The Failure of Current Legal and Regulatory Mechanisms to Control Interstate Ozone Transport: The Need for New National Legislation

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The northeast states are facing significant ozone nonattainment problems because of long-range transport of pollution from utilities in the Midwest. The States and EPA have made several attempts to control the pollution through rulemakings under the Clean Air Act, interstate transport commissions, voluntary negotiations, and litigation. Although some of these efforts have met with varying degrees of success, all have been fraught with complications and delay. This Note examines the effectiveness of these multiple efforts and concludes that the answer to the ozone transport problem lies in Congressional enactment of comprehensive federal electricity restructuring legislation.

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INTRODUCTION

Pollution travels. Pollutants emitted by motor vehicles or industrial plants in one area are frequently transported hundreds of miles away by wind and other weather conditions. This phenomenon, known as “long-range transport” of air pollution, has given rise to significant debate over the best mechanisms to control it. One group of pollutants of special concern is nitrogen oxides (NO\textsubscript{x}), which are emitted by motor vehicles, power plants, and industrial boilers. In addition to contributing to acid rain, NO\textsubscript{x} emissions react with hydrocarbons in the presence of sunlight to form ground-level ozone, which can cause serious adverse health and environmental effects. As a result, ozone is one of the pollutants regulated by the Environmental Protection Agency (EPA) under the Clean Air Act (CAA).\textsuperscript{1}

Ozone is also subject to long-range transport and has recently fueled a sharp controversy in the eastern United States. Emissions of NO\textsubscript{x} from coal-fired utilities in the Midwest and Southeast have been transported to states in the Northeast, which, as a result, have been unable to meet the national ozone standard. The transport problem has been exacerbated by a current loophole in the CAA that exempts most older coal- and oil-fired power plants from strict pollution control requirements.\textsuperscript{2} This loophole has unfortunately created an economic incentive for utilities to keep older, dirtier facilities in operation much longer than would otherwise have occurred. As a result, these facilities have generated significant amounts of NO\textsubscript{x} pollution and contributed heavily to the ozone transport problem.

Because the CAA imposes stringent sanctions on states unable to attain the ozone standard, the northeast states— with EPA’s help— have attempted to use all means possible to force the midwest and southeast utilities to reduce their NO\textsubscript{x} emissions and stop the ozone transport. These attempts, which range from rulemaking to regional cooperative efforts to litigation, have failed to produce the immediate reductions in ozone necessary to allow the northeast states to meet the ozone standard and to adequately protect public health and the environment. A more effective solution to the transport problem must therefore be found.

The various means to address ozone transport are derived from the Clean Air Act, which Congress amended in 1990 to address the growing problem of interstate transport of air pollution.\textsuperscript{3} To deal with the transport of emissions of sulfur dioxides (SO\textsubscript{2}) and NO\textsubscript{x} from midwestern states to the Northeast and Canada, Congress enacted an “acid rain program” in Title IV of the Clean Air Act Amendments of 1990 (CAAA).\textsuperscript{4} To control the transport of emissions of NO\textsubscript{x} and other ozone precursors,


\textsuperscript{3} "It is arguable whether long-range transport could be adequately addressed by the existing Clean Air Act. The EPA has generally argued that the Clean Air Act as currently written does not allow for EPA action on long-range transport. . . . [The acid rain bill] of this bill resolves these arguments by providing a comprehensive program for regulating electric utility SO\textsubscript{2} and NO\textsubscript{x} emissions." REPORT OF THE COMMITTEE ON ENERGY AND COMMERCE, U.S. HOUSE OF REPRESENTATIVES, ON H.R. 3030, reprinted in SENATE COM. ON ENV'T AND PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1990, at 3387-388 (1993) [hereinafter LEGISLATIVE HISTORY]. "We believe that the transport commissions can play a vital role in abating interstate air pollution control problems." CLEAN AIR CONFERENCE REPORT, reprinted in LEGISLATIVE HISTORY, supra, at 1003.

Congress adopted a cooperative regional strategy. Congress established an Ozone Transport Region (OTR) covering eleven northeastern states and the District of Columbia metropolitan area, and a Northeast Ozone Transport Commission (OTC) charged with assessing ozone transport throughout the region and recommending control measures to the EPA. Finally, Congress amended two existing provisions of the Clean Air Act specifically directed at interstate air pollution: the requirement in Section 110(a)(2)(D) that state implementation plans (SIPs) prohibit emissions that contribute to nonattainment in another state, and the process by which a state suffering from pollution transport can petition EPA for relief under Section 126.

These provisions reflect very different approaches to regulating the interstate transport of air pollution. In enacting the acid rain program, Congress laid out a comprehensive, detailed program capping $SO_2$ emissions and allowing the trading of $SO_2$ allowances. Congress’ approach to ozone transport was quite different. Although the 1990 Amendments stipulated that the OTR adopt certain mandatory control measures, the OTC was largely intended as a cooperative regional effort that would allow states to develop their own solutions to the transport problem. The amendments to the SIP requirements in Section 110(a)(2)(D) and the petition process under Section 126 reflect yet another, more traditional approach to regulation in which Congress left responsibility for addressing the problem in EPA’s hands.

Of Congress’ two approaches, only the acid rain program proved adequate. While the acid rain program has met its goals with remarkable success, the regional approach to controlling $NO_x$ has failed to generate anything more than data. Moreover, the provisions that give EPA power to require $NO_x$ reductions from pollution-creating states have led to chaotic rulemaking and litigation at every turn.

This Note will examine the various regulatory approaches in the context of the current controversy over ozone transport.

5. Although Virginia is not named as a state member of the OTR, the portions of Virginia that are considered part of the Washington, D.C., metropolitan area are included in the OTR. Ozone Transport Commission; Recommendation that EPA Adopt Low Emission Vehicle Program for the Northeast Ozone Transport Region, 59 Fed. Reg. 12,914 (Mar. 18, 1994).


Ultimately, this Note concludes that an effective solution will be reached only when Congress comprehensively addresses the interstate pollution transport problem. Part I briefly describes the current controversy and the numerous attempts to resolve it. Part II considers the problems with the various attempts to solve interstate ozone transport. Part II first considers why delegations of regulatory authority to EPA through Sections 110(a)(2)(D) and 126 are an ineffective means to deal with interstate pollution, in large part because of the system of judicial review that surrounds the administrative rulemaking process. Part II then examines two regional interstate transport commissions and explains why reliance on regional efforts or voluntary negotiations is insufficient to resolve interstate transport issues. Finally, Part II explains why litigation has potential but may be ineffective as an alternative means to address the problem. Part III considers the federalism concerns that underlie current U.S. environmental policymaking and explains why these concerns make reliance on state regulation alone inadequate to address interstate pollution. Part III also discusses prior Congressional action to address interstate pollution and compares these situations to that facing the Northeast today. Finally, Part IV proposes that the current ozone transport problem be resolved through Congressional enactment of comprehensive electricity restructuring legislation.

FROM RULEMAKING TO LITIGATION: RECENT AND ONGOING ATTEMPTS TO HALT OZONE TRANSPORT

A. Background

\( \text{NO}_x \) are emitted as a result of the combustion of fossil fuels, primarily by vehicles, fossil fuel-fired power plants, and industrial boilers.\(^9\) In addition to contributing to acid rain, \( \text{NO}_x \) emissions can react with hydrocarbons in the presence of sunlight to form ground-level ozone.\(^10\) Ozone causes adverse health and environmental effects\(^11\) and is one of the pollutants

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regulated by a national ambient air quality standard (NAAQS) under the Clean Air Act.\textsuperscript{12}

The current controversy over ozone transport is driven in large part by the nonattainment program in the 1990 CAAA.\textsuperscript{13} For areas that are designated nonattainment for any pollutant,\textsuperscript{14} the 1990 nonattainment program: sets new deadlines to reach attainment;\textsuperscript{15} requires states to submit revised SIPs to reach attainment;\textsuperscript{16} sets stringent permitting requirements for new and modified stationary sources under the "new source review" (NSR) program;\textsuperscript{17} and imposes harsh sanctions on states that fail to

\textsuperscript{11} INT'L AIR QUALITY ADVISORY BD., supra note 9, at 18. Adverse effects include decline in human lung function, which can lead to respiratory ailments, and damage to forests and food crops. See id.

\textsuperscript{12} CAA § 110, 42 U.S.C. § 7410 (1994). EPA has set NAAQS for six different pollutants (SO\textsubscript{2}, NO\textsubscript{2}, ozone, lead, carbon monoxide, and particulates) but states have discretion to determine how to meet the standards. State programs and measures to reduce pollutants to meet the standards are set forth in state implementation plans (SIPs), which must be approved by EPA. See 40 C.F.R. pt. 50.9-50.10.


\textsuperscript{14} CAA § 107(d), 42 U.S.C. § 7407(d)(1)(A) (1994). Under this section, areas are designated as attainment, nonattainment, or unclassifiable for the particular pollutants for which a NAAQS has been set. 40 C.F.R. Part 81 contains attainment designations for the states. 40 C.F.R. §§ 81.307-81.339 (1999).

\textsuperscript{15} CAA § 172(a), 42 U.S.C. § 7502(a) (1994). Areas have five years from the date of nonattainment designation to attain the primary NAAQS, but the Administrator of the EPA may extend this deadline to ten years from the date of nonattainment designation, considering the severity of nonattainment and the availability and feasibility of pollution control measures. The attainment date for areas in nonattainment for the secondary NAAQS is the date by which attainment can be achieved "as expeditiously as practicable." The Administrator is authorized to extend the attainment date for a primary or secondary NAAQS for one additional year if a state has complied with all requirements in its SIP, and if no more than a minimal number of exceedances of the relevant NAAQS has occurred in an area during the previous year. No more than two one-year extensions are allowed per area.

\textsuperscript{16} CAA § 172(b), (c), 42 U.S.C. § 7502(b), (c) (1994). States must submit revised SIPs within three years of the date of their nonattainment designation. The revised SIP must include several mandatory provisions, including requirements for "reasonable further progress" (RFP), inventories of emissions, compliance with the SIP requirements laid out in Section 110(a)(2), and requirements for permits for construction and operation of new and modified stationary sources.

\textsuperscript{17} CAA § 173, 42 U.S.C. § 7503 (1994). Under NSR, permits will only be issued to proposed new or modified stationary sources if the sources obtain sufficient "offsets" (offsetting emissions reductions from other sources in the area) and comply with the "lowest achievable emissions rate" (LAER), defined as the most stringent emission limitation contained in any state's SIP for that class or category of source. CAA § 171(3), 42 U.S.C. § 7501(3) (1994). A similar preconstruction permitting
meet the statutory deadlines for SIP submittal and NAAQS attainment. Requirements for ozone nonattainment areas are even stricter under the 1990 CAAA. The Amendments establish specific classifications and attainment dates for ozone nonattainment areas and specify mandatory SIP requirements and control measures, which become more stringent as the degree of nonattainment increases. Because of the strict requirements set for states that do not meet the ozone standard and the even stricter penalties for not reaching attainment on time, many of the northeast states currently in nonattainment are extremely concerned about reaching the ozone standard and avoiding the nonattainment penalties.

The other main factor fueling the current controversy is a loophole in the Clean Air Act that exempts older coal- and oil-fired power plants from meeting new source performance standards (NSPS) under Section 111. NSPS are technology-based, nationally uniform standards set by EPA for various categories of stationary sources, including electric utility units. NSPS only apply to new or modified stationary sources.

program exists for new and modified sources in attainment areas. This “prevention of significant deterioration” (PSD) program requires adoption of the more stringent “best available control technology” (BACT) instead of compliance with LAER. CAA §§ 165(a), 169(3), 42 U.S.C. §§ 7475(a), 7479(3) (1994).

18. CAA § 179, 42 U.S.C. § 7509 (1994). States may be subject to highway sanctions prohibiting approval and funding for highway projects other than for safety improvement and accident reduction, and to stringent offset requirements under the NSR program of at least 2 to 1.

19. CAA § 181, 42 U.S.C. § 7511 (1994). Nonattainment areas for ozone are classified as Marginal, Moderate, Serious, Severe, or Extreme. The section lists primary standard attainment dates, which range from November 15, 1993 for marginal areas to November 15, 2010 for extreme areas.

20. CAA § 182, 42 U.S.C. § 7511a (1994). For example, states in marginal ozone nonattainment areas are only required to develop basic vehicle inspection and maintenance programs and new source review permitting programs. States in serious ozone nonattainment areas, on the other hand, are required to develop more comprehensive “enhanced” vehicle inspection and maintenance programs, clean-fuel vehicle programs to encourage the use of alternative fuels, transportation control programs to reduce traffic and congestion, and various other measures aimed at reducing ozone pollution.

21. One recent study by the Northeast States for Coordinated Air Use Management estimated that it would cost the northeast states between $1.4 and $3.9 billion just to offset ozone transported from the Midwest. Additional money would then be required to bring the states into attainment with the ozone standard. See Transported Ozone May Cost Northeast Nearly $4 Billion Absent More Controls, ENV'T REP. (BNA) (July 24, 1998).

22. CAA § 111, 42 U.S.C. § 7411 (1994). NSPS are set by EPA based on “the degree of emission limitation achievable through the application of the best system of emission reduction which . . . has been adequately demonstrated.”


Therefore, unless an older plant is modified to the degree that triggers NSPS, it is effectively grandfathered from the pollution control requirements. Although Congress expected that older utilities would phase out as new sources were built, the loophole has unfortunately created an economic incentive for utilities to keep older, dirtier facilities in operation much longer than would otherwise have occurred.

The net result of the exemption of older coal-fired power plants from NSPS has been the transport of large amounts of NO\textsubscript{x} emissions from midwestern utilities to the Northeast. This transport has exacerbated the already significant ozone nonattainment problems in the Northeast and has struck fear in the region that, regardless of all the local pollution control measures adopted, the northeastern states will still not reach attainment and, as a result, will face sanctions beyond their control to avoid.

B. EPA’s and the States’ Attempts To Resolve the Problem Prove Ineffective

Although the northeastern states and EPA have made several attempts to resolve the NO\textsubscript{x} transport problem over the last several years, their efforts have been largely ineffective and, within the last few years, have led to a situation akin to chaos. In 1995, EPA promulgated the two rules required under the NO\textsubscript{x} Reduction Program in Title IV of the 1990 CAAA, but their

27. Congress believed that it was in the states’ interests to figure out how to deal with the existing sources, and mistakenly thought that adequate political will existed for each state to address existing sources within its SIP.
28. See Ann Brewster Weeks, Advising Nature: Can We Get Clean Air From the Old Dirties?, 33 NEW ENG. L. REV. 707, 715 (1999). Older grandfathered utility units have a competitive advantage since they do not have to incorporate the cost of pollution control into their electricity prices. They can produce electricity at a lower cost than newer units that must charge higher prices to recoup the pollution control costs. The older units can charge less, which leads to increased consumer demand for cheaper electricity and ultimately to increased emissions.
29. The following northeast and mid-Atlantic states are in nonattainment for ozone: Connecticut (serious for several areas, severe for others), 40 C.F.R. § 81.307 (1999); Delaware (severe), 40 C.F.R. § 81.308 (1999); District of Columbia (serious), 40 C.F.R. § 81.309 (1999); Maryland (severe for several areas, serious or marginal for others), 40 C.F.R. § 81.321 (1999); Massachusetts (serious for several areas), 40 C.F.R. § 81.322; New Jersey (severe for most areas), 40 C.F.R. § 81.331 (1999); New York (severe for the New York/New Jersey/Long Island area), 40 C.F.R. § 81.333 (1999); Pennsylvania (severe or moderate in several areas), 40 C.F.R. § 81.339 (1999).
30. See supra note 18 for a list of sanctions and supra note 20 for a list of requirements depending on classification.
provisions are limited. The program requires NOx emissions to be reduced by only two million tons from 1980 levels by the year 2000, while emissions are projected to increase significantly. Moreover, existing control measures are not expected to reduce NOx emissions to the extent needed for the northeastern states to reach attainment. EPA and the northeast states have thus invoked a variety of other measures, ranging from rulemaking to litigation, to address the NOx issue.

1. Interstate Cooperation: OTC and OTAG Recommendations

Although the 1990 CAAA mandated that all states comprising an ozone transport region adopt certain control measures, the Act focused only on mobile sources and emitters of volatile organic compounds (VOCs). Congress thus allowed the states to develop their own recommendations for reducing


32. According to EPA, Phase I of the Acid Rain NOx Reduction Program has reduced NOx emissions 32% from 1990 levels at 263 coal-fired utility units. However, these units only accounted for around three percent of total national NOx emissions in 1997, while more than forty-five percent of the national NOx inventory was attributed to fuel combustion (transportation accounts for almost fifty percent of the inventory). The size of the Phase I reduction is therefore deceiving. Moreover, NOx emissions from these units actually rose one percent between 1996 and 1997 due to increased electricity production. OFFICE OF AIR QUALITY PLANNING AND STANDARDS, U.S. EPA, NATIONAL AIR QUALITY AND EMISSIONS TRENDS REPORT 1997 22-23 (1997), available at http://www.epa.gov/oar/aqtrnd97/chapter2.pdf.

33. OZONE TRANSPORT ASSESSMENT GROUP, OTAG TECHNICAL SUPPORTING DOCUMENT, FINAL STATES' REPORT ON ELECTRIC UTILITY NITROGEN OXIDES REDUCTION TECHNOLOGY OPTIONS 10 (1996). OTAG estimated that NOx emissions would have to be reduced fifty to eighty-five percent to reach attainment of the ozone NAAQS in the OTR. OTAG inventories and modeling, however, show that compliance with Phase I of the NOx Reduction Program is only expected to reduce emissions by twenty-two percent. See also Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,356, 57,377 (Oct. 27, 1998) (downwind areas continue to be in nonattainment even after implementation of all required CAA measures and federal measures).

34. CAA § 184(b), 42 U.S.C. § 7511c(b) (1994). States were required to implement enhanced vehicle inspection and maintenance programs, reasonably available control technology (RACT) for sources of VOCs, and vehicle refueling controls.
transport of NOx emissions, particularly from stationary sources such as coal-fired utilities. Congress ignited this process by directly establishing the OTC in the 1990 CAAA and allowing for the establishment of similar regional commissions. The OTC and other regional transport commissions established under Sections 176A and 184 of the 1990 CAAA are charged with: (1) assessing ozone transport throughout the transport region; (2) assessing strategies to mitigate the interstate pollution; and (3) recommending to EPA "necessary" measures to ensure that SIPs comply with the requirement in Section 110(a)(2)(D) that states not contribute to nonattainment in other states.35 Commissions are also authorized to request EPA to find that the SIP of any state in the transport region is inadequate to comply with Section 110(a)(2)(D).36

The OTC attempted to address NOx emissions but was limited in two respects. First, the OTC efforts were limited geographically to eleven eastern states and the District of Columbia. Thus, while the OTC agreed (with EPA's assistance) to establish a NOx cap and trade program similar to the federal acid rain program, the program can only force NOx reductions from electric utilities and large industrial boilers within these OTC states.37 This regional program does nothing to reduce the real problem—ozone transport from outside the thirteen OTC states. Second, litigation frustrated the OTC's efforts to reduce VOC and NOx emissions from mobile sources, another significant contributor to the ozone nonattainment problem.38 Thus, despite

36. CAA § 176A(c), 42 U.S.C. § 7506a(c) (1994).
37. The program is part of the OTC NOx Budget Program, established as a result of a memorandum of understanding (MOU) adopted by all the OTC states except Virginia in September 1994. The MOU commits the OTC states to reduce NOx emissions in two phases through a NOx cap and trade program. Under the program, the OTC developed a model rule which the individual states have used to develop their own regulations to implement the cap and trade program. Phase I began in 1999; Phase II is set for 2003. Ozone Transport Commission (OTC) NOx Budget Program, available at http://www.epa.gov/airmarkets/otc/overview.html.
38. In 1994, the OTC made one formal recommendation that EPA require all states in the OTR to adopt California's low emission vehicle (LEV) program. Ozone Transport Commission; Recommendation that EPA Adopt Low Emission Vehicle Program for the Northeast Ozone Transport Region, 59 Fed. Reg. 12,914 (Mar. 18, 1994). EPA approved the recommendation and subsequently promulgated a final rule requiring all states to amend their SIPs to adopt the LEV program. Final Rule on Ozone Transport Commission; Low Emission Vehicle Program for the Northeast Ozone Transport Region, 60 Fed. Reg. 4712 (Jan. 24, 1995). The state of Virginia, which had voted against the recommendation, filed a lawsuit challenging EPA's rule. See Virginia v. EPA, 108 F.3d 1397, 1403 (D.C. Cir. 1997). Although the D.C. Circuit held that Section 184 of the Clean Air Act allowed EPA to condition approval of a SIP
Congress' optimistic belief that interstate transport commissions would be the answer to the transport problem, the OTC turned out to be a resounding failure.

A second chance lay in another regional transport group established in 1995. In a March 2, 1995 memorandum to states, EPA acknowledged the difficulty that states were having in addressing pollution transport from upwind areas and called for an assessment of the ozone transport phenomenon. In response to the memorandum and a similar recommendation by the Environmental Council of States (ECOS), EPA, ECOS, the thirty-seven easternmost states and the District of Columbia, industry representatives, and environmental groups decided to form the Ozone Transport Assessment Group (OTAG). OTAG was designed to assess and recommend strategies to reduce the ozone transport problem. Although OTAG was not formed under the authority of CAA Section 176A, its power structure was similar to that of the OTC.

After an extensive two-year assessment of ozone transport and available control options, OTAG submitted its findings and final recommendations to EPA in 1997. OTAG concluded that regional NO\textsubscript{X} reductions were necessary to reduce ozone formation. OTAG recommended a variety of control strategies to

on adoption of particular control measures, the court nevertheless invalidated the rule on the grounds that the Act prohibits EPA from mandating more stringent motor vehicle emission standards outside of California until the model year 2004. Id. at 1410-11.

39. **CLEAN AIR CONFERENCE REPORT, reprinted in LEGISLATIVE HISTORY, supra note 3, at 1003-04.** Ironically, the legislative history indicates that Congress was concerned that EPA (not other states or the courts) would interfere with OTC recommendations.


42. **See id.**


44. **OZONE TRANSPORT ASSESSMENT GROUP, OTAG TECHNICAL SUPPORTING DOCUMENT, FINAL STATES' REPORT ON ELECTRIC UTILITY NITROGEN OXIDES REDUCTION TECHNOLOGY OPTIONS (1997).** OTAG's assessment included a comprehensive emissions inventory of the OTAG region and modeling of air quality data.

EPA, including NO\textsubscript{x} controls on utilities and non-utility point sources and various mobile source-related control measures.\textsuperscript{46} OTAG also recommended that EPA consider a market-based approach to NO\textsubscript{x} reductions, in the form of an emissions cap-and-trade program.\textsuperscript{47} Finally, OTAG recommended that EPA follow through on a prior agency proposal to require states to revise their SIPs to reduce NO\textsubscript{x} emissions.\textsuperscript{48} EPA and the states are currently implementing several of the OTAG recommendations, including adoption of a national low-emission vehicle program, and the agency has also promulgated regulations to establish a NO\textsubscript{x} emissions trading program for the entire eastern half of the United States.\textsuperscript{49} These regulations were met with litigation, however, which delayed the adoption and implementation of any trading program.\textsuperscript{50} Thus, while OTAG has proved to be an important catalyst, litigation and opposition have stalled any hope for immediate solutions.

2. EPA Requires States To Revise Their SIPs

In addition to supporting the OTC and OTAG recommendations, EPA also used OTAG data to push the states to adopt new measures to reduce NO\textsubscript{x} transport. EPA relied primarily on two sections of the 1990 CAAA to call for state action. Section 110(a)(2)(D) requires SIPs to include adequate provisions prohibiting "any source or other type of emissions activity" within the state from emitting any air pollutant in amounts that "contribute significantly to nonattainment in, or interfere with maintenance by" any other state of any primary or secondary\textsuperscript{51} NAAQS, or that interfere with measures in the other state's SIP to prevent significant deterioration of air quality or to

\textsuperscript{46} See id. OTAG recommended nationwide adoption of the following mobile source-related controls: a national low-emission vehicle program, enhanced vehicle inspection and maintenance programs, continued use of reformulated gasoline, and new diesel fuel standards. Id.
\textsuperscript{47} Id.
\textsuperscript{48} Id.
\textsuperscript{50} See infra Part I.B.3.
\textsuperscript{51} EPA sets primary and secondary NAAQS under the authority of CAA § 109. CAA § 109. 42 U.S.C. § 7409 (1994). Primary standards are set at levels "requisite to protect the public health" with "an adequate margin of safety." Id. Secondary standards are set at levels to "protect the public welfare from any known or anticipated adverse effects." The NAAQS are set out in 40 C.F.R. pt. 50.
Section 110(k)(5) authorizes EPA to find that a SIP is “substantially inadequate” to meet any CAA requirement and to require a state to submit a SIP revision to correct the inadequacy.\textsuperscript{53}

Under the authority of these two sections, EPA issued a final rule on October 27, 1998, requiring twenty-two eastern states to submit revised SIPs by September 30, 1999.\textsuperscript{54} This so-called “NO\textsubscript{x} SIP call” required revised SIPs to contain measures to reduce NO\textsubscript{x} emissions enough to allow downwind states to attain and maintain the ozone NAAQS.\textsuperscript{55} The rule requires emission reduction measures to be in place by May 1, 2003, and is intended to address ozone impacts throughout the entire eastern half of the United States (not just the Northeast).\textsuperscript{56}

Not surprisingly, a group of midwest states and utilities quickly filed suit to block implementation of the NO\textsubscript{x} SIP call. In May 1999, the D.C. Circuit granted a petition in the case, \textit{Michigan v. EPA}, to delay the deadline for the NO\textsubscript{x} SIP call until April 27, 2000.\textsuperscript{57} While the court did not rule on the merits of EPA's NO\textsubscript{x} SIP call, it did significantly delay the timing for SIP submittals and thus any subsequent action to reduce NO\textsubscript{x} emissions. The case was eventually heard in late 1999 and the court issued a 2-1 decision in favor of EPA on March 3, 2000.\textsuperscript{58} The full court affirmed the decision on June 22, 2000, without rehearing the case, and imposed a new deadline for SIP submissions.\textsuperscript{59} While the case was ultimately decided in EPA's favor, the litigation delayed the deadline for SIP revisions—and action to implement new reduction measures—by more than one year.\textsuperscript{60}

\begin{itemize}
\item[55.] \textit{id.} at 57,358.
\item[56.] \textit{id.} at 57,374.
\item[57.] \textit{Michigan v. EPA}, No. 98-1497 (D.C. Cir. May 25, 1999). Submission of revised SIPs was stayed pending further order of the court.
\item[58.] \textit{Michigan v. EPA}, 213 F.3d 663 (D.C. Cir. 2000).
\item[59.] \textit{Michigan v. EPA}, No. 98-1497 (D.C. Cir. June 22, 2000). The court granted the states 128 days to submit revised SIPs, setting a new deadline of October 30, 2000.
\item[60.] The initial deadline for SIP revisions was September 30, 1999. Finding of Significant Contribution, supra note 54.
\end{itemize}
3. **Northeast States Petition EPA Under Section 126**

In conjunction with the NO\textsubscript{x} SIP call, EPA also attacked the NO\textsubscript{x} transport problem through another regulatory mechanism, Section 126 of the CAA.\(^6\) Section 126(b) authorizes any state to petition EPA for a finding that "any major source or group of stationary sources" in an upwind state emits or would emit any air pollutant in violation of the prohibition of Section 110(a)(2)(D).\(^6\) EPA is required to make a finding on a Section 126 petition within sixty days of receipt.\(^6\) If EPA grants a finding, no new or modified sources can be built or operated\(^6\) and existing sources must shut down in three months in the upwind states unless EPA directly regulates the sources (by establishing emissions limitations and setting a compliance period no longer than three years from the date of the finding).\(^6\)

In August 1997, eight northeastern states submitted Section 126 petitions to EPA alleging that NO\textsubscript{x} emissions from coal-burning utilities and industrial boilers in the Midwest and Southeast were contributing to their ozone nonattainment.\(^6\) In 1999, four additional Section 126 petitions were filed by several mid-Atlantic states and the District of Columbia.\(^6\) EPA responded to the original eight Section 126 petitions in a final rule published on May 25, 1999.\(^6\) Recognizing the opportunity to coordinate rulemakings, the final rule attempted to link the Section 126 response with EPA's NO\textsubscript{x} SIP call. EPA's Section 126 final rule thus made affirmative technical findings but deferred actual findings to allow states to comply with the SIP call and submit revised SIPs.\(^6\) In other words, the rule set an "automatic trigger mechanism:" a state's compliance with the NO\textsubscript{x} SIP call

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\(^{62}\) CAA § 126(b), 42 U.S.C. § 7426(b) (1994).
\(^{63}\) Id.
\(^{64}\) CAA § 126(c), 42 U.S.C. § 7426(c) (1994).
\(^{65}\) Id.
\(^{67}\) Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. 2674, 2679 (Jan. 18, 2000) (codified as amended at 40 C.F.R. pts. 52 & 97). The three mid-Atlantic states were Delaware, Maryland, and New Jersey.
\(^{69}\) Id. at 28,252.
would eliminate the basis for an affirmative finding under Section 126.\textsuperscript{70} In the absence of the SIP call, the CAA would have required EPA to make a finding under Section 126 as to whether the sources named in the petitions violated the prohibitions of Section 110(la)(2)(D).\textsuperscript{71} EPA's Section 126 final rule also laid out the general parameters of a NO\textsubscript{x} emissions cap-and-trade program as the control remedy and indicated that the final details and allowance allocations would be promulgated by July 15, 1999.\textsuperscript{72}

Several complications arose within weeks of EPA's final rule on the Section 126 petitions. As mentioned above, the litigation challenging EPA's NO\textsubscript{x} SIP call led the D.C. Circuit to stay the NO\textsubscript{x} SIP call until April 2000.\textsuperscript{73} This upset the linkage between the Section 126 rule and the NO\textsubscript{x} SIP call by prohibiting EPA from requiring revised SIPs by September 1999, which effectively delayed any action on the Section 126 final rule until April 2000.\textsuperscript{74}

A second decision by the D.C. Circuit also thwarted EPA's attempts to address the problem of NO\textsubscript{x} transport. All eight states had based parts of their Section 126 petitions on violations of the one-hour ozone NAAQS.\textsuperscript{75} EPA had lowered the ozone NAAQS from a one-hour standard to an eight-hour standard (0.08 parts per million based on an eight-hour average) in a July 1997 final rule.\textsuperscript{76} Five of the eight states, however, had also based parts of their Section 126 petitions on violations of EPA's new eight-hour ozone standard.\textsuperscript{77} In May 1999, however, the D.C. Circuit court invalidated the new standard and remanded it to EPA for additional scientific justification.\textsuperscript{78} By

\begin{itemize}
\item \textsuperscript{70} Id. at 28,256.
\item \textsuperscript{71} Id.
\item \textsuperscript{72} Id. at 28,252.
\item \textsuperscript{73} Michigan v. EPA, No. 98-1497 (D.C. Cir. May 25, 1999).
\item \textsuperscript{74} Id.
\item \textsuperscript{75} Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250, 28,251 (May 25, 1999) (codified at 40 C.F.R. pt. 52).
\item \textsuperscript{76} National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856 (July 18, 1997) (codified as amended at 40 C.F.R. pt. 50).
\item \textsuperscript{77} See id.
\item \textsuperscript{78} In American Trucking Ass'ns, Inc. v. U.S. EPA, 175 F.3d 1027 (D.C. Cir. 1999), aff'd in part and rev'd in part sub nom., Whitman v. Am. Trucking Ass'ns, 121 S. Ct. 903 (Feb. 27, 2001), a three-judge panel of the D.C. Circuit struck down the new ozone standard as an unconstitutional violation of the nondelegation doctrine. EPA had revised the NAAQS for ozone in a July 1997 final rule that lowered the standard to 0.08 ppm based on an eight-hour average (i.e., an eight-hour standard). In ruling against EPA, the panel found the new eight-hour standard flawed on grounds that EPA had not provided any "intelligible principle" for choosing this
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invalidating the eight-hour standard, this decision also upset part of the justification for EPA’s Section 126 final rule.

EPA responded to the complications by temporarily delaying the effectiveness of the final rule on the Section 126 petitions and by proposing an alternative rulemaking. According to EPA, it no longer made sense to defer final action on the petitions and to provide an automatic trigger mechanism tied to the schedule for action on the NOx SIP call. EPA instead proposed to delete the automatic trigger mechanism for making findings; to find that sources were emitting in violation of Section 110 and grant the portions of the Section 126 petitions that were based on attainment of the old one-hour standard, and to indefinitely postpone determinations based on the new eight-hour standard, pending further developments in the NAAQS litigation.

Final EPA action on the Section 126 petitions came on December 17, 1999, when the agency granted four of the original eight petitions based on violations of the one-hour ozone standard. This Section 126 final rule lists the sources—primarily large electric utilities and industrial boilers in twelve states—whose emissions contribute to ozone nonattainment in the petitioning states and sets up a federal NOx emissions cap-and-trade program to control emissions from these sources. The final rule indefinitely stays affirmative findings based on the eight-hour standard. EPA plans to address four pending petitions in a subsequent action.

standard over other options (e.g., 0.07 ppm or 0.09 ppm). After the D.C. Circuit approved the decision en banc, EPA appealed the decision to the Supreme Court. The Supreme Court recently upheld the ozone standard chosen by EPA. Whitman v. Am. Trucking Ass’n, 121 S. Ct. 903 (Feb. 27, 2001). The Court held that the standard laid out in § 109 of the CAA, which requires EPA to set NAAQS at levels “requisite to protect public health ‘with an adequate margin of safety’” did not violate the non-delegation doctrine and did not permit EPA to consider costs along with health effects.

81. Id. at 33,965.
82. Id.
84. Id. at 2751.
85. Id. at 2686.
86. Id. at 2676.
87. Id. at 2679.
Once again, EPA’s Section 126 rule met with opposition. Several electric utilities have sued to directly block implementation of EPA’s May 1999 final rule on the Section 126 petitions.\(^8\) The utilities have attacked the evidence used to support EPA’s rule, arguing that EPA’s data did not adequately distinguish sources and thus did not prove that the individual sources targeted by the Section 126 rule were in fact the contributors to the ozone nonattainment problem in the Northeast.\(^9\) The D.C. Circuit has not yet decided the case.

4. **Federal NSR Enforcement Actions**

On November 3, 1999, EPA and the Department of Justice launched enforcement actions against thirty-two electric power plants in the Midwest and South, alleging violations of the NSR provisions of the Clean Air Act.\(^9\) The plants were all grandfathered under the Act and thus not required to comply with NSPS requirements unless they made “major” modifications, which the government now alleges they did.\(^9\) After an extensive investigation, EPA and the Department of Justice filed civil suits against seven electric utility companies alleging violations at seventeen plants, an administrative order against one federally operated company alleging violations at seven of its plants, and eight notices of violation to eight plants not targeted in the lawsuits.\(^9\) On March 1, 2000, EPA and the Department of

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\(^{89}\) *Air Pollution: Utilities Tell Court that Ozone Transport Findings Under CAA Should be Vacated*, ENV'T REP. (BNA) (Dec. 18, 2000).


\(^{91}\) See id. The NSR program establishes permitting and pollution control equipment requirements for new “major” stationary sources of air pollution and for existing “major” stationary sources making “major” modifications. Requirements vary, depending on whether the source is in an attainment or nonattainment area. The definition of a “major” source is based on the source’s potential to emit certain air pollutants, or on the type of source. CAA § 112(a)(1), 42 U.S.C. § 7412(a)(1) (1994); CAA § 169(1), 42 U.S.C. § 7479(1) (1994); 40 C.F.R. §§ 52.21(b)(1), 51.166(b)(1). Major modifications result from physical or operational changes at the source that result in significant net increases in emissions of a pollutant, as defined in 40 C.F.R. §§ 52.21(b)(2), (b)(23), §§ 51.166(b)(2), (b)(23).

Justice expanded the lawsuits by charging another twelve plants owned by the utilities with Clean Air Act violations.93

The complaints allege that the companies made major modifications at their plants that triggered NSR permitting requirements, but that the companies failed to apply for the necessary permits and to install "best available control technology" (BACT) as required under the NSR program.94 As a result, the plants released almost one million tons of NOx and millions of tons of SO2 and particulate matter, which contributed significantly to the ozone transport problem affecting downwind states in the northeast and mid-Atlantic regions.95 The lawsuits have already led to two settlements with utilities.96 The rest of the cases are still pending.

5. State Citizen Suits

The roadblocks delaying action on the NOx SIP call and the Section 126 petitions led several northeast states to yet another attempt to control the transport of NOx emissions—litigation. On November 29, 1999, the attorneys general for New York and Connecticut filed their own citizen suit against one midwest

94. Press Release, supra note 90.
95. Id.
96. EPA and the Justice Department first settled the enforcement action against Tampa Electric Company in February 2000. Under the settlement, over the next ten years Tampa Electric will pay a $3.5 million civil penalty, switch to natural gas at least one of its plants, install pollution control equipment, and spend at least $5 million on environmental projects to develop innovative means to reduce NOx emissions. Press Release, Envtl. Prot. Agency, U.S. Settles Landmark Clean Air Act Case Against Electric Utility (Feb. 29, 2000), available at http://yosemite.epa.gov/opa/admpress.nsf/. EPA and the Justice Department reached a second settlement in December 2000 with Cinergy Corporation. The settlement, which is valued at $1.4 billion, requires Cinergy to install substantial amounts of pollution control equipment, perform $21.5 million worth of environmental projects, and pay $8.5 million in fines. Press Release, Envtl. Prot. Agency, U.S. Announces Clean Air Settlement with Cinergy (Dec. 21, 2000), available at http://yosemite.epa.gov/opa/admpress.nsf/. Finally, EPA, the Justice Department, and New York (which had filed a separate suit in July 2000) have reached a settlement with Virginia Power, which was not one of the utilities initially targeted in the government's enforcement action. This settlement requires the company to reduce NOx emissions by over two-thirds between 2004 and 2013, install pollution control equipment, reduce SOx emissions, switch to natural gas at one of its plants, pay a $5.3 million civil penalty, and perform $13.9 million worth of environmental mitigation projects. Press Release, Envtl. Prot. Agency, United States and New York Reach Agreement with Electric Utility to Reduce Air Pollution (Nov. 16, 2000), available at http://yosemite.epa.gov/opa/admpress.nsf/.
utility for alleged NSR violations at ten of its coal-fired plants in the Midwest and South.  

Because five of the ten plants are also named in the civil action filed by the government in early November, the states filed their complaint as "proposed plaintiff intervenors" in that enforcement action so that the court may consider all cases as one.  

The other five plants will be considered in a separate suit.  

New York filed an additional suit against another company targeted in the government enforcement action.  

Meanwhile, New Jersey intervened on December 3, 1999, in the federal enforcement suit filed against six plants owned by the same midwest utility targeted in the New York and Connecticut suit.  

Thus far, two of the suits have settled.  

The rest are still pending.

6. Voluntary negotiations

During the summer of 1999, the northeast and midwest states and utilities began to negotiate a solution to the ozone transport problem that would involve voluntary limits on NOx emissions.  

The negotiations broke down in August after the parties reached an impasse on an appropriate emissions level, since the lowest NOx emissions level proposed by the midwest states was still sixty-seven percent higher than the level that the northeast states had agreed to adopt for themselves.  

Negotiations between the states and EPA have recently been revived in the context of the NSR enforcement actions, but neither side has yet released any information regarding their status.


98. Air Pollution, supra note 97.

99. Id.


102. Press Release, supra note 100.


104. See id.
II

PROBLEMS WITH RECENT ATTEMPTS TO CONTROL OZONE TRANSPORT

Regulation, interstate cooperation, and litigation cannot control interstate pollution on their own. The complications of the rulemaking process, the limitations of regional voluntary efforts, and the risks inherent in litigation—combined with the characteristics of interstate ozone transport—make centralized, federally-mandated controls the most effective solution to the problem.

A. The EPA Lacks Sufficient Authority to Impose an Effective Pollution Control System

The interstate pollution transport problem presents a case in which the regulatory agency, acting alone, lacks the power and authority to impose an effective system to control harmful pollution. Although many commentators focus predominantly on limiting agency discretion, the problem of interstate pollution instead raises concerns about giving EPA effective tools to address a national problem that Congress recognizes but inadequately addresses. This has, thus far, proved a futile task because judicial review surrounds administrative rulemaking. Furthermore, Congress has already recognized that other factors may require it to retain control over certain interstate environmental problems rather than provide EPA with discretion to regulate. As a result, interstate pollution is an area where arguments in support of specific Congressional action weigh far heavier in the balance than those in favor of delegation of rulemaking authority to EPA.

Judicial review opens up almost any agency decision or rulemaking to challenge, and not always for legitimate reasons. Protections against unfettered agency discretion do not lie in clear standards articulated by the legislature, but in procedural

105. For nearly the past century, both Congress and the courts have been concerned with curbing the power of administrative agencies. The courts have in limited instances invoked the nondelegation doctrine to strike down agency actions. See Panama Refining Co. v. Ryan, 293 U.S. 388 (1935); A.L.A. Schechter Poultry Corp. v. U.S., 295 U.S. 495 (1935); Am. Trucking Ass'ns v. U.S. EPA, 175 F.3d 1027 (D.C. Cir. 1999), aff'd in part and rev'd in part sub nom., Whitman v. Am. Trucking Ass'ns, 121 S. Ct. 903 (Feb. 27, 2001). Congress has subjected agencies to strict procedural requirements under the Administrative Procedure Act, which also permits final agency actions to be subject to judicial review. Administrative Procedure Act (APA), 5 U.S.C. §§ 551-706 (1994).
safeguards and executive, legislative, or judicial checks. These checks—particularly judicial checks—are one reason why an adequate regulatory solution has not yet been found for the problem of interstate transport of pollution. While judicial review is an extremely important check on administrative power, it can also be used as a strategic tool used to delay and disable an agency intent on doing the right thing, often at the expense of the interests of other states and the environment. The lawsuits challenging EPA's NOx SIP call and Section 126 final rule are prime examples of such self-serving tactics.

The litigation challenging EPA's rulemakings has significantly delayed planning and action to curb NOx emissions and eliminate the nonattainment problem in the Northeast. Under the NOx SIP call issued in October 1998, states were required to submit SIP revisions by the end of September 1999 and to have measures to curb NOx emissions in place by May 1, 2003. These dates were delayed significantly by the D.C. Circuit's decision to stay any further action on the NOx SIP call until April 27, 2000, pending hearings by the court on the merits of the industry challenge. Even though the court ultimately ruled in EPA's favor and upheld the NOx SIP call, the damage caused by the delay was already done. The D.C. Circuit's final deadline for the states to submit their SIPs was Oct. 30, 2000—more than one year after EPA's original deadline. The problem with the delay in SIP submissions is a corresponding delay in the adoption of measures to reduce NOx emissions to halt the pressing ozone transport problem. Given the nonattainment

112. Michigan v. EPA, No. 98-1497 (D.C. Cir. June 22, 2000); see also Air Pollution: NOx Decision Upheld by Appeals Court; States Have New Deadline for SIP Submittals, ENV'T REP. (BNA) (June 26, 2000).
deadlines that are rapidly approaching for severe and extreme ozone nonattainment areas—and have passed for marginal, moderate, and serious ozone nonattainment areas—even a one year delay in implementation of NO\textsubscript{X} control measures can have significant consequences.\textsuperscript{113}

The litigation has also reduced the tools available to EPA under the Clean Air Act to address the transport problem. While EPA has statutory authority under Section 110(k)(5) to request SIP revisions, the lawsuit challenging the NO\textsubscript{X} SIP call temporarily eliminated this option. Moreover, the court's stay of the NO\textsubscript{X} SIP call upset EPA's attempt to coordinate two of its rulemakings. In an era of regulatory reform,\textsuperscript{114} the irony of this result is clear. EPA's attempts to be efficient and to allow states to decide how to curb their NO\textsubscript{X} emissions have nevertheless been thwarted by the system of judicial review.\textsuperscript{115}

Even more damaging is the prospect of an EPA loss on the Section 126 final rule before the D.C. Circuit.\textsuperscript{116} Such a loss is entirely feasible, given the conservative stance toward environmental issues that the court has adopted in several recent cases.\textsuperscript{117} If the court in the Section 126 challenge invalidates EPA's rulemaking, it will effectively destroy an important tool that Congress made available to the agency to address interstate transport of ozone pollution. Despite having been strengthened in the 1990 CAAA—and despite EPA's willingness to use its authority under Section 126—this provision would not be a viable option to address interstate pollution.


\textsuperscript{114} Regulatory reform is focused on decreasing the size and increasing the efficiency of the federal government, with particular emphasis on limiting the regulations promulgated by federal agencies. Congress has unsuccessfully attempted to pass "regulatory reform" bills imposing significant limits on the power of executive agencies, while President Clinton has established a "Reinventing Government" program aimed at reducing the size of the federal government. For descriptions of the executive and legislative efforts to implement regulatory reform, see Richard H. Pildes & Cass R. Sunstein, Reinventing the Regulatory State, 62 U. Chi. L. Rev. 1 (1995); Thomas O. McGarity, The Administrative State at a Crossroads: The APA at Fifty: The Expanded Debate over the Future of the Regulatory State, 63 U. Chi. L. Rev. 1463 (1996).

\textsuperscript{115} Cross, supra note 108, at 1043.

\textsuperscript{116} Appalachian Power Co. v. EPA, No. 99-1200 (D.C. Cir. 2000).

Finally, the stream of litigation raises a fundamental question about the nature of the current administrative law system as applied to environmental regulations. From the NAAQS to ozone transport to regional haze regulations, EPA's air pollution program has been challenged at every step and on all fronts. If every delegation of rulemaking authority to EPA and every corresponding agency action is challenged in court, the very purposes and efficiency of delegation are thwarted.\textsuperscript{118} Even if courts eventually defer to EPA, as is possible under the \textit{Chevron} doctrine,\textsuperscript{119} the agency has already spent significant time and resources defending its rulemakings. Some areas of the environmental field—such as interstate pollution transport—are simply too controversial and too prone to challenge to rely on EPA action. These are areas where Congress should pass specific legislation, drawing on the expertise of EPA and other scientific and economic bodies for assistance in devising solutions. Although the legislative process would obviously require time and resources, it would drastically reduce the expense and delay of post-promulgation litigation aimed at agencies. This would not only accelerate the pace of environmental cleanup and ecological protection, but it would also allow EPA to spend its time and resources more productively in areas that are less prone to controversy—and thus less likely to lead to litigation.

\textbf{B. The Limits of Interstate Commissions}

Congress' enthusiasm in the 1990 CAAA for regional transport commissions unfortunately far exceeded the

\footnotesize{\textsuperscript{118} Vague delegations are needed because agencies often have more expertise—technical, economic, or scientific—than Congress in the area that they charged with regulating and are therefore trusted to make better decisions. Vague delegations allow regulatory agencies to decide major policy questions that were unanticipated by Congress at the time a statute was enacted. Davis, supra note 106, at 720. They are needed because legislators are unable to write meaningful standards that assist agencies in answering major policy questions. See id. Moreover, forcing Congress to legislate on all major policy questions as they arise would waste valuable time and resources. See id. at 722.

\textsuperscript{119} Chevron, U.S.A., Inc. v. NRDC, Inc., 467 U.S. 837 (1984). Under \textit{Chevron}, if a statute is silent or ambiguous with regard to an issue, "a court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency" charged with administering the statute. Id. at 844. A court thus must defer to a reasonable interpretation of a statute by an agency if the clear intent of Congress cannot be discerned. The safety of deference to the agency under \textit{Chevron} is not so obvious, however, given the recent trend of the D.C. Circuit. See, e.g., Nat'l Mining Ass'n, 145 F.3d at 1404 (overturning an EPA/Army Corps interpretation of the term "discharge" in Section 404 of the Clean Water Act to include incidental fallback from dredging activity).}
effectiveness of these commissions. Congress intended the OTC and subsequent commissions to engage in regional negotiations and make recommendations regarding regulations and voluntary programs to control interstate pollution transport. The commissions can thus be seen as part of the recent movement in environmental law away from command-and-control regulation and toward flexible, voluntary, and cooperative approaches to environmental protection.\(^{120}\) They also embody the growing trend toward negotiation and mediation to resolve environmental disputes.\(^{121}\)

Although OTAG was an invaluable source of scientific and technical information on ozone transport, neither OTAG nor the OTC has successfully resolved the interstate ozone transport problem. As mentioned earlier, much of the failure of the OTC to force cuts in ozone transport may be blamed on its narrow geographical focus and on the unfortunate decision of the D.C. Circuit in *Virginia v. EPA*\(^{122}\) to reject mandatory adoption of the California LEV program. OTAG, on the other hand, has proven more successful in driving action to reduce ozone transport. OTAG was nevertheless limited by the problem described earlier: the commission was forced to rely on EPA to implement its recommendations, which once again opened the door to litigation.

The 1990 CAAA only empowers commissions to conduct research and make recommendations; the commissions may not require states or EPA to adopt its recommendations.\(^{123}\) Regardless of how necessary a commission deems certain control measures to be, the commission must rely on EPA to approve

\(^{120}\) In recent years, Congress and EPA have attempted to avoid command-and-control regulation in favor of market-based environmental regulation and flexible, voluntary, cooperative programs. The SO\(_2\) emissions trading program in Title IV of the 1990 CAAA is an example of market-based environmental regulation. EPA’s Common Sense Initiative (CSI) and Project XL are examples of flexible, voluntary, cooperative approaches to environmental regulation. See EPA’s CSI homepage, available at http://www.epa.gov/commonsense/index.html, and EPA’s Project XL homepage, available at http://www.epa.gov/projectxl/.

\(^{121}\) For a description of situations where environmental dispute resolution has been used as an alternative to litigation, see LAWRENCE S. BACOW & MICHAEL WHEELER, ENVIRONMENTAL DISPUTE RESOLUTION (1984). For a discussion of the factors that influence the success of negotiation and mediation in resolving environmental disputes, see GAIL BINGHAM, RESOLVING ENVIRONMENTAL DISPUTES: A DECADE OF EXPERIENCE (1986).

\(^{122}\) *Virginia v. EPA*, 108 F.3d 1397 (D.C. Cir. 1997).

\(^{123}\) See supra text accompanying notes 35-36 for additional information.
and implement any of its recommendations. EPA's record of adopting recommendations can be commended. The agency approved and promulgated a final rule adopting the OTC recommendation that the California LEV program be required in the OTR. EPA has also followed up on several OTAG recommendations, including the calls for utility and non-utility NOx controls and a national low-emission vehicle program (NLEV). Nevertheless, as explained earlier, the system of judicial review that accompanies rulemaking has made this reliance on EPA unsound. The storm of litigation that followed EPA's NOx SIP call and Section 126 rulemakings vividly highlights the problems with relying on EPA for control measures.

The failure of the OTC and OTAG is particularly galling because EPA maximized the commissions' potential for success. Studies of environmental dispute resolution have found that agreements are more likely to be reached and implemented when there is direct participation by parties with the authority to make and implement decisions, as opposed to mere recommendations. The presence of decisionmakers in negotiations lends extra certainty to the process, since no changes to an agreement are likely to occur once parties with decisionmaking authority have met. Under this theory, the OTAG and OTC processes should have been strengthened by the fact that the decisionmaker—EPA—was represented in both groups. Indeed, the fact that both groups successfully agreed

124. The situation is similar with respect to OTAG recommendations, which must be implemented by EPA. OZONE TRANSPORT ASSESSMENT GROUP, OTAG TECHNICAL SUPPORTING DOCUMENT ch. 1 (1997).
127. Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines: State Commitments to National Low Emission Vehicle Program (NLEV), 63 Fed. Reg. 926 (Jan. 7, 1998) (codified at 40 C.F.R. pts. 9, 65, & 86). The NLEV program went into effect after EPA received notifications from all the automakers and nine northeastern states that they were voluntarily opting into the program. Id. at 11,374 (1998).
128. See BINGHAM, supra note 121, at 104.
129. See id.
130. CAA § 176A(b), 42 U.S.C. § 7506a(b) (1994). Transport commissions established under the CAA comprise, at a minimum: (a) the Governor of each state in
on recommendations to EPA may be attributed in part to the participation of the decisionmaker.

Moreover, in the case of the OTC, participation was limited to representatives from twelve states, the District of Columbia, and EPA.\textsuperscript{131} Given this small group and the fact that all the participating states were affected in some way by the ozone transport problem, one would expect that agreement could be reached rather easily. Indeed, acceptance of the OTC recommendation and EPA's subsequent adoption of it was nearly unanimous. Although four states had voted against the recommendation for LEV adoption, only one state (Virginia) sued to challenge the EPA rule.\textsuperscript{132} OTAG, on the other hand, comprised a much larger group with varying interests: representatives from thirty-seven states—both upwind and downwind—and various industry and environmental groups.\textsuperscript{133} Despite the presence of EPA in OTAG discussions, it is entirely possible that the size of the group—which exceeded 700 public and private sector participants—counteracted any potential benefit of having the decisionmaker involved.\textsuperscript{134} Combined with the fact that OTAG did not have any actual authority to require implementation of any recommendations it developed,\textsuperscript{135} the large size of the group might have led members to feel that OTAG did not have any real impact. Thus, regardless of "agreement" on the final OTAG recommendations to EPA, members might have believed that there was nothing significant at stake, only talk. Reaching agreement on recommendations did not mean that they would be implemented or that any ozone control measures would be required. It simply meant that stage one of the process was over, and that more opportunities to protest lay ahead during stage two.\textsuperscript{136}

Not surprisingly, implementation of both the OTC and OTAG recommendations was met with lawsuits. While the OTC, OTAG,
and other transport commissions can be sources of data and important sounding boards for new ideas and recommendations, in the end they will not solve the ozone transport problem. First, by allowing the transport commissions to only study and recommend, without granting them any independent power, Congress (and ECOS, in the case of OTAG) placed decisionmaking authority in the hands of EPA. This was likely necessary, since there are practical and legal reasons why it may not be feasible to grant decisionmaking powers to an interstate transport commission. Nevertheless, the potential challenges to EPA decisions to implement commission recommendations may ultimately detract from the commissions' effectiveness. Second, by providing for the creation of additional transport commissions, Congress opened up the process to greater participation— with all of the complications that brings. While there can be strength in numbers (and the opportunity for all voices to be heard), as the size of participation increases the likelihood of reaching an agreement that satisfies all interests diminishes. As a result, Congress should recognize that the regional transport commissions are not an absolute answer to ozone transport problems. The interstate pollution transport issues will ultimately need to be addressed by the legislature instead.

C. The Nature of Ozone Transport Precludes Voluntarily Negotiated Solutions

Interstate ozone transport also appears to be one of a set of problems that do not lend themselves to negotiated solutions. The characteristics of ozone transport explain why voluntary negotiations between the northeast states and the midwest states and utilities broke down during the summer of 1999 before agreement could be reached.

The causes and effects of ozone transport are asymmetrical. From an environmental standpoint, the asymmetry lies in the fact that the NO_x pollution is caused by utilities in the Midwest and Southeast, while the actual harms are felt hundreds of miles away in the Northeast and Mid-Atlantic. From an economic standpoint, the asymmetry is the result of the uneven costs and benefits of pollution control. If the costs of reducing NO_x emissions were borne by the midwest utilities responsible for generating them, the clean air benefits of reduced emissions would accrue primarily to the Northeast. There is an added wrinkle to the economic asymmetry of ozone transport in that
the current lack of pollution control by the midwest utilities has actually provided them with a significant competitive advantage in the electricity industry.\textsuperscript{137} By not bearing the cost of pollution control requirements, the midwest utilities have been able to produce electricity at a cheaper price, and have thus profited at the expense of the strictly controlled utilities in the Northeast.\textsuperscript{138} Moreover, if left uncontrolled, the current restructuring of the utility industry has the potential to exacerbate the asymmetry of this situation.\textsuperscript{139} NO\textsubscript{x} pollution control requirements would impose a substantial cost on the midwest utilities, all for the benefit of the Northeast.

These environmental and economic asymmetries not only leave the northeast states with relatively little bargaining power in negotiations with the midwest states, but they create very little incentive for the midwest parties to negotiate at all. When pollution spillovers flow in all directions, then all states are affected and therefore have incentives to cooperate to impose pollution control requirements.\textsuperscript{140} If the "flow of harms" is in only one direction, however, the incentive for the unaffected state or states to negotiate a workable control regime is greatly reduced.\textsuperscript{141} Because the current ozone transport problem has a one-directional flow of harms, there is little environmental or economic incentive for the midwest states and utilities to seriously negotiate for pollution control requirements.

The difficulties that plague ozone transport negotiations are best highlighted by a comparison with the situation the Great Lakes states faced almost two decades ago. By the early 1970s, water quality problems had become extremely severe in the Great Lakes.\textsuperscript{142} Loadings of phosphorus, oil, industrial

\textsuperscript{137} One study found that requiring "competitively neutral environmental standards would remove existing disparities in the NO\textsubscript{x} emissions rates in the electric industry . . . [and] eliminate the environmental subsidy enjoyed by higher emitting companies and provide significant NO\textsubscript{x} emission reductions." E\textsuperscript{3} VENTURES, INC., AN ENVIRONMENTAL AND ECONOMIC ASSESSMENT OF NO\textsubscript{x} CONTROLS FOR EASTERN U.S. ELECTRIC GENERATING FACILITIES CONCURRENT WITH ELECTRICITY DeregULATION 8 (Sept. 1997) (prepared for Public Service Electric and Gas Company, Newark, N.J.), available at http://e3ventures.com/whtpaper.pdf.


\textsuperscript{139} See id. at 74-76.

\textsuperscript{140} Daniel C. Esty, Revitalizing Environmental Federalism, 95 MICH. L. REV. 570, 591 (1996).

\textsuperscript{141} Id.

chemicals, pesticides, and heavy metals were taking their toll on
the ecosystem, as were invasions of non-native aquatic species
and sediment contamination.\textsuperscript{143} To combat the growing
degradation of the ecosystem, the individual Great Lakes states
agreed to cooperate as a region.\textsuperscript{144} In 1982, the states formed
the Council of Great Lakes Governors and have since entered into
several voluntary agreements aimed at reducing pollution in the
Great Lakes ecosystem.\textsuperscript{145} The agreements have met with
success: pollution has decreased significantly and some of the
previously "dead" lakes have revived.\textsuperscript{146}

The success of the voluntary Great Lakes agreements, which
reflect a regional approach to pollution control, can be attributed
in large part to the nature of the water quality problem. Unlike
the environmental asymmetry of ozone transport, pollution in a
lake ecosystem affects all states to some extent. The degradation
of a lake ecosystem is inherently symmetrical in that it affects all
who border it, use it, and depend on it. Regardless of whether
pollution from one source is transported elsewhere in the lake,
the negative impacts are felt throughout the system. As a result,
even polluters have some incentive to reduce pollution. This
shared impact is reflected in the very term "ecosystem" that is so
prevalent in the voluntary agreements adopted by the Great
Lakes states.\textsuperscript{147}

Furthermore, the costs of cleanup in the Great Lakes are
shared among parties ranging from industry to government to
the general public. Unlike the costs of NO\textsubscript{x} emissions reductions,
which would be borne singly by one industry in the Midwest, the

\begin{footnotes}
\footnote{143. Id.}
\footnote{144. Eight states comprise the Great Lakes region: Illinois, Indiana, Michigan,
Minnesota, New York, Ohio, Pennsylvania, and Wisconsin. In addition, the Canadian
provinces of Ontario and Quebec participate in many regional cooperative efforts to
control pollution in the Great Lakes. The 1972 and 1978 Great Lakes Water Quality
Agreements, the Great Lakes Commission, and the 1997 U.S.-Canadian Binational
Toxics Strategy are but a few of the efforts in which the Canadian provinces work
jointly with the Great Lakes states.}
\footnote{145. Steven M. Siros, \textit{Transboundary Pollution in the Great Lakes: Do Individual
States Have Any Role to Play in its Prevention?}, 20 S. ILL. U. L.J. 287, 299-300 (1996).}
\footnote{146. U.S. EPA, \textit{UNITED STATES GREAT LAKES PROGRAM REPORT ON THE GREAT LAKES
WATER QUALITY AGREEMENT} (1997).}
\footnote{147. See, e.g., the Canada-United States Strategy for the Virtual Elimination of
Persistent Toxic Substances in the Great Lakes Basin (Great Lakes Binational Toxics
Strategy), signed April 7, 1997. The goal of the Great Lakes Binational Toxics
Strategy is virtual elimination of persistent toxic substances from the Great Lakes
Basin in order "to protect and ensure the health and integrity of the Great Lakes
ecosystem." See also the Great Lakes Water Quality Agreement of 1978, whose goal is
to "restore and enhance water quality in the Great Lakes System" and to "prevent
further pollution of the Great Lakes Basin Ecosystem."}
\end{footnotes}
costs of pollution control in the Great Lakes are diffused among many. Since there are many more pollutants at issue, the responsibility for pollution control is spread among many industries and states and municipalities. Because the costs are not as concentrated, the economic pain of bearing them is not as great. As a result, the diffused costs, combined with the mutual impact of the pollution, may have provided the parties in the Great Lakes with greater incentives to push for an effective and comprehensive pollution control regime. This is in stark contrast to the one-sided costs of NO\textsubscript{x} emissions controls. The asymmetrical nature of interstate ozone transport has not provided the midwest and northeast states with equal incentives to address the problem.

D. The Potential— and Risks— of Litigation

The NSR enforcement actions and citizen suits filed by EPA, DOJ, and several northeastern states have the potential to require the midwest utilities to make the necessary NO\textsubscript{x} emissions reductions. Nevertheless, there are certain risks and limitations associated with relying on litigation to solve the interstate ozone transport problem.

If the courts rule against the utilities or if the utilities settle with the government, the net result of the litigation—a large cut in emissions of NO\textsubscript{x} from the utilities—would be extremely positive. The federal and state lawsuits are civil actions requesting injunctive relief and civil penalties for violations of the NSR provisions of the Clean Air Act.\textsuperscript{148} The federal enforcement actions also request a court order requiring the utilities to install and operate the best available technology to control emissions of SO\textsubscript{2}, NO\textsubscript{x}, and particulate matter.\textsuperscript{149} If the orders are issued, the midwest utilities would be legally required to install the pollution control equipment they have been avoiding for the past decade, resulting in significant air quality benefits to the Northeast.\textsuperscript{150}

Despite the potential for environmental benefits, however, litigation is still an incomplete solution to the ozone transport problem. One of the drawbacks is that litigation is narrowly focused on "rights" and "duties," which may impede


\textsuperscript{149} Id.

\textsuperscript{150} Press Release, supra note 90.
considerations of cost.  

While an injunction requiring immediate installation of best available control technology is likely reasonable given the utilities' lengthy history of pollution control avoidance, issuance of an injunction nevertheless precludes consideration of the cost and planning that accompany huge investments in pollution control equipment. Moreover, litigation ignores consideration of alternatives, such as a NO\textsubscript{x} cap-and-trade program, that might better accommodate these cost issues.  

A second drawback to litigation is its piecemeal nature. Litigation tends to focus on narrow points, leaving related issues to be addressed during later litigation. In the context of ozone transport, the enforcement actions and citizen suits are focused narrowly on alleged violations of the NSR provisions in the Clean Air Act.  

A holding on the alleged NSR violations, while useful, would still fail to resolve the outstanding issues related to the Section 126 petitions, EPA's general authority to address interstate air pollution transport, and the current NSPS exemptions for older power plants since these issues are outside the scope of the litigation. However, these issues are central to finding a mechanism to effectively resolve the interstate ozone transport problem, both now and in the future. A solution directed at the problem in its entirety would therefore be far more valuable than waiting to see if each individual attack on the problem succeeds or fails.  

There are several other problems with relying on litigation, including the risk associated with leaving an issue to the courts. There is, after all, a very real chance that EPA, DOJ, and the downwind states could lose their enforcement actions and citizen suits—although the recent settlements with utilities indicate that the litigation may meet with success. The utilities are already defending themselves on the grounds that they were only doing routine maintenance and repairs within the bounds of the law. The utilities are also claiming that EPA's interpretation of the NSR provisions in the Clean Air Act is
flawed.159 Furthermore, the states may have a difficult time proving their nuisance claims in the citizen suits, particularly on the issue of causation. The utility being sued by New York and Connecticut has already attacked the suits on the grounds that the science on ozone transport does not support the states and that the states are themselves responsible for the ozone pollution they face.160 Finally, there are issues of cost and time associated with bringing suit.161 These problems, combined with the risk of a loss, make litigation an uncertain means to address interstate ozone transport.

III
THE NEED FOR CONGRESSIONAL ACTION

Congress has long been interested in finding the right balance of state and federal interests in the enactment of environmental laws. The dual roles of the states and the federal government have been a central issue in environmental law and have evolved over the years.162 Congress eventually decided that the most effective way to address environmental concerns was at the federal level, particularly when dealing with environmental problems with interstate effects. Given this federal role, as well as the particular characteristics of interstate pollution that make state regulation entirely ineffective, the interstate ozone transport problem should be dealt with by Congress.

159. Government Sues Electric Companies over New Source Review at 17 Power Plants, ENV'T REP. (BNA) (Nov. 4, 1999). The utilities claim that EPA is now interpreting the provision to require permits for nearly all routine maintenance activities, which the agency has until now not subjected to NSR requirements. The Edison Electric Institute recently published a short booklet examining EPA's past interpretation of the NSR provisions as applied to the utility industry. See EDISON ELECTRIC INSTITUTE, STRAIGHT TALK ABOUT ELECTRIC UTILITIES AND NEW SOURCE REVIEW (Jan. 2000).


161. BINGHAM, supra note 121, at xxv-xxvii.

A. Congress Should Play a Role in Controlling Interstate Pollution

Before the late 1960s and early 1970s, the states held the power to make environmental and land use decisions.163 Despite enthusiasm for localized environmental regulation, the states' poor record in controlling environmental pollution eventually led Congress to adopt a more centralized approach to environmental law in the 1970s.164 Under the current system, Congress grants EPA authority to set substantive environmental standards, while the states are allowed to implement and enforce environmental programs (which are reviewed and approved by EPA).165 The rationale for the state role is that a single, national approach to implementation and enforcement of environmental laws is not effective because of variations among states in climate, weather, geography, environmental risks, types and sources of pollution, economic conditions, and public preferences.166 Nevertheless, Congress recognized that leaving all environmental decisionmaking to the states alone did not result in effective pollution control or protection of the environment.167

The other main rationale for a centralized system of environmental law was the need to control negative interstate externalities, or "spillovers."168 Pollution is the classic negative externality.169 Because airsheds and watersheds are not limited to state boundaries, pollution in one state can easily spill over into another state, often creating significant harm.170 Interstate transport of ozone pollution is a prime example of such a spillover. Addressing such spillovers in a decentralized system is

163. Stewart, supra note 162, at 1210. The main arguments for decentralization were that state-made decisions would better reflect state differences in geography and in preferences for environmental quality, and that states would be allowed to experiment with different policies to find the ones that worked best. Id. Critics of centralized decisionmaking argued that uniform standards created unjustified burdens in certain localities and imposed economic and social costs that far outweighed the benefits, and that federal environmental policies took away the power of localities to decide issues that concerned them, such as economic activity, land use, and transportation. Id. at 1219-20. Finally, critics likened federal environmental policies to moral crusades, imposing sacrifices and demands on people who did not agree or who could not afford to pay for them. Id. at 1221.


165. See id. at 216.

166. Id. at 219-20.

167. See Stewart, supra note 162, at 1196.

168. Id. at 1215-16.

169. Esty, supra note 140, at 587.

170. Id. at 625.
extremely difficult for several reasons. First, leaving states to negotiate a solution among themselves is time-consuming and costly. Second, negotiation alone may be ineffective, since upwind and upstream states do not suffer the social costs of pollution and thus have little political incentive to take these costs into account when setting their environmental policy. If anything, these states have incentives to site pollution-generation facilities on the border of downwind and downstream states. Third, downwind and downstream states have little bargaining power with upwind and upstream states. Their only leverage is the threat of a nuisance suit, but such litigation is time-consuming, expensive, and likely to fail on issues of causation. Thus, in the absence of federally mandated pollution controls, the costs of these spillovers are typically borne entirely by unlucky downwind or downstream states. As a result, downwind and downstream states often find federally dictated environmental laws essential for the protection of their interests. The environmental and economic asymmetries of interstate ozone transport create just such a situation: without help from Congress, the northeastern states have been left with little bargaining power to improve their situation.

Aside from the difficulties of addressing interstate externalities without federal intervention, Congress by its very nature is in a more appropriate position than EPA to address interstate conflicts and make the hard decisions that accompany such controversies. Congress is made up of representatives of all the states, who come together for the specific purpose of legislating on issues of national or interstate significance. Problems like interstate ozone transport involve the balancing of differing state interests and create significant tensions between states and are thus within the inherent domain of Congress to

171. See Stewart, supra note 162, at 1215.
172. Id.
173. Dwyer, supra note 164, at 223.
174. Id.
175. Id.
176. Id.; see also, e.g., Missouri v. Illinois, 200 U.S. 496 (1906) (denying Missouri's request to enjoin Chicago from discharging sewage into the Desplaines River because there was no clear and convincing evidence of a public health threat); New York v. New Jersey, 256 U.S. 296, 309 (1921) (denying New York's request for an injunction against New Jersey enjoining the state from discharging sewage into New York Bay on grounds that the evidence introduced was "much too meager and indefinite" to prove a public nuisance).
177. Stewart, supra note 162, at 1216.
As one scholar has written: "Congressional power to mitigate these tensions through preventive legislation is implicit in the very decision to replace a loose confederation hamstrung by interstate friction with a strong national government." Even the courts have recognized the superior power of Congress to address interstate pollution problems. Rather than avoiding the political controversy of interstate pollution by passing responsibility to EPA, Congress should tackle the problem itself.

In addition, Congress bears some direct responsibility for the conflict over interstate ozone transport. The problem has arisen largely because of requirements under the CAA, a federal environmental statute passed by Congress. The interstate tensions were specifically created by the ozone nonattainment sanctions and the exemptions from NSPS requirements utilized by aging midwest utilities. Although Congress did not intend the NSPS exemptions to last indefinitely, and did not foresee that the utility industry would use the exemption in the Clean Air Act to significantly extend the lives of its power plants, it still inadvertently created the serious interstate problem. As a result, Congress—not EPA or the individual states—should be responsible for defusing it.

B. Congress Has Taken Action on Similar Interstate Environmental Problems in the Past

Past Congressional legislation specifically addressing interstate pollution offers useful guidance for attacking the interstate ozone transport problem. Although Congress delegates substantial authority to EPA, it has also retained control over several areas of environmental law and policy. Congress has, for example, taken a very active role in setting emission standards for motor vehicles. Title II of the 1990 CAAA outlines specific emission standards for motor vehicles. Although the Act gives

179. Stewart, supra note 162, at 1228.
180. Id. at 1229.
181. New York, 256 U.S. at 313 ("The grave problem of sewage disposal...is one more likely to be wisely solved by co-operative study and by conference and mutual concession on the part of representatives of the states so vitally interested in it than by proceedings in any court however constituted.").
EPA authority to issue regulations,\textsuperscript{183} the delegations to EPA under Title II are more specific than usual,\textsuperscript{184} and Congress carefully prescribed the requirements of agency regulations.\textsuperscript{185}

Congress also specifically prescribed a solution to another interstate pollution problem when it established the acid rain program in the 1990 CAAA. Title IV of the 1990 CAAA established the SO\textsubscript{2} emissions trading program in remarkable detail.\textsuperscript{186} Section 404 details the requirements for the first phase of the trading program and includes a table listing the SO\textsubscript{2} allowances allocated to all affected sources and units throughout the country.\textsuperscript{187} Section 405 contains detailed requirements for the second phase of the program, including specific emissions limits for various utility units and the methodology for allocation of additional allowances.\textsuperscript{188} Congress also established the annual auctions of SO\textsubscript{2} allowances to be conducted by EPA under Section 416(d) of the Act.\textsuperscript{189}

The legislative history of the 1990 CAAA provides clues to why Congress chose to be so specific in enacting these provisions. One reason was the importance of the issues. At the time of enactment of the 1990 CAAA, mobile sources accounted for more than half of urban ozone pollution, half of toxic air emissions nationwide, and ninety percent of carbon monoxide pollution.\textsuperscript{190} Acid rain was responsible for large-scale fish kills, water degradation, damage to trees and forests, corrosion of buildings and other materials, and health problems.\textsuperscript{191}

\begin{itemize}
\item \textsuperscript{183} CAA § 202(a), 42 U.S.C. § 7521(a) (1994).
\item \textsuperscript{184} Section 202(l) specifies certain toxic air pollutants that EPA must include in a mandatory study, and Section 202(l) lists stricter emissions standards and requires EPA to conduct a study to determine whether these listed standards should be adopted in 2004. CAA § 202(l), 42 U.S.C. § 7521(l) (1994); CAA § 202(i), 42 U.S.C. § 7521(i) (1994).
\item \textsuperscript{185} Section 202(g), for example, specifies the maximum amounts of nonmethane hydrocarbons, NO\textsubscript{x}, carbon monoxide, and particulate matter that may be emitted by passenger cars. CAA § 202(g), 42 U.S.C. § 7521(g) (1994). Similarly, Section 202(h) specifies emissions standards for light-duty trucks, while Section 202(j) sets forth specific cold temperature carbon monoxide emission standards. CAA § 202(h), 42 U.S.C. § 7521(h) (1994); CAA § 202(j), 42 U.S.C. § 7521(j) (1994). Section 211(k) specifies emissions and content requirements for reformulated gasoline and Section 243 prescribes maximum emissions standards for clean fuel vehicles. CAA § 211(k), 42 U.S.C. § 7545(k) (1994); CAA § 243, 42 U.S.C. § 7583 (1994).
\item \textsuperscript{186} CAA §§ 401-416, 42 U.S.C. §§ 7651-7651o (1994).
\item \textsuperscript{187} CAA § 404, 42 U.S.C. § 7561c (1994).
\item \textsuperscript{188} CAA § 405, 42 U.S.C. § 7561d (1994).
\item \textsuperscript{189} CAA § 416(d), 42 U.S.C. § 7561o(d) (1994).
\item \textsuperscript{190} House Debate on H.R. 3030 (May 21, 1990), reprinted in LEGISLATIVE HISTORY, supra note 3, at 2657 (Statement by Rep. Mineta).
\item \textsuperscript{191} Report accompanying H.R. 3030 (H.R. Rep. No. 101-490), reprinted in LEGISLATIVE HISTORY, supra note 3, at 3382-83.
\end{itemize}
costs of damage from acid rain were estimated to be in the billions of dollars.  

Congress also passed specific, detailed legislation because it perceived that EPA had failed to adequately regulate in these areas. Members of Congress repeatedly chided EPA for not regulating air toxics from mobile sources, despite recognizing their dangerous link to cancer deaths. Senators described EPA as unreliable and "not immune to pressure" from lobbyists and other interests within the Bush Administration. As a result, several Senators felt that Congress had a responsibility to provide clear guidance to EPA rather than give the agency complete discretion to regulate.

A third reason indicated by the legislative history— and one which is readily transferable to the ozone transport problem— is that Congress recognized the contentiousness of regulating mobile sources and acid rain for certain states. Representatives recognized that acid rain reductions would impose a disproportionate share of the burden on the nine states in the Midwest and Southeast that produced half of the SO₂ emissions in the country. Senators recognized that requiring emissions reductions from mobile sources was a legislative choice that had to be made: given the large contribution to pollution by mobile sources, and the fact that stationary sources had borne the brunt of emissions reduction requirements in the past, Congress decided that equity demanded greater reductions from mobile sources. These provisions thus represented hard choices and action by Congress on controversial issues of great significance to the health and environment of the nation. As one Senator stated:

"It has been 13 years since we have tried to take up and pass clean air legislation. Why is that? It is because the subject is
so complicated. It is because the subject is so diverse. It is because we have New England States, Southern States, Western States, and Eastern States. It is very, very difficult for this country to come together and agree on acid rain, to agree on mobile source provisions, to agree on air toxics provisions. It is extremely difficult.

As a result, Congress spent enormous time and effort crafting a bill that represented "consensus" and "balance" and "resolution of all the various competing interests that exist in this country."

One final reason for Congress' specificity—at least with regard to the acid rain emissions trading program—was the novelty of market-based environmental legislation. The nationwide SO\textsubscript{2} trading program was seen as a "major regulatory innovation" that provided market flexibility to make emission reduction requirements as cost-effective and efficient as possible. By creating an annual auction within the program, Congress intended to "jump start the trading system" and prove to the utility industry, state utility commissions, and the federal government that the program would work. Congress directly set up this novel program to ensure that the program was established correctly (or, more cynically, to later claim credit for the program's success).

Congress' detailed legislation in the areas of mobile sources and acid rain demonstrates that it is capable of more than vague delegations. Congressional legislation addressing interstate ozone transport is thus feasible. Moreover, it is necessary when one considers the reasons underlying Congress' decision to prescribe requirements to control mobile source emissions and acid rain. These reasons are common to interstate ozone transport as well, which further supports the need for a specific legislative solution to the problem.

First, ozone transport creates serious environmental and health problems, with huge economic costs. Ozone pollution causes lung damage and impairs respiratory function, particularly in vulnerable populations such as children and the elderly, and has been linked to increased emergency room

199. Id. at 5883 (Statement by Sen. Baucus).
200. Id.
203. Id. at 1418-19 (Statement of Rep. Oxley).
visits. Ozone pollution is also harmful to forests and crops and is estimated to have caused damage in excess of $1 billion.

Second, like mobile source regulation, EPA's record on interstate pollution transport is spotty. EPA's recent decision to use the NOx SIP call and Section 126 final rule to address the current ozone transport problem are anomalies in the history of interstate air pollution. Until now, the agency has rejected every state petition that it received under Section 126. EPA's failure to act may be blamed in part on the agency itself, and in part on the weaker provisions of Sections 110(a)(2)(D) and 126 in earlier versions of the Clean Air Act. EPA's fault may also lie in its narrow early interpretation of Section 110(a)(2)(D) under the 1970 Clean Air Act, which required upwind SIPs to "include measures necessary to ensure that emissions of air pollutants" from upwind sources did not "interfere with attainment or maintenance" of the NAAQS in downwind states. EPA interpreted this provision as a mere information exchange requirement rather than as an enforceable mandate that upwind states implement control measures to abate interstate air pollution. On the other hand, Congress should perhaps accept some blame for establishing the difficult standard that Section 110(a)(2)(D) set for downwind states. Under the 1977


206. See, e.g., Connectict v. EPA, 656 F.2d 902 (2d Cir. 1981) (upholding EPA's approval of a New York SIP revision even though petitions against New York by New Jersey and Connecticut were still pending); Air Pollution Control Dist. of Jefferson County, Kentucky v. EPA, 739 F.2d 1071 (6th Cir. 1984) (upholding EPA's denial of a Kentucky petition alleging that a power plant in Indiana was causing Kentucky to violate the SO2 standards); New York v. EPA, 852 F.2d 574 (D.C. Cir. 1988) (upholding EPA's denial of petitions from Pennsylvania, New York, and Maine alleging that sources in several midwestern states were preventing them from attaining the NAAQS for SO2 and particulate matter).


208. Under the Clean Air Act Amendments of both 1970 and 1977, this section was actually § 110(a)(2)(E).

209. Patton, supra note 207, at 10,163.

210. Id.
Amendments, upwind SIPs had to ensure that sources in upwind states did not "prevent attainment or maintenance" of the NAAQS in downwind states, a rather difficult standard to define in the early days of air pollution control. The 1990 Amendments significantly relaxed the required level of impact of transported pollution, prohibiting upwind states from "contribut[ing] significantly to nonattainment... or interfer[ing] with maintenance" of the NAAQS. The 1990 Amendments also expanded the number of sources prohibited from causing interstate pollution from "any stationary source" to "any source or other type of emissions activity." As a result, it may be easier for EPA to act on Section 126 petitions now than under pre-1990 versions of the Clean Air Act.

Third, ozone transport is as contentious an issue as acid rain and mobile source pollution. Like mobile source pollution controls, ozone transport reductions would target a single industry: utilities. Like acid rain, NOx emission control requirements could place a disproportionate burden on a relatively small number of states in the Midwest. Furthermore, the interests of the upwind and downwind states affected by the ozone transport problem vary immensely. Ozone transport thus puts another hard choice before Congress—namely which state interests are more important and what is the most effective and efficient way to address the problem. Given the success of Congress' SO2 emissions trading program, addressing NOx emissions through a similar market-based program is likely the best solution.

IV INTEGRATING A SOLUTION INTO ELECTRICITY RESTRUCTURING LEGISLATION

There is one final reason for Congress to address the interstate ozone problem through legislation. The deregulation and restructuring of the electricity industry that is now underway is expected to have negative environmental and

211. Simon, supra note 207, at 143-44.
212. Id. at 146.
213. Patton, supra note 207, at 10,165.
214. Until recently, electric utilities in the United States operated as vertically integrated monopolies that were permitted to perform all three functions involved in providing electricity: generation, transmission, and distribution. To preserve what was believed to be the efficiency of these monopolies—and to protect customers from monopoly pricing by the utilities—states (through state public utility commissions, or PUCs) and the federal government (through the Federal Power Commission, renamed in 1977 the Federal Energy Regulatory Commission, or FERC) regulated the rates that utilities could charge for electricity. FERC regulated transmission and
economic consequences, which could exacerbate the existing ozone nonattainment problem in the Northeast. Preventing the increase in ozone transport that will likely accompany restructuring could be accomplished through the Congressional enactment of comprehensive federal electricity restructuring legislation. Such legislation could also be the ideal vehicle to resolve the current controversy over existing ozone transport through, for example, elimination of grandfathering and adoption of a large-scale NO\textsubscript{x} emissions trading system for the entire eastern half of the United States.

Restructuring of the electricity industry is the product of a 1996 order of the Federal Energy Regulatory Commission (FERC) promulgated under the authority of the Energy Policy Act of 1992. The order essentially provides for open transmission access to the U.S. electricity market, which had been strictly wholesale power transactions in interstate commerce, while the states regulated local distribution and retail sales to customers. Rates were set to allow the utilities to recover the costs of providing the electricity but not charge anything more. See Timothy J. Brennan, A Shock to the System: Restructuring America's Electricity Industry 16, 23, 34 (1996). This system of regulating utilities came under fire in recent years for various reasons. First, changes in technology have made electricity production cheaper and eliminated the need to integrate the generation, transmission, and distribution functions. Second, basing electricity rates on utility costs meant that utilities had no incentive to reduce their costs, since that would negatively affect their profits. Third, utilities had little incentive to alter their services to meet changing customer needs. To combat the problems associated with the traditional price regulation of electric utilities, the states and the federal government have recently focused on introducing competition into the electric utility industry. Id. at 4; see also Edison Electric Institute, Competition in the Electric Power Industry (Jan. 2000), available at http://www.eeil.org/issues/news/b-matter/competition.htm (last visited Jan. 26, 2001).


216. Order 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21,540 (May 10, 1996) (codified as amended at 18 C.F.R. pts. 35 & 285). FERC conducted an environmental impact analysis that found that increased competition under Order 888 could increase utilization of coal-fired generating plants from sixty-two percent to over eighty percent, which would increase NO\textsubscript{x} emissions by up to 300,000 tons per year by 2005. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities; Availability of Final Environmental Impact Statement, 61 Fed. Reg. 17,263 (Apr. 19, 1996). Concerned with the potential NO\textsubscript{x} emissions increases, EPA subsequently referred Order 888 to the Council on Environmental Quality (CEQ). CEQ responded by recommending that EPA, not FERC, address the problem through OTAG, SIPs, and a NO\textsubscript{x} cap-and-trade program. EPA-FERC Battle on Utility Rule Resolved through Referral, CEQ Says, ENV'T REP. (BNA) (June 17, 1998).
regulated for years, by allowing utilities to compete with each other and to provide power to customers outside their regional "power pools." These separate regional market areas are being eliminated as a competitive national market in electricity is created, opening up access to customers for other electricity marketers and allowing customers to buy power from any utility or power marketer, regardless of where they are physically located. As of December 2000, twenty-four states have enacted electricity restructuring legislation. Although federal restructuring legislation stalled in Congress, it is expected to be a major issue in 2001.

Although competition among utilities is economically beneficial, it has great potential to create environmental problems. Competition favors increased production from the least expensive generators, who are unfortunately likely to use the most polluting sources of energy. Many analysts have predicted that restructuring will result in huge increases in electricity generation from dirty coal-fired utilities in the Midwest, with smaller increases in the use of cleaner natural gas in the Northeast. The net result could be huge increases in NOx emissions and corresponding increases in ozone transport to the Northeast. Preliminary studies already indicate that state deregulation has resulted in both increased generation at coal-fired plants in the Midwest and increased pollution.

Given the environmental risks of deregulation, Congress now has a prime opportunity to address the ozone transport problem in the context of electricity restructuring. Legislation can avoid

218. Id. at 72.
220. For example, H.R. 2944, the Electricity Competition and Reliability Act of 1999, introduced by Rep. Joe Barton in September 1999, has been stalled in the House since hearings were held on the bill in July 2000. Likewise, no action has been taken since May 2000 on S. 2098, the Electric Power Market Competition and Reliability Act, introduced by Sen. Frank Murkowski in February 2000.
222. Rosenberg, supra note 138, at 72.
223. Id. at 75-76; see also Ann Berwick, Environmental Implications of Energy Restructuring, 33 NEW ENGL. L. REV. 619, 622 (1999); Stern and Stern, supra note 215, at 136-41.
224. Rosenberg, supra note 138, at 75-76; Berwick, supra note 223, at 622; see also NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT (NESCAUM), AIR POLLUTION IMPACTS OF INCREASED DEREGULATION IN THE ELECTRIC POWER INDUSTRY: AN INITIAL ANALYSIS 3 (Jan. 15, 1998).
225. NESCAUM, supra note 224, at 7.
the lengthy delay and uncertainty associated with rulemaking, regional negotiations, litigation, and other efforts. At the moment, restructuring legislation is a much sounder arena in which to address air pollution problems than environmental legislation, such as CAAA or reauthorization. Legislation to amend or reauthorize the Act was unlikely to be supported in a presidential election year, particularly in light of the hostility that the Republican majority has shown toward action on air pollution issues. The Republicans have been especially opposed to any action on the issue of climate change. Given the direct link between global warming and carbon dioxide (CO₂) emissions from fossil fuel-fired utilities, it is possible that any effort to address utility emissions in an environmental context would be seen as another “back-door” attempt to implement the Kyoto Protocol. Rather than directly open up ozone transport issues to a bitter fight within Congress, the safer route appears to be in restructuring legislation.

Congress now has an opportunity to pass comprehensive legislation that resolves some of the outstanding ozone transport issues and attempts to satisfy the interests of all the parties involved in the conflict. In drafting restructuring legislation, Congress would be wise to keep the following interests in mind. The utilities in the Midwest desire certainty and flexibility; they are concerned with ensuring that NSR rules are clear and that any emissions reduction requirements adopt a market-based...

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226. Phone conversation with Ladeene Freimuth, Legislative Assistant to Congressman Frank Pallone (Feb. 8, 2000).
228. White House Faces Republican Opposition over Global Warming Money, ENV’T REP. (BNA) (Feb. 21, 2000).
229. The 1997 Kyoto Protocol to the United Nations Framework Convention on Climate Change calls for industrialized nations to reduce their greenhouse gas emissions by 5.2% below 1990 levels by 2012. See Conference of the Parties to the Framework Convention on Climate Change: Kyoto Protocol, Dec. 10, 1997, 37 I.L.M. 22 (1998) (opened for signature Mar. 16, 1998). Although the United States signed the Protocol, it has not yet been ratified by the Senate. Many Senators—mostly Republicans—oppose the treaty because it does not contain equivalent emission reduction requirements for developing countries. This issue was a sticking point for Senators even before negotiations over the Kyoto Protocol began, and led the Senate to pass Senate Resolution 98 on July 25, 1997. See S. Res. 98, 105th Cong. (1997). This resolution, sponsored by Senators Hagel (R-NE) and Byrd (D-WV), stated that the United States should not sign, and the Senate should refuse to ratify, any protocol to the United Nations Framework Convention on Climate Change that did not contain legally binding emission reduction requirements for developing countries. The resolution garnered support from Democrats as well and passed by a 95-0 vote.
approach to ensure lowest cost compliance. The northeastern states are concerned with reducing NO\textsubscript{x} transport so that they attain the ozone NAAQS and avoid severe nonattainment sanctions. EPA is interested in ensuring compliance with the NSR requirements, solving the NO\textsubscript{x} transport problem, and ensuring that all stationary sources that are major emitters of NO\textsubscript{x}—which means all utilities, new and old—are subject to pollution controls.

Given these interests, comprehensive federal restructuring legislation should close all current loopholes in the Clean Air Act while providing certainty and strong emissions reduction incentives to utilities. This could be done through the following environmental provisions, which offer incentives to utilities to switch from coal to a cleaner fuel or to adopt effective pollution control technology.

First, national restructuring legislation should include a NO\textsubscript{x} emissions cap-and-trade program similar to that established for SO\textsubscript{2} emissions under the 1990 CAAA. Under a cap-and-trade program, tradeable emission allowances are allocated to sources that are then authorized to emit one ton of pollution (that is, SO\textsubscript{2})

\begin{itemize}
  \item [230.] Freimuth, supra note 226. Utilities take risks when making investment planning decisions because of the years and the expense involved in designing, licensing, and constructing new power plants and emission control equipment, which generally remain in operation for at least thirty years. Thus it is important for utilities to be certain that their investments are both necessary to meet regulatory requirements and economically efficient. Energy Info. Admin., Analysis of Strategies for Reducing Multiple Emissions from Power Plants: Sulfur Dioxide, Nitrogen Oxides, and Carbon Dioxide ix, xiv, Dec. 2000, available at http://www.eia.doe.gov/new.html.
  \item [231.] McChesney, supra note 136, at 636. The northeast states have already—through the OTC and through requirements under the 1990 CAAA—imposed stringent controls on NO\textsubscript{x} and VOCs (another ozone precursor), including adoption of vehicle inspection and maintenance programs, reformulated gasoline requirements, and a NO\textsubscript{x} cap-and-trade program within the OTC region. Because these in-state emission control measures are still insufficient for many areas of the northeast states to attain the ozone standard, the states must address interstate ozone transport or face the penalties that accompany continued noncompliance with the ozone standard.
  \item [232.] Id. at 635-36. According to McChesney, for two reasons EPA initially preferred the consensual negotiations of the OTAG process to mandated controls and a NO\textsubscript{x} SIP call. First, OTAG negotiations and voluntary compliance by the states would conserve administrative resources by avoiding the need for EPA to review SIPs under a NO\textsubscript{x} SIP call. Second, voluntary action would avoid litigation over EPA's authority to require controls or revised SIPs. Ironically, OTAG negotiations did not rely solely on voluntary compliance but required EPA action to implement, which led to the very problems that EPA sought to avoid.
  \item [233.] For a history and description of the SO\textsubscript{2} trading program, see Larry B. Parker et al., A Review of Major Provisions: Clean Air Act Allowance Trading, 21 Env't L. 2021 (1991).
\end{itemize}
or \( \text{NO}_x \) for each allowance held.\(^{234}\) Allowances are allocated according to some baseline year, and are reduced annually until they are capped at a certain level of emissions.\(^{235}\) If holders wish to emit more than they are permitted by their allowances, they must purchase additional allowances on the market.\(^{236}\) The trading program allows sources to reduce emissions more cheaply than mandatory control requirements, since holders are permitted to compare the costs of reducing emissions with the costs of buying additional allowances on the market, keeping in mind the gradual reduction in overall allowances over time.\(^{237}\)

A \( \text{NO}_x \) emissions trading program would allow for cost-effective emissions reductions and is likely to be supported by the utility industry.\(^{238}\) The \( \text{NO}_x \) cap-and-trade program developed by the OTC and currently being implemented in the northeast states has already cut \( \text{NO}_x \) emissions more than half from 1990 levels,\(^{239}\) at costs that are between one-quarter and one-half of the costs of other cost-effective \( \text{NO}_x \) controls.\(^{240}\) A \( \text{NO}_x \) trading program that covers the entire eastern half of the United States, not just the OTC region, is expected to be similarly cost-effective.\(^{241}\) Also, such a program would further level the playing field between cleaner power plants and coal-fired plants. Clean plants that could generate electricity below the generation performance standards for \( \text{NO}_x \) could free up allocated emissions allowances and bank or sell them on the \( \text{NO}_x \) emissions trading market.\(^{242}\)

Establishing the details of a \( \text{NO}_x \) trading program

\(^{234}\) Id. at 2029.

\(^{235}\) The \( \text{SO}_2 \) trading program established in the 1990 CAAA set a cap of 8.9 million tons of \( \text{SO}_2 \) emissions, to be reached in two phases by the year 2010. The cap represents a reduction of ten million tons annually from a 1980 baseline of \( \text{SO}_2 \) emissions. Id. at 2025-26.

\(^{236}\) Id. at 2032.


\(^{238}\) Compliance costs under the acid rain emissions trading program have been calculated to be half the cost of emissions reductions under a command-and-control approach. Id.


\(^{240}\) Press Release, Ozone Transport Comm’n, New Report Shows Success Story in Air Pollution Trading; Northeast and Mid-Atlantic States Call on Other States in the East to Join the Effort to Clean Up the Air (Mar. 27, 2000).

\(^{241}\) Id.

should not be difficult, given Congress’ previous experience with the SO\textsubscript{2} program. In addition, EPA established a broad, regional NO\textsubscript{x} trading program in its December 1999 Section 126 final rule.\textsuperscript{243} Rather than waste time and money repeating EPA’s effort, Congress could codify this federal NO\textsubscript{x} emissions trading program.

Second, federal legislation should contain a national version of the “generation performance” standards that have been included by several states in their restructuring legislation.\textsuperscript{244} Generation performance standards are uniform standards for emissions produced per unit of electrical output (typically kilowatt-hours) for certain pollutants such as NO\textsubscript{x}, SO\textsubscript{2}, or heavy metals.\textsuperscript{245} Generation performance standards require retail electricity suppliers to ensure that their energy portfolios comply with these “output-based” emission standards, based on pounds of emission per unit of electricity generated.\textsuperscript{246} The standards are designed to level the playing field for the cleaner, more efficient, more expensive electricity generators that currently are at a competitive disadvantage vis-à-vis generators that rely on dirtier, cheaper coal.\textsuperscript{247}

Third, Congress should consider imposing a tax on NO\textsubscript{x} emissions from utilities.\textsuperscript{248} Such a tax would encourage utilities that could abate cheaply to do so to reduce or avoid taxes, and it would also provide a constant incentive to the utilities to reduce emissions. Unfortunately, a NO\textsubscript{x} emissions tax would be politically difficult to pass.\textsuperscript{249} Moreover, the tax would need to be set at a high enough rate to induce utilities to install emissions control technology rather than simply pay the tax. In addition,

\textsuperscript{243} Finding of Significant Contribution, supra note 49.


\textsuperscript{245} Id.

\textsuperscript{246} See supra note 242.

\textsuperscript{247} Id.

\textsuperscript{248} Perkins, supra note 244, at 1024.

\textsuperscript{249} Industry opponents to pollution taxes have successfully argued that such taxes significantly raise prices of goods and services for consumers, are difficult to monitor and enforce, and create short-term destabilization. Adam Chase, The Efficiency Benefits of “Green Taxes”: A Tribute to Senator John Heinz, 11 UCLA J. ENVTL. L. & POL’Y 1, 22-23 (1992); see also Jeffrey M. Hirsch, Emissions Allowance Trading Under the Clean Air Act: A Model for Future Environmental Regulations?, 7 N.Y.U. ENVTL. L.J. 352, 358-59 (1999). Opponents to a carbon tax to control CO\textsubscript{2} emissions have also successfully argued that uncertainties and imperfect knowledge make it difficult to set pollution taxes at appropriate rates and that such a tax would affect the international competitiveness of U.S. industries. Gary E. Merchant, Freezing Carbon Dioxide Emissions: An Offset Policy for Slowing Global Warming, 22 ENVTL. L. 623, 632-35 (1992).
determining the tax rate that would provide an adequate incentive for industry to reduce emissions would be extremely difficult.\footnote{250}

Fourth, Congress should encourage cleaner fuels by including a "renewables portfolio" standard in restructuring legislation that would require a certain percentage of electricity offered for sale in the restructured market to be generated by renewable energy.\footnote{251} Such a standard could be implemented through a system of renewable energy credits that could be traded between electric companies to reduce the cost of such a mandate.\footnote{252} Renewables portfolio standards have been enacted in several states;\footnote{253} if enacted at the national level, they are estimated to have little impact on the price of energy. A second mechanism to encourage cleaner fuels would be to offer tax incentives to utilities that increased their share of renewables in their energy portfolio, or that reduced their emissions below a certain amount. The political feasibility of such tax breaks has yet to be determined.

Fifth, restructuring legislation should have a broader focus than just reducing NO\textsubscript{x} emissions. In addition to NO\textsubscript{x}, utilities—and particularly those that burn coal—emit significant amounts of SO\textsubscript{2}, CO\textsubscript{2}, particulate matter, and toxic pollutants such as mercury.\footnote{254} Encouraging utilities to switch to cleaner fuels or to adopt pollution control technology should address these pollutants as well and should consequently have wider benefits than merely eliminating the ozone transport problem.\footnote{255} Congress should therefore provide the incentives already mentioned to reduce emissions and include renewables in utility energy portfolios, as well as establish generation performance standards for these other pollutants. Congress should also earmark funding for research and development of clean coal

\footnote{250. Merchant, \textit{supra} note 249, at 632.}
\footnote{251. Perkins, \textit{supra} note 244, at 1029.}
\footnote{252. \textit{Id.} at 1030.}
\footnote{253. Kirsten Engel, \textit{The Dormant Commerce Clause Threat to Market-Based Environmental Regulation: The Case of Electricity Deregulation}, 26 ECOLOGY L.Q. 243, 264 (1999).}
Finally, restructuring legislation should eliminate grandfathering under the Clean Air Act and subject older plants to NSPS requirements. Extending the NSPS program will prevent older plants from operating and expanding capacity uncontrolled, as well as eliminate state discretion to ignore these substantial existing sources of pollution. Extension of NSPS should be done rationally, however, keeping in mind both the costs of control technology and the need to ensure that pollution is controlled to the greatest extent possible.

Grandfathering could be phased out in one of two ways. Congress could require older existing plants to comply with the NSPS for new sources within one year of enactment of legislation. Congress could also grant flexibility to plants near the end of their useful life (for example, less than three years of operation remaining) that may find it economically infeasible to retrofit with expensive control technology at this late stage. Rather than require these older plants to meet NSPS, Congress could allow them to operate for the remainder of their useful life, provided they paid annually into a fund for research and development of advanced emissions control technology. Annual payments would be based on the plants' operational capacities and estimated emissions, and would be set at amounts at least equivalent to what the utilities would be forced to pay for NOx emissions allowances under the trading program. These plants would also be prohibited from making any repairs or modifications that would expand capacity. Although this option may be criticized for allowing older plants to continue to pollute just by paying money, it is far better than the current situation in which these plants pollute subject to no constraints at all. The plants would be forced to decide between pollution control and shutdown. Moreover, the annual payment option would serve a valuable technology-forcing function in a practical, economically feasible way.

Detailed restructuring legislation addressing environmental concerns was proposed in the 106th Congress. In July 1999, Senator Jeffords (R-VT) introduced S. 1369, which sets specific nationwide emissions caps for CO2, mercury, NOx, and SO2. The Jeffords bill also directs EPA to promulgate generation performance standards based on these nationwide emissions.

caps, 257 establishes renewable energy portfolio standards, 258 and requires FERC to establish a system for certifying and issuing renewable energy credits to comply with these standards. 259 Representative Pallone (D-NJ) introduced a similar bill, H.R. 2569, in July 1999. 260 H.R. 2569 would amend the Federal Power Act to require the Federal Power Commission to set generation performance standards for NO\textsubscript{x}, fine particulate matter, and CO\textsubscript{2}, and to require certain percentage reductions in mercury emissions. 261 The generation performance standards would be set based on specified tonnage caps set forth in the bill. 262 H.R. 2569 also sets up an emissions trading program 263 for the specified pollutants and establishes renewable energy portfolio standards. 264

Two bills to amend the Clean Air Act were introduced in September 1999. H.R. 2980, introduced by Representative Allen (D-ME), would amend the Act to require specified limits on emissions of mercury, SO\textsubscript{2}, and NO\textsubscript{x} from all fossil fuel-fired utilities, old and new. 265 H.R. 2980 would also direct EPA to set generation performance standards for CO\textsubscript{2} and set up an emissions trading program for CO\textsubscript{2}. 266 Even more notably, the Allen bill would authorize annual appropriations of $75 million to assist employees and communities adversely affected by reduced oil and coal consumption as a result of the bill's provisions. 267 Representative Waxman (D-CA) introduced a more radical bill, H.R. 2900, which would amend the Act to require older power plants to comply with NSPS requirements and to require EPA to promulgate regulations to achieve specified reductions in utility emissions of SO\textsubscript{2}, NO\textsubscript{x}, CO\textsubscript{2}, and mercury. 268 Because of the enormous emissions reductions required by the Waxman bill—including seventy-five percent reductions in SO\textsubscript{2} and NO\textsubscript{x} emissions and a ninety percent reduction in mercury

257. Id.
258. S. 1369, supra note 256, § 7.
259. Id.
261. Id.
262. Id. The bill sets a tonnage cap for NO\textsubscript{x} of 0.54 million tons for the twenty-two eastern states during the summer months of 2003 and 2004. The cap is then increased to 1.66 million tons annually for the entire continental United States starting in 2005.
263. Id.
264. Id. § 7.
266. Id. § 5.
267. Id. §§ 9, 10.
emissions from 1997 levels— and because the bill does not contain emissions trading or market based incentives, it is unlikely to be supported by the utility industry.

Finally, Senator Leahy (D-VT) introduced S. 1949, which sets combustion efficiency standards and specifies strict emissions rates and pollutant removal requirements for utility units that emit mercury, CO₂, SO₂, and NOₓ and are built within ten years of enactment of the legislation. The Leahy bill sets even stricter efficiency standards and pollution control requirements for utility units built more than ten years after enactment of the legislation. The Leahy bill also provides for research and development of clean energy technologies and, like the Allen bill, would appropriate annually $75 million to assist employees and communities adversely affected by reduced oil and coal consumption as a result of the bill's provisions.

These restructuring bills contain significant environmental provisions aimed at reducing emissions of NOₓ and other harmful pollutants from power plants. Many of the bills employ market-based incentives and provide for flexibility in attaining the strict pollution control standards they set. Although several of the bills delegate some rulemaking authority to EPA, FERC, or the Federal Power Commission, the bills are so detailed and specific that little discretion would be left to the agencies. In drafting these bills, certain members of Congress— notably four from northeastern states affected by the ozone transport problem— have attempted to address the serious pollution problem posed by uncontrolled utilities today. Congress as a whole now has a responsibility to work with these bills and enact one into law.

CONCLUSION

Despite the many attempts so far to address interstate ozone transport, Congressional legislation is the only adequate means to solve the problem. EPA rulemakings, such as the NOₓ SIP call and the Section 126 final rule, are too prone to challenge to make them an efficient and effective solution. Reliance on state regulation is ineffective because of the environmental and

269. _Id._
271. _Id._
272. _Id._ §§ 12, 13.
273. _Id._ §§ 15, 16.
economic asymmetry inherent in the ozone transport problem. This asymmetry also explains why regional interstate transport commissions and interstate negotiations are insufficient to resolve interstate transport issues. While litigation has the potential to force necessary cuts in NOX emissions from coal-fired utilities in the Midwest, the risks associated with litigation do not guarantee this to be an effective solution. Because of the limitations of these other mechanisms, the ozone transport problem is best resolved through Congressional enactment of comprehensive electricity restructuring legislation that addresses the air pollution associated with the utility industry. Congress has stepped up to the plate in the past to address pollution issues with interstate implications; Congress now has an obligation to do so again.