The Clean Air Act under Regulatory Reform

C. Boyden Gray*

I. INTRODUCTION

For years, one of the most vigorously debated issues in regulatory reform is whether the Clean Air Act[1] (CAA) should be amended to require the Environmental Protection Agency (EPA or the Agency) to consider costs and benefits in setting ambient air quality standards. To date, the proponents of cost-benefit analysis have lost the debate, as environmentalists and EPA officials have prevailed on the argument that a change would constitute a "rollback" of environmental protection and that the EPA's failure consists of not too much pollution reduction, but not enough. The EPA should be concerned solely with protecting the public's health, its supporters say, not with the health of polluting industry, which always overstates its costs, as well as the harm to an obviously booming economy.

Because the arguments have been framed as pitting industry against the public, they have largely obscured the real issue, which is not whether the EPA should consider costs and benefits, but how, and with what accountability. The plain fact is that the EPA has for a long time considered costs and benefits in setting ambient standards—only it has done so behind closed doors in a manner that should never be tolerated in an open and democratic society and that has perversely impeded some of the clean air objectives the Agency is supposed to promote. Moreover, the 1990 CAA Amendments made cost consideration an explicit

* Partner, Wilmer, Cutler & Pickering, Washington, D.C. Formerly Counsel to President George Bush, 1989-1993; Legal Counsel to Vice President George Bush, 1981-1989. B.A. 1964, Harvard University; J.D. 1968, University of North Carolina.

1. Clean Air Act §§ 101-618, 42 U.S.C. §§ 7401-7671*q* (1994).

component of implementing the air quality standards,[2] a responsibility the EPA and the states have not yet fully embraced. Because early pollution reductions are the easiest and cheapest, the EPA's rejection of accountability for its cost-benefit calculus has, to date, done relatively little harm to the economy. But continuation of business as usual in the future poses serious risks to the economy, to continued improvement in U.S. air quality—which is now among the best in the world—and to the constitutional separation of powers and the rule of law in our democratic society.

The recently promulgated fine particulate matter (PM)/ozone rules provide a useful case study of how the EPA currently looks at costs and benefits in fashioning ambient air standards in order to maximize its regulatory reach without maximizing air quality or minimizing economic benefits. After reviewing what the Agency has so far done in the context of the PM/ozone rules, this Article will show how this violates the Administrative Procedure Act[3] (APA), the CAA, and the constitutional nondelegation doctrine that the Supreme Court has applied against the Occupational Health & Safety Administration (OSHA) but not against the EPA (because it has never had the opportunity to do so) in analogous circumstances. Finally, this Article will attempt to demonstrate that open and reviewable application of cost-benefit concepts currently used by the EPA in secret will not only cure its violation of the CAA and the nondelegation doctrine, but will also provide, over the long run, higher air quality benefits at lower cost.

II. THE STATUTORY FRAMEWORK

The starting point for addressing the use of cost-benefit analysis at the EPA generally, and in the PM/ozone rule particularly, is to recognize that the CAA already explicitly requires the EPA to consider benefits by requiring the EPA to protect the public health with an adequate margin of safety. The statute provides that the standards issued by the EPA must be those that are "requisite to protect the public health" and that allow "an adequate margin of safety."[4] The D.C. Circuit in *Lead Industries Association v. EPA* has construed this language as requiring the standard to be set at a level at which "there is 'an absence of adverse effects'" on sensitive individuals.[5] So far, so good. But what exactly does this mean,

2. CAA § 221(k)(1), 42 U.S.C. § 7545(k)(1).

3. Administrative Procedure Act of 1946, Pub. L. No. 89-554, 80 Stat. 378 (codified as amended in scattered sections of 5 U.S.C.).

4. CAA § 109(b)(1), 42 U.S.C. § 7409(b)(1).

5. Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1153 (D.C. Cir. 1980) (quoting S. REP. No. 91-1196, at 416 (1970)).

given the fact that for most air pollutants there is no threshold of health effects below which there is no clear harm? Most pollutants cause harm at some level all the way down to zero.[6]

The answer has been to let the EPA decide where to set the standards, partly because there are no "clear thresholds above which there are adverse effects and below which there are none."[7] The court rejected the idea that the EPA was constrained either by considerations of economic or technological feasibility, or by any requirement that Congress intended protection only against pollution that is "clearly harmful to health."[8]

The EPA is therefore on its own, with virtually no guidance at all except for legislative history and judicial language suggesting that the EPA should "err on the side of caution in making the necessary decisions" by not waiting for or requiring evidence that an air pollutant is clearly harmful to health.[9] On the other hand, the EPA does not, in fact, have to go to zero even if there are health effects just above that level:

> [T]he standards do not fully protect in accordance with the statutory language which gives the Administrator authority to provide for additional protection. He has had to make a pragmatic judgment in the face of the fact that there is no threshold on health effects, which makes it very difficult to apply absolute health protection, and he has not been able to do that.[10]

Underscoring this absence of any mandate to go to zero is the margin of safety requirement, which assumes that there is still room for further reductions after the EPA has set the level and then added a margin of safety on top.[11] Yet, even this assumption was shaky, the court noting that "Congress has recently acknowledged that more often than not the margins of safety that are incorporated into air quality standards turn out to be very modest or nonexistent, as new information reveals adverse health effects at pollution levels once thought to be harmless."[12]

Contrast the blank check Congress gave to the EPA to regulate the quality of the air we breath ten to twenty percent of our time with the tight leash put on the OSHA that regulates the air in the workplace where we spend most of our time. In *Industrial Union Department v. American*

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6. *See id.* at 1153 n.43 (citing H.R. REP. No. 95-294, at 110 (1977); 123 CONG. REP. No. 18,463-64 (1977) (statement of Sen. Muskie)).

7. *Id.* at 1152.

8. *Id.* at 1153.

9. *Id.*

10. 123 CONG. REC. 18,463 (1977) (statement of Sen. Muskie), *cited in Lead Indus.*, 647 F.2d at 1153 n.43.

11. *Lead Indus.*, 647 F.2d at 1154.

12. *Id.* at 1154.

Petroleum Institute[13] (*Benzene*), the Supreme Court addressed a very similar statutory standard of health protection, namely, a requirement that defined a health and safety standard as one "that is 'reasonably necessary and appropriate to provide safe or healthful employment.'"[14] While not accepting an argument similar to the one rejected in *Lead Industries* that this required evidence of effects known to be "clearly harmful to health,"[15] the Supreme Court did rewrite the statute to require evidence of "a significant risk of material health impairment."[16] The reason the Court imposed this constraint on the OSHA was precisely for the same consideration that the D.C. Circuit refused to impose a similar constraint on the EPA—namely, the absence of a no-effect threshold that, when combined with the absence of other requirements to provide zero risk, equaled an open-ended grant of authority that, without a requirement of significant risk, "would make such a 'sweeping delegation of executive power' that it might be unconstitutional under the Court's reasoning in *A.L.A. Schecter Poultry Corp. v. United States*."[17]

It is difficult, if not impossible, to reconcile these two cases that came to diametrically opposite conclusions about the same condition—namely, the absence of a no-effect threshold combined with statutory permission, if not direction, not to require zero risk. On June 27, 1980, the D.C. Circuit addressed this condition and concluded that the EPA must necessarily have a blank check to do virtually anything it chooses, unrestrained by any requirement to show clear harm before acting.[18] Five days later, the Supreme Court took the same condition and said that the OSHA had to show something like clear harm (i.e., "significant risk") lest it be acting under an overly-broad and unconstitutional grant of legislative power.[19]

It is possible to attribute the difference to historical timing. The Supreme Court decision came down five days after the D.C. Circuit's and thus too late to guide it. But, the more important point may be that *Lead Industries* represented the EPA's first crack at lead amidst the early days of the EPA's implementation of the 1977 CAA Amendments, whereas the Supreme Court was dealing with a much more mature OSHA that had already regulated benzene once and, having cleaned out the "low hanging fruit," was back for a second or third helping. It is understandable that the

13. 448 U.S. 607 (1980).
14. *Id.* at 608 (quoting Occupational Safety and Health Act, 29 U.S.C. § 652(8) (1970)).
15. *Lead Indus.*, 647 F.2d at 1153.
16. *Benzene*, 448 U.S. at 639.
17. *Id.* at 646 (quoting A.L.A. Schecter Poultry Corp. v. United States, 295 U.S. 495, 539 (1935); citing Panama Refining Co. v. Ryan, 393 U.S. 388, 390-97 (1935)).
18. *Lead Indus.*, 647 F.2d at 1153.
19. *Id.*

EPA reviewing court might be reluctant to require it to start all over again, leaving the public unprotected from lead exposure in the interim, while there was substantial protection for workers in place for the period of the *Benzene* remand.

III. THE PM/OZONE CASE STUDY

The circumstances of the current PM/ozone rule, by contrast, are well beyond the early, pioneer rulemaking of *Lead Industries* and are much more akin to the situation facing the Court in *Benzene*. More than two decades of rulemaking have passed since the 1977 Amendments, and, not to put too fine a point on it, the EPA has regulated the hell out of all of the pollutants that contribute to PM and ozone. In addition to standards for ozone, total suspended particulates (TSP) (very coarse particles) and PM_{10}, which have taken years and billions of dollars to implement, the EPA has issued separate standards for NOx, SO_2, and VOCs (in the form of air toxic rules). It has, in the last three years, decided that there were no grounds to tighten the NOx and SO_2 standards,[20] possibly because Congress itself launched the acid rain program in Title IV of the 1990 CAA Amendments to reduce SO_2 and NOx, in the biggest single pollution cleanup program ever legislated.[21] Finally, Congress also revolutionized the way gasoline is made to reduce PM and ozone components in a separate part of the 1990 CAA Amendments that is still not yet fully implemented.[22]

The result has been what can only be described as an extraordinary improvement in air quality in the face of dramatic economic growth, improvement that will continue to play itself out well into the next decade as the 1990 CAA Amendments come fully into effect.

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20. *But see* the D.C. Circuit's recent remand of the SO_2 decision in *American Lung Ass'n v. EPA*, 134 F.3d 388 (D.C. Cir. 1998).

21. *See* CAA § 401, 42 U.S.C. § 7651 (1994).

22. *See* CAA § 210(k), 42 U.S.C. § 7544(k).

Table 1[23]

	Air Quality Concentration % Change 1977-1996	Emissions % Change 1970-1996
Carbon Monoxide	-61%	-31%
Lead	-97%	-98%
Nitrogen Dioxide	-27%	+8% (NOx)
Ozone	-30%	-38% (VOC)
PM_{10}	-25% (from 1987)	-73%
Sulfur Dioxide	-58%	-39%

That improvement makes *Benzene* factually far more relevant to the EPA today than in 1980. The basic parallel is striking: the *Benzene* Court said dozens of studies of harm at highly regulated benzene exposure levels of 10 parts-per-million (ppm) could not supply grounds for regulating benzene at 1 ppm, even conceding the absence of a no-effect threshold, because without any scientific evidence of harm at 1 ppm (of which there was none in the case), OSHA's intervention at that level would constitute the exercise of a standardless delegation.[24] So, it should also be with the PM rule: All of the studies in the world about harms from TSP and PM_{10}, which are highly regulated, should not be able to justify regulation of $PM_{2.5}$, in the absence of any evidence of harm from $PM_{2.5}$.

The absence of any evidence of harm from $PM_{2.5}$, whether epidemiological or otherwise, is the single most defining characteristic of the PM rulemaking. The Statement of Basis and Purpose of the rule describes paragraph after paragraph of studies on TSP and PM_{10}, but nothing on $PM_{2.5}$, except for three studies, known as D.W. Dockery *et al*., 1993 (Dockery), C.A. Pope, III *et al.*, 1995 (Pope), and J. Schwartz *et al.*, 1996 (Schwartz). These three studies deserve special attention.[25]

The problem with the first two studies is that the EPA itself never reviewed the data underlying the studies nor procured the data from the authors for review by anybody else, notwithstanding the general

23. EPA NATIONAL AIR QUALITY AND EMISSIONS REPORT, ch. 1, at 3 (1996).

24. *See Benzene*, 448 U.S. 607, 631-38 (1980).

25. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,690, 38,660 n.11 (1997) (to be codified at 40 C.F.R. pt. 51).

requirements of the APA[26] and specific requirements of Section 307(d) of the CAA[27] that supporting data and material for studies that are essential to a rule be made available for public comment.[28] This continued unavailability of the key data emerged as a key factor in the rulemaking, since Pope and Dockery were the only long-term studies showing any link—solely epidemiological—between $PM_{2.5}$ and mortality and, thus, constituted the only evidence to support the annual standard proposed by the EPA. To be sure, the EPA still had Schwartz 1996, but it was a short-term study that at best could support only the daily standard that was the less binding of the two requirements.

The reasons for this state of affairs are complex and could constitute the subject of an entire article by themselves. Suffice it to say here that the issue lead to congressional hearings and an enormous amount of pressure on the EPA itself and the custodians of the data. In the case of Dockery, the custodian of the data was Harvard University, which was thereby forced to enter the rulemaking on the side of the EPA—a difficult position for an academic institution to find itself in. Before the rulemaking was over, the EPA and the custodians agreed to make the data available to a "neutral" research organization (the Health Effects Institute that has substantial ties to Harvard), but, of course, the results of that review were not available for inclusion in the rulemaking docket and will not be available for several years.[29]

Once the EPA had been forced to make this concession, it was perhaps inevitable that it would have to take the next step and take the two controversial studies out of the basis for the rule itself, a remarkable event that occurred in obscure "Footnote 90"[30] that appears to have escaped the attention of the press, both general and trade, altogether. There, the EPA said that the studies in question "do not provide the sole (or even primary) basis for EPA's decision regarding $PM_{2.5}$," which the EPA said was instead "based on a consideration of a large body of epidemiological studies, a clear majority of which suggest PM is strongly linked to mortality and other serious health effects at concentrations permitted under the current standards."[31] The EPA went on to say that the specific $PM_{2.5}$ standard levels were based "on a more limited number of studies that actually measured fine particles and/or components of fine

26. *See* 5 U.S.C. §§ 553, 556, 557 (1994).
27. CAA § 307(d), 42 U.S.C. § 7607(d) (1994).
28. *See id.*
29. Fuels and Fuel Additives Registration Regulations, 59 Fed. Reg. 33,042, 33,046 (1994) (to be codified at 40 C.F.R. pt. 79).
30. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,689 n.90 (1997) (to be codified at 40 C.F.R. pt. 50).
31. *Id.*

particles," but these studies, identified by reference to "Koman, 1996, 1997," did not include Dockery and Pope when the 2.5 standard level was initially selected.[32] The Dockery and Pope studies were only used to "help corroborate this result," i.e., the result reached by Koman, and "neither study alone (or together) provided sufficient evidence to support more stringent levels below those identified" by Koman, and, therefore, "removal of these two studies from consideration would not have changed the selected standard level."[33]

The basis for the rule, in other words, was what was in Koman, not Dockery or Pope. An examination of Koman, however, reveals no long-term studies at all, and the EPA acknowledges in Footnote 90 that the 2.5 standard level was "principally based on other *daily* mortality and respiratory effects studies" identified in Koman.[34] The EPA thus explicitly acknowledges that, while it has short-term study support for the daily average, it has no long-term study support for the annual average.[35]

It is important to put this extraordinary gap in context. Even if the EPA had relied on the Dockery and Pope studies (after having made their underlying data available for public comment), it is not clear that the EPA would be in a stronger position. At best, these studies prove little because they deal only with weak statistical associations uncorroborated by any clinical analysis that provides a plausible biological mechanism for the faintly observed association. Although there are no formal rules on the use of epidemiology, there is a consensus that epidemiology should not support government intervention, beyond committing to intensive research, unless it reveals a risk ratio (RR) of two-, or preferably three-to-one, backed by an understandable biological explanation, or a higher RR in the absence of one.[36] In the case of smoking, for example, a compelling single causal explanation has never been developed, but a RR of better than twenty-to-one has easily sufficed to make up the difference.[37] Here, by contrast, the Dockery and Pope studies produced barely detectable RRs of about l.2-to-l, with no plausible biological mechanism, and with many questions about whether the authors had adequately taken account of confounding factors, such as smoking, humidity, and weather.[38]

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32. *Id.*
33. *Id.*
34. *Id.* (emphasis added).
35. *See id.*
36. *See* Gary Taubes, *Epidemiology Faces Its Limits*, 269 SCIENCE 164, 168 (1995).
37. *See id.*
38. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. at 38,690 n.11.

The absence of a plausible mechanism may itself be explained by nothing more complicated than the EPA's failure at the outset to theorize, let alone prove, what $PM_{2.5}$ is supposed to do to people. For an agency that is supposed to be dealing with observable adverse health effects, albeit those that may only show up in sensitive populations, this is not a trivial problem. Given that a RR of 1.2-to-l is barely statistically significant, regulating $PM_{2.5}$ could result in unintended consequences that do more harm than good.

The most likely confounder not accounted for in most short-term PM studies is humidity, which was found to knock out PM_{10} as having any statistically significant association with mortality in connection with Schwartz's Birmingham study.[39] But none of the studies of PM_{10} or $PM_{2.5}$, other than the Birmingham reanalysis, address the question of humidity or air conditioning that not only lowers humidity indoors but screens out some fine particles, including sulfates, a phenomenon understood and recognized by Schwartz himself in his 1996 short-term study.[40]

Humidity and air conditioning raise further the thorny question about the contrast between indoor air, which people breathe about eighty to ninety percent of the time, and outdoor air, where people spend very little time. We know very little about indoor air's relationship to outdoor air either in the context of PM or ozone. The EPA's publicly-stated reason for tightening the ozone standard is asthma,[41] but incidents of asthma increased in recent years just as ozone decreased, and there are many more explanations for the asthma epidemic to be found in indoor air (such as mites, dust, molds, cockroach droppings, etc.) than in outdoor air.[42] Moreover, according to Schwartz, urban populations are not likely to be significantly exposed to sulfates due to the filtering from air conditioning.[43]

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39. *See* Jerry M. Davis et al., *Airborne Particulate Matter and Daily Mortality in Birmingham, Alabama*, NAT'L INST. OF STATISTICAL SCIENCES (Technical Report No. 55, 1996).

40. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. at 38,662.

41. National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856 (1997) (to be codified at 40 C.F.R. pt. 50).

42. *See* Thomas A.E. Platts-Mills & Melody C. Carter, *Asthma and Indoor Exposure to Allergens*, 336 N. ENG. J. MED. 1382, 1383 (1997). Dr. David Rosenstreich, one of the inaugural researches in the field, and the author of one of the articles published along with Drs. Platts-Mills and Carter's article in Volume 336 of the *New England Journal of Medicine*, says that "to blame air pollution [for asthma] is political, not medical." *A Second Look at the Asthma Epidemic*, WASH. TIMES, Apr. 16, 1998, at A18.

43. Joel Schwartz et al., *Is Daily Mortality Associated Specifically with Fine Particles?*, 46 J. AIR & WASTE MGMT. 927, 935 (1996).

In short, the EPA cannot identify any benefits from its PM standard. While there is data on ozone showing health effects below the previous standard, these same data also show effects below the new standard[44] that the EPA's Clean Air Science Advisory Committee (CASAC) said was not "significantly more protective of public health" than the previous standard.[45] The EPA openly admits that its choice of level is a pure policy call.[46] If this approach to air pollution is allowed to stand, there is no constraint whatsoever on the EPA's untrammeled policy discretion to do anything it wants with essentially all pollution sources, including forcing them all down to background levels.

This blank check might have been appropriate when the EPA was in the early stages of its heretofore hugely successful campaign for air quality improvement. However, it raises quite different questions after all the "low hanging fruit" has been picked and achieving big air quality advances is more akin to pulling teeth than picking fruit. Indeed, the benefits are so elusive that the White House had to ask for tens of millions of dollars in research funds to reduce the "great uncertainty" about the effects of $PM_{2.5}$;[47] and the EPA acknowledges that it will have to spend much of the funds abroad because the ambient levels of fine particles are so low in this country that it is virtually impossible to plot a dose-response curve based on the residual PM pollution that remains in the air here.[48]

In an effort to address the uncertainties, Congress has directed the EPA to arrange for an independent study by the National Research Council (NRC) to "identify the most important research priorities relevant to setting NAAQS for particulate matter. . . ."[49] Finding that the EPA's current research plans are "crucially inadequate,"[50] the NRC stated that

> [t]here is a great deal of uncertainty about the implications of the findings for risk management, due to the limited scientific information about the

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44. *See* National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856, 38,862-63 (1997) (to be codified at 40 C.F.R. pt. 50).

45. Letter from George Wolf, Chairman, CASAC, to Carol Browner, EPA Administrator (Nov. 30, 1995) [hereinafter CASAC Letter] (on file with author) (regarding CASAC closure on the primary standard portion of the staff paper for ozone 3).

46. *See id.*

47. *See* BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 1998, at 81.

48. EPA, DRAFT, PARTICULATE MATTER SEARCH NEEDS FOR HUMAN HEALTH RISK ASSESSMENT 2 (Aug. 8, 1996).

49. NATIONAL RESEARCH COUNCIL, BOARD ON ENVIRONMENTAL STUDIES AND TOXICOLOGY, RESEARCH PRIORITIES FOR AIRBORNE PARTICULATE MATTER 1-2 (1998) [hereinafter NRC REPORT]; *see also* CONFERENCE REPORT, Report 105-297, 105TH CONG., 1ST SESS., MAKING APPROPRIATIONS FOR THE DEPARTMENT OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT, AND FOR SUNDRY INDEPENDENT AGENCIES, COMMISSIONS, CORPORATIONS, AND OFFICES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1998, AND FOR OTHER PURPOSES 112-15 (1997).

50. NRC REPORT, *supra* note 49, at 8.

> specific types of particulates that might cause adverse health effects, the contributions of particles of outdoor origin to actual human exposures, the toxicological mechanisms by which the particles might cause adverse health effects, and other important questions. These questions are not presented here as a rationale for abandoning efforts to control public exposures to fine particulate matter and the other pollutants, but they do indicate the critical need for better scientific knowledge to guide such efforts.[51]

In other words, in the absence of any statutory or scientific guidance, the EPA has "shot first," and only now is being forced by Congress to figure out where to aim.

Nowhere is the uncertainty more apparent than in connection with the utility industry. In its filing before the Federal Energy Regulatory Commission (FERC) in the open-access Notice of Proposed Rulemaking (NOPR),[52] for example, the EPA said that "[e]lectricity production represents the single greatest cause of fine particle pollution, when secondary formation of nitrates and sulfates from SO_2 and NOx emissions are taken into account."[53] Two years later, the EPA was much less certain about this, stating in its Statement of Basis and Purpose for the $PM_{2.5}$ rule, as noted above, that SO_2 may not be a factor in $PM_{2.5}$ formation, especially indoors where most people spend most of their time.[54]

The ultimate confirmation of this aimlessness comes with the EPA's unwillingness or inability to provide for implementation of the PM rule (and perhaps the ozone rule as well) on a level playing field pursuant to the kind of market incentives that made possible the three most successful pollution reductions in history: the lead phase down of the early 1980s, the phaseout of CFCs, and the ongoing acid rain program under Title IV of the CAA.[55] The EPA supported the FERC's open access rule because a more efficient electricity industry is a less polluting one, noting that "[w]e believe that, as a nation, we will not meet our health-based National Ambient Air Quality Standards until there is an open, competitive

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51. *Id.* at 2.

52. Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines; Request for Comments on Alternative Pricing Methods, 60 Fed. Reg. 8356 (1995), FERC Docket No. RM 95-6-000.

53. Comments of the Environmental Protection Agency, *in* Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities, FERC Docket No. RM 95-8-00; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, FERC Docket No. RM 94-7-001, at 16 (Aug. 7, 1995) [hereinafter EPA's Open Access Comments].

54. National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,662 (1997) (to be codified at 40 C.F.R. pt. 50).

55. CAA §§ 401-416; 42 U.S.C. §§ 7651-7651*o* (1994).

electrical industry."[56] The EPA went on to say that it "is committed to flexible, market-based air quality regulations to encourage innovation and achieve clean air in the most cost-effective manner"[57] and that it "believes that open transmission access could enhance both economic efficiency and encourage market-based environmental protection."[58] The message was clear: the better the market for electricity, the better the market for pollution control.

In reality, however, the EPA cannot now say whether or not it will allow the establishment of an acid rain-like cap and trade system for reducing $PM_{2.5}$ precursors, because it does not yet understand the relationship between those precursors well enough to allow trading between them. The best the EPA can say now is that as detailed data on the chemical composition of $PM_{2.5}$ in different areas becomes available, it "will encourage states to work together to use a cap-and trade approach" if the future research suggests that regional reduction strategies will help compliance.[59] But, it seems fairly obvious that if the EPA does not understand how potential PM precursors relate to each other, it cannot understand how or even whether to regulate them at the outset.

One cannot escape the suspicion that there is another reason the EPA is now reluctant to embrace market based incentives—namely, that a transparent and level playing field reduces, if not eliminates, the EPA's ability to pick and choose regulatory targets depending upon the political necessities of fending off a congressional override of the rule. Thus, as Congressman John D. Dingell (D-16th MI) has observed,[60] the EPA made numerous political deals, including promising Congress that it would not regulate politically powerful farmers, notwithstanding the EPA's own acknowledgment in the rule that implementation of a standard is up to the states in their SIP programs and that "there is nothing EPA can do in setting the NAAQS to tailor those programs as they apply to small entities."[61] And despite the EPA's supposed lack of power in this area, it announced with the rule a $10,000 per ton technology cost limit for compliance expenses on the grounds that "[i]t was agreed that $10,000

56. EPA's Open Access Comments, *supra* note 53, at 2.
57. *Id.* at 3.
58. *Id.* at 6.
59. Implementation of Revised Air Quality Standards for Ozone and Particulate Matter, 62 Fed. Reg. 38,421, 38,428 (1997).
60. Representative John Dingell (D-MI), Remarks at National Press Club Newsmaker Luncheon (regarding the new EPA Clean Air Standards) (July 20, 1997), *reprinted in EPA Clouding the Clean Air Debate*, WASH. TIMES, Sept. 7, 1997, at B1.
61. National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,705 (1997) (to be codified at 40 C.F.R. pt. 50).

per ton of emission reduction is the high end of the range of reasonable cost to impose on sources."[62]

It is, of course, impossible to have a market for pollution control like the one set up for acid rain, which the EPA admits "delivered environmental benefits at a greatly reduced cost,"[63] if the government sets the price and determines who can buy and sell. This technique is not what the authors of the CAA had in mind. Section 110(a)(2)(A) provides that state SIPs "shall" include emission limitations and "other control measures, means or techniques (including economic incentives such as fees, marketable permits, and auctions of emission rights) . . . as may be necessary or appropriate to meet the applicable requirements of [the CAA]."[64] Thus, the EPA finds itself ignoring a cost-saving provision of the CAA, because it does not know enough about either the harms or the benefits of the targeted pollution to use economic incentives and because using such transparent even-handed incentives would preclude use of the command and control gerrymandering necessary to make the standard politically palatable.

So, here we have truly come full circle. The EPA refuses to entertain cost-benefit considerations, at least for purposes of judicial or congressional accountability, because *Lead Industries* states that the CAA says the only thing that counts is the EPA's official view of the adverse effect of the particular pollutant under scrutiny. Then, the EPA goes ahead and engages in the most exquisite cost-benefit manipulation, including exempting farmers, targeting utilities, foregoing the benefits of cost-saving economic incentives required by the statute, proceeding in the face of "crucially inadequate" science, setting a compliance cost ceiling in violation of the statute, exploiting the curious asthma epidemic for political purposes at the expense of medical truth,[65] and biasing the benefit considerations by excluding consideration of side-effects or "dis-benefits"—all in a manner designed to shield its actions from any accountability by the other two branches of government (and the White House as well, it might be added).

IV. THE NONDELEGATION DOCTRINE

If this is not the standardless exercise of legislative power—or "delegation running riot" to use Cardozo's famous phrase[66]—it is difficult

62. Implementation Plan for Revised Air Quality Standards, 62 Fed. Reg. at 38,429.
63. *Id.* at 38,428.
64. CAA § 110(2)(2)(A), 42 U.S.C. § 7410(a)(2)(A) (1994).
65. *See* WASH. TIMES, *supra* note 43, at A18.
66. A.L.A. Schecter Poultry Corp. v. United States, 295 U.S. 495, 553 (1935) (Cardozo, J., concurring).

to imagine what could be. Perhaps the most revealing insight is the use of the passive voice in the compliance memorandum accompanying the President's decision on PM/ozone to describe the $10,000 per ton compliance cost cap: "It was agreed that $10,000 per ton of emission reduction is the high end of reasonable cost to impose on sources."[67] "It was agreed?"[68] By whom and according to what criteria and subject to what standard of judicial review? Of course, there is no standard and there is no judicial review, because *Lead Industries* makes clear that Congress meant for costs to be totally irrelevant, citing as a representative view the harsh conclusion made by the Senate Committee Report on the 1970 CAA in order to force technology: "Therefore, the Committee determined that existing sources of pollutants either should meet the standard of the law or be shut down."[69] Nor is the EPA permitted to consider economic or technical feasibility in reviewing SIPs.[70]

So in Alice-in-Wonderland style, the EPA's successful assertion in court that it cannot consider costs has freed it to consider costs in a way that no one can shape or review. A $10,000 per ton cap is no doubt better than no cap at all, because five-figure tons are very expensive tons indeed, difficult to justify in the absence of a closed, captive market on to which to pass the costs without triggering plant relocations abroad. One could argue in favor of a $5,000 per ton figure as the best market clearing price at which costs can be imposed without sending production abroad or shutting it down altogether. But, this decision is not for the EPA to make, at least not without some guidance and review. As Chief Justice Rehnquist observed in *Benzene*, "[t]he decision whether the law of diminishing returns should have any place in the regulation of toxic substances is quintessentially one of legislative policy."[71]

Compounding the "black box" nature of the EPA's arrogation of authority is its refusal, noted above, to permit open and transparent trading of marketable permits as required by the CAA, and its decision to establish instead a "Clean Air Investment Fund" to trade undisclosed reductions of other pollutants for $10,000 per ton payment made by sources in lieu of installation of its own controls.[72] This would allow the EPA to micro-manage and maintain control over who wins and who loses

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67. Implementation of Revised Air Quality Standards for Ozone and Particulate Matter, 62 Fed. Reg. 38,421, 38,429 (1997).

68. *Id.*

69. Lead Indus. Ass'n, Inc. v. EPA, 647 F.3d 1130, 1149 (D.C. Cir. 1980) (quoting S. REP. No. 91-1196, at 3 (1970)).

70. *See id.*

71. *Benzene*, 448 U.S. 607, 686 (1980).

72. Implementation of Revised Air Quality Standards for Ozone and Particulate Matter, 62 Fed. Reg. 38,421, 38,429 (1997).

from the allocation of the regulatory burden that the CAA commits, in the first instance, to the states and then to the market through economic incentives but in no instance to the EPA itself. The EPA is forced into this position because, as noted above, it does not know enough about the relationship of PM precursors to allow trading between them. If that is not known, then the EPA has no business regulating the precursors at the outset, let alone playing industry price fixer and broker, especially when there is no hint of statutory authority for the EPA's "Fund."

The use of a $10,000 figure looks deceptively neutral, but, in fact, it can have a dramatically different impact depending on the size of a source, its market power, and its vulnerability to foreign competition. As the D.C. Circuit said in another OSHA nondelegation case decided under *Benzene*,

> even the use of general standards leaves opportunities for dangerous favoritism. The cost of compliance with a standard will vary among firms within an industry, so the power to vary the stringency of the standard is the power to decide which firms will live and which will die. At the simplest level, for example, compliance may involve economies of scale, so that a tough standard will erase small, marginal firms and leave the field to a small group of larger ones.[73]

This situation is especially troubling where there are no opportunities for trading below $10,000 a ton.

The fact is that the entire PM/ozone effort is a massive exercise of unguided industrial policy based on a Rube Goldberg-like, gerrymandered set of regulatory indulgences designed to reward or punish political friends or enemies for the purpose of enhancing adoption of the rules, not advancing the environment. The EPA thus decided to protect the farmers and small business, taking immediate action only against the utility industry that has been distracted and politically weakened by the restructuring and deregulation of the industry and that, as a result, has had to husband its political capital for other purposes. The most delicious indulgence is the one the EPA gave to the West in the form of relaxation of the existing PM_{10} standard (by changing the one-hour to an eight-hour standard),[74] notwithstanding the fact that most of the evidence of harm cited in support of the $PM_{2.5}$ rule is in fact data on PM_{10}. The point was to placate the western congressional delegations rightly concerned about ordinary dust.

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73. International Union, United Auto, Aerospace & Agric. Implement Workers of Am., UAW v. OSHA, 938 F.2d 1310, 1318 (D.C. Cir. 1991).

74. *See* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652 (1997) (to be codified at 40 C.F.R. pt. 50).

The EPA's unguided policy making is not simply occurring on a blank slate of delegated authority; it is in fact indirectly erasing much of the CAA and ousting Congress of its jurisdiction over the Act. Thus, as noted above, it is illegally preempting the states' authority over implementation by walling off certain sources from state regulation; it is ignoring the CAA's direction to the states to use economic incentives[75] and instead operating the market itself through an unauthorized "Clean Air Fund;" it is setting itself the price for emission reductions, notwithstanding its own successful judicial arguments that it is precluded from considering costs; and it is completely rewriting the carefully worked out implementation schedule for ozone attainment known as subpart D.[76] Most importantly, it has asserted jurisdiction over a surrogate for all pollution ($PM_{2.5}$) without any understanding either of what exactly the surrogate consists of—other than anything and everything—or of what exactly it does to harm the public health, so that it is now free, unless checked by the courts, to regulate any and all pollutants down to background levels whenever the spirit moves it to do so.

There is, in these circumstances, no need for any CAA at all, or for any of the kind of periodic reviews and revisions that have occurred over the last three decades to bring the CAA up to date. There is no need or room for any further congressional direction, fine tuning, or even oversight, because there is no pollutant for which the EPA will not be able to prescribe background-level standards some time in the future. This open-ended authority derives from the fact that there are virtually no threshold pollutants given today's measuring techniques and from the power asserted by the EPA in the $PM_{2.5}$ rule, but rejected for the OSHA by *Benzene*[77]—to generalize from epidemiological data linking a pollutant to premature death at one level of that pollutant to adverse health effects at any level and from there to reduce that pollutant to zero. This conflict on nondelegation grounds with the Supreme Court in *Benzene* ought to be enough to merit reversal. *Lead Industries* also conflicts with a D.C. Circuit offspring of *Benzene* known as the "lockout-tagout case" that forbade the OSHA to do what *Lead Industries* said the EPA could do, namely, "choose freely among levels of stringency, from adopting no standard at all to adopting the most stringent standard feasible."[78]

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75. CAA § 110, 42 U.S.C. § 7410.

76. *See, e.g.*, Subpart D, 40 C.F.R. §§ 60.40-60.48(c) (1997).

77. *Benzene*, 448 U.S. at 654.

78. International Union, United Auto., Aerospace & Agric. Implement Workers of Am. UAW v. OSHA, 37 F.3d 665, 668 (D.C. Cir. 1994). Actually, *Lead Industries* ruled that the EPA

Is there enough life in the nondelegation doctrine to deal with this state of affairs? There are, of course, numerous legal challenges to the PM/ozone rules that could and should succeed, such as the lack of scientific support for $PM_{2.5}$ after Footnote 90 and the absence of significant improvement for the ozone rule, the total conflict with Subpart D of the ozone rule, and both rules' defiance of the statutory commitment to state SIPs and the use of economic incentives. But, the nondelegation doctrine—if alive—puts all of these arguments in better understood context and in bolder relief.

The case law seems strong enough not to have the CAA declared unconstitutional, but to have it construed as narrowly as OSHA's statute was in the *Benzene*, *Cotton Dust*,[79] and the lockout-tagout cases. There is, of course, evidence of nondelegation life beyond just the OSHA.[80] Although Judge Silberman once described the nondelegation argument as "only a shadowy limitation on congressional power,"[81] more recently in a speech in Washington, D.C., before the Federalist Society, he cited the need for courts to test agency claims of expansible legislative authority against the nondelegation doctrine.[82] Finally, there is Judge Hogan's opinion in the line item veto decision, where he discusses the nondelegation doctrine as grounds for holding the line item veto unconstitutional.[83]

As indicated above, the nondelegation doctrine should be applicable in the PM/ozone cases not to have the CAA declared unconstitutional, but rather to have it implemented pursuant to criteria that lend accountability to the process. As noted above, a court could remand the rules for lack of sufficient evidence or for inconsistency with subpart D's or Section 110's requirements for use of economic incentives,[84] but that course would provide little future guidance either for these rules on remand or for future rules where the EPA may be equally emboldened to legislate unless clearly tied down to accountable standards now. Indeed, the EPA's sorry win-loss record in the courts over the last six years strongly suggests that case-by-case reversals have not provided adequate systematic guidance and that something more comprehensive may be required.

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was not even constrained by feasibility. Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1149 (D.C. Cir. 1980).

79. American Fed'n of Labor and Congress of Indus. Orgs. v. OSHA, 965 F.2d 962 (11th Cir. 1991).

80. *See, e.g.*, South Dakota v. Department of Interior, 69 F.3d 878, 886-89 (8th Cir. 1996).

81. Chamber of Congress v. Reich, 74 F.3d 1322, 1326 (D.C. Cir. 1996).

82. The Honorable Laurence H. Silberman, Circuit Judge, U.S. Court of Appeals, D.C. Circuit, Speech before the Federalist Society (Oct. 18, 1997).

83. *See* City of New York v. Clinton, 985 F. Supp. 168, 177-81 (D.D.C. 1998).

84. CAA § 110(a)(2)(A), 42 U.S.C. § 7410(a)(2)(A) (1994).

V. THE EXISTING LEGISLATIVE ANSWER

What is necessary here: Legislation embodying some form of cost-benefit balancing or use of economic incentives to reduce costs, maximize benefits, and eliminate regulatory gerrymandering? Given the EPA's refusal to comply with the existing statutory scheme (behavior not unique to the EPA by any means), it does not make much sense to enact another statute it can also ignore. The best option is for the courts to enforce the existing framework as informed by the nondelegation doctrine, as the courts did earlier with *Benzene* and its progeny.

More precisely, what the courts should do here is apply the analysis of *Benzene et al.* to the CAA and the EPA, along with (a) a publicly-accountable and judicially reviewable application of the cost-benefit approach used by the EPA itself and (b) enforcement of the 1990 CAA Amendments that, as noted above, introduced cost considerations for the EPA and the states to take into account. This combination would satisfy both the statute and the nondelegation doctrine for the PM/ozone rules and all future standards and rules as well. It is important to indicate that the following discussion does not suggest applying formally to the EPA any analysis materially different from the approach that the EPA has been following internally for years and, with the modifications introduced by the 1990 CAA Amendments, used in these particular rulemakings.

VI. BENEFITS

The starting point, as always, is to look at the benefit side of the equation, that is, what adverse health effect is being targeted for elimination. This is not as easy at it might seem on the surface. There are at least two confining qualifications on the identification of benefit, or avoided harm, that the EPA has rejected and that would substantially guide the exercise of the EPA's discretion. The first is how clear the harm or benefit must be before the EPA can act. In *Benzene*, without any statutory language to point to and relying almost solely on the nondelegation doctrine, the Supreme Court determined that the protection to worker health at issue had to involve a "significant risk," the necessary showing for which, at a proposed level of l ppm, could *not* be supplied by evidence of risk at 10 ppm (as supplemented by a theoretical linear dose-response curve).[85] In *Lead Industries*, by contrast, the D.C. Circuit rejected an argument that the CAA required evidence of "clear harm" to satisfy the CAA, although the court did say that there had to be

85. *Benzene*, 448 U.S. 607, 636-37 (1980).

supporting evidence for the particular level the EPA decided to pick.[86] It is quite possible, of course, that a reviewing court today could say there is no need here to reconcile the potential conflict between significant risk and "unclear" harm, because even under *Lead Industries*, the EPA's Footnote 90 in the $PM_{2.5}$ rule means the EPA failed to meet that case's evidentiary requirement. However, for future guidance, the better course for a court to follow would be to say that where, as here and as in *Benzene*, but not *Lead Industries*, there has been substantial regulation of the pollutant already—in this case that regulation could be described as massive—the EPA cannot propose massive *future* regulation of the pollutant without showing that there is a continuing significant health risk at ever diminishing levels of pollution. This is the holding of *Benzene*, and it ought to apply to the outdoors, where the overall risk is far less than it is indoors where people spend most of their time. As will be shown below, this deference to the law of diminishing returns is surprisingly consistent with the approach followed by the EPA in practice.

The second qualification concerns the issue of "dis-benefits" or substitution risks, also known as "adverse side effects" in the world of new drug applications at the Food and Drug Administration. That is, are there any collateral consequences of eliminating some pollutant, just as some new drug may solve one problem but contribute to another? An example was the EPA's phaseout of lead—the subject of the *Lead Industries* case itself. The elimination of lead, which supplied octane to gasoline, triggered the need for the oil companies to find another source of octane enhancement. The new octane source, which no one focused on at the time, was, ironically, the same substance under review in the *Benzene* case, namely, benzene and its cousins toluene and xylene.[87] The problem with benzene was that, as a carcinogen, it is possibly more toxic than lead; it is especially photochemically reactive for ozone purposes; and it hinders the operation of the catalytic converter (though not as badly as lead). As a result, it had to be forced out by the 1990 CAA Amendments at the cost of billions that could probably have been avoided had anyone thought about it at the time the lead decision was made.[88]

There are several potential dis-benefits or substitution risks here. For ozone, there is substantial scientific evidence that further reduction of ozone will so increase exposure to ultraviolet radiation as to cause more

86. Lead Indus. Ass'n v. EPA, 647 F.2d 1130, 1160 (D.C. Cir. 1980).

87. *See generally Benzene*, 448 U.S. at 607.

88. *See* CAA § 211(k), 42 U.S.C. § 7545(k) (1994) (reformulated gasoline provisions, setting limits on benzene, aromatics, and air toxics).

cancer than the ozone rule might otherwise produce.[89] For PM, there is some question that further removal of sulfates will aggravate the heating of the atmosphere for global warming purposes because there will be fewer particles to reflect sunlight back into space. For both rules, there is ample literature demonstrating that higher electrical prices, which these rules will surely trigger if they do nothing else, will quite literally kill low-income people during heat waves either because they cannot afford air-conditioning or they turn it off (remember that air conditioning also screens out at least a substantial portion of $PM_{2.5}$).[90]

The EPA has taken the position that the CAA, by focussing solely on the public health effect of "each air pollutant" individually in Section 108[91] precludes the EPA from considering secondary or tertiary consequences that may involve another pollutant or other health effect. These other effects, the EPA says, should be considered during the implementation stage, not earlier.[92]

History suggests, however, that, as in the case of lead, later may be too late. It takes a lot of time to regulate a new risk, and there is the potential for much harm in the interim. More importantly, the CAA, perhaps for this reason, does not impose such tunnel vision on the EPA. Once a criteria pollutant is identified under Section 108,[93] Section 109 requires the EPA to promulgate the standard itself that must be "requisite to protect the public health,"[94] a concept far broader than just the regulation of each air pollutant. If a particular standard, for whatever reason, causes more public health harm than good, it is difficult to see how that standard satisfies Section 109 to "protect the public health."[95]

Although many experts may differ, to this author the biggest substitution risk is the risk of heat prostration and related problems resulting from curtailed air conditioning use. Numerous studies by the government of past heat waves have shown that the lack of adequate air conditioning in residences during summer heat waves can increase mortality. Since nearly seventy percent of American households had air

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89. *See generally* Randall Lutter & Christopher Wolz, *UV-B Screening of Tropospheric Ozone: Implications for the National Ambient Air Quality Standard*, 31 ENVTL. SCI. & TECH. 142A (1997).

90. *See* Platts-Mills & Carter, *supra* note 42, at 1383.

91. *See* CAA § 108, 42 U.S.C. § 7408 (sets forth the framework for the EPA to list ambient air pollutants for standard setting).

92. *See* EPA, RESPONSE TO SIGNIFICANT COMMENTS ON THE 1996 PROPOSED RULE ON THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR OZONE 128-33 (1997) [hereinafter RESPONSE TO COMMENT].

93. CAA § 108, 42 U.S.C. § 7408 (1994).

94. CAA § 109(b)(1), 42 U.S.C. § 7409(b)(1).

95. *Id.*

conditioning according to the 1990 census,[96] raising the cost of operating these units will certainly have an effect on the quality of many American lives through increased stress due to heat and humidity and, potentially, even loss of life. The *New England Journal of Medicine* suggests that air conditioning was responsible for saving many lives in the heat wave of 1995 in Chicago.[97] This study looked at the causes of at least 700 excess deaths to determine who was at greatest risk for heat-related death.[98] People most at risk were those with medical illness, those socially isolated, and those who did not have access to air conditioning.[99] In fact, the study found that the risk of death was reduced for people with working air conditioners by eighty percent, as well as reducing the mortality due to cardiovascular disease by sixty-six percent.[100] In closing, the study stated: "Access to air-conditioned environments is the factor with the greatest protective effect with respect to heat-related mortality. We found that people who lived in apartments without air conditioning had a lower risk if they had access to an air-conditioned lobby."[101]

One EPA and National Oceanic and Atmospheric Administration (NOAA) study of deaths in a New York City heat wave in 1966 claimed the death rate more than doubled a day after the maximum temperature of 103 degrees was reached.[102] According to this same study, in one three-day period, for example, the cancer death toll rose from forty-three to ninety-eight per day while heart failures jumped from eighty-eight to 230 a day.[103] Carl A. Posey, a spokesperson for NOAA, maintained that high energy costs were killing people:

> The cost of cool air moves steadily higher, adding what appears to be a cruel economic side to heat wave fatalities preliminary indications from the 1978 Texas heat wave suggest that some elderly people on fixed incomes, many of them in buildings that cannot be ventilated without air conditioning, found the cost too high, turned off their units, and ultimately succumbed to the stress of heat syndrome. When a human's heat limits are exceeded, he does not doze reptile-fashion, he dies.[104]

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96. *See* STATISTICAL ABSTRACT OF THE UNITED STATES 739 (1995); *see also* 1991 DEPT. OF COMM. & DEP'T OF HUD, AMERICAN HOUSING SURVEY FOR THE UNITED STATES IN 1991 5.

97. Jan C. Semenza et al., *Heat-Related Deaths During the July 1995 Heat Wave in Chicago*, 335 N. ENG. J. MED. 84 (1996).

98. *See id.* at 86.

99. *See id.* at 84.

100. *See id*. at 86-87.

101. *Id.* at 90.

102. Randolph E. Schmid, ASSOC. PRESS, Aug. 6, 1979 (on file with author).

103. *See id.*

104. *Id.*

Apparently, the EPA itself has done significant research on the topic of air conditioning's life-saving capability.[105] Another EPA study showed air conditioning saved lives during a heat wave.[106] According to the Chicago Tribune, "[r]esearchers for the U.S. Environmental Protection Agency estimated that in New York more than 3,500 deaths were avoided between 1964 and 1988 because of air conditioning. That number is equal to 21 percent of all heat-related deaths in that period."[107]

Other federal agencies have shown concern about the dangers of heat waves and the lack of air conditioning. In 1982, the Federal Centers for Disease Control and Prevention published a study of the deaths associated with the July 1980 heat wave in Kansas City and St. Louis, Missouri.[108] Not surprisingly, lack of air conditioning was the most critical factor in the fatalities; those without it had a fifty percent greater risk of dying.[109]

These studies are also supported by the many reports in the press about the benefits of air conditioning. According to one article by *The New York Times* news service, the inability to afford air conditioning was a factor in the many deaths in 1995 in Chicago:

> The one factor common to heat victims was a lack of air conditioning. Dr. Zun and others point out that while there were hundreds of deaths in Chicago in the hot spell, only 80 people died of heat in the same period in more affluent Cook County suburbs. "Folks in the suburbs, with a lot of air conditioners," Dr. Zun said, "didn't have the same kind or amount of problems we had in the city."[110]

There is, in short, a great deal more evidence linking death to higher electricity costs than to $PM_{2.5}$.

The problem is compounded because the EPA simply has no clue about how much $PM_{2.5}$ penetrates indoor air conditioning or how much humidity, which is eliminated by air conditioning, may be a confounding factor in the $PM_{2.5}$ epidemiology studies that the EPA no longer relies upon; there is simply no data relating air conditioning use to the deaths involved in the studies. But, we do know that the PM_{10} study by

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105. Stevenson Swanson, *Is Being Cool Our Right or just a Privilege?*, CHI. TRIB., Aug. 6, 1995, at 1C.

106. *See id.*

107. *Id.*

108. Joseph J. Ramm & Christine A. Ervin, *How Energy Policies Affect Public Health*, 111 U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PUBLIC HEALTH REPORTS 390 (Sept. 19, 1996).

109. *Id.*

110. Don Terry, *Killer Heat Teaches City Grim Lessons: Experts Warn that Others Could Suffer Like Chicago*, DALLAS MORN. NEWS, Oct. 8, 1995 (quoting Dr. Leslie Zun of Mt. Sinai Hospital).

Schwartz was reanalyzed and its PM effect found statistically insignificant when humidity was included.[111] As a result, the EPA has absolutely no idea whether implementation of the $PM_{2.5}$ rule might not actually kill more people than it saves, if in fact it would save anybody.

The EPA also contends that Congress made the dis-benefit preclusion clear in amending the CAA in 1977 in Section 109 to direct CASAC to offer the EPA advice "in several areas, including any 'adverse public health . . . effects which may result from various strategies for attainment and maintenance'" of the standards.[112] But, this amendment would seem to reinforce the obvious point that the EPA is *required* to take dis-benefits into account, not prohibited from doing so. The EPA tries to turn this upside down by saying that the legislative history shows the advice was not for the EPA but for the benefit of the states for SIP implementation or Congress for future legislation.[113] This proposition is absurd on its face, because the statute directs CASAC to advise the EPA, not the states or Congress.[114] It is not irrelevant here that when it comes to advantageous rather than adverse side effects, or what might be called "co-benefits" rather than dis-benefits, the EPA rarely ever hesitates to take them into account.

VII. COSTS

What about the cost side of the equation? As any EPA employee or practitioner knows, the EPA has for a long time taken costs into account in its decision-making. The beauty of saying that it is officially precluded from doing so means that it can do so unofficially without any review by the courts or Congress. But it does so nonetheless. In its regulatory impact analysis (RIA) for the PM/ozone rules, the EPA makes the Yogi Bera-like statement that "this prohibition against consideration of cost does not mean that cost or other economic considerations are not important or can be ignored. In fact, the Agency believes that consideration of costs is an essential decision-making tool."[115] The Agency goes on to say:

> The consideration of cost and, to be more specific, the use of cost-benefit analyses, provides a structured means of evaluating and comparing various

111. Davis et al., *supra* note 39.

112. RESPONSE TO COMMENTS, *supra* note 93, at 128-33 (quoting CAA § 109(d)(2)(C), 42 U.S.C. § 7409(d)(2)(C)).

113. *See id.*; *see also* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,685 n.65 (1997) (to be codified at 40 C.F.R. pt. 50).

114. CAA § 109(d)(2)(C); 42 U.S.C. § 7409(d)(2)(C).

115. EPA, REGULATORY IMPACT ANALYSIS FOR PROPOSED PARTICULATE MATTER NATIONAL AMBIENT AIR QUALITY STANDARD, ES-1 (Dec. 1996) [hereinafter RIA].

> implementation policies, as well as a means of comparing the variety of tools and technologies available for air pollution control efforts. The Agency has found the use of such analyses to be of significant value in developing regulatory options over the years.[116]

The EPA seems to be trying to say that either it or the states can take costs into account for implementation purposes but not for standard-setting purposes. But, apart from the fact that, as the PM/ozone rules make clear, standard-setting cannot easily be separated from implementation, there is no statutory or judicial basis for the EPA or the states to compartmentalize standard-setting and implementation as unrelated issues or to use cost-benefit in implementation but not standard-setting. The EPA acknowledges as much by summarizing the Supreme Court's and D.C. Circuit's views as follows: "[S]tates may consider economic and technological feasibility . . . only insofar as this does not interfere with meeting the strict deadlines for attainment of the standards."[117] The EPA may not consider such factors at all in deciding whether to approve state SIPs.[118] Since deadlines have never been met, consideration of costs has never been permissible. As noted above, one of the purposes of the original CAA was to force technology; if a source could not meet the standard, it would have to be shut down. Since implementation was exclusively up to the states in any event, the EPA was never supposed to have any implementation strategy and, as we have seen, was not even supposed to tell the states what sources they could or could not control.

Again, in practice, as everybody knows, the EPA runs almost everything from Washington and, therefore, must have the best cost information it can get. In doing the RIA, for example, the EPA calculated the total cost figure for compliance only after settling upon $l billion/μg/m3 as the cut-off point for making the calculations.[119] That is, the EPA said that no further controls will be required when the costs exceed the $l billion cut-off; the purpose is "to eliminate extreme measures that are unrealistically cost-ineffective."[120] How does the EPA know? The reason is the result of an analysis of two cities (Philadelphia and Denver) that "indicated that higher cut-offs achieve minimal air

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116. *Id.* at ES-2.

117. *See* Lead Indus. Ass'n v. EPA, 647 F.2d 1149 n.37 (D.C. Cir. 1980) (citing Union Elec. Co. v. EPA, 427 U.S. 246, 257-58, 266 (1976)); *see also* National Ambient Air Quality Standards for Particulate Matter, 62 Fed. Reg. 38,652, 38,684 (1997) (to be codified at 40 C.F.R. pt. 50).

118. *See Lead Industries*, 647 F.2d at 1149 n.37.

119. RIA, *supra* note 115, at ES-6 to 7.

120. *Id.*

quality improvements at unreasonably high cost."[121] Presumably, this data is the basis for capping control costs at $10,000 a ton in the rule. So much for the prohibition against considering costs. The fact is that the EPA has been observing the law of diminishing returns for a long time, and it would be absolutely idiotic not to do so. The problem, however, as Chief Justice Rehnquist said in 1980, is that this is quintessentially a job for Congress to spell out, and not for an agency, namely the EPA, to conduct behind closed doors.[122]

How can one square what the EPA has been doing, and should continue to do, albeit on the record and subject to judicial review, with *Lead Industries*? Maybe, as suggested above, the D.C. Circuit or the Supreme Court has to overrule *Lead Industries* in favor of the lockout-tagout decision,[123] or *Benzene*. If necessary, that should be done, because the conflict should not be allowed to persist any longer. But a strong case can be made that the 1990 CAA Amendments effectively "overruled" *Lead Industries* with a far-reaching provision that the EPA has acknowledged but misconstrued. The particular provision at issue is the change made in 1990 in Section 110 to require SIPs to incorporate economic incentives.[124] This, in turn, requires the agency and the states to have a full understanding of costs and all compliance alternatives, because it is impossible to structure incentives without that understanding.

During the hearings on the 1990 CAA Amendments, EPA Administrator Reilly explained that "[w]e do want to be careful . . . that the control measures imposed by the federal government are as cost-effective as possible. The President's bill reflects this effort."[125] He went on to say that

> [t]his bill incorporates more economic incentives than any environmental law ever passed in this country. . . . In this bill [the President] brings the force of the marketplace to bear in our national effort to protect air quality. In doing so he is not only proposing a fundamental change in the way we approach air pollution control in this country, he is also giving momentum to an idea that is shared by many people on Capital Hill today . . . . This bill gives industry a great deal of flexibility in meeting clean air goals, and it gives it economic flexibility to take advantage of that flexibility.[126]

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121. *Id.*

122. *Benzene*, 448 U.S. 607, 672 (1980) (Rehnquist, J., concurring).

123. International Union, United Auto, Aerospace & Agric. Implement Workers of Am., UAW v. OSHA, 938 F.2d 1310 (D.C. Cir. 1991).

124. CAA § 110, 42 U.S.C. § 7410.

125. *Clean Air Amendments of 1989: Hearing on S. 816 and S. 196 Before the Subcomm. On Environmental Protection of the Senate Comm. on Environmental and Public Works*, 101st Cong. 78 (1989) (statement of William Reilly, EPA Administrator).

126. *Id.* at 78-79.

As detailed above, the EPA acknowledges the role of economic incentives, but it makes only the weakest promise to allow them in the ozone rule, and it defies the statute in the PM rule by setting up a Clean Air Fund that substitutes the EPA for the marketplace envisioned by Reilly as the mechanism for setting price and allocating burden. Thus, the EPA is in denial about the fundamental change made by the CAA Amendments of 1990. Ironically, the White House seems to understand the importance of these incentives on the global stage, having made them a centerpiece of its Global Warming initiative.[127] The EPA should give this fundamental change in Section 110 the same scope domestically. There are probably two explanations for why the EPA has not done so. The most obvious is that full compliance with the change would acknowledge the CAA's adoption of cost consideration, subject to judicial review. The second is that compliance would preclude establishment of a PM rule until the EPA understands what it is trying to regulate well enough to make the use of transparent economic incentives possible. Both explanations, of course, underscore the importance of complying with Section 110.

VIII. CONCLUSION

Making open and accountable use of economic incentives and the law of diminishing returns, as well as demanding that there be benefits to the public from a rule net of any offsetting side-effects or dis-benefits, would save the CAA and the EPA from vulnerability under the nondelegation doctrine. It would also produce more expansive air quality benefits, because costs saved in implementation can be redirected to providing benefits. That, indeed, is the basic lesson of the fundamental change made to the CAA in 1990 to require use of economic incentives: as illustrated by the success of the Title IV Acid Rain allowance trading program[128] that has produced more than 135% of the targeted benefits at less than one-fifth the cost, use of economic incentives in enforcement produces huge air quality dividends.[129] There is, in short, no need for a cost-benefit statute. The EPA already has one, even if it may need the assistance of the *Benzene* nondelegation decision to comply with it.

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127. *See* President's Remarks at the White House Conference on Climate Change, 29 WEEKLY COMP. PRES. DOC. 2108, 2109 (Oct. 19, 1993); President William J. Clinton and Vice President Albert Gore, Jr., The Climate Change Action Plan (visited May 22, 1998) <http://gcrio.cgrio.org/USCCAP/>.

128. CAA §§ 401-416, 42 U.S.C. §§ 7651, 7651*a*-7651*o* (1994).

129. *See* EPA, OFFICE OF AIR AND RADIATION, 1995; 1996 COMPLIANCE RESULTS AND RAIN PROGRAM (1997).