

IS THE CLEAN AIR ACT AT A CROSSROADS?

BY

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The Clean Air Act does not need fundamental change. The Act has been very successful in reducing emissions of harmful air pollutants over the past forty years, although we do need to make more progress. EPA is currently examining its air quality standards for ozone; to do so, EPA will not only need to understand the science involved, but also to make key policy judgments about whom to protect and what to protect them from. Yet no change in the Act seems appropriate. The agency is also faced with the issue of whether to use the Clean Air Act as a vehicle to address global warming, but the mechanisms of the Act do not afford effective means of doing so; independent legislation will be necessary.

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I. INTRODUCTION

Is the Clean Air Act (CAA or the Act)¹ at a crossroads?

The title of this symposium suggests that it is, but I am not convinced by our speakers that this is so. The current Act seems basically sound. The real question is whether the Obama Administration can carry through on its intention to implement the Act aggressively. If the plans of United States Environmental Protection Agency (EPA) Administrator Lisa Jackson and her subordinates work out, we will see a series of initiatives between now and the end of 2012 spanning much of the Act.² The reconsideration of the ozone standard we examined in our panel in April is just one of those planned measures. The reconsideration shows how difficult it can be to decide the level of air quality standards, but it does not counsel any fundamental change in the Act's direction.

In this Article, I also discuss whether the Act is at a crossroads in regulating greenhouse gases (GHGs). I suggest—and this may surprise some readers—that it is not. The Act is unlikely to be the means to address global climate disruption because the Act's mechanisms do not fit the problem well. At most, the Act can contribute interstitially. I also assess the novel suggestion that a “scrivener's error” in the statute should be corrected in a way that imposes a duty for EPA to set air quality standards for GHGs.

II. A QUICK BRIEFING ON THE ACT³

The cornerstone of the Act is its grant of power to EPA to establish national ambient air quality standards (NAAQS).⁴ Each air quality standard limits the maximum permissible concentration of a pollutant in the outside air to which the public has access.⁵ For instance, the present ozone standard says that there should be no more than 0.075 parts per million (ppm) of ozone per cubic meter of air in the air we breathe.⁶

Ambient air quality standards are of two types: primary and secondary.⁷ Primary standards must protect the public health with an adequate margin of safety;⁸ secondary standards must protect the public welfare.⁹ The United

¹ 42 U.S.C. §§ 7401–7671q (2006).

² Steven D. Cook, *EPA Poised to Consider Range of Mobile, Stationary Source Emissions Controls*, 40 Env't Rep. (BNA) 2811, at 2811–12 (Dec. 11, 2009).

³ For a longer but still reasonably brief and comprehensible summaries, see ROY S. BELDEN, *CLEAN AIR ACT* (2001), and *THE CLEAN AIR ACT HANDBOOK* (Robert J. Martineau, Jr. & David P. Novello eds., 1998).

⁴ 42 U.S.C. § 7409(a)(1) (2006).

⁵ See 40 C.F.R. § 50.1(e) (2010) (defining “ambient air” as “that portion of the atmosphere, external to buildings, to which the general public has access”).

⁶ See *id.* § 50.15.

⁷ 42 U.S.C. § 7409(a) (2006).

⁸ *Id.* § 7409(b)(1).

⁹ *Id.* § 7409(b)(2); see also 40 C.F.R. § 50 (listing the ambient air quality standards).

States Supreme Court has held that EPA may not consider costs in setting these standards.¹⁰

The responsibility for attaining and maintaining these air quality standards is divided between the federal government and the states.¹¹ The federal government regulates emissions from new “mobile sources”—cars and other motor vehicles—as well as the content of motor vehicle fuels.¹² Many categories of stationary sources—for instance, electricity-generating plants—are subject to new source performance standards (NSPS).¹³ Each standard sets limits on the emissions from new and modified sources in a specific category; the standard’s stringency is based on the emission limit that can be achieved by these sources assuming use of the best demonstrated control system.¹⁴ Costs are considered by EPA in setting these standards.¹⁵

In addition, states must prepare and enforce state implementation plans (SIPs).¹⁶ The plans may consider costs, subject to an important qualification: each SIP must demonstrate that areas of the state not in attainment of NAAQS (nonattainment areas) will achieve and maintain the primary air quality standards by the statutory deadlines—five years after the date of designation as nonattainment unless the EPA Administrator grants a five-year delay or unless a different date is specified in the statute.¹⁷ So a state will determine its air quality, decide how much it has to limit emissions to meet and stay in compliance with the air quality standards, and impose emission controls on air pollution sources to do so. The state may, if it wishes, require steps that are not currently technologically feasible.¹⁸ EPA decides whether the plan is satisfactory, and (along with the state and citizens) enforces the plan against violators.¹⁹ If the plan is not satisfactory or is not being carried out by the state, EPA can promulgate a federal

¹⁰ Compare *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 486 (2001) (Scalia, J.) (holding that the Act bars cost consideration in the setting of air quality standards and holding that this does not violate the delegation doctrine), with Craig N. Oren, *The Supreme Court Forces a U-Turn: The Fate of American Trucking*, 34 *Env’tl. L. Rep. (Env’tl. Law Inst.)* 10,687, at 10,690 (Aug. 2004) (suggesting it would be more consistent with previous case law to say that the decision does not bar EPA from considering costs, but rather only from basing its public explanation on costs).

¹¹ 42 U.S.C. § 7410(a)(1) (2006).

¹² See *id.* §§ 7521–7590.

¹³ See *id.* § 7411; see also 40 C.F.R. § 60.4101 (2009) (for an example of regulations for an electricity-generating plant). For a list of regulated categories, see *id.* § 60.16 (2009).

¹⁴ See 42 U.S.C. § 7411(a)(1)–(b)(1) (2006).

¹⁵ *Id.* § 7411(a)(1) (stating factors that are to be considered in judging whether an emission limit has been adequately demonstrated).

¹⁶ *Id.* § 7410(a)(1).

¹⁷ See *id.* § 7502(a)(2)(A). By contrast, the secondary standards need only be attained “as expeditiously as practicable.” *Id.* § 7502(a)(2)(B).

¹⁸ See *Union Electric Co. v. U.S. Env’tl. Prot. Agency*, 427 U.S. 246, 265 (1976) (holding that a petitioner could not challenge EPA’s approval of a SIP provision on the grounds that it is technologically or economically infeasible).

¹⁹ See 42 U.S.C. § 7413(a)(1)–(3) (2006). For citizen suits, see *id.* § 7604(a)(1)–(3).

implementation plan,²⁰ or impose restrictions on highway funding or other sanctions.²¹

The Act requires each SIP to include new source review (NSR) programs.²² These impose requirements on new and modified stationary sources—electricity generating plants, refineries, factories or other facilities with a fixed location.²³ One program, often known as Nonattainment New Source Review (NNSR), regulates new and proposed sources that would contribute to nonattainment of the air quality standards.²⁴ The other, known as Prevention of Significant Deterioration (PSD), regulates sources that would not contribute to nonattainment, but would instead add new air pollution to presently clean areas.²⁵ These programs impose emission control requirements that must be at least as tough as the NSPS.²⁶

The Act also contains a cap-and-trade program intended to reduce pollutants that cause acid rain.²⁷ In this program, Congress imposed in 1990 a cap on sulfur dioxide emissions at about one-half of the then-existing levels.²⁸ EPA distributes annual allowances to sources based roughly on the same proportion of historic emissions.²⁹ Each allowance permits a source to emit a ton of sulfur dioxide, and the total number of allowances equal the cap.³⁰ Sources may then trade the allowances so that the reduction is accomplished in the most cost-effective way.³¹ EPA has found that emissions from Eastern and Midwestern states contribute to the downwind formation of ozone, and has required the states involved to curb the transport across state lines of ozone and its precursors.³² Finally, the Act contains a special provision aimed at curbing emissions from stationary sources of hazardous air pollutants—those that contribute to life-threatening disease or adverse environmental effects.³³

²⁰ *Id.* § 7410(c)(1).

²¹ *Id.* § 7509(b).

²² *Id.* § 7410(a)(2)(D).

²³ *See id.* § 7479(1).

²⁴ *See id.* § 7502.

²⁵ *See id.* §§ 7470–71. For a summary and critique of the program, see Craig N. Oren, *Prevention of Significant Deterioration: Control-Compelling Versus Site-Shifting*, 74 IOWA L. REV. 1 (1988), reprinted in 21 Land Use & Env't L. Rev. 445 (1990), Craig N. Oren, *The Protection of Parklands from Air Pollution: A Look at Current Policy*, 13 HARV. ENVTL. L. REV. 313 (1989), reprinted in 22 Land Use & Env't L. Rev. 405 (1991), and Craig N. Oren, *Detail and Delegation: A Study in Statutory Specificity*, 15 COLUM. J. ENVTL. L. 143 (1990).

²⁶ *See* 42 U.S.C. § 7475 (2006) (requirements to construct under the PSD program); *see also id.* § 7503 (requirements for construction under the NNSR program).

²⁷ *Id.* § 7651(b).

²⁸ *See* Byron Swift, *How Environmental Law Works: An Analysis of the Utility Sector's Response to Regulation of Nitrogen Oxides and Sulfur Dioxide Under the Clean Air Act*, 14 TUL. ENVTL. L.J. 309, 315 (2001) (“[T]he emissions cap [was] . . . designed to reduce utility emissions by 10 million tons, or roughly 50% from 1980 levels.”).

²⁹ 42 U.S.C. § 7651b(a)(1) (2006).

³⁰ *Id.* § 7651b(f).

³¹ *See id.* § 7651b(b).

³² 63 Fed. Reg. 57,356, 57,356 (Oct. 27, 1998) (codified at 40 C.F.R. pts. 51, 72, 75 & 96).

³³ *See* 42 U.S.C. § 7412 (2006).

III. THE ACT'S RECORD OF SUCCESS

A symposium like ours inevitably focuses on the weaknesses of the Act and its implementation. So it is easy to overlook the basic point that the Act has been quite successful in reducing air pollution. True, it has not accomplished the utopian goals of the first Earth Day in 1970 or the CAA Amendments of the same year;³⁴ it did not clean the air by 1977, and the auto industry was not required to reduce new-car emissions by 90% by 1976.³⁵ But the Act's record has been impressive.

Take, for instance, carbon monoxide, a pollutant that comes mainly from the tailpipes of gasoline-powered motor vehicles.³⁶ Carbon monoxide causes pain to persons with heart disease.³⁷ In 1970, the nation's total emissions of carbon monoxide were 204 million tons.³⁸ By 2008, that decreased to 77 million tons, a 62% reduction.³⁹ There is now only one area in the country—Las Vegas—that is classified by EPA as not attaining the current air quality standards for carbon monoxide,⁴⁰ and EPA is now proposing to designate that area as attainment.⁴¹ This performance is especially telling considering that vehicle miles traveled have almost tripled nationally since 1970.⁴²

Clearly the program to control emissions from new cars has worked well, although, to be sure, not perfectly. Another program that worked was the effort to get lead, which causes learning deficits and decreased IQ in children,⁴³ out of gasoline.⁴⁴ Lead emissions dropped 99% from 1970 to

³⁴ Clean Air Act Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970).

³⁵ See 42 U.S.C. § 7521(b) (2006).

³⁶ U.S. Env'tl. Prot. Agency, Carbon Monoxide, <http://www.epa.gov/air/emissions/co.htm> (last visited Nov. 21, 2010).

³⁷ U.S. Env'tl. Prot. Agency, Carbon Monoxide: Health and Environmental Effects of CO, <http://www.epa.gov/air/urbanair/co/hlth1.html> (last visited Nov. 21, 2010).

³⁸ U.S. Env'tl. Prot. Agency, National Emissions Inventory Air Pollutant Emission Trends Data, <http://www.epa.gov/ttn/chieftrends/trends06/nationaltier1upto2008basedon2005v2.xls> (CO_Nat'l tab) (last visited Nov. 21, 2010).

³⁹ *Id.*

⁴⁰ U.S. Env'tl. Prot. Agency, Green Book: Classifications of Carbon Monoxide Nonattainment Areas, <http://www.epa.gov/air/oaqps/greenbk/cnc.html> (last visited Nov. 21, 2010).

⁴¹ See 75 Fed. Reg. 44,734, 44,734 (July 29, 2010). It appears that there has not been a violation there for a long time, and that the area had remained classified nonattainment because of the failure of the state to submit an adequate plan for maintaining the standard. See *id.* at 44,737 ("In 2005, EPA determined that the Las Vegas Valley had attained the CO NAAQS by its applicable attainment deadline of December 31, 2000, and had continued to attain through 2003. This attainment determination did not constitute redesignation to attainment, however, because it did not include consideration or approval of the additional requirements for redesignation set forth in CAA section 107(d)(3)(E), *e.g.*, a maintenance plan satisfying CAA section 175A." (citations omitted)).

⁴² See Infoplease, Motor Vehicle Fuel Consumption and Travel in the U.S., 1960–2006, <http://www.infoplease.com/ipa/A0004727.html> (last visited Nov. 21, 2010).

⁴³ U.S. Env'tl. Prot. Agency, Lead in Air: Health and the Environment, <http://www.epa.gov/air/lead/health.html> (last visited Nov. 21, 2010).

⁴⁴ See U.S. Env'tl. Prot. Agency, Air Emissions Summary Through 2005, http://www.epa.gov/airtrends/2006/emissions_summary_2005.html (last visited Nov. 21, 2010).

2005,⁴⁵ and only a few isolated areas remain in nonattainment of the air quality standards.⁴⁶

There have been successes—not as dramatic, to be sure—in controlling pollutants that come from stationary sources. The leading example is sulfur dioxide, which mostly comes from coal-burning electricity-generating units, and which causes distress to asthmatics and, indirectly, deposition of fine particles in the deepest portions of the lung.⁴⁷ Emissions dropped from 31 million tons in 1970 to 11 million tons in 2008, a diminution of close to two-thirds.⁴⁸ Over half of this reduction has come since 1990, when Congress established the cap-and-trade program described above that allows the market to determine which sources will undertake the required reduction. Concentrations of sulfur dioxide in the ambient air have decreased 59% since 1990.⁴⁹ Only nine areas were classified as in violation of the current air quality standards as of June, 2010,⁵⁰ and none of these areas may actually be exceeding the standards.⁵¹ Finally, emissions of hazardous air pollutants—which come from a wide range of sources ranging from cars, service stations and industrial plants⁵²—declined 40% between 1990, when the current program was enacted, and 2005.⁵³

These achievements are especially impressive considering that Gross Domestic Product has tripled in real terms since 1970,⁵⁴ and that the

⁴⁵ *Id.*

⁴⁶ EPA is currently in the midst of a transition from air quality standards set in 1970 to tighter standards set in 2008. U.S. ENVTL. PROT. AGENCY, FACT SHEET: FINAL REVISIONS TO THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR LEAD 6 (2008), *available at* <http://www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf>. As of June 15, 2010, there were only two areas classified as nonattainment. *See* U.S. Env'tl. Prot. Agency, Green Book: Classifications of Lead Nonattainment Areas, <http://epa.gov/airquality/greenbk/Inc.html> (last visited Nov. 21, 2010). EPA has proposed to find that areas in 12 states violate the new standard. *EPA Takes Comment on Lead Nonattainment Letters*, 41 Env't Rep. (BNA) 1506, at 1506 (July 9, 2010).

⁴⁷ U.S. Env'tl. Prot. Agency, Sulfur Dioxide: Health, <http://www.epa.gov/air/sulfurdioxide/health.html> (last visited Nov. 21, 2010).

⁴⁸ U.S. Env'tl. Prot. Agency, *supra* note 38 (SO₂_Nat'l tab).

⁴⁹ U.S. Env'tl. Prot. Agency, Sulfur Dioxide, <http://www.epa.gov/airtrends/sulfur.html> (last visited Nov. 21, 2010).

⁵⁰ U.S. Env'tl. Prot. Agency, Green Book: Sulfur Dioxide Nonattainment Areas, <http://www.epa.gov/air/oaqps/greenbk/snc.html> (last visited Nov. 21, 2010).

⁵¹ *See* NAT'L RESEARCH COUNCIL, INTERIM REPORT OF THE COMMITTEE ON CHANGES IN NEW SOURCE REVIEW PROGRAMS FOR STATIONARY SOURCES OF AIR POLLUTANTS 63 (2005) (reporting that as of 2004, "[n]one of the 17 designated nonattainment areas for SO₂ has experienced NAAQS exceedances during the past 10 years").

⁵² U.S. Env'tl. Prot. Agency, Pollutants and Sources, <http://www.epa.gov/ttn/atw/pollsour.html> (last visited Nov. 21, 2010).

⁵³ U.S. ENVTL. PROT. AGENCY, OUR NATION'S AIR 1-2 (2010), *available at* <http://www.epa.gov/airtrends/2010/report/fullreport.pdf>. It is not clear exactly how much of the reduction has occurred as a result of the 1990 program to regulate stationary sources, as opposed to the turnover of more-polluting older vehicles—which emit, for instance, benzene, a kind of volatile organic that can also cause ozone—in favor of new ones. *See id.*

⁵⁴ U.S. CENSUS BUREAU, TABLE 651: GROSS DOMESTIC PRODUCT IN CURRENT AND CHAINED (2000) DOLLARS, 1970-2008 (2009), *available at* <http://www.census.gov/compendia/statab/2010/tables/10s0651.pdf>.

population of the United States has increased by about half.⁵⁵ And this reduction has been achieved at costs that are far below the best estimate of the benefits. EPA has estimated in a peer-reviewed report that the benefits of the Act from 1970 to 1990 were in the trillions of dollars—in the form of better health, better visibility, and ecological effects avoided—while costs were a small fraction of that.⁵⁶ A draft report by the agency suggests that, at a conservative estimate, the benefits of the Act since the 1990 Amendments have been four times higher than the costs.⁵⁷

IV. IMPLEMENTING THE ACT: THE EXAMPLE OF OZONE⁵⁸

But we cannot rest on our laurels. More progress is needed. The air pollutant ozone is a good example. Ozone is one of a group of “photochemical oxidants” formed by reactions between hydrocarbons and nitrogen oxides in the presence of sunlight.⁵⁹ Emissions of both these pollutants from mobile and stationary sources have decreased since 1970.⁶⁰ Concentrations of ozone in the air have declined markedly in the last decade, thanks largely to the nitrogen oxide SIP call, another market-based cap-and-trade program.⁶¹

But ozone remains a particularly stubborn air quality problem.⁶² True, concentrations of ozone in the air we breathe have decreased by 25% since 1980.⁶³ Yet 119 million people, or more than a third of the Nation’s population, live in the forty-seven mostly urban areas that EPA classifies as in violation of the primary, health-based, ozone standards.⁶⁴

⁵⁵ Compare U.S. CENSUS BUREAU, HISTORICAL NATIONAL POPULATION ESTIMATES: 1990–2002 (2003), available at <http://www.census.gov/statab/hist/HS-01.pdf> (estimating U.S. 1970 population at 205,052,000), with U.S. Census Bureau, U.S. & World Population Clock, <http://www.census.gov/population/www/popclockus.html> (last visited Nov. 21, 2010) (estimating U.S. population as of November 21, 2010, at 310,756,169).

⁵⁶ U.S. ENVTL. PROT. AGENCY, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT, 1970 TO 1990, at ES-7 to ES-8 (1997), available at <http://www.epa.gov/oar/sect812/copy.html> (click on “Executive Summary”).

⁵⁷ Andrew Childers, *Clean Air Act Benefits to Health, Environment Significantly Outweigh Costs*, *EPA Reports*, 41 Env’t Rep. (BNA) 880, at 880 (Apr. 23, 2010). See generally U.S. Env’tl. Prot. Agency, Retrospective Study - Study Design and Summary of Results, <http://www.epa.gov/air/sect812/design.html> (last visited Nov. 21, 2010) (summarizing and explaining the range of benefits and costs of the Clean Air Act).

⁵⁸ EPA has proposed to revise the standards for ozone. 75 Fed. Reg. 2938, 2938, 2998 (proposed Jan. 19, 2010). I will write an update to this section once those rules are published. Craig Oren, *Is the Clean Air Act at a Crossroads?: Update*, 41 Env’tl. L. (Forthcoming 2011).

⁵⁹ See N.Y. COMP. CODES R. & REGS. tit. 6, § 257–5.1.

⁶⁰ See U.S. ENVTL. PROT. AGENCY, *supra* note 38 (VOC_Nat’l and NOx_Nat’l tabs).

⁶¹ U.S. ENVTL. PROT. AGENCY, *supra* note 53, at 1.

⁶² See BREATHE CAL., AIR POLLUTION, available at [http://www.lungsrus.org/Assets/pdf/brochures/Air Pollution Brochure.pdf](http://www.lungsrus.org/Assets/pdf/brochures/Air%20Pollution%20Brochure.pdf).

⁶³ U.S. Env’tl. Prot. Agency, Ozone, <http://www.epa.gov/airtrends/ozone.html> (last visited Nov. 21, 2010).

⁶⁴ U.S. Env’tl. Prot. Agency, Green Book: Eight-Hour Ozone Nonattainment Areas, <http://www.epa.gov/oar/oaqps/greenbk/gntc.html> (last visited Nov. 21, 2010); see U.S. Census

What should be done? The successes of the Act strongly indicate that no fundamental changes are needed. Probably the only thing that immediately must be done is for Congress to enact, or to give EPA the authority to create, a substitute for the Clean Air Interstate Rule (CAIR), another cap-and-trade program that sought to reduce the interstate transport of ozone, particles, and the substances that cause them.⁶⁵ One recent proposal is estimated by EPA to carry benefits that would greatly outweigh the costs.⁶⁶

What we do need is not a new Act, but more vigorous implementation—certainly more than we saw under the George W. Bush Administration, and more than in any other recent administration. The ambient air quality standards are the obvious starting point. As we have seen, these standards drive much of the regulation under the Act.⁶⁷ The air quality standards need to be scientifically defensible and to reflect a philosophy of protecting public health, particularly the health of sensitive populations such as children and asthmatics.

During the George W. Bush Administration, the air quality standards were reviewed only when citizens went to court to force the agency to do so.⁶⁸ This has changed. The current EPA administration has announced plans to review all of the current ambient air quality standards by the end of 2011.⁶⁹ Already EPA has set new air quality standards for nitrogen dioxide,⁷⁰ and, after over a decade of delay, has set a new air quality standard for sulfur dioxide.⁷¹ EPA scientists have tentatively concluded that the current standards for carbon monoxide⁷² and one category of particulate matter, PM 2.5,⁷³ need to be strengthened.

Bureau, U.S. POPclock Projection, <http://www.census.gov/population/www/popclockus.html> (last visited Nov. 21, 2010).

⁶⁵ See Gabriel Nelson, *Uneasy Emission Traders Seek Help from Congress on CAIR Replacement*, GREENWIRE, July 12, 2010, <http://www.eenews.net/Greenwire/2010/07/12/2/> (last visited Nov. 21, 2010) (discussing the status of efforts to enact such a program, and explaining why congressional action would be more desirable than agency action alone).

⁶⁶ Gabriel Nelson, *SO₂, NO_x Bill Could Bring Significant Public Health Benefits*, ENV'T & ENERGY DAILY, July 22, 2010, <http://www.eenews.net/EEDaily/2010/07/22/4/> (last visited Nov. 21, 2010).

⁶⁷ See *supra* text accompanying notes 4–26.

⁶⁸ See National Ambient Air Quality Standards for Ozone, 72 Fed. Reg. 37,818, 37,822 (proposed July 11, 2007) (to be codified at 40 C.F.R. pt. 50); National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66,964, 66,968 (Nov. 12, 2008) (to be codified at 40 C.F.R. pts. 50, 51, 53 & 58); National Ambient Air Quality Standards for Particulate Matter, 71 Fed. Reg. 61,144, 61,147 (Oct. 17, 2006) (to be codified at 40 C.F.R. pt. 50).

⁶⁹ Stephen D. Cook, *EPA to Complete Review of Standards for Six Major Air Pollutants by 2011*, 40 Env't Rep. (BNA) 2493, at 2493 (Oct. 30, 2009).

⁷⁰ 75 Fed. Reg. 6474 (Feb. 9, 2010) (to be codified at 40 C.F.R. pts. 50 & 58)

⁷¹ 75 Fed. Reg. 35,520 (June 22, 2010) (to be codified at 40 C.F.R. pts. 50, 53 & 58). The controversy about the sulfur dioxide standard goes back to the mid-1990s. See *Am. Lung Ass'n v. U.S. Env'tl. Prot. Agency*, 134 F.3d 388, 391 (1998).

⁷² Andrew Childers, *Assessment Urges EPA to Consider Stronger Air Quality Standards for Carbon Monoxide*, 41 Env't Rep. (BNA) 526, at 526 (Mar. 12, 2010).

⁷³ Andrew Childers, *Air Standards for Fine Particles Fail to Protect Health, Visibility, Report Finds*, 41 Env't Rep. (BNA) 525, at 525 (Mar. 12, 2010); see also Andrew Childers, *EPA Advisers*

The most dramatic of EPA's steps is its decision to reconsider the air quality standards for ozone. In 1997, the Clinton Administration braved a firestorm of controversy⁷⁴ and tightened the standard to 0.084 ppm measured over an eight-hour period.⁷⁵ The Bush EPA revised the standard after a court order compelled the agency to review it. EPA's scientific advisory board recommended a standard in the 0.060 to 0.070 ppm range,⁷⁶ but the Bush EPA decided instead to set the standard at 0.075 ppm, citing uncertainty in the scientific data.⁷⁷

The current EPA has proposed to set the standard in the 0.060 to 0.070 ppm range suggested by its scientific review committee.⁷⁸ EPA agrees that there has been no significant change in the scientific evidence regarding ozone since the Bush Administration set its standard.⁷⁹ Nor does EPA see any sharp break in the effects caused by the concentrations found in the ambient air quality; instead, there is a continuum of effects between 0.060 and 0.080 ppm.⁸⁰ Instead, the agency has proposed to make a different policy judgment, primarily about what to do in the face of uncertainty—a perennial problem in environmental law.⁸¹

The issue for EPA is how to decide where on the continuum the standard should be set. The economic stakes are high. EPA has estimated that 345 of the Nation's approximately 3000 counties⁸² violate the current 0.075 ppm standard.⁸³ That number would rise to 510 counties at a 0.070 ppm standard, 594 at 0.065 ppm and 614 at 0.060 ppm.⁸⁴ And virtually the entire remainder of the country would barely meet a 0.060 ppm standard, largely because of natural background concentrations.⁸⁵ It is perhaps not surprising,

Endorse Particulate Standards Based on Pollutant's Ability to Lower Visibility, 41 Env't Rep. (BNA) 1046, at 1046 (May 14, 2010); Andrew Childers, *EPA Science Advisors Say Health Risk of Fine Particles Justify Stricter Standards*, 41 Env't Rep. (BNA) 821, at 821 (Apr. 16, 2010).

⁷⁴ See *Browner Signs Final Rule Tightening Standards for Ozone and Particulates*, 28 Env't Rep. (BNA) 549, at 549 (July 18, 1997).

⁷⁵ See 62 Fed. Reg. 38,856, 38,856 (July 18, 1997) (codified at 40 C.F.R. pt. 50).

⁷⁶ Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Bd., to Stephen L. Johnson, Adm'r, U.S. Env'tl. Prot. Agency 2, 5 (Oct. 24, 2006) [hereinafter Henderson Letter] (on file with U.S. Env'tl. Prot. Agency, docket item EPA-HQ-OAR-2005-0172-0142).

⁷⁷ See 73 Fed. Reg. 16,436, 16,436, 16,440 (Mar. 27, 2008) (codified at 40 C.F.R. pts. 50 & 58).

⁷⁸ 75 Fed. Reg. 2938, 2938, 2998 (proposed Jan. 19, 2010).

⁷⁹ See *id.* at 2944 (discussing EPA's provisional assessment of new scientific research).

⁸⁰ See *id.* at 2977 (characterizing ozone effects as a continuum).

⁸¹ For discussion of the reasons for scientific uncertainty, see *Ethyl Corp. v. U.S. Env'tl. Prot. Agency*, 541 F.2d 1, 24–26 (D.C. Cir. 1976) (en banc). In a nutshell, our present techniques of establishing environmental harm—epidemiological studies of humans, clinical exposures, and animal data—are all insufficiently sensitive or open to question.

⁸² U.S. CENSUS BUREAU, COUNTY AND CITY DATA BOOK: 2007, at A-4 (14th ed. 2007).

⁸³ Gale Lea Rubrect, *EPA Regional Reports: EPA Headquarters*, 13 AM. BAR ASS'N AIR QUALITY COMMITTEE NEWSL., no. 2, March 2010 at 3, 8, available at http://www.abanet.org/environ/committees/airquality/newsletter/mar10/AirQuality_Mar10.pdf.

⁸⁴ *Id.*

⁸⁵ *Id.*

then, that some United States senators, including some Democrats, are urging that the Bush Administration standard be retained.⁸⁶

EPA has two important questions to face in deciding where to set the standard. The first is determining what range of standards would be consistent with scientific knowledge. Ozone at levels higher than the Clinton Administration standard have been associated with increased school absenteeism, increases in respiratory hospital emergency department visits among those with respiratory diseases such as asthma, increased hospitalization for chest tightness and medication usage, and an increase in cardiorespiratory effects.⁸⁷ To quote the chief medical officer of the American Lung Association, ozone exposure is like “getting a sunburn on your airways.”⁸⁸ The evidence shows that a level of 0.080 ppm causes decreases in lung function as well as respiratory symptoms in healthy young adults.⁸⁹ One researcher has conducted studies that show that levels of 0.060 ppm can interfere with normal activity in sensitive individuals, especially those with lung diseases such as asthma.⁹⁰ And there is evidence that premature death is associated even with very low levels of ozone.⁹¹

EPA must decide which of these effects constitute “health effects,” and how much protection to give against them. Studies by EPA show that a standard of 0.074 ppm—approximately the Bush Administration’s standard⁹²—would result in concentrations of 0.060 ppm for between 2% and 25% of children aged 5–18 in twelve large urban areas, depending on how bad air quality actually is.⁹³ Of those children, between 50,000 and 700,000 are asthmatic.⁹⁴ A standard of 0.070 ppm would cut exposures to concentrations of 0.060 ppm for between 1% and 16% of children in these areas, with up to 46,000 asthmatic children being affected.⁹⁵ Clearly there is no bright line between what will or will not protect children adequately.

Scientific knowledge is of course essential in deciding where to set the standard. It is helpful, for instance, to know that the guidelines from the American Thoracic Society, an international group of scientists and doctors,

⁸⁶ See Gabriel Nelson, *Bayh, Voinovich criticize EPA’s ozone plans*, ENV’T & ENERGY DAILY, Aug. 6, 2010, <http://www.eenews.net/EEDaily/2010/08/06/4> (last visited Nov. 21, 2010).

⁸⁷ Henderson Letter, *supra* note 76, at 4.

⁸⁸ Tim Kiladze, *America’s Most Polluted Cities 2010*, Forbes.com, Apr. 28, 2010, <http://realestate.yahoo.com/promo/americas-most-polluted-cities-2010.html>.

⁸⁹ 75 Fed. Reg. 2938, 2997 (proposed Jan. 19, 2010) (to be codified at 40 C.F.R. pts. 50 & 58).

⁹⁰ *Id.* at 2985, 2986–88. There are 22 million known asthmatics in the United States, 6 million of them children. Nat’l Heart Lung and Blood Inst., Nat’l Insts. of Health, *What is Asthma?*, Sept. 2008, http://www.nhlbi.nih.gov/health/dci/Diseases/Asthma/Asthma_WhatIs.html (last visited Nov. 21, 2010). A disproportionate number of asthma cases are found in the African-American community. See Office of Minority Health, U.S. Dep’t of Health & Human Servs., *Asthma and African Americans*, <http://minorityhealth.hhs.gov/templates/content.aspx?ID=6170> (last visited Nov. 21, 2010).

⁹¹ 75 Fed. Reg. at 2987.

⁹² 73 Fed. Reg. 16,436, 16,436 (Mar. 27, 2008) (codified at 40 C.F.R. pts. 50 & 58).

⁹³ 75 Fed. Reg. at 2989, 2990–91 tbl.3.

⁹⁴ *Id.*

⁹⁵ *Id.*

consider a wide range of effects to be harmful to health.⁹⁶ But science alone cannot answer the question of where to draw the line. Instead, EPA must make what amounts to a policy judgment about how protective to be.⁹⁷ This judgment involves agonizing decisions. The drawing of fine lines is needed, both because we cannot identify a safe level⁹⁸ and, again, because of uncertainty, particularly about the effects of low concentrations.⁹⁹ EPA needs to decide how important it is that the standards not be too lax.¹⁰⁰ The consequence is that EPA has much discretion to say what standards are needed to protect public health with “an adequate margin of safety,” in the words of the statute.¹⁰¹ The breadth of its discretion led the United States Court of Appeals for the District of Columbia Circuit a decade ago to rule that EPA’s standard-setting authority violates the nondelegation doctrine, which, at least in theory, restricts the amount of discretion Congress may give an agency.¹⁰² The Supreme Court promptly and unanimously overturned that ruling, holding it is sufficient guidance for Congress to state that the standards be requisite to protect public health and welfare.¹⁰³

Thus, EPA’s responsibilities are to follow the procedures mandated by law and to explain itself well enough to satisfy the reviewing court that it has not been arbitrary or capricious. The agency realizes the need for explanation: Administrator Lisa Jackson’s statement about the factors she considered in proposing the new health-based standard takes up six triple-columned, single-spaced federal register pages.¹⁰⁴ To date, the decisions reviewing health-based standards have overturned the agency only when it has chosen to be lenient;¹⁰⁵ EPA’s choices to be stringent in establishing tough health-based air quality standards have invariably been upheld.¹⁰⁶

⁹⁶ See *id.* at 2972.

⁹⁷ *Id.* at 2992.

⁹⁸ *Id.* at 2960.

⁹⁹ *Id.* at 2977.

¹⁰⁰ See *id.* at 2992–98 (Describing the process and the factors considered in reviewing health-based standards).

¹⁰¹ Clean Air Act, 42 U.S.C. § 7409(b)(1) (2006).

¹⁰² *Am. Trucking Ass’ns v. U.S. Env’tl. Prot. Agency*, 175 F.3d 1027, 1034–40 (D.C. Cir.) (per curiam), *modified on reh’g and petition for reh’g en banc denied*, 195 F.3d 4 (D.C. Cir. 1999) (per curiam).

¹⁰³ See *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 462–76 (2001) (holding that the Act bars cost consideration in the setting of air quality standards and holding that this did not violate the delegation doctrine).

¹⁰⁴ 75 Fed. Reg. at 2992–98.

¹⁰⁵ See *Am. Farm Bureau Fed’n v. U.S. Env’tl. Prot. Agency*, 559 F.3d 512 (D.C. Cir. 2009) (per curiam) (remanding particulate matter standards for EPA’s failure to sufficiently explain why the standards weren’t made tighter); *Am. Lung Ass’n v. U.S. Env’tl. Prot. Agency*, 134 F.3d 388 (D.C. Cir. 1998) (remanding for additional explanation EPA’s refusal to set an air quality standard limiting short-term peak levels of sulfur dioxide).

¹⁰⁶ See, e.g., *Am. Trucking Ass’ns v. U.S. Env’tl. Prot. Agency*, 283 F.3d 355, 372–80 (D.C. Cir. 2002) (upholding ambient air quality standards for ozone and particulate matter); *Natural Res. Def. Council, Inc. v. U.S. Env’tl. Prot. Agency*, 902 F.2d 962, 968–74 (D.C. Cir. 1990) (per curiam) (particulate matter); *Lead Indus. Ass’n v. U.S. Env’tl. Prot. Agency*, 647 F.2d 1130, 1156–67 (D.C. Cir. 1980) (lead).

Can, or should, EPA's discretion be bounded? One suggestion has been to have EPA use cost to explain its decisions.¹⁰⁷ But this would not be helpful. First, cost-benefit numbers are not reliable; prospective estimates of costs are almost always too high.¹⁰⁸ Second, values like environmental protection cannot be reduced to costs.¹⁰⁹ As I have written elsewhere, there is another objection as well.¹¹⁰ The Act's bar on the consideration of costs is basically a means to encourage EPA to put little emphasis on them.¹¹¹ If EPA wants to be lax, it must explain itself in public health terms.¹¹² This is not easy to do. Consider, as we did at the symposium, the air quality standards set under the Bush Administration for respirable particles.¹¹³ Those standards were vacated by the D.C. Circuit because EPA's explanation did not make sense: that is, the decision could not be explained in public health terms.¹¹⁴ Allowing EPA to explain itself in terms of cost would make it easier for the agency to be lax, thus undercutting the public health protection that the Act is supposed to provide. Moreover, allowing EPA to consider costs would give the agency, if anything, even more discretion by providing it with yet another factor to be weighed.¹¹⁵

A quick word needs to be said about the secondary air quality standards—those that aim to protect public welfare¹¹⁶—a phrase that Congress has defined very expansively.¹¹⁷ EPA has set secondary air quality standards for almost all pollutants at the same level as the primary, health-based standards.¹¹⁸ Ozone has long been an example.¹¹⁹ EPA staff and scientists during the Bush Administration, including the agency's scientific advisory board, argued that a tighter secondary standard was needed for ozone in order to protect vegetation and ecological systems.¹²⁰ EPA proposed

¹⁰⁷ See Gary E. Marchant, *Turning Two Blind Eyes: The EPA's Failure to Consider Cost and Health Disbenefits in Revising the Ozone Standard*, 11 TULANE ENVTL. L.J. 261, 264–71 (1998) (arguing that costs and feasibility should be considered in the EPA's decisions).

¹⁰⁸ RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY 131 (2008).

¹⁰⁹ FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 205 (2004); MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW AND THE ENVIRONMENT 87–109 (2d ed. 1988).

¹¹⁰ Craig N. Oren, *Run Over by American Trucking Part I: Can EPA Revive Its Air Quality Standards*, 29 Env'tl. L. Rep. (Env'tl. Law Inst.) 10,653, at 10,660, 10,662 (1999).

¹¹¹ *Id.* at 10,662.

¹¹² *Id.* at 10,664.

¹¹³ Craig N. Oren, Professor of Law, Rutgers School of Law, Panel Remarks during The Clean Air Act at a Crossroads: Public Health and the National Ambient Air Quality Standards (April 22, 2010), available at <http://lawmedia.lclark.edu/LawMedia/SilverlightPlayer/Default.aspx?peid=b66a6c40569c481ebc960dffa8c250fc1d>.

¹¹⁴ *Am. Farm Bureau Fed'n*, 559 F.3d 512, 519–25 (D.C. Cir. 2009).

¹¹⁵ See Craig N. Oren, *Whitman v. American Trucking Associations—The Ghost of Delegation Revived . . . and Exorcised*, in ADMINISTRATIVE LAW STORIES 6, 38 (Peter L. Strauss ed., 2006) (describing the views of Justice Scalia, the eventual author of the majority opinion in *Whitman*).

¹¹⁶ See Clean Air Act, 42 U.S.C. § 7409(b)(2) (2006).

¹¹⁷ See *id.* § 7602(h).

¹¹⁸ See 40 C.F.R. pt. 50 (2010).

¹¹⁹ See *id.* § 50.9–10, 50.15.

¹²⁰ See 75 Fed. Reg. 2938, 3012–18 (proposed Jan. 19, 2010) (to be codified at 40 C.F.R. pts. 50 & 58); Henderson Letter, *supra* note 76, at 5.

this as an option.¹²¹ But President George W. Bush stepped in and decided that EPA should not have a tighter secondary standard.¹²² EPA is now reconsidering that decision.¹²³ Here again the key questions will be of policy.

The ozone reconsideration rulemaking shows how difficult implementation of an environmental scheme can be, and the challenges facing EPA's leadership as it tries to carry out ambitious plans.¹²⁴ EPA has been asked by Congress to do a very difficult job, with high stakes, without much in the way of guidance. Nor is the fault necessarily Congress's. The decisions that need to be made are so complex that they cannot readily be reduced to verbal formulae. Changes in the Act would thus be unlikely to solve the very real problems that exist. Perhaps all we can ask is that the agency make evident its reasoning and discuss policy and scientific issues as openly as possible so that we can judge whether EPA is carrying out both the statute and our preferences as citizens.

V. GLOBAL WARMING AND THE CAA

Some readers will no doubt feel frustrated at this point. A main focus of the symposium was whether and how EPA should regulate GHGs, such as carbon dioxide, under the Act that threaten global climate disruption.¹²⁵ Surely that decision places the Act at a crossroads?

That depends on whether the Act is a potential long-term solution to the problem. There are at least some who believe this largely on the grounds that since the Act has generally been a success, it should be used as well to combat excessive emissions of GHGs.¹²⁶ But environmentalists generally believe that a preferable solution would be either a comprehensive cap-and-

¹²¹ See 72 Fed. Reg. 37,818 (proposed July 11, 2007) (to be codified at 40 C.F.R. pt. 50).

¹²² Steven D. Cook, *White House Defends Intervention in EPA Decision on Ozone Standard*, 39 Env't Rep. (BNA) 542, at 542 (Mar. 21, 1998); Cindy Skrzycki, *It's Not a Backroom Deal if the Call Is Made in the Oval Office*, WASH. POST, Apr. 8, 2008, at D02.

¹²³ 75 Fed. Reg. at 2938.

¹²⁴ On implementation of other types of governmental programs, see generally JEFFREY L. PRESSMAN & AARON WILDAVSKY, IMPLEMENTATION (1984).

¹²⁵ For a recent summary of the global disruption issue, see NAT'L OCEANIC & ATMOSPHERIC ADMIN., THE STATE OF THE CLIMATE: HIGHLIGHTS 2 (2009), available at <http://www1.ncdc.noaa.gov/pub/data/cmb/bams-sotc/2009/bams-sotc-2009-brochure-hi-rez.pdf> (“[G]lobal warming is undeniable.”). For an account suggesting that global warming is already causing changes in the weather, see Justin Gillis, *In Weather Chaos, a Case for Global Warming*, N.Y. TIMES, Aug. 14, 2010, available at http://www.nytimes.com/2010/08/15/science/earth/15climate.html?_r=1&emc=eta1 (last visited Nov. 21, 2010).

¹²⁶ See *CBD's Snape Says Clean Air Act Good Tool for Emissions Regulation*, ENV'T & ENERGY NEWS PM, Mar. 31, 2010, <http://www.eenews.net/eenewspm/2010/03/31/11/> (last visited Nov. 21, 2010) (transcript of interview with William Snape, senior counsel at the Center for Biological Diversity). Another impulse here, interestingly enough, is the desire for EPA career staff to make a contribution rather than, as in the 1980s' acid rain debate, wait passively for congressional action. See Robert Brenner, Dir. of Policy Analysis, Office of Air & Radiation, U.S. Env'tl. Prot. Agency, Remarks at Regulating Global Warming: The Role of the Clean Air Act (2009), available at <http://nicholasinstitute.duke.edu/caa-video/>. And of course the scope of the global disruption problem is bound to lead to examination of any tool that might be helpful.

trade program or a carbon tax.¹²⁷ While this might be made part of the Act formally, it would essentially be a freestanding scheme. The present Act is thus at most an interim solution, a way to force Congress to pass a cap-and-trade program or a carbon tax,¹²⁸ or a back-up in case a comprehensive statute fails to do the job. Even this seems to have a tenuous future; the leading House and Senate bills aimed at GHGs in the last Congress would have largely pre-empted EPA's ability to use the Act as a source of further regulation.¹²⁹ The only way the Act will be the chief regulatory mechanism will be if Congress indefinitely stalemates on comprehensive regulation¹³⁰ while not forbidding EPA to go ahead using existing authorities.¹³¹ The latter condition seems unlikely, since it is hard to envision Congress being willing to let EPA decide on its own how to regulate in this controversial area.¹³² And, as I will now discuss, the Act's authorities do not seem well-suited to the problem.¹³³

¹²⁷ For summary and critique of some of the major proposals, see Victor B. Flatt, *Taking the Legislative Temperature: Which Federal Climate Change Proposal Is "Best"?*, 102 NW. U. L. REV. COLLOQUY 123 (2007), available at <http://www.law.northwestern.edu/lawreview/colloquy/2007/32/LRColl2007n32Flatt.pdf>.

¹²⁸ See Elana Schor, *Efforts to Block EPA Regs Back in Play*, ENV'T & ENERGY DAILY, July 23, 2010, <http://www.eenews.net/EEDaily/2010/07/23/2/> (last visited Nov. 21, 2010). EPA denies that this is its aim. See Robin Bravender, *Carbon Cap Likely Dead This Year—Lieberman*, ENV'T & ENERGY NEWS PM, July 29, 2010, <http://www.eenews.net/eenewspm/2010/07/29/2/> (last visited Nov. 21, 2010) ("A lot of businesses, including those that negotiated with Lieberman and Sens. John Kerry (D-Mass.) and Lindsey Graham (R-S.C.) on their cap-and-trade bill, 'may well be so upset by EPA regulation that they'll come to Congress regardless of the party allocation in Congress and really plead for a legislative response that is more balanced and longer term so they have predictability in what they do,' Lieberman said."); Steven D. Cook, *McCarthy Says EPA to Proceed Carefully With Regulation to Curb Greenhouse Gases*, 41 ENV'T. REP. (BNA) 322, at 322 (Feb. 12, 2010).

¹²⁹ Steven D. Cook, *Kerry-Lieberman Bill Would Preempt State Emissions Trading, Most EPA Authority*, 41 ENV'T. REP. (BNA) 1052, at 1052 (May 14, 2010).

¹³⁰ This possibility is very real. See Carl Hulse & David M. Herszenhorn, *Democrats Call Off Effort for Climate Bill*, N.Y. TIMES, July 23, 2010, at A15.

¹³¹ See generally Schor, *supra* note 128 (discussing Congress's difficulties in addressing comprehensive regulation and possible preemption of any EPA promulgated regulations of GHGs).

¹³² See Robin Bravender, *Rockefeller Promises Push to Clip EPA Climate Regs*, ENV'T & ENERGY NEWS PM, July 23, 2010, <http://www.eenews.net/eenewspm/2010/07/23/2/> (last visited Nov. 21, 2010) (quoting Senator Jay Rockefeller (D-WV) as advocating a two-year moratorium on any EPA regulation of stationary sources "so that Congress, not federal regulators, can set national energy policy . . . [t]he EPA could do real harm to our economy if allowed to go forward precipitously, without additional direction from Congress").

¹³³ I will not discuss Clean Air Act, 42 U.S.C. § 7415 (2006). This provision on the one hand gives EPA broad authority to tell states to revise their plans to remedy air pollution that threatens other nations. *Id.* at § 7415(a). On the other hand, its authority is confined to the situation in which the other nation or nations have granted similar rights to the United States, something that seems far from likely soon. *Id.* at § 7415(c).

A. The Use of PSD

EPA has, it is true, already regulated emissions of GHGs from new cars in conjunction with other agencies,¹³⁴ and is currently planning to phase in the PSD program for very large stationary sources of such gases.¹³⁵ The latter effort has run into difficulties. The statute states that the construction or modification of a “major emitting facility” requires a PSD permit,¹³⁶ and defines a major emitting facility as one with the potential to emit either 100 tons per year or 250 tons per year—depending on whether the source fits into certain named categories—of any air pollutant regulated under the Act.¹³⁷ Now that EPA has regulated GHGs under the mobile source program, the PSD scheme applies to these gases.¹³⁸ But applying the statutory size cut-off to GHGs would mean extensive burdens on small sources and permit-processing agencies.¹³⁹ EPA has therefore adopted much higher cut-off numbers than those in the statute.¹⁴⁰ Thus, EPA is in the position of needing to persuade a court to ignore the plain words of the statute,¹⁴¹ or of hoping that Congress ratifies the agency’s interpretation.¹⁴²

PSD covers only new and modified sources, not existing sources,¹⁴³ and so it is far from a comprehensive solution. A program that emphasizes controlling new and modified sources also means that existing sources would not be regulated even if it would cost less to put the control burden on them. As a consequence the program will make it impossible to have a least-cost solution: a serious matter, given the likely high price of preventing climate disruption, and the appropriateness of saving resources for other societal problems.¹⁴⁴ Moreover, any solution to global warming will involve

¹³⁴ EPA’s standards regulate GHG emissions from automobiles by increasing fuel economy standards and thus cutting emissions. *See* 75 Fed. Reg. 25,324 (May 7, 2010) (codified at 40 C.F.R. pts. 85, 86, & 600 and 49 C.F.R. pts. 531, 533 & 536–38). EPA has also suggested the possibility of regulating other mobile sources, such as heavy-duty vehicles (trucks), non-road engines, and aircraft. *See* 73 Fed. Reg. 44,354, 44,454–56, 44,458, 44,460–61 (July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

¹³⁵ 75 Fed. Reg. 31,514 (June 3, 2010) (codified at 40 C.F.R. pts. 50–51 & 70–71).

¹³⁶ *See* 42 U.S.C. § 7475(a) (2006) (requiring a permit for the construction of any major emitting facility). “Construction” is defined to include “modification.” *Id.* § 7479(2)(C).

¹³⁷ *See id.* § 7479(1) (defining “major emitting facility”).

¹³⁸ *See* 75 Fed. Reg. 31,514 (discussing EPA’s plans to regulate GHGs under the PSD program).

¹³⁹ *Id.* at 31,517, 31,533–36.

¹⁴⁰ *Id.* at 31,514.

¹⁴¹ For EPA’s legal rationales, see *id.* at 31,516–36, showing agency’s strategy to overcome *Chevron* step one. Some industrial groups and Republican members of the House have brought suit to contest EPA’s approach. Steven D. Cook, *New Source Review House Republicans, Businesses Sue EPA Over Greenhouse Gas Emissions Controls*, 41 *Env’t Rep.* (BNA) 1294 (June 11, 2010). At the symposium I asked a former EPA General Counsel, now an attorney in industry, how he felt about the legality of EPA’s approach. He tactfully observed that EPA had made the best case possible for its position.

¹⁴² *See* Robin Bravender, *Two Dems May Counter Rockefeller Bid to Handcuff EPA*, *ENV’T & ENERGY DAILY*, Aug. 3, 2010, <http://www.eenews.net/EEDaily/2010/08/03/3/> (last visited Nov. 21, 2010) (reporting effort by two Senators to make clear that EPA cannot regulate small sources).

¹⁴³ 75 Fed. Reg. at 31,516.

¹⁴⁴ 73 Fed. Reg. 44,354, 44,503 (July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

replacing existing high-polluting equipment with cleaner new capacity. Arguably, imposing special burdens on new sources would lead to the environmentally counterproductive result of keeping existing equipment online longer.¹⁴⁵ And a large part of the rationale for special requirements on new sources—desire to avoid localized effects near the source—does not apply to sources of GHGs, since the effects of greenhouse emissions are felt uniformly around the world, rather than focused on a particular area.¹⁴⁶

B. The Ambient Air Quality Standard System

1. The Difficulties in Ambient Standards for GHGs

The Act does not readily accommodate a more comprehensive approach. Consider, for instance, the NAAQS system summarized earlier.¹⁴⁷ EPA could conceivably set air quality standards for GHGs.¹⁴⁸ States would then have to submit SIPs to attain and maintain these standards.¹⁴⁹ Given how long it takes to implement an ambient air quality standard, and given the opportunities to slow down the agency, a prominent CAA expert recently wrote me that it would take a decade of controversy (and a possible trip to the United States Supreme Court) for EPA to be able to regulate under this system. He concluded that “if I were being paid to oppose [GHG control], there is nothing I would like more than for EPA to start down this road.” Then-counsel for the Sierra Club has said he would join industry in opposing the use of the ambient standard system.

Part of the problem here, not surprisingly in light of our discussion of ozone, is the difficulty of constructing an ambient air quality standard for GHGs. The plausible range for standard-setting appears quite wide. Today’s concentration of carbon dioxide-equivalent gases is about 380 to 400 ppm.¹⁵⁰ Estimates of the maximum allowable concentration necessary to avoid extensive climate disruption range from 350 to 450 ppm.¹⁵¹ This is a huge difference in terms of required steps;¹⁵² it means that an ambient standard could designate all of the country as being either in attainment or nonattainment. And the scientific data to make a choice of standard within

¹⁴⁵ NAT’L RESEARCH COUNCIL, NEW SOURCE REVIEW FOR STATIONARY SOURCES OF AIR POLLUTION 34 (2006).

¹⁴⁶ Patricia Ross McCubbin, *EPA’s Endangerment Finding for Greenhouse Gases and the Potential Duty to Adopt National Ambient Air Quality Standards to Address Global Climate Change*, 33 S. ILL. U. L.J. 437, 446–47 (2009).

¹⁴⁷ See *supra* Part II.

¹⁴⁸ Robert B. McKinstry, Jr. & Thomas D. Peterson, *The Implications of the New “Old” Federalism in Climate-Change Legislation: How to Function in a Global Marketplace When States Take the Lead*, 20 GLOBAL BUS. & DEV. L.J. 61, 98 (2007).

¹⁴⁹ Clean Air Act, 42 U.S.C. § 7410 (2006).

¹⁵⁰ McCubbin, *supra* note 146, at 446.

¹⁵¹ Richard Monastersky, *A Burden Beyond Bearing*, 458 NATURE 1091, 1091 (2009), available at <http://www.nature.com/news/2009/090429/pdf/4581091a.pdf>.

¹⁵² See *id.*

this large range are scant, even more so than for the pollutants presently covered by air quality standards.¹⁵³

Implementing air quality standards for GHGs would pose many challenges as well. Suppose that EPA sets a primary standard that is below current levels.¹⁵⁴ Each state would then have the obligation to submit a plan that demonstrates that the standard will be attained and maintained within, at most, ten years.¹⁵⁵ As EPA has pointed out, ten years is not an adequate time to meet a primary standard since it takes a very long time—perhaps centuries—for changes in GHG emissions to be reflected in atmospheric concentrations.¹⁵⁶ Indeed, it seems unlikely that any reduction by any one nation would be enough to meet an ambient standard below current concentrations.¹⁵⁷ Thus any SIP would be subject to challenge as not being sufficiently stringent.

EPA could somewhat avoid this result by using its authority under section 179B of the Act to approve plans that would have resulted in timely attainment but for the effects of sources abroad.¹⁵⁸ Yet, as we will see shortly, this authority is a two-edged sword. And even using section 179B would not relieve the states of the obligation to abide by other portions of the scheme for areas in nonattainment.¹⁵⁹ Among these requirements would be the obligation to subject the construction or modification of “major stationary sources” of GHGs to the special NSR requirements imposed by the Act for new or modified sources whose emissions would contribute to nonattainment of the air quality standards.¹⁶⁰ Application of this requirement might well lead to “technology-forcing”—the development by sources of better controls¹⁶¹—but at the same time might lead to the imposition of high control costs.¹⁶² Furthermore, this case-by-case review of new sources would carry with it the same deficiencies we identified with the PSD program.¹⁶³

¹⁵³ McCubbin, *supra* note 146, at 445 (citing 73 Fed. Reg. 44,354, 44,479 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1)).

¹⁵⁴ EPA under the Bush Administration considered the possibility of setting a secondary air quality standard only for GHGs. 73 Fed. Reg. at 44,478. Such a standard need only be met “as expeditiously as practicable,” as we have already seen. *See supra* note 17. But the agency has since concluded—quite properly, considering the scientific data—that GHGs may endanger health as well, for instance, by increasing temperatures and thus causing higher ozone levels. *See* 74 Fed. Reg. 66,496, 66,497 (Dec. 15, 2009) (codified at 40 C.F.R. ch. 1). In light of this finding, it would be difficult for EPA to avoid setting a health-based primary air quality standard were it to use the ambient standard system.

¹⁵⁵ 73 Fed. Reg. at 44,481.

¹⁵⁶ *Id.*

¹⁵⁷ McCubbin, *supra* note 146, at 463 (“If the Agency set the limit as low as 350 ppm, as urged by some scientists, then even the most draconian state emissions reductions would not bring U.S. air quality into line, because of the continuing contributions from other nations.” (footnote omitted)).

¹⁵⁸ *See* Clean Air Act, 42 U.S.C. § 7509a (2006) (requiring that an implementation plan be approved if the plan would be adequate to attain and maintain the relevant NAAQS by the specified attainment date but for emissions emanating from outside of the United States).

¹⁵⁹ 73 Fed. Reg. at 44,481.

¹⁶⁰ *See* 42 U.S.C. § 7503 (2006).

¹⁶¹ *See id.* § 7602 (defining technology-based controls).

¹⁶² 73 Fed. Reg. at 44,502.

¹⁶³ *See supra* Part V.A.

Perhaps going through the ambient standard system would be worthwhile if it would lead to a nationwide cap-and-trade program. But this is very unlikely. First, the agency's authority to allow full trading, an essential part of any least-cost solution, has been limited by the D.C. Circuit in situations, like this one, involving the transport of air pollution across state lines.¹⁶⁴ Second, let us suppose that EPA's ambient air quality standard places the entire nation in nonattainment, so that each state will have to submit a SIP showing how it would reduce concentrations. It is long-established that, in general, each state has the right in its SIP to use any mix of measures that would result in timely attainment and thus EPA cannot force the imposition of any particular measure.¹⁶⁵ At most, EPA would be able to suggest the use of a cap-and-trade system.¹⁶⁶ While ten Northeastern states have, even without EPA, established a regional trading program,¹⁶⁷ there is no guarantee that other states would follow; states in the Midwest and in the West have struggled to pass legislation allowing them to enact climate policies.¹⁶⁸

The difficulty in imposing a trading system would be present even if the nation failed to attain the GHG air quality standards on time. Generally, when an area does not attain on time, EPA can prescribe measures for it to follow.¹⁶⁹ But here section 179B might lead to an opposite result. This provision, as we saw above, allows an area to exclude emissions from sources in foreign jurisdictions in determining whether its plan shows attainment.¹⁷⁰ Every area, therefore, could argue that it would attain the ambient standard level were it not for the contributions of foreign nations to GHG concentrations. Since foreign nations emit three-quarters of the world's GHG emissions,¹⁷¹ such an argument might be hard to fight, and if accepted, the argument would destroy any EPA authority to require cap-and-trade or

¹⁶⁴ See *North Carolina v. U.S. Env'tl. Prot. Agency*, 531 F.3d 896, 920–22, 930 (D.C. Cir.), *modified on reh'g*, 550 F.3d 1176, 1178 (D.C. Cir. 2008). The decision strikes this writer as a crabbed interpretation, but discussion would carry us too far afield.

¹⁶⁵ See *Train v. Natural Res. Def. Council*, 421 U.S. 60, 79 (1975) (Rehnquist, J.) (“[S]o long as the ultimate effect of a State's choice of emission limitations is compliance with the national standards for ambient air, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation.”); See also *Virginia v. U.S. Env'tl. Prot. Agency*, 108 F.3d 1397, 1407, 1413 (D.C. Cir. 1997) (holding that EPA could not require a state to adopt stricter auto vehicle emission standards).

¹⁶⁶ Cf. McCubbin, *supra* note 146, at 460–61 (urging that the experience in other model cap-and-trade programs has been that the states follow EPA's model rule).

¹⁶⁷ Evan Lehmann, *Obama Gets a Menu of Climate Actions He Can Take Without Congress*, CLIMATEWIRE, Aug. 6, 2010, <http://www.eenews.net/climatewire/2010/08/06> (last visited Nov. 20, 2010).

¹⁶⁸ *Id.* (“[S]tates in the Midwest and in the West have struggled to pass legislation allowing them to enact climate policies.”).

¹⁶⁹ Clean Air Act, 42 U.S.C. § 7509(d)(2) (2006).

¹⁷⁰ See *supra* note 158 and accompanying text.

¹⁷¹ See U.S. Energy Info. Admin., Dep't of Energy, Greenhouse Gases, Climate Change and Energy, <http://www.eia.doe.gov/oiaf/1605/ggcebro/chapter1.html> (last visited Nov. 21, 2010) (estimating the United States' emissions as 25% of total global emissions).

any other particular program.¹⁷² Even setting an air quality standard above present levels so that the entire nation is in attainment would not be a suitable response, since NSR in some form would still apply, and since states would be under virtually no other obligation to regulate GHGs.¹⁷³

2. *A Duty to Use the Ambient Air Quality System?*

a. *A Scrivener's Error?*

Professor Patricia Ross McCubbin, while acknowledging the problems of using the ambient air quality standard system, urges that the Agency is under a legal obligation under the Act to use it.¹⁷⁴ This duty arguably arises under section 108(a)(1) of the Act, which orders EPA to list pollutants to be regulated under the ambient air quality system.¹⁷⁵ Under the literal statutory language, a pollutant must be put on the list if it might endanger public health or welfare, comes from diverse sources, and EPA plans to regulate it under the ambient standard system.¹⁷⁶ Professor McCubbin has recently made the interesting and original suggestion that this language reflects a scrivener's error—that Congress intended to divide the two clauses of the first subparagraph, move the “and” to between the first and second conditions, and include an “or” between the second and third.¹⁷⁷ In this way, she urges, EPA would be compelled to list any pollutant that may endanger health or welfare and comes from diverse sources—conditions met by GHGs.¹⁷⁸ Such an interpretation appears to be the intent of the Senate committee staff; the question is whether it was in some sense the intent of Congress.

¹⁷² See 73 Fed. Reg. 44,354, 44,485 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1) (“[I]f worldwide (non-U.S.) emissions were to continue increasing . . . the NAAQS would be unachievable . . . even if U.S. emissions were reduced to zero.”).

¹⁷³ States do have an obligation under CAA § 175A, 42 U.S.C. § 7505a(a) (2006), to submit plans to maintain air quality standards, but this duty only arises when a state is asking EPA to change an area's classification from nonattainment to attainment, which would not be occurring if the Agency sets an air quality standard that can be met around the nation.

¹⁷⁴ See McCubbin, *supra* note 146, at 450–58.

¹⁷⁵ 42 U.S.C. § 7408(a)(1) (2006).

¹⁷⁶ *Id.* The text reads:

(1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after December 31, 1970, publish, and shall from time to time thereafter revise, a list which includes each air pollutant—

(A) emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare;

(B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and

(C) for which air quality criteria had not been issued before December 31, 1970 but for which he plans to issue air quality criteria under this section.

Id.

¹⁷⁷ McCubbin, *supra* note 146, at 456.

¹⁷⁸ *Id.* at 457.

Judges, even textualists, recognize that statutes can contain scriveners' errors; when this happens, the court may add, delete, or insert words.¹⁷⁹ The party seeking to show a scrivener's error must "show either that, as a matter of historical fact, Congress did not mean what it appears to have said, or that, as a matter of logic and statutory structure, it almost surely could not have meant it."¹⁸⁰

Neither branch of this test is met in the case of the paragraph here. The main evidence offered to show that Congress did not mean what it said is the Senate report on what became the CAA Amendments of 1970, whence section 108(a)(1) comes.¹⁸¹ Professor McCubbin cites two passages of this report. The first states that EPA would set ambient standards for all pollutants that "are emitted from widely distributed air pollution sources and [are] generally present in the ambient air in all areas of the Nation."¹⁸² This general language, though, seems contradicted by the passage that follows detailing precisely what the provision was intended to do, and suggesting that EPA has extensive discretion in deciding whether to add to its original list of pollutants to be regulated.¹⁸³ The other passage she cites states that national standards should be set for pollutants that "are emitted from diverse stationary and moving sources into the ambient air."¹⁸⁴ But this latter language does not refer to ambient air quality standards at all. Rather, it has to do with "emission standards for selected agents" and the language in the committee bill on this point was extensively rewritten before final passage.¹⁸⁵ Indeed, this committee report language largely tracks that of the relevant provision in the committee bill.¹⁸⁶

¹⁷⁹ For a discussion of scrivener's error, see WILLIAM N. ESKRIDGE, JR., PHILIP P. FRICKEY & ELIZABETH GARRETT, *CASES AND MATERIALS ON LEGISLATION: STATUTES AND THE CREATION OF PUBLIC POLICY* 727 (4th ed. 2007), and NORMAN J. SINGER, *2A STATUTES AND STATUTORY CONSTRUCTION* §§ 47.35–38 (5th ed. 1992).

¹⁸⁰ *Appalachian Power Co. v. U.S. Envtl. Prot. Agency*, 249 F.3d 1032, 1041 (D.C. Cir. 2001) (quoting *Engine Mfrs. Ass'n v. U.S. Envtl. Prot. Agency*, 88 F.3d 1075, 1089 (D.C. Cir. 1996)).

¹⁸¹ S. REP. NO. 91-1196, at 9–10 (1970).

¹⁸² McCubbin, *supra* note 146, at 454 (quoting S. REP. NO. 91-1196, at 9) (alteration in original) (emphasis removed).

¹⁸³ S. REP. NO. 91-1196, at 9–10. The report continues:

Air quality criteria for five pollution agents have already been issued Other contaminants of broad national impact include [a further list of five agents] Others may be added to this group as knowledge increases. The bill would require that air quality criteria for these and other pollutants be issued within 13 months from enactment. If the Secretary subsequently should find that there are other pollution agents for which the ambient air quality standards procedure is appropriate, he *could* list those agents in the Federal Register, and repeat the criteria process.

Id. at 10 (emphasis added). On the one hand, this language speaks of what the bill would "require." On the other, the language of the last sentence suggests that EPA is given discretion on what to add to the original list of pollutants regulated by the ambient air quality scheme, and hence can decide whether or not to include GHGs.

¹⁸⁴ McCubbin, *supra* note 146, at 454 (quoting S. REP. NO. 91-1196, at 18).

¹⁸⁵ *Compare* S. 4358, 91st Cong. § 6 (as reported by S. Comm. on Pub. Works, Sept. 17, 1970), with Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 4, 84 Stat. 1676, 1678–87 (codified as amended at 42 U.S.C. § 7414 (2006)).

¹⁸⁶ *See* S. 4358, § 6 (proposing new § 114(a)).

Moreover, there are three more general problems with the use of the Senate committee report. The first is that there is no guarantee it reflects the will of the Congress as a whole or of anyone other than the staff, and perhaps members, of the committee. Second, section 108(a)(1) as enacted is almost identical to the language of the Senate committee bill.¹⁸⁷ Surely there was plenty of time to fix whatever errors the provision had in it if it truly conflicted with congressional desire. And finally, while Professor McCubbin urges that her emendations are “few” and “relatively minor,”¹⁸⁸ they go beyond the usual scope of scrivener’s errors, which typically cover mistakenly inserted provisions or the use of a word opposite to the thrust of the statute.¹⁸⁹

Nor does it seem sound to argue that an interpretation giving EPA discretion violates logic or statutory structure. To be sure, the tendency of the 1970 Amendments is to give EPA a great deal of direction about how to regulate air pollution.¹⁹⁰ Moreover, it seems clear that Congress wanted an expansive regulatory program.¹⁹¹ And, of course, Professor McCubbin’s reading may reflect sounder public policy. But this is a far cry from being able to say that it was illogical or against the structure of the statute to give EPA some discretion, and to allow it to temper the growth of the ambient standards program. It is true that the language of section 108(a)(1), read literally, seems contradictory; on the one hand, it speaks of what EPA “shall” do, and on the other appears to give EPA total discretion. But this proves only that the statute is ambiguous; it does not tell us which reading is illogical.

Finally, Professor McCubbin’s reading has difficulties. She is essentially suggesting that Congress wanted ambient standards for all pollutants that could harm health or welfare if either the pollutants come from diverse sources or are pollutants that EPA had already listed for regulation. But the two choices seem non-parallel. Why would Congress have wanted EPA to be able to set air quality standards for air pollutants that, while dangerous, do not come from numerous or diverse sources? Professor McCubbin does not explain this. Her reading thus seems at least as flawed as the one she critiques.

The difficulties with a literal reading of the statute seem too great to qualify under the scrivener’s error doctrine. Rather, we at most have a

¹⁸⁷ *Id.* § 5 (proposing new § 109(a)(1)).

¹⁸⁸ McCubbin, *supra* note 146, at 456.

¹⁸⁹ See, e.g., *Amalgamated Transit Union Local 1309 v. Laidlaw Transit Servs., Inc.*, 435 F.3d 1140, 1146 (9th Cir.) (holding that Congress meant to use “more” rather than “less”), *reh’g en banc denied and dissenting opinion filed*, 448 F.3d 1092 (9th Cir. 2006); *Shine v. Shine*, 802 F.2d 583, 588 (1st Cir. 1986) (holding that Congress did not mean to allow the discharge of alimony and child support). For a general discussion of the implications of the doctrine, see Jonathan R. Siegel, *What Statutory Drafting Errors Teach Us About Statutory Interpretation*, 69 GEO. WASH. L. REV. 309 (2001), which suggests that the doctrine of scrivener’s error is a challenge to textualist theories of interpretation.

¹⁹⁰ Edmund S. Muskie & Eliot R. Cutler, *A National Environmental Policy: Now You See It, Now You Don’t*, 25 ME. L. REV. 163, 167–69 (1973). Muskie, then in the United States Senate, chaired the Senate subcommittee that produced what became the 1970 Clean Air Act Amendments. *Id.* at 163; U.S. Env’tl. Prot. Agency, *Taking to the Air*, <http://www.epa.gov/history/publications/formative5.htm> (last visited Nov. 21, 2010).

¹⁹¹ McCubbin, *supra* note 146, at 454–55.

situation of poor drafting. In such a situation, a textualist would adhere to the statutory language, and might not even consider the legislative history. These problems are not solved even if we take a nontextualist view of statutory interpretation: that we recognize, as Justice Breyer has urged, that clear legislative history can overcome even a clear statutory text.¹⁹² Here the limited legislative history is simply not clear. Perhaps this is because of inadvertence, but we have no way of knowing.

b. NRDC v. Train

Thus the argument that EPA is under a mandatory duty to regulate GHGs under the ambient standard system must fall back on the United States Court of Appeals for the Second Circuit's 1976 decision in *Natural Resources Defense Council, Inc. v. Train (NRDC)*.¹⁹³ There the court held that EPA had a duty to put lead on the list of pollutants for regulation under the ambient standard system.¹⁹⁴ The court read the statute as saying, in effect, that EPA was required to set ambient air quality standards for the pollutants it already planned to regulate as of 1970, and was required to do the same for any other pollutant that endangers public health or welfare and comes from diverse sources.¹⁹⁵ As a matter of policy, this seems like a sensible position, but it is in conflict with the words that Congress used and as we have seen, does not accord well with the legislative history.¹⁹⁶

But in any case this decision is of limited authority. First, it relied to some extent on legislative history mentioning lead specifically,¹⁹⁷ and so some stretching is required to make it cover GHGs. Second, the court relied heavily on the belief that the emission control provisions of the Act were designed to be a means of meeting the ambient air quality standards rather than an alternative to them.¹⁹⁸ This interpretation would mean that EPA could not avoid the applicability of the deadlines for attainment by never setting ambient air quality standards for a pollutant and instead controlling it under other provisions of the Act that do not have a timetable for cleaning the air.¹⁹⁹

¹⁹² See *Arlington Cent. Sch. Dist. Bd. of Educ. v. Murphy*, 548 U.S. 291, 308–09 (2006) (Breyer, J., dissenting) (arguing that the legislative history showed that Congress intended plaintiffs to be able to recover expert fees). For commentary, see Carlos E. González, *The Law of Interpretation in Cases of Interpretive Choice 1–3*, 10 (unpublished draft) (on file with author).

¹⁹³ 545 F.2d 320 (2d Cir. 1976).

¹⁹⁴ *Id.* at 328.

¹⁹⁵ *Id.* at 325 (“We agree with Judge Stewart that it is to the initial list alone that the phrase ‘but for which he plans to issue air quality criteria’ is directed, and that the Administrator *must* list those pollutants which he has determined meet the two requisites set forth in section 108.”).

¹⁹⁶ See *supra* text accompanying notes 186–87.

¹⁹⁷ *NRDC*, 545 F.2d at 325–26.

¹⁹⁸ *Id.* at 326–27.

¹⁹⁹ *Id.* at 325 (“[Under EPA’s view,] [t]he determination to list a pollutant and to issue air quality criteria would remain discretionary with the Administrator, and the rigid deadlines . . . for attaining air quality standards could be bypassed by him at will.”).

This is a plausible policy position, but this is undercut by the statute's language. The court cited the Senate committee's discussion of what became the NSPS provision as showing that those standards were designed to be a way to meet the standards, not an alternative to them.²⁰⁰ The committee discussion quoted by the court does not say so clearly, and concerns a requirement for a pre-construction certification for new and modified stationary sources—something that was not included in the 1970 Amendments, although it did eventually make its way into the Act in 1977.²⁰¹ The final bill differed from the Senate committee bill in one other crucial way: the final bill made clear that EPA could set NSPS even for pollutants not covered by a NAAQS.²⁰² This provision, which still exists and which is discussed later,²⁰³ requires EPA to establish a procedure under which states must submit plans for pollutants covered by an NSPS for which an ambient standard does not exist.²⁰⁴ Hence it is not true that pollutants can be regulated only to meet ambient air quality standards, and thus the court's reasoning fails. It is with justice that Professor McCubbin calls the court's rationale "convoluted."²⁰⁵

There is a final problem with *NRDC*: it was decided before *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc. (Chevron)*,²⁰⁶ in which the Supreme Court held that, when a statute is silent or ambiguous, the agency's interpretation must be accepted so long as it is a "permissible construction."²⁰⁷ The Court applied this decision to pre-*Chevron* interpretations in *National Cable & Telecommunications Ass'n v. Brand X Internet Services (Brand X)*.²⁰⁸ The Court there held that a pre-*Chevron* interpretation of a statute is controlling only where the interpretation was based on an unambiguous congressional intent rather than on a decision about which interpretation is more appropriate.²⁰⁹

It is not easy to classify pre-*Chevron* opinions under this scheme because, before *Chevron*, courts had no reason to draw such a distinction in

²⁰⁰ *Id.* at 326–27.

²⁰¹ Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 109(e), 91 Stat. 685, 701 (codified as amended at 42 U.S.C. 7411(j) (2006)).

²⁰² Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 4(a), 84 Stat. 1676, 1684 (codified as amended at 42 U.S.C. § 7411(d) (2006)).

²⁰³ See *infra* Part V.C.1.

²⁰⁴ Clean Air Act Amendments of 1970, § 4(a).

²⁰⁵ McCubbin, *supra* note 146, at 453.

²⁰⁶ 467 U.S. 837 (1984).

²⁰⁷ *Id.* at 843.

²⁰⁸ 545 U.S. 967 (2005).

²⁰⁹ *Id.* at 982 ("A court's prior judicial construction of a statute trumps an agency construction otherwise entitled to *Chevron* deference only if the prior court decision holds that its construction follows from the unambiguous terms of the statute and thus leaves no room for agency discretion."); see also *Dominion Energy Brayton Point, LLC v. Johnson*, 443 F.3d 12, 17 (1st Cir. 2006) ("If the precedent at issue finds clarity at step one—that is, if the holding of the case rests on a perception of clear and unambiguous congressional intent—that precedent will govern. If, however, the precedent operates at *Chevron* step two—that is, if the case holds, in effect, that congressional intent is less than pellucid and proceeds to choose a 'best reading' rather than 'the only permissible reading,'—its stare decisis effect will, through *Chevron* deference, yield to a contrary but plausible agency interpretation." (citations omitted)).

their opinions interpreting statutes. Besides, it would be a rare court that openly admitted that its decision was not derived from clear congressional intent. The very difficulty of classification, though, gives a subsequent reviewing court considerable discretion. This is illustrated by the United States Court of Appeals for the First Circuit's decision in *Dominion Energy Brayton Point, LLC v. Johnson (Dominion Energy)*, one of the few cases applying *Brand X*. The issue in *Dominion Energy* was whether EPA, in considering applications for exemptions under the Clean Water Act,²¹⁰ is obliged to give trial-type hearings.²¹¹ Prior to *Chevron*, the First Circuit had held in *Seacoast Anti-Pollution League v. Costle (Seacoast)*²¹² that the answer is affirmative.²¹³ But *Dominion Energy* overruled *Seacoast*, holding instead that, under *Brand X*, the *Seacoast* case was not controlling because it did not represent the unambiguously expressed intent of Congress.²¹⁴ *Dominion Energy* reasoned that *Seacoast* had instead been based "on a presumption derived from the legislative history of the [Administrative Procedure Act],"²¹⁵ by the court.²¹⁶ This is true, but of questionable relevance: as *Dominion Energy* itself recognizes,²¹⁷ the presumption was derived from the *Seacoast* court's understanding of the kinds of proceedings that Congress wanted to be subject to trial-type hearings, and thus the presumption itself rested on the unambiguous intent of Congress.²¹⁸ Possibly the best way to explain *Dominion Energy* is that the court, for some undisclosed reason, thought the unambiguous intent had to come from the Clean Water Act, and that it was not crucial what Congress's intent was in establishing the Administrative Procedure Act.

This leaves the law in a confused state. All one can say is that *Chevron* and *Brand X* put *NRDC* at risk. EPA has made this argument, and has suggested that all a court need be concerned about is whether the agency's interpretation was reasonable,²¹⁹ even if the *NRDC* view represents a more desirable approach. Thus the agency believes it is free of *NRDC*.

The upshot is that *NRDC* is of questionable authority. That is why Professor McCubbin's scrivener's error approach is so important. Yet, as we have seen, her argument does not appear convincing either.²²⁰ Thus EPA appears to have a great deal of discretion in deciding whether to use the ambient air quality system. This is particularly important in light of the difficulties we saw earlier in setting and implementing ambient air quality standards for GHGs.

²¹⁰ Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2006).

²¹¹ See *Dominion Energy*, 443 F.3d at 13.

²¹² 572 F.2d 872 (1st Cir. 1978).

²¹³ See *id.* at 872.

²¹⁴ *Dominion Energy*, 443 F.3d at 17.

²¹⁵ 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5362, 7521 (2006).

²¹⁶ *Dominion Energy*, 443 F.3d at 17.

²¹⁷ See *id.* at 17.

²¹⁸ *Seacoast*, 572 F.2d at 876–77.

²¹⁹ See 73 Fed. Reg. 44,354, 44,477 n. 229 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

²²⁰ See *supra* Part V.B.2.a.

C. Technology-Based Standards Under §§ 111 and 112

That brings us to two programs that are, like NSR, technologically-based, but which can cover existing sources as well as new and modified sources. These programs, particularly the first, have potential benefits but neither affords a sound basis for a long-term comprehensive strategy of preventing global climate disruption.

1. New Source Performance Standards

Section 111's NSPS program calls for EPA to list categories of stationary sources whose emissions might be dangerous to public health or welfare.²²¹ EPA then sets an emission limit that applies to new and modified sources in a category.²²² As explained earlier, this limit is based on what can be achieved using the best demonstrated system of control, taking cost into consideration.²²³

These standards, as we saw earlier, can cover pollutants for which there are no ambient air quality standards.²²⁴ EPA has used this authority to cover sulfuric mist from sulfuric acid plants, fluoride emissions from phosphate fertilizer plants and primary aluminum plants, total reduced sulfur emissions from craft pulp mills, municipal waste emissions from solid waste incinerators, and organic emissions from landfills²²⁵—all relatively small categories of sources. Even in the George W. Bush years, though, EPA was reportedly considering revising its NSPS for electricity-generating plants to cover GHGs, and environmentalists have urged that GHGs from refineries be covered as well.²²⁶

If EPA does so, existing power plants and refineries would be affected as well. When EPA sets an NSPS that covers a pollutant for which there is no ambient air quality standard, then, under section 111(d) of the Act, states are required to establish plans for applying the NSPS to existing sources in the regulated category.²²⁷ EPA publishes “emission guidelines” for each category announcing the emission limit that can be achieved by existing sources using the best demonstrated system.²²⁸ EPA prescribes through rulemaking the emission limits that existing sources must generally meet and the compliance deadline.²²⁹ Each state must then submit a plan within nine months of the guidelines' issuance.²³⁰ For pollutants that endanger public

²²¹ Clean Air Act, 42 U.S.C. § 7411(b)(1)(A) (2006).

²²² *See id.* § 7411(b)(1)(B).

²²³ *See supra* text accompanying notes 14–15.

²²⁴ *See supra* text accompanying note 204.

²²⁵ Robert J. Martineau, Jr., *Hazardous Air Pollutants*, in *THE CLEAN AIR HANDBOOK*, *supra* note 3, at 227, 265–66.

²²⁶ *See* Steven D. Cook, *EPA Said to Be Considering Emissions Limits for Greenhouse Gases at Stationary Sources*, 38 *Env't Rep.* (BNA) 2453, at 2453 (Nov. 16, 2007).

²²⁷ 42 U.S.C. § 7411(d) (2006).

²²⁸ 40 C.F.R. § 60.22(a), (b)(5) (2010).

²²⁹ *See, e.g., id.* § 60.33b(a) (guidelines for control of pollutants emitted by municipal waste incinerators).

²³⁰ *Id.* § 60.23(a).

health or welfare the state must require the existing sources in the regulated category to abide by the emission limits and compliance deadlines established by EPA,²³¹ unless the state can demonstrate that this is not practicable, e.g., the cost of compliance would be unreasonable.²³²

This might seem to be an attractive way of regulating categories of stationary sources without the delay and complexity of the ambient air quality system. Electricity-generating plants, which account for over one-third of the United States' GHG emissions, would seem to be an especially apt target.²³³ And EPA has considerable flexibility in setting NSPS²³⁴—possibly, though, a double-edged sword. Yet there are difficulties. One is that there are limits to how stringent an NSPS may be. The NSPS can be technology-forcing,²³⁵ that is, EPA does not need to show that the control system is in routine use somewhere, but instead can reasonably extrapolate from existing to new sources.²³⁶ Still, EPA's standard must be capable of being met under most adverse conditions.²³⁷ EPA would have to set a standard that could be met by all sources; EPA could subcategorize sources so that plants that can control well receive stringent treatment,²³⁸ but the limits of less capable sources would have to be recognized in standard setting. Thus, coal-fired, electricity-generating plants would not be regulated as much as plants burning fuels that produce fewer GHGs. In addition, the wording of the statute suggests that the standards must be capable of being met at the time of promulgation.²³⁹ This limits technology forcing and would

²³¹ *Id.* § 60.24(c).

²³² *Id.* § 60.24(f). The regulations do not seem to explicitly allow the state to consider the age of the source; this seems in some tension with § 111(d). Furthermore, § 111(d) seems to give to the state the final word on how to apply the NSPS to existing sources. *See* 42 U.S.C. § 7411(d) (2006) ("Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies."). EPA's regulations, though, have never been challenged, and it is now far too late to do so. *See id.* § 7607(b) (providing a sixty-day period following promulgation for actions for judicial review to be brought, and providing that a claim that could have been presented in the sixty-day period cannot be asserted as a defense in an enforcement action).

²³³ *See* U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2008, at ES-4 tbl.ES-2, ES-7 to ES-8 (2010), *available at* http://epa.gov/climatechange/emissions/downloads10/US-GHG-Inventory-2010_Report.pdf.

²³⁴ 73 Fed. Reg. 44,354, 44,489–90 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

²³⁵ *Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981).

²³⁶ *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973) (quoting S. REP. No. 91-1196, at 16 (1970)).

²³⁷ *Nat'l Lime Ass'n v. U.S. Envtl. Prot. Agency*, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980).

²³⁸ *See* 73 Fed. Reg. at 44,488 (discussing subcategorization by fuel for electricity generating plants).

²³⁹ *Compare* Clean Air Act, 42 U.S.C. § 7521(a)(2) (2006) (explicitly allowing EPA to set standards for motor vehicles that apply after a period for development of technology), *with id.* § 7411(a)(1) (containing no parallel provision in the NSPS program). The issue has not been tested in court. During the Bush years, EPA promulgated a two-phase scheme as part of its NSPS for mercury emissions from electricity-generating plants, *see* 70 Fed. Reg. 28,606, 28,606 (May 18, 2005) (codified at C.F.R. pts. 60, 72 & 75), but these rules were invalidated on other grounds. *See New Jersey v. U.S. Envtl. Prot. Agency*, 517 F.3d 574, 577–78 (D.C. Cir. 2008).

interfere with EPA's desire to set standards that become more stringent over time as technology develops.²⁴⁰ There is also the difficulty that EPA believes that energy efficiency steps, the chief present technique for reducing GHG emissions, would result in only a one to ten percent reduction in emissions during the next five to ten years.²⁴¹ Thus, like the ambient air quality standards discussed above,²⁴² it would be a long time before the standards took hold.

Another disadvantage comes with technology-based standards for particular categories: The standards would be based on what is technologically possible, without regard to whether other source categories could be regulated more cheaply.²⁴³ Thus, a technology-based scheme is not a least-cost way of preventing global climate disruption. Moreover, there is no guarantee that such a scheme would bring the desired environmental quality, since the standards are set on the basis of feasibility rather than on the needs of health and the environment.²⁴⁴ And the section 111 scheme would certainly mean that existing sources would be subject to less stringent standards than new and modified sources—consider that the median existing coal-fired plant was built in 1966²⁴⁵—thus discouraging, at least to some degree, the replacement of older with newer capacity, as we saw with PSD.²⁴⁶

EPA has suggested that allowing trading between sources, including between new and existing sources, is the appropriate response.²⁴⁷ In this way, the sources with the lowest cost of control would be paid to control beyond the standard by sources with high control costs, thus making the NSPS more of a least-cost scheme. It would also arguably give an incentive for the development of better control technology, whereas a technology-based system gives little incentive for this. The agency suggests that a trading scheme would be legally permissible because it could be argued that trading is the best system of emission control.²⁴⁸ One very well-informed commentator has doubted, in the context of the Clean Water Act, whether EPA could allow such trading, suggesting that each individual source has the

²⁴⁰ See 73 Fed. Reg. at 44,490.

²⁴¹ *Id.* at 44,490–91.

²⁴² See discussion *supra* Part V.B.1.

²⁴³ See William F. Pedersen, Jr., *Turning the Tide on Water Quality*, 15 *ECOLOGY L.Q.* 69, 83 (1988) (making the same critique of technology-based standards under the Clean Water Act). Another critique by Pedersen—that technology-based standards will lead to under-protection in some geographic areas and overprotection in others—seems inapplicable here because global climate disruption is a world-wide problem for which the location of particular sources is irrelevant. *Id.* at 82.

²⁴⁴ See *id.* at 75–76, 82.

²⁴⁵ SourceWatch, Existing U.S. Coal Plants, http://www.sourcewatch.org/index.php?title=Existing_U.S._Coal_Plants (last visited Nov. 21, 2010).

²⁴⁶ See *supra* text accompanying note 144.

²⁴⁷ 73 Fed. Reg. 44,354, 44,490 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

²⁴⁸ See *id.* (noting that in addition to meeting the other two statutory requirements, the trading scheme would also be the best method for reducing emissions, and that by meeting all three requirements, the trading scheme would be legally permissible).

duty to abide by the technology-based standards for its category.²⁴⁹ The same critique may well apply here.²⁵⁰ Thus the agency would be hamstrung in its ability to make the scheme less costly.

2. GHGs as Hazardous Air Pollutants

The Act contains a final mechanism that might conceivably be used to regulate GHG emissions. That is the Act's program to reduce emissions of hazardous air pollutants that are either exceptionally dangerous to health—e.g., by posing a risk of cancer or similar effects—or produce adverse environmental effects, broadly defined.²⁵¹ EPA is required to make a list of source categories that emit these pollutants.²⁵² The agency then must set emission standards for sources in these categories.²⁵³ The initial set of standards provides that EPA must require what is known as “maximum achievable control technology” (MACT) for new and existing major stationary sources.²⁵⁴ New source standards must be as stringent as those for the best-controlling similar source;²⁵⁵ existing source standards must be set at least as stringently as “floor levels” based on what the best-controlling sources are achieving.²⁵⁶ Existing sources must comply no later than three years after promulgation.²⁵⁷ EPA can choose to require only “generally available control technology” for small sources—those with potential to emit less than ten tons per year—of hazardous air pollutants.²⁵⁸ A second stage of standard-setting then occurs for source categories that, even after installing controls, would pose more than a one-in-a-million risk of cancer to the most

²⁴⁹ See Pedersen, *supra* note 243, at 84 (“One can argue that a source that increases its effluents just because another source discharges less quite plainly no longer is meeting *its* obligation to install the best technology.”).

²⁵⁰ The issue of whether trading is allowed under the Clean Air Act has not been tested in court, even though EPA included a trading scheme in its new source performance standard for mercury emissions from electricity-generating plants. See 70 Fed. Reg. 28,606, 28,609–10 (May 18, 2005) (codified at 40 C.F.R. pts. 60, 72 & 75). As already discussed, these rules were invalidated on other grounds. See *supra* note 239.

²⁵¹ See Clean Air Act, 42 U.S.C. § 7412(b)(2) (2006); *id.* § 7412(a)(7) (providing the expansive definition of “adverse environmental effect”).

²⁵² See *id.* § 7412(c)(1).

²⁵³ *Id.* § 7412(c)(2).

²⁵⁴ *Id.* § 7412(g)(2).

²⁵⁵ *Id.* § 7412(d)(3) (“The maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source . . .”).

²⁵⁶ See *id.* (“Emission standards promulgated under this subsection for existing sources in a category or subcategory may be less stringent than standards for new sources in the same category or subcategory but shall not be less stringent than . . . the average emission limitation achieved by the best performing 12 percent of the existing sources . . . [or] . . . the average emission limitation achieved by the best performing 5 sources . . . in the category or subcategory for categories or subcategories with fewer than 30 sources.”).

²⁵⁷ *Id.* § 7412(i)(3)(A).

²⁵⁸ See *id.* § 7412(a)(2), (d)(5).

exposed individual.²⁵⁹ These standards are not technology-based, but rather must protect public health with an “ample margin of safety.”²⁶⁰

GHGs would seem to meet the definition of adverse environmental effect, which encompasses “significant degradation of environmental quality over broad areas,”²⁶¹ and might meet the definition of health effects. Thus, EPA could add GHGs to the list of hazardous air pollutants to be regulated under the MACT program. Those standards, though, have been buffeted by a series of court decisions,²⁶² and criticized from various scholarly perspectives.²⁶³ Furthermore, regulation under section 112 seems to pose the same kinds of problems as the PSD and NSPS programs, and perhaps worse. Even EPA under the Bush Administration conceded that it would be difficult under the statute to institute any kind of trading approach,²⁶⁴ thus making it hard to minimize costs. Other difficulties, covered above in the context of other programs, include the deficiencies of category-wide standards, the differentiation between existing and new sources, and the very low cutoff for being considered a source subject to regulation—indeed, EPA can cover virtually every source, and must control with MACT, sources with the potential emissions of at least ten tons per year,²⁶⁵ a level that would even include furnaces in buildings.²⁶⁶ The short time period for compliance would make it difficult—even more difficult than in the NSPS program—to phase in tighter emission limits over time,²⁶⁷ and finally, the use of the hazardous air pollutant program would prevent use of the NSPS mechanism to address existing sources to the extent that seems desirable.

VI. CONCLUSION

Only a Renaissance man or woman, familiar with all aspects of American domestic policy, could rank the CAA against other efforts in the last forty to fifty years to improve the common weal. Nevertheless, the Act appears a success. The Act is like a tremendous locomotive that is difficult to put into motion—consider, again, the long time that must pass between the setting of an air quality standard and the time it has a real-world

²⁵⁹ *Id.* § 7412(f)(2)(A).

²⁶⁰ *Id.*

²⁶¹ *Id.* § 7412(a)(7).

²⁶² *See* *Sierra Club v. U.S. Env'tl. Prot. Agency*, 479 F.3d 875, 884 (D.C. Cir. 2007) (invalidating EPA standard as violating the Act on a number of grounds); *Cement Kiln Recycling Coal v. U.S. Env'tl. Prot. Agency*, 255 F.3d 855, 861 (D.C. Cir. 2001) (same); *Nat'l Lime Ass'n v. U.S. Env'tl. Prot. Agency*, 233 F.3d 625, 633–34 (D.C. Cir. 2000) (same). Notice that these decisions invalidated decisions of the Clinton EPA as well as the Bush EPA.

²⁶³ *See* Victor B. Flatt, *Gasping for Breath: The Administrative Flaws of Federal Hazardous Air Pollution Regulation and What We Can Learn from the States*, 34 *ECOLOGY L.Q.* 107, 107 (2007); William F. Pedersen, *Adapting Environmental Law to Global Warming Controls*, 17 *N.Y.U. ENVTL. L.J.* 256, 275–76 (2008). Both of these articles urge, on disparate grounds, for greater emphasis on state initiatives.

²⁶⁴ 73 *Fed. Reg.* 44,354, 44,494–95 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1).

²⁶⁵ *Id.* at 44,495.

²⁶⁶ *Id.*

²⁶⁷ *See* *Clean Air Act*, 42 U.S.C. § 7412(i) (2006).

impact—but effective once it gets moving. This in turn encourages efforts to load more jobs on the Act, even those, like global warming, for which it does not seem well designed.

One very legitimate reason for this is that our environmental problems can seem so daunting. But another part perhaps stems from the millennial sources of the Act. The environmental laws of the 1960s and 1970s were not simply a reaction to the public health and welfare problems caused by pollution or the economic inefficiency caused when we allow sources to dispose without a motive to consider the impacts of their effluents on others or other environments. These rather abstract considerations could never have prompted the kind of wave of support for environmental legislation that then occurred. Rather, these laws owe their enactment largely to the same kind of citizen activism of the era that produced other major legislation such as the Civil Rights Act of 1964.²⁶⁸ One might think that this activism would have led to trust in government as citizens saw the benefits of agency action. But the supporters of the Act, ranging from the ultimate outsider Ralph Nader to an equally-ultimate insider, Senator Edmund Muskie (D-Me.), were dubious about administrative agencies. Nader's air pollution book is replete with stories of ineffective governmental action,²⁶⁹ while Muskie saw the need for Congress to lay down definite direction.²⁷⁰ Perhaps the most dramatic example was Congress's decision to enact the provision allowing private citizens to sue EPA to carry out its duties under the Act²⁷¹—the very provision that led to *NRDC*, discussed earlier.

If the Act is under constant critique as not going far enough, then the temptation arises to make the Act do more. Yet the Act can do only so much work. It is time for an approach, designed specifically with the issues of global warming in mind. It is time to recognize that we cannot jiggle the Act's language into giving us a guarantee of the air quality that we want; rather, a continuance of informed citizen pressure is necessary. We need to balance our ambitions with some appreciation of what the Act can and cannot do.

²⁶⁸ 42 U.S.C. §§ 2000a–2000h-6 (2006); see ROBERT GOTTLIEB, *FORCING THE SPRING: THE TRANSFORMATION OF THE AMERICAN ENVIRONMENTAL MOVEMENT* 81 (1993).

²⁶⁹ See THE RALPH NADER STUDY GRP., *REPORT ON AIR POLLUTION, VANISHING AIR* (1970).

²⁷⁰ See Muskie & Cutler, *supra* note 190, at 168–69.

²⁷¹ See 42 U.S.C. § 7604(a) (2006).