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COMMENTS

The Overwhelming Case for Clean Air Act Reform

by Bill Pedersen and David Schoenbrod

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I. The Status Quo Is Unacceptable

Our current Clean Air Act (CAA)[1] will cut national emissions of the most dangerous and widespread pollutants roughly in half. The U.S. Environmental Protection Agency (EPA) estimates that these cuts will prevent 20,000 premature deaths per year and add one full year to the life of the average American 30-year old. The Agency also estimates that CAA benefits total two trillion dollars per year and exceed their costs by 30 to one. CAA environmental benefits exceed costs, even if we do not count health improvement at all.[2]

If these estimates are true, further pollution reductions would almost certainly have proportionate benefits. Cutting pollution to one-quarter (rather than one-half) of its original levels could prevent an additional 10,000 premature deaths and produce a further trillion dollars in annual benefits. The technologies needed to do this are already available, and a benefit-to-cost ratio of 30 to 1 leaves a lot of room for additional control requirements that are cost-effective.

These estimates may seem too dramatic to be true, particularly since they so strongly support the programs of the Agency that sponsored them. But they have been used to support regulations, and have thus survived both public comment and White House review during the last three presidential Administrations—Obama, Bush II, and Clinton. More fundamentally, their conclusions are so strong that they could contain a lot of overstatement and still provide compelling support for CAA reform.

The current CAA cannot provide those benefits. Congressional action will be needed. Moreover, a new CAA could decrease the cost of further emission reductions by allowing sources to achieve them far more efficiently and effectively than is possible using the accumulated pile of programs, often based on an outdated understanding of air pollution, that makes up the current law. A new statute could cut back or even eliminate many of those programs, reducing bureaucracy and saving money with no loss of environmental protection. Reducing the cost of pollution control would justify controlling pollution more.

Should a new CAA include greenhouse gas (GHG) controls? We favor that inclusion, but our suggestions would work equally well with or without GHG control.

We explain below that the U.S. Congress designed the current CAA around two fundamental misunderstandings about air pollution, misunderstandings that make the statute clumsy and that hinder further attempts at emissions reductions. We then describe a new approach that could solve these problems and allow Congress to dramatically streamline the CAA. We conclude with a word on GHG control.

II. Two Misunderstandings About Air Pollution

A. *The CAA Assumes That All Air Pollutants Have Clear "Safe" Levels, but They Do Not*

The CAA assumes that all widespread pollutants have identifiable "safe" levels. It therefore calls on EPA to set—and periodically revise—national ambient air quality standards (NAAQS) at levels that will "protect the public health" with an "adequate margin of safety."[3] It then requires states to adopt state implementation plans (SIPs) to achieve each separate NAAQS by a set deadline.[4] These deadlines are

Authors' Note: The authors worked together on the Breaking the Logjam Project from whose recommendations portions of this Article are adapted. For those recommendations, see the project's website (http://www.breakingthelogjam.org/) or David Schoenbrod, Richard B. Stewart & Katrina M. Wyman, Breaking the Logjam: Environmental Protection That Will Work *ch. 4 (2010).*

1. 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
2. Figures taken from U.S. EPA, The Benefits and Costs of the Clean Air Act From 1990 to 2020 (Mar. 2011), *available at* http://www.epa.gov/air/sect812/feb11/summaryreport.pdf.
3. CAA §109.
4. *See* CAA §110.

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short and have generally not been met. A missed deadline generally requires an SIP revision.

Given the absence of scientific knowledge of air pollution in the 1970s, Congress required EPA to revise NAAQS every five years, and required states to revise their SIPs whenever EPA revised a NAAQS. The combination of unrealistic deadlines and NAAQS revisions has generated an endless stream of SIP changes for regulators to process.

But all recent studies suggest that the damage from one particular pollutant—fine particulates ($PM_{2.5}$)—far exceeds damage from any other, and that there is no safe level for $PM_{2.5}$ exposure. Adverse health effects (and environmental damage too) occur at all levels studied, though, of course, they get smaller as levels decrease.[5] This is also true, to a lesser extent, of ozone, the other widespread NAAQS pollutant. The CAA strategy to "control quickly to a certain level and stop" does not fit such pollutants.

Instead, addressing a pollutant that causes damage at all exposure levels calls for an ongoing effort to reduce those levels. It also requires a limiting principle to make sure that the costs of control do not exceed the benefits.

The current CAA hides the need for such a limiting principle by instructing EPA to set NAAQS to protect health without regard to cost or practicality. For pollutants with no threshold, that means that the Agency must set the standard on the basis of balance of health, cost, and other considerations, then cover up the fact that it took cost or practicality into account. Congress told the public that NAAQS would put pollution control on the basis of science rather than politics, but the very nature of the problem makes a decision based on pure science impossible.

B. The CAA Assumes That Air Pollution Is a Local Problem, but Often It Is Regional or National

The CAA assumes that high air pollution concentrations in a state generally come from sources within the state. It therefore calls on every state containing areas that exceed any NAAQS to revise its SIP to remove the exceedance. This makes sense only if in-state emissions generally cause those exceedances.

The CAA measures to address interstate pollution occupy a secondary place and have proved hard to use.[6] $PM_{2.5}$ and ozone do not fit this model. High pollution levels in a state will almost always be caused by emissions from many other states. Controls in one state alone will make little difference.

III. Failed Reform Efforts

These two misunderstandings mean that the current CAA is largely based on an intricate, awkward, and increasingly inefficient division of authority between state and federal governments.

Responding to these facts, the William Clinton, George W. Bush, and Barack Obama Administrations all tried to fit regional air pollution control programs into the existing CAA. They labored long and ingeniously to develop a framework to allow the federal government to set up and run that program. But the courts have almost totally rejected their efforts.[7]

Faced with this failure, EPA has turned to an inefficient program of source-by-source controls on $PM_{2.5}$ precursors, using a statutory framework designed for the completely different purpose of mercury control.

Legal challenges to that rule are underway. Even if it survives, the need to fit within the antiquated CAA structures has already made the rule far more complex and far less efficient than it needs to be.

IV. Designing a Regional Air Pollution Control Program

The legislative changes needed to address the pollution that our current CAA cannot control are tried, efficient, and effective.

Over 80% of the emissions that give rise to $PM_{2.5}$ and ozone and do not come from motor vehicles[8] come from about 3,000 of the 50,000 plus "major sources."[9] EPA has over 20 years of experience with market-based programs that assign an allowable emissions total to such sources, reduce that total over time, issue "allowances to emit" equal to that total, and allow sources to trade the right to emit among themselves so that the sources that can reduce emissions most efficiently will make the reductions.

This cap-and-trade approach has repeatedly reduced emissions more cheaply and more quickly than either industry or the government had predicted. It minimizes government interference with business decisions and operates with minimal bureaucracy. EPA's whole acid rain control program, which is designed on these principles, runs with about 50 employees.[10]

A new program should cover all of these approximately 3,000 emissions sources that contribute to $PM_{2.5}$ and ozone. To minimize costs, it should ideally be nationwide,

5. See, in addition to the study cited in fn.2, the preambles to EPA's Clean Air Interstate Rule, http://www.epa.gov/cair/, and Clean Air Mercury Rule, http://www.epa.gov/camr/.
6. *See* CAA §126.
7. The U.S. Court of Appeals for the District of Columbia (D.C.) Circuit, which decides CAA cases of national significance, upheld the Clinton-era program (*see* State of Michigan v. EPA, 213 F.3d 663, 30 ELR 20407 (D.C. Cir. 2000)), but struck down the George W. Bush program (*see* North Carolina v. EPA, 531 F.3d 896 (D.C. Cir. 2008)), and the Obama program (EME Homer City Generating v. EPA, __F.3d__ (2012)). The U.S. Supreme Court has agreed to review this decision.
8. This Article does not recommend any changes in the CAA motor vehicle control programs. Those standards are already set at very low levels, so that aggregate motor vehicle emissions will continue to decline as new, tightly controlled vehicles replace old ones.
9. David Schoenbrod et al., Breaking the Logjam: Environmental Protection That Will Work 90 (2010).
10. Sam Napolitano et al., *The U.S. Acid Rain Program: Key Insights From the Design, Operation, and Assessment of a Cap and Trade Program*, 20:7 Electricity J. 47, 55 (Aug./Sept. 2007), *available at* http://www.epa.gov/airmarkets/resource/docs/US%20Acid%20Rain%20Program_Elec%20Journal%20Aug%202007.pdf.

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like the highly successful acid rain program, and should allow nationwide emissions trading.

It should replace the multiple and ever-changing deadlines of current law with a single reduction schedule gradual enough to avoid excessive reduction costs. One approach would reduce the number of allowances each year by enough to keep their price at a set level—for example, $2,000 per ton of sulfur oxides.[11] As emissions control costs declined over time, this constant price would yield ever-increasing emission reductions.

V. Eliminating Obsolete Provisions

Assuring continuing nationwide reductions in the most damaging air pollutants would allow Congress to cut back or eliminate many other CAA programs. Specifically, Congress could address the following:

- Clean Air Mercury Rule: this rule aims at controlling mercury emissions from power plants by reducing their emissions of particulate precursors. But with a national program to reduce these emissions in place, the rule would become superfluous.
- SIPs: A national emission reduction program to reduce emissions would do the job that SIPs are supposed to do, and do it more effectively. If Congress thought necessary, SIPs could be retained in a simplified form to guard against the possibility that in particular cases the national program might not produce results quickly enough.
- Prevention of significant deterioration: This program aims at making sure that pollution levels that are below the NAAQS levels do not increase unduly. Amending the CAA to assure steady emissions reductions would make that program unnecessary.
- Visibility protection programs: These are separate programs to control emissions to prevent, and eventually to correct, visibility degradation caused by air pollution. But a national $PM_{2.5}$ and ozone control program would target pollutants that also degrade visibility, making a separate program unnecessary.

Any new CAA should retain the fundamental principle of the NAAQS by requiring EPA to define, by a rigorous scientific process, the health effects of different atmospheric levels of widespread air pollutants. Only in this way can we understand how well our control efforts are succeeding. Indeed, these standards could become more scientific and more informative if they did not have the immediate and short-term impacts on control programs that current law provides.

11. This is the level used in EPA's last attempt to establish a regional emissions control program by regulation.

VI. Objections and Qualifications

Such sweeping surgery on a long-established law would naturally raise objections. We can anticipate and briefly respond to some of the most important of them here.

A. *Uncapped Pollutants and Sources*

Under our suggestion, not all pollutants, and not all sources, would be capped and reduced. But the uncapped pollutants, and the smaller uncapped sources of capped pollutants, may simply not be important enough to justify a federal control effort.[12]

Such pollutants and sources would remain subject to state controls. Indeed, since many of them would have local effects, and since state and local governments will probably be much more familiar with these effects and sources than the federal government, states could well have a comparative advantage in addressing them.

Beyond that, Congress if it wished, could readily craft "backstop" provisions to allow EPA to regulate uncapped pollutants and sources, but only upon a showing that they were creating real problems. For example, Congress could authorize EPA to adopt additional controls, or require states to adopt them, on a showing that air quality levels exceeded set levels and were likely to continue to exceed them. That approach would avoid the automatic cycles of regulation that current law generates.

An alternative, more creative solution would harness the power of information disclosure to prod states to act. EPA could be charged with systematically developing and publicizing data on air quality, including any air quality problems caused by uncapped pollutants and sources. States and their citizens could then draw on that information to decide where additional regulation was necessary.

B. *"Hot Spot" Areas Where Air Quality Remains Bad Despite the National Program*

Programs of generic emission reduction often generate concern that some areas will become "hot spots" that do not enjoy the benefits of the broad national emission reduction program. There is no real evidence that past cap-and-trade programs have generated such hot spots.[13] And if the prospect is still worrisome, once again, it would be easy to craft backstop authority, or an information disclosure program to spur states to act.

12. The national control program would almost certainly target sulfur oxides (a precursor of $PM_{2.5}$), nitrogen oxides (an ozone and $PM_{2.5}$ precursor), and perhaps volatile organic compounds (VOCs) (an ozone precursor). The remaining NAAQS pollutants are carbon monoxide and lead. Existing control programs have already reduced emissions of both pollutants largely to insignificance. These control programs aim largely at mobile sources. Our suggestions would not affect mobile source control programs.
13. *See* 69 Fed. Reg. 4566, 4629-30 (Jan. 30, 2004) (analyzing the effect of EPA's Clean Air Interstate Rule).

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VII. GHG Control

We both favor enactment of comprehensive GHG controls. Our suggested CAA reforms would be fully consistent with such a program. Indeed, enactment of GHG controls would greatly strengthen our case for CAA reform.[14]

Even taken alone, CAA reform would reduce GHG emissions, since setting a cap on conventional pollutant emissions—which come largely from electric-generating units—would favor the replacement of high-emitting generators with renewable energy, nuclear energy, and conservation. It would make sense to design CAA reform to capture as many of these reductions as possible.

With this small caveat, our suggested CAA controls would work just as well without an accompanying GHG reduction program as with one.

Of course, success in actually adopting CAA amendments might depend on adopting GHG controls as well. This Article suggests that even those not convinced of the need for GHG controls might find that price worth paying to achieve the benefits of CAA reform.

14. For a detailed argument, see William F. Pedersen, *Adapting Environmental Law to Global Warming Controls*, 17 NYU Envt'l L.J. 256 (2008).