meets minimum criteria for completeness. *Id*. § 7410(k)(1). EPA has twelve months after that to approve or disapprove the plan in whole or part. *Id*. § 7410(k)(2) & (3). In general, attainment deadlines are now "no later than 5 years from the date such area was designated nonattainment," *id.* § 7502(a)(2)(A), but some nonattainment areas qualify for later dates. *See* 40 C.F.R. § 51.903; *cf*. 42 U.S.C. § 7511(a). EPA may grant states "[n]o more than 2 one-year extensions" of an attainment deadline. 42 U.S.C. § 7502(a)(2)(C).

14. *See* 42 U.S.C. § 7408(a)(1) (emphasis added) (describing pollutants that EPA should regulate under the "criteria pollutant" program).

15. Which is not to deny that Congress provided various exemptions and delays for favored industries and companies. For example, in the 1977 Clean Air Act Amendments, Congress authorized the waiver of

> federal restrictions on building a power plant if the waiver is approved by the Interior Department and the appropriate state governor or, if they disagree, by the President. Although never mentioned in the debate, that provision is aimed at permitting development of the huge Intermountain Power Project next to Capital Reef National Park in central Utah. That concession removed a threat [of opposition from Utah's Senator Jake Garn].

BERNARD ASBELL, THE SENATE NOBODY KNOWS 451 (1978); *see also* Friends of Everglades v. S. Fla. Water Mgmt. Dist., 570 F.3d 1210, 1227 (11th Cir. 2009) ("[I]t may seem inconsistent with the lofty goals of the Clean Water Act to leave out of the permitting process the transfer of pollutants from one navigable body of water to another, but it is no more so than to leave out all non-point sources, allowing agricultural run-offs to create a huge 'dead zone' in the Gulf of Mexico. Yet we know the Act does that."). But where Congress declined to adopt unambiguous exceptions, courts should read antipollution law consistently with its fundamental purpose. *See*

Because the Clean Air Act Amendments of 1970 comprise the first U.S. antipollution law of the modern era,[16] this Article focuses primarily on that Act. The Article begins with a discussion of goals. First, Part I discusses the "macro," or overall, goals set by the National Environmental Policy Act of 1969.[17] Next, Part II reviews the Clean Air Act's goals, as reflected in that Act's legislative history. Part III attempts to reconcile the Article's recitation of Clean Air Act goals with the more modest vision of the Act that the U.S. Supreme Court expressed in *Utility Air Regulatory Group v. EPA* (*UARG*).[18] After that, Part IV discusses three examples of areas in which EPA implementation of the Act falls short of congressional goals. Section IV.A shows that EPA watered down the requirement that new and modified sources install state-of-the-art technology. Section IV.B demonstrates that the agency's limitation of the "criteria pollutant"[19] program to only six pollutants is not consistent with congressional intent. And Section IV.C establishes that EPA weakened environmental protection by defining "safety" in a manner that takes cost considerations into account through a back-door mechanism, allowing continued public exposure to significant risks from hazardous air pollutants. Next, Part V of the Article reviews the Act's "cooperative federalist" framework[20] to show that Congress intended EPA to actively supervise state implementation. Finally, Part VI points out that the Act's legislative history and plain language foreclose interpretations that sidestep the problem of climate change. The Article concludes that a reference to "the basics" cannot justify rolling back environmental protections or letting states decide the extent to which air pollution will meet federal standards. Rather than stretching past the Clean Air Act's "basics," EPA and the courts have failed to implement them fully.[21]

---

supra note 6 (citing, *inter alia*, King v. Burwell, 135 S. Ct. 2480, 2492 (2015)); *see also* Schlemmer v. Buffalo, R & P R Co., 205 U.S. 1, 10 (1907) ("The general rule of law is, that a proviso carves special exceptions only out of the body of the act; and those who set up any such exception must establish it."); Donovan v. Cunningham, 716 F.2d 1455, 1467-68 n.27 (5th Cir. 1983) ("As the Supreme Court has observed in a different context, it seems 'fair and reasonable' to place the burden of proof upon a party who seeks to bring his conduct within a statutory exception to a broad remedial scheme.").

16. *See supra* note 10.

17. 42 U.S.C. §§ 4321, 4331.

18. 134 S. Ct. 2427, 2441 (2014).

19. For a brief explanation of the criteria pollutant program, see *infra* notes 174-181 and accompanying text.

20. For a brief explanation of cooperative federalism, see *infra* note 234 and accompanying text.

21. EPA has been known, however, to reach beyond statutory mandates. Sierra Club v. EPA, 311 F.3d 853, 861 (7th Cir. 2002) ("It is not the EPA's prerogative to disregard statutory

I. MACRO GOALS

The modern era of antipollution law began with the December 31, 1970, Clean Air Act Amendments.[22] But Congress passed—and President Richard Nixon signed—the nation's environmental manifesto almost a year before that, on January 1, 1970. This was the National Environmental Policy Act of 1969 (NEPA).[23] The goal, *inter alia*, was to "prevent or eliminate damage to the environment."[24] To that end, NEPA § 101 announces "sweeping policy goals."[25] These goals include fulfilling each generation's responsibility "as trustee of the environment for succeeding generations"; assuring "for *all* Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings"; attaining wide beneficial uses of the environment "without degradation" and without "risk to health or safety"; and striking a balance "between population and resource use which will permit high standards of living and a wide sharing of life's amenities."[26] The U.S. Supreme Court decided that these goals are not judicially enforceable.[27] Nonetheless, NEPA's goals are the law of the land.[28] Also, they are unambiguously part of the "context" within

---

limitations on its discretion because it concludes that other remedies it has created out of whole cloth are better." (citations omitted)). Similarly, the courts have also not always confined themselves to the four corners of congressional mandates. In *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253 (D.D.C. 1972), *aff'd* 2 Envtl. L. Rep. (Envtl. L. Inst.) 20,656 (D.C. Cir. 1972), *affirmed sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973), the U.S. District Court for the D.C. District ordered EPA to come up with a program—despite the lack of any statutory mandate—to implement "Congress' intent to improve the quality of the nation's air and to prevent deterioration of that air quality, no matter how presently pure that quality in some sections of the country happens to be." 344 F. Supp. at 255. The D.C. Circuit affirmed and the Supreme Court then affirmed by operation of law, because the Court was evenly divided. *See* Robert V. Percival, *Environmental Law in the Supreme Court: Highlights from the Marshall Papers*, 23 Envtl. L. Rep. (Envtl. L. Inst.) 10,606, 10,621 (1993) (noting that Justice Marshall's law clerk urged the Justice to change his vote to create a 4-4 split). Congress liked the idea well enough to write the program (in a revised form) into the 1977 amendments to the Clean Air Act, creating the prevention of significant deterioration (or PSD) program in Part C, subpart I, of the Act, 42 U.S.C. §§ 7470-79.

22. *See supra* note 10.

23. Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321-4347)).

24. 42 U.S.C. § 4321.

25. *See* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989).

26. 42 U.S.C. § 4331(b)(1)-(3), (b)(5) (emphasis added).

27. *See Robertson*, 490 U.S. at 351 ("Other statutes may impose substantive environmental obligations on federal agencies, but NEPA merely prohibits uninformed—rather than unwise—agency action." (footnote omitted)); Strycker's Bay Neighborhood Council v. Karlen, 444 U.S. 223, 227 (1980) ("[O]nce an agency has made a decision subject to NEPA's procedural requirements, the only role for a court is to insure that the agency has considered the environmental consequences.").

28. *See* ENVTL. LAW INST., REDISCOVERING THE NATIONAL ENVIRONMENTAL POLICY ACT, BACK TO THE FUTURE 26 (1995) ("To treat a statutory obligation as non-binding unless a court can

which other environmental laws should be interpreted[29] because they are part of "the backdrop against which Congress was legislating" when enacting subsequent laws.[30]

II. CLEAN AIR ACT GOALS

When launching the modern era of antipollution regulation with the 1970 Clean Air Act Amendments, Congress recognized it was doing big and new things.[31] Senator Howard Baker said: "I do not suggest . . . that the bill is perfect, or even that it is outstanding. It is good. It may turn out to be very good. It may turn out to be best of all, though, for beginning something new."[32] Congress enacted the 1970 Clean Air Act Amendments after a decade in which the legislative and executive branches had broken with the past to enact historic statutes meant to put racial discrimination[33] and denial of voting rights[34] in the rearview mirror. Environmental protection was a similarly grand and transformative undertaking.[35] President Nixon challenged Congress to enact true reform:

---

order a government official to comply . . . mocks the Constitutional obligation of the President to 'take Care that the Laws be faithfully executed.'" (quoting U.S. Const. art. II, § 3)).

29. *See* FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 133 (2000) (holding that "the meaning of one statute may be affected by other Acts, particularly where Congress has spoken subsequently and more specifically to the topic at hand"); *see also id.* at 143 ("In determining whether Congress has spoken directly to the FDA's authority to regulate tobacco, we must also consider in greater detail the tobacco-specific legislation that Congress has enacted over the past 35 years."). Unlike the situation in *Brown & Williamson Tobacco Corp.*, NEPA is a prior, rather than subsequent, statute. In NEPA, Congress specifically instructed the executive that "regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter." 42 U.S.C. § 4332.

30. *Cf.* Voisine v. United States, 136 S. Ct. 2272, 2281 (2016); *see also* McQuiggin v. Perkins, 569 U.S. 383, 398 n.3 (2013) ("Congress legislates against the backdrop of existing law.").

31. Much of the legislative history discussed in this Article concerns S. Bill No. S. 4358. 91st Cong., 2d Sess., 116 CONG. REC. 32,375 (1970). That bill "eventually became the Clean Air Act Amendments of 1970. *See* Ctr. for Auto Safety v. Ruckelshaus, 747 F.2d 1, 5 (D.C. Cir. 1984). The corresponding House bill was H.R. 17255. 91st Cong., 2d Sess., 116 CONG. REC. 19,226 (1970). Congress reconciled the bills in conference. *See* Conf. Rep. on H.R. 17255 (Dec. 17, 1970), *reprinted in* 1970 U.S.C.C.A.N. 5374, *and in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 151. The final bill—H.R. 17255, Public Law 91-604, 84 Stat. 1676 (1970)—"largely followed the Senate bill (S. 4358)." Arthur C. Stern, *History of Air Pollution Legislation in the United States*, 32 J. AIR POLLUTION CONTROL ASS'N 44, 55 (1982).

32. S. Deb. on S. 4358, 116 CONG. REC. 32,921 (Sept. 21, 1970) (statement of Sen. Baker), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 266.

33. Civil Rights Act of 1964, Pub. L. No. 88-352, 78 Stat. 241; Fair Housing Act, Title VIII of the Civil Rights Act of 1968, Pub. L. No. 90-284, 82 Stat. 81.

34. Voting Rights Act of 1965, Pub. L. No. 89-110, 79 Stat. 437.

35. Bruce M. Kramer, *The 1970 Clean Air Amendments: Federalism in Action or Inaction*?, 6 TEX. TECH L. REV. 47, 67 (1974) ("What passed Congress on December 18, 1970, and what was signed into law on December 31, 1970, was a piece of legislation called 'the toughest

> The first task of government [is] reforming the institutions of the past. The second task is that of creating the conditions of the future. The fundamental fact is that of choice. We can choose to debase the physical environment in which we live, and with it the human society that depends on that environment, or we can choose to come to terms with nature, to make amends for the past, and build the basis for a balanced and responsible future.[36]

Senator Pete Domenici remembered that "Congress in enacting the 1970 amendments contemplated a legislative blitzkrieg by the federal government that would roll over economic and technical difficulties and bring the nation with limited exceptions healthy air by mid-1975."[37] Senator Edmund S. Muskie—the "father of the Clean Air Act"[38]—emphasized the fundamental nature of the undertaking:

> The legislation we take up today provides the Senate with a moment of truth: a time to decide whether or not we are willing to let our lives continue to be endangered by the wasteful practices of an affluent society, or whether we are willing to take the difficult but necessary steps to breathe new life into our fight for a better quality of life.
>
> This legislation will be a test of our commitment and a test of our faith: in our institutions, in our capacity to find answers to difficult economic and technological problems, and in the ability of American citizens to rise to the challenge of ending the threat of air pollution.[39]

Congress knew this would not be a free ride. Senator Muskie acknowledged that the legislation "undoubtedly will have an economic

---

most far-reaching environmental legislation ever enacted by Congress.'" (quoting Senator Muskie, as reported by the *Boston Globe* newspaper)).

36. President Richard Nixon, *Special Message to the Congress on the Administration's Legislative Program* (Sept. 11, 1970), *quoted in part in* S. Deb. on S. 4358, 116 CONG. REC. 32,922 (Sept. 21, 1970) (statement of Sen. Dole), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 270.

37. Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7330 (Mar. 22, 1976), *reprinted in* COMM. ON PUBLIC WORKS, 6 A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1977, at 4504, 4506 (1978) [hereinafter 1977 LEGIS. HIST. vol. 6].

38. *See, e.g.,* Frank B. Cross, *Section 111(d) of the Clean Air Act: A New Approach to the Control of Airborne Carcinogens*, 13 B.C. ENVTL. AFF. L. REV. 215, 220 (1986) (noting that Senator Muskie is "known as the father of the Clean Air Act"); Robert F. Blomquist, *What Is Past Is Prologue: Senator Edmund S. Muskie's Environmental Policymaking Roots as Governor of Maine, 1955-58*, 51 ME. L. REV. 87, 91 n.10 (1999) ("Senator Muskie helped transform the Public Works Committee and went on to become the founding father of environmental protection in America by sponsoring both the Clean Air Act and the Clean Water Act of 1972." (quoting Sen. Olympia Snowe)).

39. S. Deb. on S. 4358, 116 CONG. REC. 32,900 (Sept. 21, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223.

impact all across this country."[40] Senator Randolph responded, "Yes, it will, and it will be costly. And yet the ugly face of pollution must be erased."[41] Senator John Sherman Cooper emphasized that the bill "assumes a readiness by industry and the people or the country to pay the costs of pollution control."[42]

Why was Congress so willing to require fundamental change and so optimistic about tight schedules? Legislators in the 1970s were cut from a different cloth than are many of today's politicians. Enough of them to matter believed that great things were within the United States' grasp. This was the country that had won World War II.[43] This Nation had put someone on the moon.[44] None of that would have happened if the government had lowered its expectations to please those who would shy away from ambitious undertakings as too difficult or expensive.[45] At the dawn of the 1970s, President Nixon promised strong environmental legislation in his State of the Union address, announcing his intent to propose "the most comprehensive and costly program in this field in America's history."[46] Professor John Dwyer argues, "There were no

---

40. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,391 (Dec. 18, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 111, 145.

41. *Id.* (statement of Sen. Randolph).

42. S. Deb. on S. 4358, 116 CONG. REC. 32,919 (Sept. 21, 1970) (statement of Sen. Cooper), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 262. Senator Cooper later said,

> The bill will place great responsibilities on nearly every aspect in our society. It certainly will place great burdens on industry, it will place great burdens on Government, both at the State and Federal level, and it will place great burdens on the people generally for they will ultimately have to bear the expense and, for the first time, possibly experience inconvenience so that we might achieve clean and healthful air.

116 CONG. REC. 42,394 (Dec. 18, 1970) (statement of Sen. Cooper), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 111, 149.

43. *See* S. Deb. on S. 4358, 116 CONG. REC. 32,902 (Sept. 21, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 227 ("At the beginning of World War II industry told President Roosevelt that his goal of 100,000 planes each year could not be met. The goal was met, and the war was won.").

44. *Id.* ("[I]n 1960, President Kennedy said that America would land a man on the moon by 1970. And American industry did what had to be done.").

45. *See* 116 CONG. REC. at 32,904, *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 232 ("As we bear in mind the . . . great technological achievements of American industry, I find it difficult to believe that, whatever their present doubts, they cannot meet the challenge of this bill.").

46. President Richard Nixon, *Annual Message to the Congress on the State of the Union* (Jan. 22, 1970):

> We still think of air as free. But clean air is not free, and neither is clean water. The price tag on pollution control is high. Through our years of past carelessness we incurred a debt to nature, and now that debt is being called. The program I shall propose to

countervailing political forces . . . . Republican legislators, who might have been expected to resist such legislation, were unwilling to do so . . . in part because they also sensed popular support for stringent controls."[47] Senator Cooper emphasized, "We have been fortunate that Democrats and Republicans have served together under fine leadership. We have laid aside political matters."[48]

Senator Muskie explained that the Clean Air Act amendments would set requirements according to "what the health of the Nation requires" and "challenge polluters to meet them."[49] In other words, Congress adopted a

---

> Congress will be the most comprehensive and costly program in this field in America's history.

47. John P. Dwyer, *The Pathology of Symbolic Legislation,* 17 ECOLOGY L.Q. 233, 243 (1990) (footnotes omitted). Senator Domenici explained,

> The Clean Air Amendments of 1970 were passed at the high-water mark of the environmental movement. Either as a distraction to the lingering Vietnam nightmare, or as an idea whose time had truly come, the environmentalists grabbed the nation's attention with their fundamental insight that America's affluent and industrialized life style threatened not only the public health, but also the very integrity of the eco-systems that support man. The 1970 amendments were also passed in a period of comparative economic tranquility when unemployment was hovering near the four percent mark and the nation was looking forward to a "peace surplus" in the federal budget for domestic programs as the war wound down.

Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7330 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504, 4504 (footnote omitted). Senator Robert Dole said,

> The bill reported from committee is in response to [President Nixon's] challenge and is the result of many hours of bipartisan efforts by committee members, and the executive branch. It contains elements of legislation introduced by Senator Muskie, chairman of the subcommittee on Air and Water Pollution, as well as significant aspects of legislation introduced by Senator Scott, minority leader, on behalf of the administration.

S. Deb. on S. 4358, 116 CONG. REC. 32,922 (Sept. 21, 1970) (statement of Sen. Dole), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 270.

48. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,391 (Dec. 18, 1970) (statement of Sen. Cooper), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 143.

49. S. Deb. on S. 4358, 116 CONG. REC. 32,902 (Sept. 21, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 227. Senator Muskie later explained,

> Predictions of technological impossibility or infeasibility were not considered sufficient reasons to avoid tough standards and deadlines, and thus to compromise the public health. The urgency of the problems required that the industry consider not only the improvement of existing technology, but also alternatives to the internal combustion engine and new forms of transportation. Only a clear cut and tough public policy could generate this kind of effort.

S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,382 (Dec. 18, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 126-27. Similarly, Senator John Sherman Cooper emphasized that the bill sets "out what is to be achieved, and places its reliance on a great effort to develop technology, to train and put to work the

technology-forcing approach,[50] expecting the regulated community to rise to the challenge[51] and figure out how to continue industrial production while achieving regulatory goals:

> As we bear in mind the space program and other great technological achievements of American industry, I find it difficult to believe that, whatever their present doubts, they cannot meet the challenge of this bill.
>
> They have been able to meet such challenges in the case of war when President Roosevelt asked them to build 100,000 planes a year. They have been able to meet such challenges in the case of national curiosity when President Kennedy asked them to make it possible to send a man to the moon in the 1960s.
>
> Here, in the case of . . . the national health, I think that we have an obligation to lay down the standards and requirements of this bill.[52]

"Technology-forcing [was] a concept somewhat new to our national experience and it necessarily entail[ed] certain risks. But Congress considered those risks in passing the 1970 Amendments and decided that the dangers posed by uncontrolled air pollution made them worth taking."[53] If Congress's optimistic standards and deadlines proved unrealistic, Congress reserved to itself the authority to change them.[54]

---

manpower to accomplish that purpose." S. Deb. on S. 4358, 116 CONG. REC. 32,919 (Sept. 21, 1970) (statement of Sen. Cooper), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 262.

50. The D.C. Circuit illustrated the power of technology-forcing:

> [T]he impossibility of compliance with [the applicable anti-pollution requirement] emerges only if one adopts petitioners' *ex post* perspective on the statute. That is, petitioners look only at the situation as it stands currently, after the relevant . . . deadlines have passed. Given the technology-forcing nature of the statute, however, it is more reasonable to adopt an *ex ante* view and ask whether, if sufficient resources were devoted to the problem, it was possible to develop the required treatment and disposal technologies between [the requirement's promulgation] and the present.

Edison Elec. Inst. v. EPA, 996 F.2d 326, 336 (D.C. Cir. 1993) (discussing application of a waste storage prohibition in the Resource Conservation and Recovery Act to radioactive mixed waste).

51. S. Deb. on S. 4358, 116 CONG. REC. 32,902 (Sept. 21, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 227 ("The first responsibility of Congress is not the making of technological or economic judgments or even to be limited by what is or appears to be technologically or economically feasible. Our responsibility is to establish what the public interest requires to protect the health of persons. This may mean that people and industries will be asked to do what seems to be impossible at the present time."); *see also* Union Elec. Co. v. EPA, 427 U.S. 246, 257 (1976) (noting that the Act was "expressly designed to force regulated sources to develop pollution control devices that might at the time appear to be economically or technologically infeasible").

52. *See* S. Deb. on S. 4358, 116 CONG. REC. 32,904 (Sept. 21, 1970) (statement of Sen. Muskie, *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 223, 232 ("As we bear in mind the . . . great technological achievements of American industry, I find it difficult to believe that, whatever their present doubts, they cannot meet the challenge of this bill.").

53. *Union Elec. Co.*, 427 U.S. at 269.

54. *See* S. Deb. on S. 4358, 116 CONG. REC. 32,905 (Sept. 21, 1970) (statement of Sen.

On signing the 1970 Clean Air Act Amendments, President Nixon remarked,

> How did this come about? It came about by the President proposing. It came about by a bipartisan effort represented by the Senators and Congressmen, who are here today . . . . Senator Randolph, Senator Cooper, and Congressman Springer represent both parties and both Houses of the Congress . . . .
>
> . . . I think that 1970 will be known as the year of the beginning, in which we really began to move on the problems of clean air and clean water and open spaces for the future generations of America.[55]

So did EPA and the Nation step up to the plate? By 1977 the answer appeared to be "no."[56] The automobile industry had threatened to shut down manufacturing unless Congress amended the law by August 1977.[57] The oil embargo of 1973-75 challenged Congress's confidence in U.S. industry's ability to achieve quick breakthroughs.[58] "The economy was

---

Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 236:

> If the Congress, which would have made the policy in the first instance, is persuaded that the industry cannot do the job, Congress could change the policy.
>
> . . . But this would be—as it is now—a policy decision of such moment to the country that it ought to be made by nobody other than the Congress, so that the decision gets the visibility, the prestige and the responsibility that are necessary to deal with this problem.

Much of the debate about technology-forcing occurred in the context of regulating emissions from automobiles. Congress intended the Act to require automobile manufacturers to achieve "at least a 90% reduction from emissions of the 1970 models." S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,384 (Dec. 18, 1970) (Summary of the Provisions of Conference Agreement on the Clean Air Amendments of 1970, Exh. 1 to Statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 131.

55. President Richard Nixon, *Remarks on Signing the Clean Air Act Amendments of 1970* (Dec. 31, 1970), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 105.

56. Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7331 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504, 4506 ("[By 1975,] the battle for environmental quality had settled into a protracted struggle.").

57. *See* H. Consideration of the Rep. of the Conf. Comm., 123 CONG. REC. 27,066 (Aug. 4, 1977) (statement of Rep. Meeds), *reprinted in* COMM. ON PUBLIC WORKS, 3 A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1977, at 311 (1978) [hereinafter 1977 LEGIS. HIST. vol. 3] ("The Committee on Rules agreed that a waiver of the 3-day layover rule was necessary . . . to avoid the shutdown of the auto industry as had been threatened if Congress did not finish consideration of this matter before August 6."); STAN LUGER, CORPORATE POWER, AMERICAN DEMOCRACY, AND THE AUTOMOBILE INDUSTRY 93 (2000) ("Coming just weeks before the beginning of the 1978 model year the passage of the 1977 CAA Amendments averted the threatened plant shutdowns by giving Detroit what it wanted.").

58. *See* Craig N. Oren, *Struggling for Context: An Appraisal of "Struggling for Air,"* 46 Envtl. L. Rep. (Envtl. L. Inst.) 10,838, 10,842 (2016) (The 1973 Arab oil embargo "led to many states abandoning their ambitious goals for emission reduction."); H.R. REP. No. 95-294, 123 CONG. REC. 14,641 (May 13, 1977) (accompanying H.R. 6161) (separate views of representatives John D. Dingell, James T. Broyhill *et al*.), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1445, *and in*

in the doldrums."[59] Senator Domenici noted, "The 1970 Senate Report had bravely asserted that existing stationary sources had a choice of meeting 'the standard of the law or be closed down,'" but by 1975, "it was apparent that an alternative to shutdown was needed."[60] Senator Muskie decried "foot dragging" by the nation's auto companies and a tendency "to solve problems by lobbying Congress instead of developing technology."[61] Congress also recognized the difficulty of setting protective standards in the face of scientific uncertainty, when no bright-line threshold could establish a safe level for many pollutants.[62]

Congress responded with the Clean Air Act Amendments of 1977, i.e., Public Law 95-95, which President Carter signed on August 8, 1977.[63] The Senate Bill was S. 252, the House Bill was H.R. 6161, and the bills were reconciled in committee.[64] The 1977 amendments "increased the size and complexity of the CAA, [but] did not change the framework or the philosophy of control of the CAA."[65] The amendments imposed a requirement that new and modified major sources install state-of-the-art emission control technology,[66] adding Parts C and D to the Act. Part C

COMM. ON PUBLIC WORKS, 4 A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1977, at 2465, 2949 (1978) [hereinafter 1977 LEGIS. HIST. vol. 4]:

> Increased fuel costs due to the oil embargo and reduced purchasing power due to inflation combined in 1973-75 to produce a drastic decline in auto sales. The result was assembly line shutdowns, layoffs, job dislocations, inventory surpluses, cancelled orders to suppliers, and a spiral of nonproductivity and unemployment. This affected not only the auto industry, but also allied industries, such as steel, rubber, glass, et cetera. In fact, the economic health of the entire country was strained.

59. Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7331 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504, 4506.

60. *Id.* (quoting S. REP. NO. 91-1196 at 3 (Sept. 17, 1970) (accompanying S. 4358), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 403).

61. *See* S. Consideration of the Rep. of the Conf. Comm., 123 CONG. REC. 26,842 (Aug. 4, 1977) (statement of Sen. Muskie), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 341-43.

62. Senator Muskie explained that "testimony on the health question over the last 7 years over and over again has made the point that there is no such thing as a threshold for health effects." S. Deb. on S. 252, 123 CONG. REC. 18,460 (June 10, 1977), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 1027, 1030.

63. 91 Stat. 685 (1977). *See* President Jimmy Carter, *Statement on Signing H.R. 6161 into Law*, *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 303. Congress made technical and conforming amendments later that year. 91 Stat. 1399 (1977).

64. *See* Citizens to Save Spencer Cty. v. EPA, 600 F.2d 844, 866-67 (D.C. Cir. 1979) (reviewing the legislative history); Stern, *supra* note 31, at 59; Conf. Rep. on H.R. 6161, 123 CONG. REC. 26,570 (Aug. 3, 1977), *reprinted in* 1977 U.S.C.C.A.N. 1502, *and in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 381.

65. Arnold W. Reitze, Jr., *The Legislative History of U.S. Air Pollution Control*, 36 HOUS. L. REV. 679, 726 (1999).

66. In areas that have attained a criteria pollutant, the requirement for state-of-the-art

created the prevention of significant deterioration (PSD) program,[67] and Part D added the nonattainment program, including nonattainment new source review.[68] Senator Muskie explained that "new air pollution sources have a special responsibility to preserve air quality values, both to avoid a repetition of the past air pollution mistakes that now plague our urban areas and to protect the capacity of our clean air resource to provide margins for future growth."[69] "A great Nation's growth cannot be measured only in terms of new production capacity; it will ultimately be measured by how well growth preserves the quality of areas the American people cherish."[70]

Among the 1977 amendments' changes, Congress extended various deadlines.[71] Representative Harley Orrin Staggers explained, "This [bill] will help gradually to clean up the air; pollution did not all happen at one time, and we cannot stop it at one time. We are doing it gradually through this bill, and we are allowing progress at the same time."[72] Senator Muskie expressed frustration with these delays but also emphasized the amendments' continued demands for reform:

> All in all, this bill represents something less than that which we set out to do in 1970. Under this legislation, [EPA] will have fewer tools to accomplish the job of protecting America's health and welfare from the threat of air pollution. The Administrator will be more reliant on local and State capabilities to create the institutional and infrastructure changes necessary to achieve clean air. And perhaps this is as it should be. . . .

---

technology takes the form of "best available control technology," or "BACT." 42 U.S.C. § 7475(a)(3) (imposing the requirement), *id*. § 7479(3) (defining BACT). In nonattainment areas, the applicable requirement is generally the "lowest achievable emission rate," or "LAER." *Id.* § 7501(3) (defining LAER), *id*. § 7503(a)(2) (imposing the requirement).

67. Pub. L. 95-95, §§ 160-169, 91 Stat. 731, 731-42 (1977). The PSD program is codified at 42 U.S.C. §§ 7470-7479.

68. Pub. L. 95-95, §§ 171-178, 91 Stat. 746, 746-51 (1977) (adding Part D to the Act) (The nonattainment program is codified at 42 U.S.C. §§ 7501-7515.).

69. S. Deb. on S. 252, 123 CONG. REC. 18,015 (June 8, 1977) (statement of Sen. Muskie), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 709.

70. *Id.* at 18,016, *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 710.

71. *See* Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1150 n.38 (D.C. Cir. 1980) ("[T]he 1977 Amendments to the Act relaxed and extended the automobile emission standards."); Pub. L. 95-95, § 201(a), 91 Stat. 751 (1977) (governing emission standards for light-duty motor vehicles); Arnold W. Reitze, Jr., *A Century of Air Pollution Control Law: What's Worked; What's Failed; What Might Work*, 21 ENVTL. L. 1549, 1596 (1991) ("The 1977 Amendments retained the SIP scenario, although the time for attainment was extended and control measures were more fully detailed."); Pub. L. 95-95, § 172(a)(1)-(2), 91 Stat. 746-47 (1977) (providing for attainment by December 31, 1982, or for ozone and carbon monoxide, by December 31, 1987).

72. *See* H. Consideration of the Rep. of the Conf. Comm., 123 CONG. REC. 27,067 (Aug. 4, 1977) (statement of Rep. Staggers), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 313.

> . . . We have learned that any lack of enthusiasm or negativism or sign of weakness on the part of the national program directors is magnified tenfold at the local level. We have learned that only with maximum political, technical and education support can the local political leaders who must inevitably bear the burden for change withstand the kind of pressures which arise when change is undertaken. . . .
>
> . . . And we have seen a lack of commitment on the part of Federal agencies charged with other responsibilities raise doubts about the efficacy of environmental controls.
>
> So, we begin again. This time with a more specified law; this time with a greater burden on localities; this time with more tools and more flexibility. But still with a very basic objective—the objective of protecting the health and welfare of the people of this land. No one, and I underscore no one, should be led to believe that this act by its modification of the 1970 law means an abandonment of those objectives.[73]

In 1990, Congress amended the Act again. The House bill—which began with proposed amendments by the George H.W. Bush administration—was H.R. 3030. The Senate Bill was S. 1630.[74] President George H.W. Bush signed the amendments—Pub. L. 101-549[75]—on November 15, 1990, stating, "The bill will allow the Nation finally to meet air quality standards in every city; and, in total, almost 30 million tons per year of dangerous chemicals and noxious pollutants will be prevented from fouling the air."[76] Introducing the conference report, Senator Max Baucus stated,

> By adopting this conference report, we will end a decade-long stalemate.
>
> . . . [D]uring the past decade: 96 of our Nation's cities still had excessive levels of smog; 41 areas exceeded safe levels for carbon monoxide; more than 50 areas were in nonattainment for fine particulate pollution; more than 400 million tons of acid rain-causing-emissions spilled out of our Nation's utility power plants; 30 billion pounds of toxic chemicals were emitted, just from the largest factories and plants. . . .
>
> With this conference report compromise, the stalemate, finally, is broken. The competing interests, finally, are balanced. And the nation,

---

73. *See* S. Consideration of the Rep. of the Conf. Comm., 123 CONG. REC. 26,842 (Aug. 4, 1977) (statement of Sen. Muskie), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 341, 341-43.

74. S. COMM. ON ENV'T & PUB. WORKS, 103d CONGRESS, 1st SESSION, 1 A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1990 xi (1993) [hereinafter 1990 LEGIS. HIST. vol. 1]; *see also* Theodore L. Garrett & Sonya D. Winner, *Chapter 14. Legislative History of the Clean Air Act Amendments of 1990*, 22 Envtl. L. Rep. (Envtl. L. Inst.) 10,321, 10,321-22 (1992).

75. 104 Stat. 2399 (1990).

76. 1990 LEGIS. HIST. vol. 1, *supra* note 74, at 727.

> finally, can get on with the job of reducing air pollution to levels that will protect public health and the natural environment.[77]

He concluded,

> This conference report, as I said, is an ending. . . . It also is a beginning. If the conference report is enacted, we can turn our energy, our creativity, and our commitment to a new set of environmental problems. The problems of the 21st century. Solid waste. Hazardous waste. Biodiversity. And the vexing problems of global climate change.[78]

As amended in 1990, the Clean Air Act is a stringent environmental law, comprising "a comprehensive and detailed set of measures" that regulate "more sources and smaller sources than before."[79] The amendments "continued to use the established approach for the control of air pollution, but significantly further increased the size and scope of the CAA."[80]

III. WHAT ABOUT UARG?

The U.S. Supreme Court's opinion in *Utility Air Regulatory Group v. EPA* (*UARG*) presents a conception of the Clean Air Act as a humbler law than that described in the preceding part.[81] The opinion is about EPA's effort to regulate greenhouse gases under Clean Air Act provisions that require state-of-the-art emission controls on major stationary sources of air pollution, specifically the Act's "PSD"—i.e., prevention of significant deterioration—program (rooted in the 1977 amendments)[82] and its "Title V" operating permit program (which the 1990 amendments added to the

---

77. S. Deb. on the Clean Air Act Amendments of 1990 Conf. Rep., 136 CONG. REC. 35,738 (Oct. 26, 1990), *reprinted in* 1990 LEGIS. HIST. vol. 1, *supra* note 74, at 1097, 1114 (statement of Sen. Baucus). Senator Baucus chaired the Senate Subcommittee on Environmental and Public Works. 136 CONG. REC. 35,740, *reprinted in* 1990 LEGIS. HIST. vol. 1, *supra* note 74, at 1120 (thanking the "majority leader, Senator [George] Mitchell, [Baucus'] predecessor as subcommittee chairman" and noting that Mitchell "fought for years to pass a new clean air bill" and that "his leadership was critical in steering this bill through the Senate floor and helping to break the conference deadlock").

78. 136 CONG. REC. 35,741 (Oct. 26, 1990), *reprinted in* 1990 LEGIS. HIST. vol. 1, *supra* note 74, at 1097, 1120 (statement of Sen. Baucus).

79. Theodore L. Garrett & Sonya D. Winner, *Chapter 1. History and Structure of the Clean Air Act*, 22 Envtl. L. Rep. (Envtl. L. Inst.) 10,159, 10,162 (1992) ("The CAA Amendments of 1970 increased the stringency of the air pollution control program, established the federal government as the dominant force in air pollution control, and created the basic framework that would be used for the next twenty years.").

80. Reitze, *supra* note 65, at 726.

81. 134 S. Ct. 2427 (2014).

82. Pub. L. 95-95, §§ 160-169, 91 Stat. 732, 731-42 (1977).

Act).[83] Under EPA's approach, a new or modified facility's emission of greenhouse gases over a threshold amount would have triggered PSD and Title V because the facility would have qualified as a "major emitting facility" for PSD purposes[84] and as a "major source" under Title V.[85] The Court rejected EPA's theory that greenhouse gas emissions could trigger PSD or Title V requirements.[86] The Court, however, upheld EPA's authority to require those sources that trigger PSD due to other pollutants, i.e., "anyway sources," to install best available control technology for greenhouse gases.[87] EPA "won what it needed to win to address [greenhouse gases] under this [PSD] permitting program."[88]

Most relevant for purposes of this Article is that the Court found that "the PSD program and Title V are designed to apply to, and cannot rationally be extended beyond, a relative handful of large sources capable

---

83. Pub. L. 101-549 §§ 501-507, 104 Stat. 2635, 2635-48 (1990). Title V is codified at 42 U.S.C. § 7661-7661(f).

84. The PSD program appears in Part C of the Act. It applies to any "region (or portion thereof) designated pursuant to [42 U.S.C. § 7407] as attainment or unclassifiable," 42 U.S.C. § 7471, which means that the area either meets at least one national ambient air quality standard, or EPA cannot determine whether it meets such a standard "on the basis of available information." *Id*. § 7407(d)(1)(A)(iii). "The EPA treats an 'unclassifiable' area as if it were in attainment." Miss. Comm'n. on Envtl. Quality v. EPA, 790 F.3d 138, 145 (D.C. Cir. 2015) (citing 42 U.S.C. § 7471)). The Act bans construction of a "major emitting facility" in "any area to which [Part C] applies" unless the facility complies with PSD. 42 U.S.C. § 7475. "Construction" in this context includes "modification." *Id*. § 7479(2)(C). A "modification" is a "physical change" or a "change in the method of operation" that "increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." *Id*. § 7411(a)(4). For Part C's purposes, a "major emitting facility" is a stationary source with the potential to emit "any air pollutant" above specified thresholds—usually 250 tons per year, but 100 tons per year for specified source categories. *Id*. § 7479(a).

85. A facility is a "major source" under Title V if, *inter alia*, it meets the definition of "major stationary source." 42 U.S.C. § 7661(2). The Act defines "major stationary source" as "stationary facility . . . which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant"—"[e]xcept as otherwise expressly provided." *Id*. § 7602(j).

86. Thus,

> We hold that EPA exceeded its statutory authority when it interpreted the Clean Air Act to require PSD and Title V permitting for stationary sources based on their greenhouse-gas emissions. Specifically, the Agency may not treat greenhouse gases as a pollutant for purposes of defining a "major emitting facility" (or a "modification" thereof) in the PSD context or a "major source" in the Title V context.

UARG, 134 S. Ct. at 2449.

87. *Id.* ("EPA may . . . treat greenhouse gases as a 'pollutant subject to regulation under this chapter' for purposes of requiring BACT for 'anyway' sources.").

88. Jody Freeman, *Why I Worry About UARG*, 39 HARV. ENVTL. L. REV. 9, 9 & n.7 (2015) (citing, *inter alia*, Adam Liptak, *Justices Uphold Emission Limits on Big Industry*, N.Y. TIMES (June 23, 2014). The Liptak article quotes Justice Antonin Scalia as stating that, under the ruling, EPA can regulate eighty-three percent of stationary-source greenhouse gas emissions instead of the eighty-six percent that would have been covered by the original rule.

of shouldering heavy substantive and procedural burdens."[89] The court did not define "relative handful."[90] Along the way, the Court concluded that to read Congress's words "any pollutant" to mean—literally—"any" pollutant regulated under the Act would "bring about an enormous and transformative expansion in EPA's regulatory authority without clear congressional authorization."[91]

Uncontroversially, the Court rejected a completely literal reading of "any pollutant" (regardless of whether EPA regulates the pollutant) as inconsistent with common sense. The statutory definition of "pollutant" includes "any" substance that "is emitted into or otherwise enters the ambient air."[92] "It is plain as day," said the Court, "that the Act does not envision an elaborate, burdensome permitting process for major emitters of steam, oxygen, or other harmless airborne substances."[93] The *de minimis* doctrine would have led the Court to the same conclusion, that—in general—EPA need not regulate pollutants that are "harmless" or pose a trivial risk of harm.[94] But EPA does not regulate substances under the Act unless the agency or Congress believes that they are *not* harmless. For example, EPA regulation kicks in after the agency determines that a pollutant "may reasonably be anticipated to endanger public health or welfare"[95] or because it appears on a statutory list.[96] Thus, the Court's point about "harmless" pollutants does not eliminate the implication that Congress intended "any" pollutant to include all pollutants that EPA

89. *UARG*, 134 S. Ct. at 2453.

90. Justice Breyer's opinion agreed with the majority about PSD's application to a "relative handful of large sources," *id.* (Breyer, J., concurring in part and dissenting in part), and cited *Alabama Power Co. v. Costle*, 636 F.2d 323, 353 (D.C. Cir. 1979) ("Congress's intention was to identify facilities which, due to their size, are financially able to bear the substantial regulatory costs imposed by the PSD provisions and which, as a group, are primarily responsible for emission of the deleterious pollutants that befoul our nation's air."). *Alabama Power*, however, does not cite legislative history. Christine Kexel Chabot argues that the Court's relative-handful conclusion "seems grounded in fear of dire policy consequences rather than necessary implication of the CAA's plain language." Christine Kexel Chabot, *Selling Chevron*, 67 ADMIN. L. REV. 481, 535 (2015).

91. *UARG*, 134 S. Ct. at 2441 (concluding that Congress "obviously" meant its use of "air pollutant" to be "narrower than the Act-wide definition"), 2444 (holding that EPA's reading would enormously expand EPA's authority).

92. 42 U.S.C. § 7602(g).

93. *UARG*, 134 S. Ct. at 2440.

94. *See id.* at 2435 n.1.

95. The quoted language appears in 42 U.S.C. § 7408(a)(1) (stationary sources), § 7411(b)(1)(A) (new source performance standards), and § 7521(a)(1) (mobile sources).

96. *See, e.g.*, 42 U.S.C. § 7412(b)(1) (setting forth a list of hazardous air pollutants for EPA regulation).

regulates under the Act.[97] To rebut that implication, the Court relied on a host of EPA regulatory decisions in which the agency gave "any pollutant" narrow constructions.[98] But EPA's mere adoption of an interpretation does not necessarily make that interpretation lawful.[99] The Court cautioned:

> We need not, and do not, pass on the validity of all the limiting constructions EPA has given the term "air pollutant" throughout the Act. We merely observe that taken together, they belie EPA's rigid insistence that when interpreting the PSD and Title V permitting requirements it is bound by the Act-wide definition's inclusion of greenhouse gases, no matter how incompatible that inclusion is with those programs' regulatory structure.[100]

But if the Court did not approve EPA's prior interpretations, why did the Court disregard the plain meaning of Congress's chosen word, "any," so cavalierly? And why assume that PSD and Title V should apply only to "a relative handful" of pollution sources?[101] One factor is that EPA invited these rulings.

In the *UARG* case, EPA urged a bizarre legal theory to justify an assertion of administrative authority to rewrite the Act's textual definitions of "major emitting facility" and "major source."[102] Specifically, EPA

---

97. *See infra note* 114 and accompanying text (showing that Congress, after conference, declined to adopt the House bill's limitation of PSD-triggering "major stationary sources" to those that exceed a threshold for a criteria pollutant, instead specifying thresholds in terms of "any" pollutant); Ala. Power Co. v. Costle, 636 F.2d 323, 352 (D.C. Cir. 1979) ("The definition [of "major emitting facility"] is not pollutant-specific, but rather identifies sources that emit more than a threshold quantity of any air pollutant.").

98. *UARG*, 134 S. Ct. at 2439-41 ("It takes some cheek for EPA to insist that it cannot possibly give 'air pollutant' a reasonable, context-appropriate meaning in the PSD and Title V contexts when it has been doing precisely that for decades.").

99. There are many examples of courts overturning EPA interpretations. For example, in *Friends of Earth, Inc. v. EPA*, 446 F.3d 140, 142 (D.C. Cir. 2006), the agency took "the position that Congress, in requiring the establishment of 'total maximum daily loads' to cap effluent discharges . . . left room for EPA to establish seasonal or annual loads" instead of "daily" loads. The court ruled, "Daily means daily, nothing else" and vacated "the non-daily 'daily' loads." *Id*.

100. *UARG*, 134 S. Ct. at 2442.

101. *Id*. at 2443.

102. The D.C. Circuit let EPA's attempt to rewrite the Act slide based on a catch-22 theory of standing law. The idea was that EPA's rewrite of statutory thresholds benefited industry, rather than injuring it. Therefore, the petitioners lacked the requisite legal injury to have standing to sue. Coal. for Responsible Regulation, Inc. v. EPA, 684 F.3d 102, 146 (D.C. Cir. 2012) (EPA's actions "actually mitigate Petitioners' purported injuries"), *rev'd sub nom.* Util. Air Regulatory Grp. v. EPA, 134 S. Ct. 2427 (2014). But EPA had taken the position that, unless it rewrote the thresholds, the agency's program to regulate greenhouse gases through the new source review program would be unworkable, imposing "overwhelming permitting burdens." 684 F.3d at 144 (quoting EPA, Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514, 31,516 (preamble to final rule, June 3, 2010)). One might think, therefore, that an illegal act that preserved the viability of a program that cost utilities money could be challenged as

sought to substitute thresholds that it selected for the thresholds in the bill that Congress drafted and approved and that the President signed.[103] EPA's justification was (1) it had no choice but to regulate greenhouse gases under the PSD and Title V programs because such gases qualify as "any pollutant," but (2) applying the statutory definitions of "major emitting facility" and "major source" to all stationary sources of greenhouse gases would be more burdensome than Congress would have wanted.[104] EPA therefore argued that it needed to modify statutory thresholds to avoid a scenario "contrary to Congress's careful efforts to confine PSD to large industrial sources that could afford these costs."[105] In other words, the agency's legal theory required EPA to downplay Congress's goals for the PSD program:

> Congress intended that PSD be limited to a relatively small number of large industrial sources. Without phasing in PSD and title V applicability to GHG sources so as to allow the development of streamlining methods and increases in permitting authority resources, the PSD program would expand by January 2, 2011, from the current 280 sources per year to almost 82,000 sources, virtually all of which would be smaller than the sources currently in

---

contributing to a utility's injury, but the D.C. Circuit treated the underlying program as flowing from "automatic operation of the statute" and therefore inevitable. *Id.* at 146. The Supreme Court avoided the problem by rejecting EPA's theory that the Act unambiguously mandated the conclusion that greenhouse gas emissions, in and of themselves, could trigger PSD or Title V requirements. *UARG*, 134 S. Ct. at 2445 ("Because we . . . hold that EPA's greenhouse-gas-inclusive interpretation of the triggers was not compelled, and because EPA has essentially admitted that its interpretation would be unreasonable without 'tailoring,' we consider the validity of the Tailoring Rule.").

103. *UARG*, 134 S. Ct. at 2437 (describing EPA's "Tailoring Rule," 75 Fed. Reg. 31,514 (2014)).

104. The author can only speculate as to why EPA adopted a legal theory with such a questionable ability to pass the "straight-face" test. But for years before the *UARG* case, EPA had urged Congress to pass specific legislation to govern climate change. *See* Raymond B. Ludwiszewski & Charles H. Haake, *Climate Change a Heat Wave of New Federal Regulation and Legislation*, FED. LAW., June 2009, at 32, 37 ("Perhaps recognizing that the existing regulatory programs . . . are ill-suited for regulating greenhouse gas emissions, a press release issued by the EPA refers to [a regulatory initiative]) almost begrudgingly . . . and states [the administration's] 'preference for comprehensive legislation to address this issue . . . .'"). In that context, EPA's July 30, 2008, Advance Notice of Proposed Rulemaking reads like an ultimatum, asserting that if Congress failed to regulate, EPA would have no choice but to do so and the results would not be pretty: "One point is clear: The potential regulation of greenhouse gases under any portion of the Clean Air Act could result in an unprecedented expansion of EPA authority that would have a profound effect on virtually every sector of the economy and touch every household in the land." EPA, Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,354, 44,355 (advance notice of proposed rulemaking, July 30, 2008). Congress, of course, failed to act, and EPA was left to carry out its apparent threat.

105. EPA, Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514, 31,556 (preamble to final rule, June 3, 2010).

> the PSD program and most of which would be small commercial and residential sources. Until EPA could develop streamlining methods, all of the sources that would become newly subject to PSD—whether they be larger or smaller sources, whether industrial or commercial/residential sources—would have to undergo source-specific BACT determinations for their GHG emissions, as well as their emissions of conventional pollutants in amounts in excess of the significance levels. We estimate that the commercial and residential sources—the great majority of which are small business—would each incur, on average, almost $60,000 in PSD permitting expenses.[106]

Similarly, EPA's Supreme Court brief pitched the theory that Congress intended PSD to reach only a "relative handful" of sources.[107] To support this minimization of Congress's PSD goals, EPA relied on legislative history from a failed 1976 bill (S. 3219),[108] rather than the bill that became the 1977 amendments.[109] EPA's support is remarkably thin. The agency cited a July 29, 1976, statement from Senator James A. McClure to show that Congress "applied PSD to only [28 source categories] at 100 tpy or higher . . . after reviewing an EPA study."[110] EPA also claimed that

---

106. *Id*. at 31,555-56.

107. *See* Brief for the Federal Respondents at 48 n.14 (Jan. 21, 2014), *UARG*, 134 S. Ct. 2427 (2014) (No. 12-1146), 2014 WL 251995 (suggesting that Congress contemplated "a relative handful of known sources and known types of pollutants" when selecting the Act's applicable thresholds). EPA and the U.S. Department of Justice's reliance in this brief on inapposite legislative history is partially obscured by a miscitation to "123 Cong. Rec. 24,549" instead of "122 Cong. Rec. 24,549," although the brief does provide the accurate "1976" date. *Id*. Volume 123 contains legislative history from 1977, but the page that the government relied on was from volume 122. *See infra* note 111. The Court adopted EPA's "relative handful" language but credited a "brief review of the relevant statutory provisions" rather than the agency's miscitation to legislative history. 134 S. Ct. at 2443.

108. *See* S. Deb. on S. 252, 123 CONG. REC. 18,014 (June 8, 1977) (statement of Sen. Muskie), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 705 ("1976 Clean Air Amendments were approved by this body on August 5, 1976, only to be killed by a filibuster, in this Chamber, on the last day of the 94th Congress.").

109. 75 Fed. Reg. at 31,555.

110. *Id*. at 31,550. The McClure statement appears in S. Deb. on S. 3219, 122 CONG. REC. 24,520-23 (July 29, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 5179, 5192-99; *see also* S. REP. NO. 94-717, at 79-80 (Mar. 29, 1976) (accompanying S. 3219), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4701, 4780-81. That report—about a narrower definition in a 1976 proposed amendment that did not pass Congress—explains why the drafters proposed to limit PSD to specific source categories:

> [100 tons of any pollutant] is a standard in general use by EPA and by the States to define major sources of pollution. It is a reasonable and rational point of division.
>
> The legislation also creates a mechanism to guard against significant deterioration of air quality, a procedure that must include an effective review-and-permit process. Such a process is reasonable and necessary for very large sources, such as new electrical generating plants or new steel mills. But the procedure would prove costly and

Congress "relied on" a May 3, 1976, EPA memorandum—published in the 1976 Congressional Record at Senator McClure's request—which made clear that "there were a large number of sources below" the statutory thresholds.[111] A significant problem with EPA's analysis is that Senator McClure's statements—such as they are—apply to S. 3219, a failed 1976 bill that defined "major emitting facility" more narrowly than the definition in the 1977 amendments. Of course, it is the 1977 amendments that Congress passed and President Carter signed.[112] Specifically, S. 3219 applied PSD to "[e]ach new source with the potential to emit more than 100 tons of a pollutant per year and identified by category in the statute," limiting the provision's application to 28 source categories, and granting EPA authority to add to this list.[113] As enacted, the 1977 amendments broadened the definition significantly by adding, "Such term also includes any other source with the potential to emit two hundred and fifty tons per year or more of any air pollutant."[114] This was a compromise at

---

> potentially unreasonable if imposed on construction of storage facilities for a small gasoline jobber or on the construction of a new heating plant at a junior college, each of which may have the potential to emit 100 tons of pollution annually.
>
> . . . [EPA] is given full flexibility to include additional categories where [it] believes it necessary to implement effectively the intent of the no-significant-deterioration provision.

Senator Hart explained,

> As I understand it, the intent of the committee in exempting nonmajor sources from the act was to simplify implementation by limiting regulation to the largest potential polluters. Superficially, at least, this appears to make good sense. Regulations and permits which would cover all emission sources would pose an intolerable regulatory burden, undoubtedly causing more problems than they would solve.

S. Deb. on S. 3219, 122 CONG. REC. 23,842 (July 26, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4938, 4971-72.

111. 75 Fed. Reg. at 31,550. Senator McClure referred to EPA's May 3, 1976, memorandum (a/k/a the "Steigerwald-Strelow" memorandum) in S. Deb. on S. 3219, 122 CONG. REC. 24,548-50 (July 29, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 5179, 5261-66.

112. Senator Ted Stevens did essentially incorporate by reference the 1976 "major emitting source" discussion into a 1977 debate. S. Deb. on S. 252, 123 CONG. REC. 18,146 (June 9, 1977) (statement of Sen. Stevens), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 851, 907 ("It is my expectation we mean exactly the same thing this year as we did last."). But this was before the Conference Committee broadened the definition to include "any other source with the design capacity to emit more than 250 tons per year of any air pollutant." Conf. Rep. on H.R. 6161, 123 CONG. REC. 26,611 (Aug. 3, 1977), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 381, 532.

113. S. REP. NO. 94-717, at 19 (Mar. 29, 1976) (accompanying S. 3219), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4701, 4720; *see also* S. 3219 § 33 (proposing to amend § 302(k) of the Clean Air Act) (Mar. 29, 1976) (defining "major emitting facility"), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4610, 4686.

114. Pub. L. 95-95, § 169(1), 91 Stat. 740 (1977) (codified at 42 U.S.C. § 7479(1)).

conference between the Senate bill (limiting PSD to specific source categories[115]) and the House Bill's definition (setting a 100-ton-per-year threshold applicable to criteria pollutants).[116] Essentially, therefore, EPA—by citing legislative history for a law that was never enacted—cited no relevant legislative history at all. But EPA's position on this point was essentially unopposed. In fact, the petitioners adopted and repeated EPA's characterization of congressional intent.[117]

Despite the lack of support for EPA's theory of congressional intent, it is reasonable to assume that Congress did not intend PSD requirements to impose absurd burdens on the regulated community.[118] Alternatively,

---

115. *See* S. 252 § 39 (proposing to amend § 302(k) of the Act), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 575, 684-85; *see also* S. REP. NO. 95-127 (accompanying S. 252) (May 10, 1977), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 1371, 1468 ("For the purposes of section 110(g), a major emitting facility is any stationary source which emits, or can emit, 100 [tpy or more] and which falls within one of the categories specified by this statute or subsequently identified by the Administrator . . . .").

116. *See* Conf. Rep. on H.R. 6161, 123 CONG. REC. 26,610 (Aug. 3, 1977); *reprinted in* 1977 U.S.C.C.A.N. 1502, 1530, *and in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 381, 529 ("[Under the House bill, a]ll sources with the design capacity to emit 100 tons per year or more of any pollutant [would have had to] receive a permit."). The PSD provisions of the 1977 amendments, as per the conference agreement, were arguably broader than both the Senate Bill (limiting "major emitting facility" by source category, *see supra* note 115) and the House Bill (limiting "major stationary source" by type of pollutant, as explained below). Under House bill, a new or modified "major stationary source" would have triggered PSD. H.R. 6161, § 108(a) (May 12, 1977), *reprinted in* 1977 LEGIS. HIST. vol. 4, *supra* note 58, at 2220, 2289 (which would have added § 160(c)(4)(A) to the Act). The bill would have defined "major stationary source" in terms of capacity to emit "one hundred tons per year or more of any air pollutant for which a national ambient air quality standard is promulgated," i.e., the definition would have been limited to criteria pollutants. *Id*. § 103(f), *reprinted in* 1977 LEGIS. HIST. vol. 4, *supra* note 58, at 2251 (which would have added § 302(o) to the Act).

117. *See* Brief for Petitioner Utility Air Regulatory Group at 22 (Dec. 9, 2013), *UARG*, 134 S. Ct. 2427 (2014) (No. 12-1146), 2013 WL 6512952. The environmentalists' brief avoided buying off on EPA's congressional intent language, focusing instead on the agency's administrability concerns. Brief of Environmental Organization Respondents at 12 (Jan. 21, 2014), *UARG*, 134 S. Ct. 2427 (No. 12-1146), 2014 WL 281680 (noting EPA concerns about "[p]ermit gridlock"). The environmentalists stressed the breadth of congressional intent but did not directly contradict EPA's relatively-small-number-of-sources theory. *Id*. at 7 (noting that "at conference, the 1977 Congress specifically rejected the House bill's language limiting the PSD permit obligation to 'any air pollutant for which a national ambient air quality standard is promulgated,' choosing instead the broader terms of the Senate bill that became the statutory text" (quoting Clean Air Act Amendments of 1977, H.R. 6161, 95th Cong., Section 103(f) (1977) (proposing new Section 7402(o)(1)), *reprinted in* 1977 LEGIS. HIST. vol. 4, *supra* note 58, at 2251, and relying on H.R. Rep. No, 95-564, 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 532)).

118. *See* Am. Water Works Ass'n v. EPA, 40 F.3d 1266 (D.C. Cir. 1994) (reading a statute to avoid absurd results). Of course, the Court has occasionally disapproved the "absurd results" doctrine. *See UARG*, 134 S. Ct. at 2446 ("The power of executing the laws necessarily includes both authority and responsibility to resolve some questions left open by Congress that arise during the law's administration. But it does not include a power to revise clear statutory terms that turn out not to work in practice."). But the Court has also interpreted laws to avoid results that Congress

these requirements might have been interpreted consistently with Congress's approach in the 1970 amendments, when Congress reserved to itself the authority (and responsibility) to modify requirements that proved impractical.[119] Either way, it is quite a stretch to conclude that Congress intended the program to apply to only a "relative handful"[120] or a "relatively small number" of sources."[121] On the other hand, the U.S. Supreme Court has spoken. As Supreme Court Justice Robert H. Jackson recognized, "[Supreme Court judgments] are not final because we are infallible, but we are infallible only because we are final."[122]

How, then, to interpret *UARG*? Because "relative handful" is such a vague phrase (relative to what?), and because the phrase is not central to the case's outcome,[123] it should be interpreted as a literary flourish, rather than read literally.[124] It is not, therefore, fully settled law that Congress had only modest goals for the PSD or Title V programs, but only that applying those programs to greenhouse gasses at a threshold of 250 tons per year would bloat the programs beyond Congress's contemplation. In the alternative, the Court's portrait of the Act's intended reach as relatively modest should be limited to the reach of the PSD and Title V programs. In general, the language of the statute and the legislative history continues

---

could not have intended. King v. Burwell, 135 S. Ct. 2480, 2493 (2015) (interpreting the phrase "an Exchange established by the State" to include exchanges established by the federal government to avoid "destabiliz[ing] the individual insurance market in any State with a Federal Exchange, and likely creat[ing] the very 'death spirals' that Congress designed the Act to avoid"). The language in *UARG*, of course, was a number (a threshold) that would have been hard in interpret in any way other than its plain terms.

119. *See supra* note 54.

120. *See supra* notes 89 & 107 and accompanying text.

121. *See supra* note 106 and accompanying text.

122. *See* Dietz v. Bouldin, 136 S. Ct. 1885, 1896 (2016) (quoting Brown v. Allen, 344 U.S. 443, 540 (1953) (Jackson, J., concurring in judgment)).

123. It is doubtful that the Court would have permitted EPA to amend plain statutory language in any event. *See UARG*, 134 S. Ct. at 2446 ("Nothing in [*Morton v. Ruiz*, 415 U.S. 199 (1974)] remotely authorizes an agency to modify unambiguous requirements imposed by a federal statute."). And a 250-ton per year threshold for carbon dioxide would presumably have swept in "tens of thousands of smaller sources," *id*. at 2443—so many that the "relative handful" comparison is unnecessary to raise concerns about administrability.

124. "When an opinion issues for the Court, it is not only the result but also those portions of the opinion necessary to that result by which we are bound." Seminole Tribe of Fla. v. Florida, 517 U.S. 44, 67 (1996). *Dictum*, on the other hand, is "a statement in a judicial opinion that could have been deleted without seriously impairing the analytical foundations of the holding—that, being peripheral, may not have received the full and careful consideration of the court that uttered it." United States v. Crawley, 837 F.2d 291, 292 (7th Cir. 1988) (quotation marks and citation omitted). Supreme Court *dicta*, of course, is extra good *dicta*. *See In re* Pre-Filled Propane Tank Antitrust Litig., 860 F.3d 1059, 1064 (8th Cir. 2017) ("Although panels have held that federal courts are 'bound' by Supreme Court *dicta*, this goes too far . . . [but a]ppellate courts should afford deference and respect to Supreme Court *dicta* . . . ."), *cert. denied*, 138 S. Ct. 647 (2018).

to stand for the proposition that Congress intended the Clean Air Act to fundamentally reform U.S. society's approach to emission of air pollution.

IV. IMPLEMENTATION EXAMPLES

In general, "remedial legislation should be construed broadly to effectuate its purposes."[125] And as discussed, Congress's purpose in the Clean Air Act was to make "drastic changes" in the face of a "crisis."[126] Nonetheless, EPA implementation of the Clean Air Act has tended to water down congressional mandates as illustrated below by three examples: (A) EPA's exception-ridden provision for state-of-the-art technology on new and modified sources, (B) the limited scope of the agency's criteria pollutant program, and (C) EPA's decision to tolerate nontrivial risks while supposedly protecting the public with an "ample margin of safety."[127]

A. New and Modified Sources

The 1970 Clean Air Act Amendments reflect a compromise that draws a line between (1) existing major sources of air pollution and (2) new or modified major sources. The idea is that state-of-the-art pollution control equipment is most cost-effective to install when a plant is under construction.[128] For new and modified major sources, Congress ordered EPA to develop "New Source Performance Standards" (NSPS), i.e., "the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) [EPA] determines has been adequately demonstrated."[129] This standard of state-of-the-art controls applies to

125. Tcherepnin v. Knight, 389 U.S. 332, 336 (1967) (acknowledging a "familiar canon of statutory construction").

126. *See supra* notes 7-8 and accompanying text.

127. 42 U.S.C. § 7412(f)(2)(A).

128. *See* S. REP. NO. 91-1196, at 16 (Sept. 17, 1970) (accompanying S. 4358), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 416 ("The overriding purpose of this section [governing new source performance standards] would be to prevent new air pollution problems, and towards that end, maximum feasible control of new sources at the time of their construction is seen by the committee as the most effective and, in the long run, the least expensive approach."); *cf.* Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7333 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504, 4514 ("[For new plants,] the costs of control technology can be worked into the economic equation of the plant's profitability from the outset. A new facility has the option of employing process changes in the way a product is manufactured rather than strictly relying on add-on pollution control technology.") (discussing prevention of deterioration provisions, ultimately added by the 1977 amendments).

129. Clean Air Act Amendments of 1970 § 111(a)(1), 84 Stat. 1683 (1970).

"any stationary source, the construction *or modification* of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing [an applicable] standard of performance."[130] Congress did not limit its new source program to "major" sources, but instead applied it to "any stationary source" covered by the applicable emission standard.[131] Congress ordered EPA to create standards for each "category of sources" that EPA "determines . . . may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare."[132]

Congress also did not limit its requirement of state-of-the-art controls to "major modifications" of such sources but instead defined "modification" to include "*any* physical change in, or change in the method of operation of, a stationary source which increases the amount of *any* air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."[133] EPA, however, has exempted from the definition various kinds of physical changes, including routine "[m]aintenance, repair, and replacement."[134] Congress also provided for regulation of otherwise unregulated pollutants from existing sources that, if new or modified, would fall within covered source categories.[135]

In 1977, Congress expanded the idea of requiring state-of-the-art technology on new and modified sources in the prevention of significant deterioration (PSD) and nonattainment new source review programs (NNSR).[136] With those programs, Congress barred construction or

---

130. *Id.* § 111(a)(2) (emphasis added).

131. Congress defined "stationary source" as "any building, structure, facility, or installation which emits or may emit any air pollutant." *Id.* § 111(a)(3).

132. *Id.* § 111(b)(1)(a), 84 Stat. at 1684.

133. *Id.* § 111(a)(4), 84 Stat. at 1683. Wis. Elec. Power Co. v. Reilly (*WEPCO*), 893 F.2d 901, 908 (7th Cir. 1990) ("We follow Congress's definition of 'modification'—not Webster's—when interpreting this term within the context of the Clean Air Act.").

134. 40 C.F.R. § 60.14(e); *see* Brian H. Potts, *Trading Grandfathered Air—A New, Simpler Approach*, 31 HARV. ENVTL. L. REV. 115, 123 ("To determine what is routine, EPA has historically looked to the "nature, extent, purpose, frequency, and cost" of a proposed project."). In addition, EPA regulations provide that "a modification to an 'affected facility' within an existing source subjected only that facility, and not the entire source, to the NSPS" and that sources may "avoid the NSPS for individual units within the source if the net emissions from all units affected by the project did not increase," considering "other 'contemporaneous' increases or decreases in actual emissions from the other affected units." Thomas O. McGarity, *When Strong Enforcement Works Better Than Weak Regulation: The EPA/DOJ New Source Review Enforcement Initiative*, 72 MD. L. REV. 1204, 1212 (2013) (footnotes omitted).

135. Clean Air Act Amendments of 1970 § 111(d), 84 Stat. at 1684.

136. Both of these programs fit within the umbrella term "new source review" (or NSR). The Act's prevention of significant deterioration (PSD) program's goal is to protect air in

modification of any "major emitting facility"[137] in an attainment area without a PSD permit,[138] and Congress required construction permits for new or modified "major stationary sources"[139] in nonattainment areas.[140] PSD and NNSR permits require owners and operators of new or modified major sources to install state-of-the-art technology.[141] Congress intended that the PSD program would make up for inadequate implementation of the criteria pollutant program,[142] which relies on ambient standards, i.e., national ambient air quality standards (NAAQS).[143] Senator Muskie explained, "Even at the national primary standard level, which is the health standard, there are health effects that are not protected against."[144] The House Report accompanying H.R. 6161 proclaimed, "The idea that the national primary standards are adequate to protect the health of the public has been belied."[145] The Act establishes the PSD program's first goal as

---

"attainment areas" that already meet national ambient air quality standards). 42 U.S.C. §§ 7470-7492. The goal of the nonattainment new source review (a/k/a "NNSR") program is to improve air quality in "nonattainment areas" that fail to meet such standards. *Id.* §§ 7501-7515. *See generally* ARNOLD W. REITZE JR., STATIONARY SOURCE AIR POLLUTION LAW 159-224 (2005).

137. The Act defines "major emitting facility" for purposes of the PSD program at 42 U.S.C. § 7479(a). That definition sets a 100-ton per year threshold for some source categories but sets a higher threshold (250 tons per year) for other sources.

138. 42 U.S.C. § 7475(a).

139. The Act defines "major stationary source" at 42 U.S.C. § 7602(j) as a "stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant." Other, more narrowly applicable thresholds appear in 42 U.S.C. § 7511a(b)(1)(A)(ii)(I) (for "moderate" ozone nonattainment areas), § 7511a(c) (for "serious" ozone nonattainment areas), § 7511a(d) (for "severe" nonattainment ozone nonattainment areas), and § 7511a(e) (for "extreme" ozone nonattainment areas).

140. 42 U.S.C. § 7502(c)(5).

141. *See* New York v. EPA, 413 F.3d 3, 13 (D.C. Cir. 2005) ("[T]he 1977 amendments carved out a significant difference between existing sources on the one hand and new or modified sources on the other. The former faced no NSR obligations—in the common phrase, they were 'grandfathered'—while the latter were subject to strict standards."); Ala. Power Co. v. Costle, 636 F.2d 323, 400 (D.C. Cir. 1979) ("The statutory scheme intends to 'grandfather' existing industries; but . . . this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit.").

Under the PSD program, the requirement for state-of-the-art technology is "best available control technology" or BACT. 42 U.S.C. § 7479(3). Under the NNSR program, the requirement is generally for "lowest achievable emission rate" or LAER. *Id*. § 7501(3).

142. Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and 'Fine-Tuning' Regulatory Reforms*, 37 STAN. L. REV. 1267, 1310 (1985) ("The primary congressional response to [Congress's dissatisfaction with the implementation of ambient air quality standards] was to strengthen two antidegradation policies applied to new sources of air pollution.").

143. 42 U.S.C. § 7409(a).

144. S. Deb. on S. 252, 123 CONG. REC. 18,460 (June 10, 1977), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 1027, 1030.

145. H.R. REP. No. 95-294 at 112 (May 12, 1977) (accompanying H.R. 6161), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1090, *and in* 1977 LEGIS. HIST. vol. 4, *supra* note 58, at 2465, 2579.

protection of "public health and welfare from any actual or potential adverse effect which . . . may reasonably be anticipated to occur from air pollution or from exposures to pollutants in other media, which pollutants originate as emissions to the ambient air, notwithstanding attainment and maintenance of all national ambient air quality standards."[146]

As in the new source performance standard program, Congress defined "modification" broadly to include "*any* physical change in, or change in the method of operation of, a stationary source which increases the amount of *any* air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."[147] EPA, however, took a different approach, building regulatory "significance" thresholds into its new source review regulations. The U.S. District Court for the Middle District of North Carolina explained:

> Although both the PSD and NSPS provisions of the CAA use the same statutory definition of "modification," the EPA promulgated distinct regulations for each. Under the 1980 PSD regulations, the EPA limited the application of PSD review to "*major*" modifications, defined as "any physical change in or change in the method of operation of a major stationary source that would result in a *significant* net emissions increase of any pollutant subject to regulation under the [CAA]." 40 C.F.R. § 51.166(b)(2)(i). Thus to trigger PSD permitting requirement, there must be (1) a "physical change" and (2) a "significant net emissions increase."[148]

As demonstrated by Professors Richard L. Revesz and Jack Lienke, EPA's new source review regulations create a complex scheme rife with exceptions.[149] Not only must an increase be "significant" in terms of thresholds, but for the PSD or nonattainment new source review programs to apply, the "net" increase must also be significant.[150] Significance is

---

146. 42 U.S.C. § 7470(1) (with typographical errors corrected).

147. *Id.* § 7479(2)(C) (incorporating—for purposes of the PSD program—the definition of modification from the new source performance standard program, 42 U.S.C. § 7411(a)); *id.* § 7501(4) (same for purposes of the nonattainment new source review program). The quote is from 42 U.S.C. § 7411(a)(4), with emphasis added. EPA's regulatory definition of modification in the PSD program, however, differs from the agency's NSPS definition. *See* New York v. EPA, 413 F.3d at 20 (rejecting an industry challenge to EPA's PSD definition based on "its divergence from" an NSPS definition).

148. United States v. Duke Energy Corp., No. 00-CV-1262, 2010 WL 3023517, at *2 (M.D.N.C. July 28, 2010) (emphasis added) (quoting Envtl. Def. v. Duke Energy Corp., 549 U.S. 561, 578 (2007)); *see also* 40 C.F.R. §§ 51.165(a)(1)(x), 52.21(b)(23).

149. *See* REVESZ & LIENKE, *supra* note 11, at 60-66.

150. 40 C.F.R. § 51.165(a)(1)(v)(A) (defining "major modification" as "any physical change in or change in the method of operation of a major stationary source that would result in: (1) a significant emissions increase of a regulated NSR pollutant . . . and (2) a significant net emissions increase of that pollutant from the major stationary source"); *see also id.*

determined after an opaque netting process that involves calculating emission increases and decreases from "baseline" emissions during a "contemporaneous" period.[151] For many sources, "fugitive"[152] emissions are not included in the major/minor calculation.[153]

EPA justifies its insertion of significance thresholds into the "modification" definition by reference to the "*de minimis*" doctrine.[154] That doctrine, however, is limited to trivialities.[155] The U.S. Supreme Court has ruled that "the venerable maxim *de minimis non curat lex* ('the law cares not for trifles') is part of the established background of legal principles against which all enactments are adopted, and which all enactments (absent contrary indication) are deemed to accept."[156] Thus, EPA has inherent authority—maybe even an inherent duty—to promulgate so-called *de minimis* thresholds that soften at least some statutory commands.[157] For example, "EPA may require an 'anyway' source to comply with greenhouse-gas BACT *only* if the source emits

---

§§ 51.166(a)(7)(iv)(a), 52.21(a)(2)(iv)(a) (same concept).

151. *See, e.g., id.* § 52.21(b)(3); *see also* New York v. EPA, 413 F.3d 3, 22-27 (2005) (upholding key elements of EPA's regulatory approach).

152. Fugitive emissions are emissions that "could not reasonably pass through a stack, chimney, vent, or . . . equivalent opening." 40 C.F.R. § 52.21(b)(20).

153. The Act, at 42 U.S.C. § 7602(j), gives EPA discretion to decide when fugitive emissions count in determining whether emissions from a source exceed the threshold for a "major source." *See* Ala. Power Co. v. Costle, 636 F.2d 323, 370 n.134 (D.C. Cir. 1979) ("EPA has authority by rulemaking to incorporate fugitive emissions, including fugitive dust, in the calculation of tonnage thresholds required to qualify a stationary source as a major emitting facility."); EPA, CONSIDERATION OF FUGITIVE EMISSIONS IN MAJOR SOURCE DETERMINATIONS 5 (Mar. 8, 1994) ("EPA has revised its interpretation of the Act . . . . EPA now believes the Act does not require fugitives to be considered for purposes of determining major source status in these nonattainment areas, except as provided pursuant to rulemaking under section 302(j) [i.e., 42 U.S.C. § 7602(j)]."). 42 U.S.C. § 7479(1), which defines "major emitting facility" for purposes of the PSD program, does not mention fugitives. EPA regulations, however, limit consideration of these emissions. *See* 40 C.F.R. § 52.21(b)(1)(iii) (limiting consideration of fugitive emissions in the "major source" definition under the PSD program); *id*. § 51.165(a)(1)(iv)(C) (same for the nonattainment new source review program).

154. *See, e.g.*, EPA, Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans, 45 Fed. Reg. 52,676, 52,698 (preamble to final rules, Aug. 7, 1980) ("The new PSD regulations define 'significant' in terms of *de minimis* thresholds for each pollutant subject to regulation under the Act."); Ala. Power Co. v. Costle, 636 F.2d 323, 360 (D.C. Cir. 1979) ("Courts should be reluctant to apply the literal terms of a statute to mandate pointless expenditures of effort.").

155. *See* BLACK'S LAW DICTIONARY 464 (8th ed. 2004) (defining "*de minimis non curat lex*" as "[t]he law does not concern itself with trifles.").

156. Wis. Dep't of Revenue v. William Wrigley, Jr., Co., 505 U.S. 214, 231 (1992) (cited by *UARG*, 134 S. Ct. 2427, 2435 n.1 (2014)).

157. *UARG*, 134 S. Ct. at 2449 ("EPA may establish an appropriate *de minimis* threshold below which BACT is not required for a source's greenhouse-gas emissions.").

more than a *de minimis* amount of greenhouse gases."[158] EPA's *de minimis* exceptions, however, should be based on "a true *de minimis* level."[159]

EPA's new source review "significance" table includes values such as:

> Carbon monoxide: 100 tons per year (tpy)
> Nitrogen oxides: 40 tpy
> Sulfur dioxide: 40 tpy
> Ozone: 40 tpy of Volatile organic compounds or Nitrogen oxides.[160]

Common sense tells us that "[f]or the law to have any credibility or respect, it must be grounded in reality."[161] Yet to characterize EPA's significance thresholds as "true *de minimis* level[s]"[162]—such that emissions below those thresholds are too trivial to worry about—would ignore reality.[163] EPA's significance thresholds allow a source near a residential community that increases emissions of volatile organic compounds by thirty-nine tons per year—often not including fugitive emissions[164]—to avoid the requirement to install state-of-the art technology. Two or three such new or modified sources near the same community would still be exempt. Multiple sources are "a fact of life" for residents of fence-line communities, for example "[i]n parts of Louisiana and Texas."[165]

---

158. *Id.*

159. *Id.*

160. 40 C.F.R. § 51.165(a)(1)(x)(A); *see also id.* § 52.21(b)(23).

161. Holy Cross v. U.S. Army Corps of Eng'rs, 455 F. Supp. 2d 532, 539 (E.D. La. 2006).

162. *See supra* text accompanying note 159.

163. *See* New York v. EPA, 413 F.3d 3, 30 (D.C. Cir. 2005) (noting that "even 'small' increases in emissions can harm public health"). For "serious" ozone nonattainment areas, Congress prohibited EPA from setting a de minimis level above 25 tpy. 42 U.S.C. § 7511a(c)(6); *see also* 40 C.F.R. § 51.165(a)(1)(x)(B).

164. *See* 40 C.F.R. § 52.21(b)(2)(v) (limiting consideration of fugitive emissions for the "modification" definition" under the PSD program); *id*. § 51.165(a)(1)(v)(G) (same for the nonattainment new source review program); applicability determinations for a new air emissions source or a modification to an existing air emissions source."); *id*. § 52.21(i)(1)(vii) (providing an additional limitation with respect to the PSD program); *id*. § 51.165(a)(4) (same for the nonattainment new source review program). *But see* EPA, Reconsideration of Inclusion of Fugitive Emissions; Interim Rule; Stay and Revisions, 76 Fed. Reg. 17,548, 17,551 (interim final rule, Mar. 30, 2011) (staying, *inter alia*, §§ 52.21(b)(2)(v) and 51.165(a)(1)(v)(G) "to revert the treatment of fugitive emissions in applicability determinations to the approach that applied prior to the Fugitive Emissions Rule on an interim basis"). *See generally* Leslie Cook Wong, *Fugitive Greenhouse Gas Emissions and Prevention of Significant Deterioration Program Applicability*, 45 ABA TRENDS (July/Aug. 2014) ("Fugitive emissions do not typically present a significant challenge in Prevention of Significant Deterioration (PSD) applicability determinations for a new air emissions source or a modification to an existing air emissions source.").

165. Gina McCarthy & Janet McCabe, *Foreword*, 41 HARV. ENVTL. L. REV. 321, 322-23

Some argue that the new source review and NSPS programs harm air quality by creating an incentive for owners and operators to keep old emission sources running rather than investing in newer and presumably cleaner equipment.[166] In other words, the requirement to install state-of-the-art pollution controls is arguably a disincentive to modernization.[167] If so, EPA's extra-statutory exceptions to NSPS and NSR—e.g., for maintenance, repair, and replacement that EPA deems routine[168]—surely enable owners and operators to keep these old sources running, and thus, depending on the circumstances of each plant, can provide an attractive alternative to updated technology.[169] For example, when EPA determined renovation of a power plant would trigger NSPS requirements in the *WEPCO* case, one of the power company's primary arguments was to point to the many renovations that EPA had let slide at other facilities pursuant to the "routine" maintenance, repair, and replacement exception.[170]

Experience shows that the technology-based standards required for new and modified sources of criteria pollutants, sources of hazardous air pollutants, and mobile sources can be key to attaining national ambient air quality standards (or at least coming close to attainment).[171] Without

---

(2017).

166. *See* Jonathan Remy Nash & Richard L. Revesz, *Grandfathering and Environmental Regulation: The Law and Economics of New Source Review*, 101 NW. U. L. REV. 1677, 1709 & n.191 (2007) (discussing "the general notion that application of more stringent standards to new sources tends to lengthen the lives of older plants").

167. *See* NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., NEW SOURCE REVIEW FOR STATIONARY SOURCES OF AIR POLLUTION 106-07 (2006) ("Several economic researchers have asked whether NSR regulations inhibit technological change. . . . However, no empirical studies have explored the relationship directly . . . .").

168. *See*, *e.g.*, 40 C.F.R. § 51.166(b)(2)(iii) (setting forth exemptions).

169. *See* Victor B. Flatt, *Frozen in Time: The Ossification of Environmental Statutory Change and the Theatre of the (Administrative) Absurd*, 24 FORDHAM ENVTL L. REV. 125, 134 (2012-2013) (arguing that the "regulatory shelter" of EPA exemptions has inspired decisions by the owners and operators of regulated plants that "prolonged the lives of these older plants far beyond what had been anticipated in 1970").

170. *WEPCO*, 893 F.2d 901, 911 (7th Cir. 1990) (noting that WEPCO sought reversal of an EPA determination "primarily on the basis of earlier EPA decisions characterizing certain replacement programs as routine"). EPA decided in the late 1990s that members of the refinery sector had illegally avoided NSR for decades by invoking this ill-defined exception. *See* Nash & Revesz, *supra* note 166, at 1692 (discussing "a three-pronged attack on the pulp and paper industry, the petroleum refining industry, and the electric utility industry" that EPA began in 1997).

171. The National Research Council estimated, "For NO_x [i.e., oxides of nitrogen], 38% of the U.S. total derives from potential NSR emitters. . . . Even small changes in NO_x emissions owing to NSR rule changes might have nonnegligible effects on emissions in [some] states." NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., *supra* note 167, at 215. Further, "Some 87% of total U.S. emissions [of SO_2] is from the NSR-eligible emitters." *Id*. Although the fraction of emissions of volatile organic compounds (VOCs) "from point sources is small compared with total

technology-based standards to provide (when they apply) a floor below which permit emission limits should not drop, states often lack the discipline to impose emission controls sufficient for attainment of risk-based national ambient air quality standards.[172] By limiting the application of technology-based standards, therefore, EPA helps to allow continued nonattainment and, at least in part, thwarts Congress's plan "to protect public health and welfare."[173]

VOC emissions," Alabama, Arkansas, Hawaii, Kentucky, Louisiana, Tennessee, Texas, and Wyoming all "have fractions of NSR-eligible source emissions that exceed 5% of the total" (with Louisiana at 12%). *Id*. at 213. Twelve percent of total U.S. emissions of particulate matter of 2.5 microns or less in diameter ($PM_{2.5}$) "could be from NSR-eligible sources" (with West Virginia at 52%). *Id*. at 213-15. SO_2 and PM are "criteria pollutants," for which EPA has set national ambient air quality standards. 40 C.F.R. pt. 50. NO_x and VOCs are precursors of ozone (which is a criteria pollutant). *Id.* § 51.165(a)(1)(xxxvii)(C)(*1*). The National Research Council explained:

> [T]he criteria pollutants are associated with a variety of health effects, including increased occurrence of cardiopulmonary morbidity, cardiopulmonary and cancer mortality, effects on birth outcomes (low birth weight and infants that are small for gestational age), and impaired growth of lung function in children. The associations are most consistent in children (particularly those with asthma) and the elderly (particularly those with underlying cardiovascular diseases and diabetes).

NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., *supra* note 1677, at 236-37.

Many commentators believe that "those portions of the Clean Air Act that have worked well (such as new motor vehicle standards) were technology-based rather than ambient-based." *See* Alan C. Waltner, *Paradise Delayed—The Continuing Saga of the Los Angeles Basin Federal Clean Air Implementation Plan*, 14 UCLA J. ENVTL. L. & POL'Y 247, 249. William W. Buzbee explains,

> Notably absent from technology-based standards is any requirement that regulators adjust emission limitations in light of nuanced understanding of the surrounding ambient environment, other than taking into account a jurisdiction's attainment status. . . . [A]ny requirement to adjust regulatory requirements in light of the ambient environment demands huge resources and levels of scientific and predictive capacity that remain elusive. By not utilizing nuanced ambient environment analysis, an additional source of delay and resource drain is avoided.

William W. Buzbee, *Clean Air Act Dynamism and Disappointments: Lessons for Climate Legislation to Prompt Innovation and Discourage Inertia*, 32 WASH. U. J.L. & POL'Y 33, 55-56 (2010).

172. *See* Chris Colclasure*, Recent Events and Trends from the State Perspective*, No. 1 RMMLF-INST. 6, 6-20 (2018) (a Deputy Director within the Colorado Department of Public Health and Environment notes that a proposed EPA delay of new source performance standards for crude oil and natural gas facilities may increase emissions of criteria pollutants affecting some nonattainment areas). Almost fifty years after enactment of the Clean Air Act Amendments of 1970, nonattainment remains a persistent problem. *See, e.g.*, EPA, Determination of Nonattainment and Reclassification of the Houston-Galveston-Brazoria 2008 8-Hour Ozone Nonattainment Area; Texas, 81 Fed. Reg. 90,207, 90,210 (preamble to final rule, Dec. 14, 2016) ("[The] HGB area has been previously designated nonattainment for both the 1979 1-hour ozone standard and the 1997 8-hour ozone standard, receiving a classification of Severe for both NAAQS.").

173. *See* 42 U.S.C. § 7470(1).

B. Only Six Criteria Pollutants?

The criteria pollutant program is arguably the heart of the Clean Air Act's regulatory scheme.[174] To date, however, EPA has used the program to cover only six pollutants[175]—"[c]arbon monoxide, nitrogen dioxide, ozone, lead, particulate matter, and sulfur dioxide."[176] Under this program, EPA puts together a "criteria" document to "provide the scientific basis for promulgation of air quality standards for [a] pollutant."[177] The document must "accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities."[178] The trigger for EPA's duty to prepare the criteria document is an EPA decision to put a chemical on a list of pollutants that, in EPA's judgment, "cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare" and which are present in ambient air due to emissions "from numerous or diverse mobile or stationary sources" and for which EPA "plans to issue air quality criteria."[179] Along with the

---

174. *See, e.g.*, City of Seabrook v. EPA, 659 F.2d 1349, 1357 (5th Cir. 1981) (discussing the "heart" of the Act's 1977 Amendments) (quoting Train v. Nat. Res. Def. Council, 421 U.S. 60, 66 (1975), which discussed the "heart" of the 1970 Amendments).

175. *See* Berks Cty. v. EPA, 619 Fed. Appx. 179, 181 (3d Cir. 2015) ("Section 108 of the CAA directs the Administrator of EPA to identify 'criteria pollutants,' which are those air pollutants the 'emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare . . . .'" (quoting 42 U.S.C. § 7408(a)(1)(A))).

176. EPA, Approval and Promulgation of Air Quality Implementation Plans; Texas, 82 Fed. Reg. 29,426, 29,427 (preamble to final rule, June 29, 2017). As for sulfur dioxide and nitrogen dioxide, the criteria are for "oxides of sulfur" and "oxides of nitrogen," but EPA regulates SO_2 and NO_2 as indicator pollutants. *See* EPA, Final Risk and Exposure Assessment Report for Sulfur Dioxide, 74 Fed. Reg. 37,705, 37,706 (notice, July 29, 2009) ("Air quality criteria have been established for sulfur oxides (SO_x) and NAAQS have been established for sulfur dioxide (SO_2), an indicator for gaseous SO_x."); EPA, Integrated Science Assessment for Oxides of Nitrogen—Health Criteria, 73 Fed. Reg. 39,960, 39,960 (notice, July 11, 2008) ("Oxides of nitrogen are one of six principal (or "criteria") pollutants . . . . National ambient air quality standards (NAAQS) based on those criteria have been established for nitrogen dioxide (NO_2), an indicator for gaseous nitrogen oxides.").

177. *See* Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1136-37 (D.C. Cir. 1980) (noting that "'criteria' do not constitute 'standards' or 'guidelines,' but rather refer to a document").

178. 42 U.S.C. § 7408(a)(2).

179. *Id.* § 7408(a)(1). The Second Circuit has ruled, "it is to the initial list alone that the phrase 'but for which [EPA] plans to issue air quality criteria' is directed, and that [EPA] must list those pollutants which [it] has determined meet the two requisites set forth in section 108." Nat. Res. Def. Council v. Train, 545 F.2d 320, 325 (2d Cir. 1976). *See generally* Nathan Richardson, *Greenhouse Gas Regulation Under the Clean Air Act: Does Chevron Set the EPA Free*?, 29 STAN. ENVTL. L.J. 283, 305-18 (2010) (discussing changes in the Act and in case law that might allow EPA to depart from the holding of *Natural Resources Defense Council v. Train*); Brigham Daniels

criteria, EPA must propose national ambient air quality standards,[180] which trigger the "state implementation plan" regulatory process.[181]

Congress unambiguously expected EPA to add, as appropriate, to the list of criteria pollutants. The Act provides that EPA "shall from time to time [after January 30, 1971] revise" the list of criteria pollutants, to account for reasonably anticipated risks to public health "or" welfare.[182] And Congress provided for promulgation of standards for "any air pollutant for which air quality criteria are issued after December 31, 1970."[183] Indeed, EPA noted in 1971 that "evaluation of other air pollutants, including fluorides, polycyclic organic matter, and odorous substances, is being conducted, and the list will be revised as [EPA] deems appropriate."[184] Yet the agency has only added two pollutants to the list

---

et al., *Regulating Climate: What Role for the Clean Air Act*?, 39 Envtl. L. Rep. (Envtl. L. Inst.) 10,838 (2009) (noting that whether EPA has "discretion to refrain from using the NAAQS program to address GHGs [is] a matter of contention.").

180. 42 U.S.C. § 7409(a)(2).

181. State implementation plans are a primary mechanism for implementation of the Act. *Id*. § 7410. States submit these plans for EPA approval. *Id*. § 7410(a)(2), (k)(3). If EPA approves, states take the lead in implementation. *Id.* § 7410(a)(2)(E) (requiring that state submissions include "necessary assurances that the State . . . will have adequate personnel, funding, and authority . . . to carry out [the plan]"); *see also id.* § 7509(a)(4) (providing for repercussions if EPA "finds that any requirement of an approved plan … is not being implemented"). *See generally* S. Coast Air Quality Mgmt. Dist. v. EPA, 882 F.3d 1138, 1143 (D.C. Cir. 2018) ("States must formally adopt SIPs through state notice and comment rulemaking and then submit the SIPs to the EPA for approval. [42 U.S.C.] § 7410(a). For those areas designated as 'nonattainment,' SIPs must show how the areas will achieve and maintain the relevant [standards]."). If a state fails to submit an approvable plan, EPA must fill the gap by promulgating and carrying out a federal implementation plan. 42 U.S.C. § 7410(c), (k)(1)(C). "Once a pollutant has been listed under [42 U.S.C. § 7408(a)(1)], §§ [7409] and [7410] of the Act are automatically invoked." *Train*, 545 F.2d at 322-23.

182. 42 U.S.C. § 7408(a)(1); *see also* 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. ENVTL. L.J. 298, 319 (2006) ("The statutory language . . . case law, legislative history, and previous [EPA] action . . . indicate that the mandate for the agency to revise the list of criteria pollutants requires [EPA] to add potential pollutants that meet the requirements of section 108 . . . .").

183. 42 U.S.C. § 7409(a)(2).

184. EPA, List of Air Pollutants; Issuance of Air Quality Criteria, 36 Fed. Reg. 1515 (notice, Jan. 30, 1971). EPA's list of potential additional criteria pollutants is consistent with legislative history identifying "fluorides, nitrogen oxides, polynuclear organic matter, lead, and odors" as "contaminants of broad national impact." *Train*, 545 F.2d at 326 (quoting S. REP. NO. 91-1196 (Sept. 17, 1970) (accompanying S. 4358), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 409).

since the Act's enactment: oxides of nitrogen[185] (i.e., nitrogen dioxide[186]) and lead.[187]

Granted, EPA's six criteria pollutants cover a lot of ground. One of those pollutants, particulate matter, consists of small particles that may include a variety of potentially dangerous chemicals.[188] Another criteria pollutant—ground-level ozone—results from a chemical reaction in the atmosphere involving sunlight, oxygen, volatile organic compounds (VOCs) and oxides of nitrogen (sometimes called "NOx").[189] To implement the ozone standard, EPA and states regulate categories of pollutants that are ozone precursors (VOCs and NOx).[190] These comprise a broad collection of chemicals.[191] In addition, the technology required to reduce emissions of some chemicals often reduces emissions of other chemicals as well, creating "ancillary benefits."[192] But it is one thing to say that various pollutants are fortuitously reduced in the effort to achieve the ozone and particulate matter standards and it is quite another to say

185. 36 Fed. Reg. at 1515.

186. *See supra* note 176 (showing that EPA regulates SO_2 and NO_2 as indicator pollutants for "oxides of sulfur" and "oxides of nitrogen").

187. EPA, Proposed National Ambient Air Quality Standard, 42 Fed. Reg. 63,076, 63,076 (preamble to proposed rule, Dec. 14, 1977) (noting that the agency listed lead on March 31, 1976).

188. EPA, Approval and Promulgation of Air Quality Implementation Plans; Maryland; Infrastructure Requirements for the 2012 Fine Particulate Matter National Ambient Air Quality Standard, 83 Fed. Reg. 31,352, 31,353 (preamble to proposed rule, July 5, 2018) ("Particle pollution, also referred to as particulate matter (PM), is a complex mixture of small particles and liquid droplets suspended in the air, which causes adverse health effects and is the leading cause of visibility impairment in the United States.").

189. *See* Arnold W. Reitze Jr., *Ozone National Ambient Air Quality Standards: Should Cost Be a Consideration*?, NAT. RESOURCES & ENV'T, Fall 2015, at 3 ("Ozone (O_3) is used as an indicator of photochemical smog, which is a complex mix of many chemicals. To prevent photochemical reactions, nitrogen oxides (NO_x) and reactive hydrocarbons known as volatile organic compounds (VOCs), are regulated by the CAA.").

190. *See* S. Coast Air Quality Mgmt. Dist. v. EPA, 882 F.3d 1138, 1143 (D.C. Cir. 2018) (noting that areas that violate the ozone ambient standard are subject to "progressively more stringent emissions controls for ozone precursors, namely, volatile organic compounds (VOCs) and oxides of nitrogen (NO_x)" (quoting Nat. Res. Def. Council v. EPA, 571 F.3d 1245, 1250 (D.C. Cir. 2009)); *see also* 40 C.F.R. § 51.165(a)(1)(xxxvii)(C)(*1*) ("Volatile organic compounds and nitrogen oxides are precursors to ozone in all ozone nonattainment areas.").

191. *See* 40 C.F.R. § 51.100(s) (defining VOC, subject to exceptions as "any compound of carbon . . . which participates in atmospheric photochemical reactions"); EPA, Primary National Ambient Air Quality Standards for Nitrogen Dioxide, 75 Fed. Reg. 6474, 6476 (preamble to final rule, Feb. 9, 2010) ("NO_x includes multiple gaseous (*e.g.*, NO_2, NO) and particulate (*e.g.*, nitrate) species.").

192. *See* Michael A. Livermore & Richard L. Revesz, *Rethinking Health-Based Environmental Standards*, 89 N.Y.U. L. REV. 1184, 1250 (2014) ("[T]o meet the NAAQS for one pollutant, an electric utility may switch from burning coal to burning natural gas, thereby also reducing its emissions of other pollutants. It is precisely because of this dynamic that the NAAQS produce such significant ancillary benefits.").

that those pollutants are reduced to a sufficient degree "to protect the public health" with "an adequate margin of safety"[193] or "to protect the public welfare from any known or anticipated adverse effects."[194] If you have visited residents of a "fence-line community"[195] and have been disturbed by odors of hydrogen sulfide (rotten eggs) or benzene (gasoline-like), your welfare has not been protected from adverse effects.[196] By 1977, the House Report accompanying H.R. 6161 recognized that "[t]he inadequacies of the [national ambient air quality] standards are substantial both with regard to the pollutants which are regulated and with respect to their failure to regulate others."[197]

EPA also regulates pollutants from many types of facilities under its hazardous air pollutant program.[198] This program, however, generally imposes emission limits on individual facilities and does not necessarily protect people living in industrialized areas from ambient concentrations or cumulative effects.[199] The Act requires EPA to examine residual health

---

193. 42 U.S.C. § 7408(a)(1).

194. *Id.* § 7408(a)(2).

195. *See* LESLEY FLEISCHMAN & MARCUS FRANKLIN, CLEAN AIR TASK FORCE & NAACP, FUMES ACROSS THE FENCE-LINE: THE HEALTH IMPACTS OF AIR POLLUTION FROM OIL & GAS FACILITIES ON AFRICAN AMERICAN COMMUNITIES 6 Nov. 2017) ("Fence-line communities are communities that are next to a company, industrial, or service facility and are directly affected in some way by the facility's operation (e.g. noise, odor, traffic, and chemical emissions).").

196. *See id*. at 20 ("[The] AllenCo drilling site [in Los Angeles] was 30 feet away from the nearest home. Residents filed hundreds of complaints about odors, nausea, body spasms, and respiratory illnesses before the site was finally closed in 2013. Despite the efforts of community members, the site was only closed after EPA officials became sick while investigating the site." (footnote omitted)).

197. H.R. REP. NO. 95-294, at 106 (May 12, 1977) (accompanying H.R. 6161), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1184, *and in* 1977 LEGIS. HIST. vol. 4, *supra* note 58, at 2465, 2573.

198. 42 U.S.C. § 7412(b)(1). The Second Circuit explained:

> The 1970 Clean Air Act Amendments provide two different approaches for controlling pollutants in the air. One approach, incorporated in §§ 108-110 [42 U.S.C. §§ 7408-10], provides for the publication of a list of pollutants adverse to public health or welfare, derived from 'numerous or diverse' sources, the promulgation of national ambient air quality standards for listed pollutants, and subsequent implementation of these standards by the states. The second approach of the Act provides for control of certain pollutants at the source, pursuant to §§ 111, 112, 202, 211, and 231 [42 U.S.C. §§ 7411-12, 7521, 7545, 7571].

Nat. Res. Def. Council v. Train, 545 F.2d 320, 322 (2d Cir. 1976).

199. *See* 42 U.S.C. § 7412(d) (requiring EPA to set emission standards). The U.S. Supreme Court explained:

> EPA must first divide sources covered by the program into categories and subcategories in accordance with statutory criteria. § 7412(c)(1). For each category or subcategory, the Agency must promulgate certain minimum emission regulations, known as floor standards. § 7412(d)(1), (3). The statute generally calibrates the floor standards [for existing sources] to reflect the emissions limitations already achieved by the best-

risks that remain eight years after promulgation of a hazardous air pollutant standard.[200] This process, however, has been far from rigorous.[201]

The criteria pollutant program and the hazardous air pollutant program are not mutually exclusive.[202] The Act's hazardous air pollutant section provides:

> No air pollutant which is listed under section 7408(a) of this title may be added to the list under this section, except that the prohibition of this sentence shall not apply to any pollutant which independently meets the listing criteria of this paragraph and is a precursor to a pollutant which is listed under section 7408(a) of this title or to any pollutant which is in a class of pollutants listed under such section.[203]

Thus, for example, there is nothing to prevent EPA from regulating "odorous substances" or "odors" as EPA and Congress both expected following enactment of the 1970 Clean Air Act amendments.[204] Such

---

> performing 12% of sources within the category or subcategory. § 7412(d)(3). In some circumstances, the Agency may also impose more stringent emission regulations, known as beyond-the-floor standards. The statute expressly requires the Agency to consider cost (alongside other specified factors) when imposing beyond-the-floor standards. § 7412(d)(2).

Michigan v. EPA, 135 S. Ct. 2699, 2705 (2015).

200. *See* 42 U.S.C. § 7412(f)(2)(A).

201. *See* Nat. Res. Def. Council v. EPA (*NRDC v. EPA*), 529 F.3d 1077, 1084-85 (D.C. Cir. 2008) (upholding an EPA decision to calculate risks to public health based on "industry-supplied data" from an American Chemistry Council questionnaire with only a 44% response rate, in part because the agency's lawyer said that it would have been "very costly and time-consuming" for the agency to require members of the regulated community to collect data).

202. *See* Frank B. Cross, *Section 111(d) of the Clean Air Act: A New Approach to the Control of Airborne Carcinogens*,13 B.C. ENVTL. AFF. L. REV. 215, 235 & n.132 (1986) (asserting that "the provisions of sections 108, 111(d), and 112 are by their terms mutually exclusive alternatives for regulating stationary sources," relying on "provisions of [42 U.S.C. § 7411(d)(1) that] expressly present an alternative to that section and section 112 [before amendment of that section in 1990]").

203. 42 U.S.C. § 7412(b)(2).

204. *See* EPA, List of Air Pollutants; Issuance of Air Quality Criteria, 36 Fed. Reg. 1515 (notice, Jan. 30, 1971); S. REP. NO. 91-1196 (Sept. 17, 1970) (accompanying S. 4358), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 409. Similarly, ambient standards presumably could be set for fluorides and polycyclic organic matter, which are classes of pollutants that Congress and EPA identified as potential criteria pollutants. Polycyclic organic matter "is generally defined as a large class of organic compounds which have multiple benzene rings and a boiling point greater than 100 degrees Celsius. Many of the compounds included in the class of compounds known as POM are classified by EPA as probable human carcinogens based on animal data." EPA, Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder, 72 Fed. Reg. 15,938, 15,960 (preamble to proposed rule, Apr. 3, 2007). The "class of chemicals . . . commonly referred to as fluorides" includes "numerous natural and synthesized compounds that are derived from hydrofluoric acid." AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR FLUORIDES, HYDROGEN

standards could significantly improve the lives of people living near industrial facilities.[205]

C. Defining "Safety" Without Regard to Significant Risks

Under the Clean Air Act, as amended in 1990, EPA must—eight years after promulgating technology-based standards for hazardous air pollutants from a source category—promulgate additional, "residual risk" standards if necessary to provide "an ample margin of safety to protect public health."[206] In general, EPA "considers cancer risks (expressed as the probability of an increased cancer case) in the range of one in one million (or 1 x 10^{-6}) or less to be negligible" and thus acceptable.[207] Nevertheless, EPA considers greater risks, up to one in ten thousand (or 1 x 10^{-4}), to be acceptable when implementing the hazardous air pollutant program.[208] The next few paragraphs describe how EPA got there.

In the Clean Air Act Amendments of 1970, Congress instructed EPA to create emission standards for new or modified sources of hazardous air pollutants that would provide "an ample margin of safety to protect the public health."[209] Senator Muskie had explained, "This could mean, effectively, that a plant could be required to close because of the absence of control techniques. It could include emission standards which allow for no measurable emissions."[210] In the years before enactment of the 1990 Amendments, the D.C. Circuit grappled with EPA's attempt to regulate vinyl chloride, which EPA concluded is "an apparent non-threshold pollutant," meaning that vinyl chloride "appears to create a risk to health at all non-zero levels of emission."[211] During the rulemaking process, EPA

FLUORIDE, AND FLUORINE 29 (Sept. 2003).

205. *See* McCarthy & McCabe, *supra* note 1655, at 322-23 ("In this country's environmental justice communities, pollution often remains painfully visible. In parts of Louisiana and Texas, for example, clusters of chemical plants and refineries too often have visible emissions that are a fact of life for people living in adjacent housing developments.").

206. 42 U.S.C. § 7412(f)(2)(A). The D.C. Circuit used the "residual risk" terminology in *NRDC v. EPA*, 529 F.3d at 1079.

207. EPA, Isopyrazam; Pesticide Tolerances, 82 Fed. Reg. 24,071, 24,074 (preamble to final rule, May 25, 2017).

208. *See NRDC v. EPA*, 529 F.3d at 1080 (EPA regards "an excess lifetime cancer risk of . . . 100-in-one million [i.e., one in ten thousand] . . . as the 'presumptively acceptable' level under its precedents.").

209. Clean Air Act Amendments of 1970 § 112(b)(1)(b), 84 Stat. 1685 (1970).

210. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,385 (Dec. 18, 1970) (Summary of the Provisions of Conference Agreement on the Clean Air Amendments of 1970, Exh. 1 to Statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 133.

211. Nat. Res. Def. Council v. EPA, 824 F.2d 1146, 1148 (D.C. Cir. 1987) (internal

had discussed the Act's "ample margin of safety" language and "the potential problem under this standard of shutting down an entire industry that produces a non-threshold pollutant."[212] EPA determined

> that a zero-emissions standard for non-threshold pollutants would result in the elimination of such activities as "the generation of electricity from either coal-burning or nuclear energy; the manufacturing of steel; the mining, smelting, or refining of virtually any mineral (e.g., copper, iron, lead, zinc, and limestone); the manufacture of synthetic organic chemicals; and the refining, storage, or dispensing of any petroleum product."[213]

The D.C. Circuit held that "'safe' does not mean 'risk-free.'"[214] Instead, the court found that EPA's "decision must be based upon an expert judgment with regard to the level of emission that will result in an 'acceptable' risk to health."[215] Thus, the court explained, EPA must "decide what risks are acceptable in the world in which we live."[216] But a definition of "acceptable" risk according to "activities that we engage in every day—such as driving a car"[217] allows consideration of cost through the back door, in contrast to the court's ruling that EPA "cannot under any circumstances consider cost and technological feasibility at this stage of the analysis."[218] We would, for example, presumably drive safer cars if cost were no object.[219]

Responding to the Court's opinion, EPA specifically rejected the idea that "acceptable risk" should be "limited to *de minimis* risk."[220] In other words, EPA asserted the authority to not only move beyond zero risk, but to allow non-trivial, i.e., significant, risks.[221] To determine "what risks are

---

quotation marks and citation omitted).

212. *Id*. at 1151.

213. *Id*. at 1154 (internal quotation marks and citation omitted).

214. *Id*. at 1153 (quoting Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst., 448 U.S. 607, 642 (1980)).

215. *Id*. at 1164-65.

216. *Id*. at 1165 (citing a U.S. Supreme Court statement that "[t]here are many activities that we engage in every day—such as driving a car or even breathing city air-that entail some risk of accident or material health impairment; nevertheless, few people would consider those activities 'unsafe,'" *Indus. Union Dep't*, 448 U.S. at 642).

217. *Id*.

218. *Id*. But when "determining what is an 'ample margin,'" EPA may consider technological feasibility. *Id.* at 1146.

219. *See* EPA, National Emission Standards for Hazardous Air Pollutants, 54 Fed. Reg. 38,044, 38,046 (preamble to final rule, Sept. 14, 1989) (quoting Nat. Res. Def. Council v. EPA, 824 F.2d 1146, 1165 (D.C. Cir. 1987).

220. 54 Fed. Reg. at 38,055.

221. In general, courts and agencies have accepted that a one-in-a-million lifetime risk qualifies as *de minimis*. *See* Pub. Citizen v. Young, 831 F.2d 1108, 1111 (D.C. Cir. 1987); EPA, Hazardous Waste Management System; Identification and Listing of Hazardous Waste Final

acceptable in the world in which we live," the agency "compiled and presented a Survey of Societal Risk," finding individual risks that ranged from one-in-ten to less than one-in-ten-million.[222] The agency then set a "presumptive level" of acceptable risk for its hazardous air pollution decisions "within the range for individual risk in the survey."[223] But the range in the survey was so wide (one-in-ten to one-in-ten million) that EPA could effectively have picked almost any number—which arguably renders the analysis arbitrary. Further, since potential costs of risk-reduction are presumably a factor when we choose to accept the risks of the "world in which we live," considering this broad context of societal risk decisions was a way for EPA to let cost considerations into its analysis through the back door.

When Congress amended the Clean Air Act in 1990, it instructed EPA to promulgate residual risk standards for hazardous air pollutants if existing standards fail to "reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than one in one million."[224] But Congress also mandated that nothing in its amended hazardous air pollutant section "shall be construed as affecting, or applying to the Administrator's interpretation of this section, as in effect before November 15, 1990, and set forth in the Federal Register of September 14, 1989 (54 Federal

---

Exclusion, 67 Fed. Reg. 1888, 1892 (preamble to final rule, Jan. 15, 2002) ("The commenter is correct that a *de minimis* risk is usually considered by regulatory agencies to be a risk at or below 10^{-6} over a 70 year life time."); EPA, No-Migration Variance from Land Disposal Restrictions for Exxon Company, 58 Fed. Reg. 40,134, 40,141 (preamble to final rule, July 27, 1993) (explaining that "to define *de minimis* releases that do not amount to migration" EPA considers "levels or concentrations of a hazardous constituent that would be acceptable (for example, that would pose a one in a million probability of adverse health effects) human exposure for a lifetime at the unit boundary").

222. 54 Fed. Reg. at 38,046:

> The risks surveyed ranged from individual risks of 1 in 10 (10^{-1}) to less than 1 in 10,000,000 (10^{-7}). Everyday risks include risks from natural background radiation as well as risks from home accidents. Natural background radiation at sea level creates individual lifetime cancer risks in the range of 3 in 1,000 (10^{-3}) and an estimated 10,000 cancer cases per year. Naturally occurring radon in homes poses an additional source of radiation risk, and these risks can be as high as 1 in 100 to 1 in 10 (10^{-2} to 10^{-1}) and cause an estimated 5,000 to 20,000 cancer cases/yr. In the U.S., accidents, natural disasters, and rare diseases pose individual risks of death from 1 in 10,000 (10^{-4}) (*e.g.*, tripping and falling which cause approximately 470 deaths per year) to 1 in 10,000,000 (10^{-7}) (*e.g.*, rabies which causes an average of 1.5 deaths per year).

EPA, Proposed National Emission Standards for Hazardous Air Pollutants, 53 Fed. Reg. 28,496, 28,513 (preamble to proposed rule, July 28, 1988).

223. 54 Fed. Reg. at 38,046.

224. 42 U.S.C. § 7412(f)(2)(A).

Register 38044)"—the benzene rulemaking in which EPA adopted a one-in-ten thousand risk as acceptable.[225] EPA read this provision as a green light to continue considering nontrivial risks as acceptable under the ample margin of safety standard—an interpretation that the D.C. Circuit accepted as "not . . . inevitable" but "reasonable."[226]

V. COOPERATIVE FEDERALISM

With the Clean Air Act Amendments of 1970, Congress launched modern environmental "cooperative federalism."[227] One might expect, therefore, that the legislative history would brim with platitudes about state sovereignty and traditional spheres of state authority. And the Act does state "that air pollution prevention . . . and air pollution control at its source is the primary responsibility of States and local governments."[228] But that language is basically a holdover from the 1963 Clean Air Act.[229] Senator Domenici argued that the finding is a "vestigial remainder . . . and is now an anomaly *vis-à-vis* the nearly total federal supervisory and approval authority contained in the Act as amended through 1970."[230] By 1970, Congress had "learned from experience . . . that States and localities need greater incentives and assistance to protect the health and welfare of all people."[231] How did Congress respond to its "disappointing" experience with "state planning and implementation [that] had made little progress"?[232] The U.S. Supreme Court found that, "Congress reacted by

225. *Id.* § 7412(f)(2)(B); *see NRDC v. EPA*, 529 F.3d 1077, 1082 (D.C. Cir. 2008) ("The cited item . . . is EPA's emission standard for benzene [in which EPA] said that the 'ample margin' was met if as many people as possible faced excess lifetime cancer risks no greater than one-in-one million, and that no person faced a risk greater than 100-in-one million . . . .").

226. *NRDC v. EPA*, 529 F.3d at 1083.

227. *See* Jeffrey G. Miller, *Theme and Variations in Statutory Preclusions Against Successive Environmental Enforcement Actions by EPA and Citizens Part Two: Statutory Preclusions on EPA Enforcement*, 29 HARV. ENVTL. L. REV. 1 (2005) ("Beginning with the CAA, Congress modeled complicated "cooperative federalism" constructs as the bedrock of its environmental programs.").

228. 42 U.S.C. § 7401(a)(3).

229. Clean Air Act of 1963 § 1(a)(3), Pub. L. No. 88-206, 77 Stat. 392, 393 (Dec. 17, 1963) ("[T]he prevention and control of air pollution at its source is the primary responsibility of States and local governments.").

230. Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7330 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504, 4505 & nn.7 & 10 (quoting Thomas Jorling who "was minority staff counsel, and one of the actual drafters of the 1970 amendments").

231. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,381 (Dec. 18, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 124.

232. Train v. Nat. Res. Def. Council, 421 U.S. 60, 64 (1975); *see also* S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,382 (Dec. 18, 1970) (statement of Sen. Muskie),

taking a stick to the States in the form of the Clean Air Amendments of 1970."[233] The Court later defined environmental cooperative federalism as an arrangement in which federal law "offer[s] States the choice of regulating . . . according to federal standards or having state law preempted by federal regulation."[234]

Senator Domenici said that the 1970 amendments were "the outgrowth of a decade of Congressional frustration over the slow pace of pollution control efforts."[235] He explained, "Prior Clean Air Act legislation beginning in 1955, and extending through the 1963, 1965, and 1967 amendments were considered a failure."[236] Perhaps overstating his case for the sake of emphasis, Senator Domenici concluded that the "federal-state partnership" had been "jettisoned by the 1970 amendments."[237] Especially in light of the states' role in developing implementation plans for EPA approval, and in permitting and enforcement, however, the U.S. Supreme Court continues to recognize that the 1970 amendments "made the States and the Federal Government partners in the struggle against air pollution."[238] The Court has also upheld EPA's broad supervisory authority, ruling for example that the agency can enforce an EPA-approved state implementation plan without regard to a state's effort to revise that plan.[239]

---

reprinted in 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 125 ("[N]o level of government has implemented the existing law to its full potential. On all levels, the air pollution control program was underfunded and undermanned."); S. REP. NO. 91-1196 at 36 (Sept. 17, 1970) (accompanying S. 4358), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 397, 436 ("Government initiative in seeking enforcement under the Clean Air Act has been restrained.").

233. *Id*.

234. New York v. United States, 505 U.S. 144, 145 (1992).

235. Sen. Pete V. Domenici, *The Clean Air Act Amendments of 1976: Balancing the Imponderables*, 122 CONG. REC. 7330 (Mar. 22, 1976), *reprinted in* 1977 LEGIS. HIST. vol. 6, *supra* note 37, at 4504-05.

236. *Id*.

237. *Id*. Representatives John Henry Kyl and Harley Orrin Staggers engaged in the following colloquy:

> Mr. KYL. Mr. Speaker, one of the great problems we have had in mounting a meaningful environment program has been the fragmentation of responsibilities. Is the chairman of the committee satisfied that the enforcement provisions of this act are now sufficiently centralized so that we can also pinpoint the responsibilities of the Federal agencies?
>
> Mr. STAGGERS. Yes. That was one of the great concerns of all the conferees, and I am satisfied on this point.

H. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,520 (Dec. 18, 1970), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 111, 113 (Rep. Staggers chaired the conference).

238. Gen. Motors Corp. v. U.S., 496 U.S. 530, 532 (1990).

239. *Id*. at 541 ("There is nothing in the statute that limits EPA's authority to enforce the 'applicable implementation plan' solely to those cases where EPA has not unreasonably delayed

When discussing state implementation, the 1970 legislative history emphasizes practicalities rather than traditional state authorities or sovereignty. Senator Muskie explained:

> In 1963, the Congress recognized that the Federal Government could not handle the enforcement task alone, and that the primary burden would rest on States and local governments. However, State and local governments did not respond adequately to this challenge. Enforcement had to be toughened. More tools were needed. The Federal presence and backup authority had to be increased.[240]

Thus, for example, although state implementation plans "involve public policy choices that citizens should make on the State and local level," they should also "be consistent with a rational nationwide policy and should be subject to the approval of the Administrator."[241] The 1970 amendments therefore "established the federal government as the dominant force in air pollution control."[242]

When enacting the 1977 amendments, Congress continued to stress the states' role on the front lines of implementation: "The problem of air pollution exists at the State and local level. That is where the public understands the problem. . . . The Federal Government has a responsibility to provide support for those regulatory activities, but it need not have an actual presence in all regulatory activities."[243] Further, "[t]he Federal role must be one of support rather than control."[244] And when it came to the new prevention of significant deterioration program, "[t]his policy will be implemented by the States. Judgments will be made on a case-by-case basis, taking into account local factors."[245] Nonetheless, "in no case will deterioration be permitted to a level that would exceed any national ambient air quality standard."[246] Ultimately, both the legislative

---

action on a proposed SIP revision.").

240. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,382 (Dec. 18, 1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 125 (1974). Nonetheless, "[t]he Senate remains convinced that the most effective enforcement of standards would take place on the State and local levels. It was here that the public could participate most actively and bring the most effective pressure to bear for clean air." *Id.* at 127.

241. *Id.* at 127.

242. Reitze, *supra* note 65, at 725.

243. S. REP. NO. 95-127 at 10 (May 10, 1977) (accompanying S. 252), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 1371, 1384.

244. *Id.*

245. *Id.* at 11.

246. *Id.*

history and the law itself[247] clarify the broad scope of EPA's supervisory role in the PSD program:

> The Administrator's role is one of monitoring State actions. States have authority to issue construction permits to new major emitting facilities in clean air areas. The Administrator thus could go to court to stop a permit for activities which would exceed the increments of pollution or which otherwise did not comply with the requirements of this section, including use of best available control technology. But the Administrator could not and should not attempt to burden this section with unnecessary regulations and guidelines.
>
> The Administrator should tell the States the basis for his review. When asked, he should become involved at an early date in particularly difficult permit applications so that the States and localities will know of any potential differences. But under no conditions may he use this authority, to force land use or site selection decisions unrelated to air quality.[248]

In the final analysis,

> The policy is clear: there is a uniform national standard against which deterioration is judged; there is a national requirement that each new major facility to be located in a clean air area install the best available control technology; and there is a national interest in the protection of air quality-related values in national parks and wilderness areas.[249]

Senator Muskie explained, "The Federal role is sharply restricted in implementing this policy," but "[o]nce the State adopts a permit process in compliance with this provision, the Environmental Protection Agency role is to seek injunctive relief or other judicial relief to assure compliance with the law."[250] He emphasized, "All levels of government had to be given adequate tools to enforce [emission] standards."[251]

---

247. 42 U.S.C. § 7477 is particularly powerful, ordering EPA to "take such measures, including issuance of an order, or seeking injunctive relief, as necessary to prevent the construction or modification of a major emitting facility which does not conform to the requirements of [the PSD program]." *See also id.* § 7413(a)(5) ("[If EPA finds that a State is not complying with a provision of the Act] relating to the construction of new sources or the modification of existing sources, the Administrator may—(A) issue an order prohibiting the construction or modification of any major stationary source in any area to which such requirement applies."). *See generally* Alaska Dep't of Envtl. Conservation v. EPA, 540 U.S. 461, 502 (2004) ("EPA has supervisory authority over the reasonableness of state permitting authorities' BACT [i.e., best available control technology] determinations and may issue a stop-construction order . . . if a [state's] BACT selection is not reasonable.").

248. S. REP. NO. 95-127 at 12 (May 10, 1977) (accompanying S. 252), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 1371, 1386.

249. *Id.*

250. S. Deb. on S. 252, 123 CONG. REC. 18,021 (June 8, 1977) (statement of Sen. Muskie), *reprinted in* 1977 LEGIS. HIST. vol. 3, *supra* note 57, at 705, 725.

251. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,382 (Dec. 18,

For decades, lawyers have used the phrase "cooperative federalism" to refer to a variety of situations in which state and federal sovereigns exercise overlapping and interacting authorities.[252] But when two sovereigns cooperate, it tends to be "the stronger member of the combination who calls the tunes."[253] The Clean Air Act's approach to cooperative federalism does nothing to upset this principle.

VI. CLIMATE CHANGE

Assuming, as Senator Bob Dole did, that Congress intended the Clean Air Act to respond to President Nixon's September 11, 1970, "challenge" to "choose to come to terms with nature, to make amends for the past, and build the basis for a balanced and responsible future," how can a policy of ignoring climate change be consistent with congressional intent?[254] We know from *King v. Burwell* that we should not "interpret federal statutes to negate their own stated purposes."[255] *Burwell* concerned the Affordable Care Act, a/k/a Obamacare.[256] That law mandates creation of a health insurance exchange in every state, which is "basically, a marketplace that allows people to compare and purchase insurance plans."[257] Congress encouraged states to set up their own exchanges but the law "provides that the Federal Government will establish the Exchange if the State does not."[258] The Affordable Care Act provides "tax credits to certain people to make insurance more affordable."[259] The way Congress set up the law, it would "not work without the tax credits."[260] Under the law, the tax credits depend on the

---

1970) (statement of Sen. Muskie), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 123, 127.

252. *See* Joseph F. Zimmerman, *Preemption in the U.S. Federal System*, 23 PUBLIUS, Fall 1993, at 1, 10.

253. Edward S. Corwin, *The Passing of Dual Federalism*, 36 VA. L. REV. 1, 21 (1950). The federal sovereign is undoubtedly the stronger member given the supremacy clause of the U.S. Constitution. U.S. CONST. art. VI, cl. 2:

> This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

254. *See supra* notes 46-47.

255. 135 S. Ct. 2480, 2493 (2015) (quoting N.Y. State Dep't of Soc. Servs. v. Dublino, 413 U.S. 405, 419-20 (1973)).

256. Pub. L. No. 111-148, 124 Stat. 119 (2010).

257. *Burwell*, 135 S. Ct. at 2485.

258. *Id.*

259. *Id.*

260. *Id.* at 2487.

insured being "covered by a qualified health plan . . . that was enrolled in through an Exchange established by the State."[261]

When interpreting Congress's commands, the Court noted, "we must read the words 'in their context and with a view to their place in the overall statutory scheme,'"[262] in line with the Court's duty "to construe statutes, not isolated provisions."[263] In this context, the Court interpreted the phrase "[health insurance] Exchange established by the State" to include exchanges established by the *federal* government because "[w]e cannot interpret federal statutes to negate their own stated purposes."[264] A contrary interpretation would have "destabilize[d] the individual insurance market in any State with a Federal Exchange, and likely create the very 'death spirals' that Congress designed the Act to avoid."[265] So although the "plain meaning" argument for a different outcome was "strong," the petitioners' reading "turn[ed] out to be 'untenable in light of [the statute] as a whole.'"[266] The "context and structure of the [Affordable Care] Act compel[led the Court] to depart from what would otherwise be the most natural reading of the pertinent statutory phrase."[267]

Whether the Clean Air Act creates an EPA duty to protect the public from climate change is a much easier question than that faced by the *Burwell* Court. Congress made clear its broad intent that EPA protect the public health and welfare from pollution, both in legislative history and statutory text. Congress spoke broadly, requiring EPA to safeguard public welfare from any anticipated adverse effects from pollutants.[268] The congressional purpose was to "achieve a livable environment, not only for ourselves but for future generations."[269] One commentator has argued, "The first comprehensive Clean Air Act, the foundation of America's

---

261. 26 U.S.C. § 36B(c)(2)(A)(i).

262. *Burwell*, 135 S. Ct. at 2489 (quoting FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 133 (2000)).

263. *Id.* at 2489 (quoting Graham Cty. Soil & Water Conservation Dist. v. United States *ex rel.* Wilson, 559 U.S. 280, 290 (2010) (internal quotation marks omitted)).

264. *Id.* at 2493 (quoting N.Y. State Dep't of Soc. Servs. v. Dublino, 413 U.S. 405, 419-20 (1973)).

265. *Id.*

266. *Id.* at 2495 (quoting Dep't of Revenue of Ore. v. ACF Indus., 510 U.S. 332, 343 (1994)).

267. *Id.*

268. *See supra* note 11 and accompanying text. Further—and not surprisingly—greenhouse gases are "pollutants." Massachusetts v. EPA, 549 U.S. 497, 529 (2007) ("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." (quoting the Act's definition of "air pollutant," 42 U.S.C. § 7602(g))).

269. *See supra* note 9 and accompanying text.

modern environmental policy, was passed in 1970 with bipartisan support—and no mention of carbon dioxide as a pollutant."[270] But Congress did not seek to "mention" every pollutant to be regulated by the Act. Instead, Congress ordered EPA to protect health and welfare from "any pollutant"—broadly defined[271]—that EPA concludes "may reasonably be anticipated to endanger public health or welfare."[272] It is one thing to say that Congress has so far failed to give EPA an ideal set of tools to grapple with climate change; it is quite another to assert that harmful pollutants, i.e., greenhouse gases, are somehow immune from the Act's reach, or from EPA's duty to protect public health and welfare.

Is climate change a real threat? As a matter of law, that is not an open question. EPA has promulgated a finding that "six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations"[273] and that "greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare."[274] The U.S. Supreme Court has noted, "A well-documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related."[275] In other words, greenhouse gases are pollutants that threaten public health and welfare. Under the basic provisions of the Clean Air Act, therefore, EPA has a duty to protect the public. Exactly what form that protection should take and whether EPA's duty is enforceable are more complicated questions.[276] But any argument that a return to Clean Air Act "basics"

---

270. Paul H. Tice, *Trump's Half-Measures Won't Save the Coal Industry*, WALL ST. J., Sept. 17, 2018, at A19.

271. 42 U.S.C. § 7602(g).

272. *Id.* § 7408(a)(1).

273. EPA, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,496 (preamble to final rule, Dec. 15, 2009). The six are [carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). *Id*. at 66,497.

274. *Id*.

275. Massachusetts v. EPA, 549 U.S. 497, 504-05 (2007) (noting additionally that "when carbon dioxide is released into the atmosphere, it acts like the ceiling of a greenhouse, trapping solar energy and retarding the escape of reflected heat. It is therefore a species—the most important species—of a 'greenhouse gas'").

276. *See* Zen-Noh Grain Corp. v. Jackson, 943 F. Supp. 2d 657, 661 (E.D. La. 2013) (holding that duties that are enforceable as "nondiscretionary" are "statutory obligations with an explicit deadline for the EPA to act"); *see also Massachusetts*, 549 U.S. at 533 (holding that when "EPA has responded to a petition for rulemaking, its reasons for action or inaction must conform to the authorizing statute").

involves ignoring climate change—a threat to human health and welfare from air pollution—is spurious.

CONCLUSION

The "basics" of modern federal antipollution law—as illustrated in the Clean Air Act, which set the pattern for other antipollution statutes—suggest that EPA should pursue an aggressive program of reform that will "test the determination in this country to achieve a livable environment, not only for ourselves but for future generations."[277] Implementation of antipollution laws that fully respects the "basics" has yet to be attempted.

277. S. Consideration of the Rep. of the Conf. Comm., 116 CONG. REC. 42,392 (Dec. 18, 1970) (statement of Sen. Randolph), *reprinted in* 1970 LEGIS. HIST. vol. 1, *supra* note 7, at 111, 145.