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**MICHIGAN V. EPA: INTERSTATE OZONE POLLUTION AND EPA’S
“NO_x SIP CALL”**

PATRICIA ROSS McCUBBIN*

I. INTRODUCTION

In 1998, faced with mounting evidence that states along the eastern seaboard could not comply with national air quality standards for ozone pollution due, in part, to emissions originating in upwind states,¹ the U.S. Environmental Protection Agency (EPA) issued a highly controversial rule, the “NO_x SIP Call,” requiring twenty-three states to reduce their emissions.² For the first time, EPA had initiated an attempt under the federal Clean Air Act³ to

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1. *See* Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 62 Fed. Reg. 60,318, 60,322 (Nov. 7, 1997) (proposed “NO_x SIP Call”) (“States generally were not able to meet [the deadlines for complying with national air quality standards for ozone because] . . . States were not able to address or control transport [of ozone pollution].”). *See also* Jason S. Grumet, *Old West Justice: Federalism and Clean Air Regulation 1970-1998*, 11 TUL. ENVTL. L.J. 375, 398-99 (1998) (while scientists have known about the long-range transport of ozone since at least the 1970’s, information was not made available and understandable to the state regulatory community until the 1997 Ozone Transport Assessment Group study).

2. 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 (Oct. 27, 1998) (final NO_x SIP Call). For an explanation of the terms “NO_x” and “SIP Call,” *see infra* text accompanying notes 8 & 17. Technically, the NO_x SIP Call regulates twenty-two states and the District of Columbia but for simplicity this article refers to the regulated entities as “twenty-three states.” Those twenty-three states are found in the midwest, southeast and northeast and are: Alabama, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Indiana, Kentucky, Massachusetts, Maryland, Michigan, Missouri, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin. 63 Fed. Reg. at 57,358.

3. 42 U.S.C. §§ 7401-7671q (1999).

reduce “interstate ozone pollution,” that is, ozone carried by the prevailing winds from one state to another.

Unprecedented in nature and affecting nearly half the nation, the NO_x SIP Call was challenged by eight of the twenty-three upwind states along with dozens of industries.⁴ They argued two key issues in the case: first, that EPA had improperly identified which upwind states’ emissions were responsible for interstate ozone pollution; and, second, that EPA had violated states’ rights under the cooperative federalism mandated by the Clean Air Act.⁵ On March 3, 2000, however, in *Michigan v. EPA*, a divided panel of the U.S. Court of Appeals for the District of Columbia Circuit upheld the rule in all major respects.⁶ To explain the importance of this complex case, which will give EPA greater authority to regulate interstate air pollution in the future, presented below are an overview of the NO_x SIP Call and analyses of the two key issues in the *Michigan* decision.⁷

4. *Michigan v. EPA*, 213 F.3d 663, 667-68 (D.C. Cir. 2000), *cert. denied*, 69 U.S.L.W. 3297 (U.S. Mar. 5, 2001) (No. 00-632). The state petitioners were: Michigan, Ohio, Indiana, West Virginia, Virginia, North Carolina, South Carolina, and Alabama. The state of Wisconsin intervened as a petitioner. *Id.* at 668. Some of the petitioning industries were Appalachian Power Company, the United Mine Workers of America, and the Council of Industrial Boiler Owners. See Joint Common Issues Brief of Industry/Labor Petitioners, *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (No. 98-1497); Brief of Petitioner Council of Industrial Boiler Owners, *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (No. 98-1497).

Several northeastern states intervened on EPA’s behalf, including New York, Massachusetts, and Pennsylvania, as did several industries from those states, as well as the Province of Ontario and the federal government of Canada, and several environmental groups. 213 F.3d at 668-69.

5. *Id.* at 674-79, 685-88. See *infra* text accompanying notes 24-105 (analyzing these two issues in more detail).

6. 213 F.3d at 669.

7. In addition to the two primary issues discussed in this article, the *Michigan* court agreed with EPA on several other issues, including that: (1) EPA did not have to convene a transport commission under sections 176A and 184 of the Clean Air Act, 42 U.S.C. §§ 7506a & 7511c (1994), before issuing the NO_x SIP Call (213 F.3d at 671-73); (2) EPA’s modeling was sufficient to identify the significant contributions from *specific* upwind states (*id.* at 673-74); (3) the rule did not conflict with earlier EPA decisions that certain upwind contributions did *not* violate the pre-1990 version of the good neighbor provision (Clean Air Act, § 110(a)(2)(E), 42 U.S.C. § 7410(a)(2)(E) (1988)) (213 F.3d at 674); (4) EPA reasonably imposed uniform control requirements on all the states subject to the rule, rather than varying the controls based on geographic considerations (*id.* at 679-80); (5) the state of South Carolina was appropriately included in the rule (*id.* at 685); (6) EPA did not violate the Regulatory Flexibility Act, 5 U.S.C. §§ 601-612 (1994 & Supp. II 1996), by certifying that the rule would not have a significant economic impact on a substantial number of small entities (213 F.3d at 688-89); and (7) EPA reasonably defined the main sources that could participate in the rule’s NO_x emissions trading program (*id.* at 689-90).

The court held against EPA when it found that the states of Wisconsin, Missouri and Georgia were included in the NO_x SIP Call on improper grounds. *Id.* at 681-85.

II. OVERVIEW OF THE NO_x SIP CALL

Ground-level ozone pollution, commonly referred to as “smog,” forms when nitrogen oxides (NO_x) and volatile organic compounds (VOCs) interact with sunlight in the earth’s atmosphere.⁸ NO_x and VOCs are emitted by thousands of diverse sources across the country. Coal-burning power plants are emissions sources, but so too are such smaller sources as gasoline distributors, diesel engines and automobiles.⁹

Because the transformation of NO_x and VOCs into ozone occurs in the atmosphere where prevailing westerly winds can carry the pollutants over great distances,¹⁰ several northeastern—and therefore downwind—states repeatedly had urged EPA to require upwind states to impose greater controls on NO_x and VOC emissions.¹¹ Although ozone is one of six air pollutants for which EPA has promulgated “national ambient air quality standards,”¹² EPA had been

The court also considered several other issues specific to industrial boilers, rejecting all but the claim that EPA failed to give proper notice of its definition of an “electricity generating unit.” *Id.* at 691-93. The court also agreed with a petitioner that EPA did not give proper notice of the control level it assumed for large stationary internal combustion engines. Finally, the court rejected two narrow claims brought by an electric utility regarding “early reduction credits” and “low mass emission units.” *Id.* at 693-95.

8. 63 Fed. Reg. at 57,359.

9. Grumet, *supra* note 1, at 378.

10. 62 Fed. Reg. at 60,333. *See also* Grumet, *supra* note 1, at 381 (scientific studies have concluded that ozone may be caused by emissions hundreds of miles away).

11. Grumet, *supra* note 1, at 396 and notes 72-73 (describing New York’s 1989 request that EPA take action against ozone transport); *id.* at 387-88 (describing petitions to EPA by eight northeastern states asking for regulation of upwind NO_x emissions). *See also* Vickie L. Patton, *The New Air Quality Standards, Regional Haze and Interstate Air Pollution Transport*, 28 ENVTL. L. REP. 10155, 10166 n.89 (1998) (describing repeated efforts by New York, Connecticut and other northeastern states to force EPA to impose additional requirements on midwestern sources to reduce emissions of another transported pollutant, sulfur dioxide).

12. National ambient air quality standards prescribe the maximum acceptable level of the pollutant in our ambient air. *See* 40 C.F.R. §§ 50.9-.10 (1999) (standards for ozone). *Id.* at pt. 50 (standards for particulate matter, sulfur dioxide, carbon monoxide, nitrogen dioxide and lead). In 1979, EPA promulgated the original “primary” standard for ozone, which set the permissible level of ozone in the ambient air at 0.12 parts per million (ppm), averaged over one-hour intervals (sometimes referred to as the “one-hour standard”). 40 C.F.R. § 50.9 (1979). In 1997, EPA promulgated a new, more stringent primary ozone standard as a companion to the older standard. National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856 (July 18, 1997) (codified at 40 C.F.R. § 50.10). EPA reduced the maximum allowable level of ozone in the ambient air to 0.08 ppm averaged over an eight-hour interval (the “eight-hour standard”). *Id.* at 38,858, 38,861-62.

In addition to “primary” standards designed to protect the public health, EPA also sets “secondary” standards designed to protect the public welfare. 42 U.S.C. § 7409(b)(1)(2) (1994). In 1997, EPA set the “secondary” ozone standard at the same level as the primary standard. 62 Fed. Reg. at 38,874-75.

reluctant to intercede in the states' disputes over interstate ozone pollution.¹³ However, with broader regulatory power granted by Congress in 1990,¹⁴ and with scientific evidence indicating that states along the eastern seaboard could not comply with the air quality standards for ozone,¹⁵ EPA announced a plan, in 1997, to determine whether any upwind states should be required, through a "SIP Call," to reduce their emissions.¹⁶

Under the Clean Air Act, in order to comply with air quality standards set by EPA, each state must develop a State Implementation Plan, or SIP, identifying which emissions sources the state will regulate and by what degree.¹⁷ EPA must review and approve a state's SIP and, after doing so, may "call" the SIP to require its revision if it fails to comply with all the relevant provisions of the Clean Air Act.¹⁸ To regulate interstate ozone pollution, EPA planned to call the SIPs of certain upwind states and require them to reduce their NO_x emissions. This "NO_x SIP Call" would be issued pursuant to section 110(a)(2)(D) of the Clean Air Act, which requires each state to ensure that emissions from its

13. See Patton, *supra* note 11, at 10156 ("Since the adoption of the 1970 Clean Air Act, . . . EPA has resisted restrictions on downwind pollution transport or allocating emissions reduction responsibilities among states to address transboundary pollution."); *id.* at 10166-72 (describing EPA's repeated denials of requests by downwind states for regulation of upwind sources); Grumet, *supra* note 1, at 385 ("By refusing to employ [its] authority [to control interstate air pollution], the EPA has until now perpetuated the paradigm of local responsibility set forth in the 1970 [Clean Air] Act.").

14. In 1990 Congress strengthened the good neighbor provision now found in section 110(a)(2)(D) and, before 1990, found in section 110(a)(2)(E). 42 U.S.C. § 7410(a)(2)(E) (1988). The pre-1990 version only prohibited emissions from "any stationary source within the [upwind] State . . . which will . . . prevent attainment or maintenance [of the air quality standards] by any other State." *Id.* (emphasis added). In 1990, Congress revised the provision to focus not only on stationary sources, but also "other type[s] of emissions activities" within an upwind state (such as automobiles), and to prohibit emissions that "contribute significantly" to downwind nonattainment, even if those emissions were not the sole cause of (*i.e.*, "prevented") nonattainment in another state. *Id.* § 7410(a)(2)(D)(i)(I) (1994). See Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2360-61 (1996) (summarizing changes made in 1990 to the good neighbor provision); Geoffrey L. Wilcox, *New England and the Challenge of Interstate Ozone Pollution Under the Clean Air Act of 1990*, 24 B.C. ENVTL. AFF. L. REV. 1, 18-21 (1996) (explaining difficulties in implementing the pre-1990 version of the good neighbor provision).

15. Grumet, *supra* note 1, at 389 (referring to "improved scientific knowledge among policy makers" and "changes in the 1990 [Clean Air Act] Amendments" as contributing to EPA's willingness to issue the NO_x SIP Call, as well as "changing politics" and "the growing competition between electric utilities").

16. Calls for State Implementation Plan Revisions for Certain States To Reduce Regional Transport of Ozone, 62 Fed. Reg. 1420 (Jan. 10, 1997).

17. 42 U.S.C. § 7410 (1990).

18. See *id.* § 7410(k)(5). Prior to 1990, EPA's authority to require a state to revise its SIP was implied from section 110(a)(2)(H), 42 U.S.C. § 7410(a)(2)(H) (1977). See *Virginia v. EPA*, 108 F.3d 1397, 1407 (D.C. Cir.), *modified on other grounds*, 116 F.3d 499 (D.C. Cir. 1999).

pollution sources do not *contribute significantly* to pollutant levels in another state.¹⁹

To issue the NO_x SIP Call pursuant to section 110(a)(2)(D), EPA faced enormous challenges. EPA had to determine not only which states' emissions were contributing to ozone levels in distant downwind states (and to what degree), but also had to define which emissions would be considered "significant," for nowhere does the Clean Air Act define the phrase "contribute significantly" or provide any guidance for its interpretation.²⁰ In addition, EPA had to develop a regulatory mechanism that would force the states to reduce their emissions while, at the same time, leaving each state the flexibility to choose which pollution control measures to adopt in order to obtain the necessary reductions.²¹

To meet these challenges, EPA took two innovative steps. First, EPA developed a definition of "contribute significantly," based not only on the amount of ozone an upwind state contributed to downwind areas, but also on what types of pollution sources were found in the state and whether affordable pollution controls were available for those sources.²² Second, to prescribe the emissions reductions required of the states, EPA assigned to each state an "emissions budget," that is, a cap on the total amount of NO_x emissions permitted from that state.²³ A discussion of these controversial steps, vital to understanding the *Michigan* case, follows.

III. AIR QUALITY, CONTROL COSTS AND "CONTRIBUTING SIGNIFICANTLY"

A. *The Good Neighbor Provision Of Section 110(a)(2)(D)*

EPA issued the NO_x SIP Call pursuant to section 110(a)(2)(D) of the Clean Air Act,²⁴ the "good neighbor provision,"²⁵ which requires each state to include provisions in its SIP prohibiting:

any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will . . . *contribute significantly* to nonattainment in, or interfere with maintenance by, any other State with respect to any . . . national primary or secondary ambient air quality standard.²⁶

19. 42 U.S.C. § 7410(a)(2)(D)(i)(I) (1990).

20. *See infra* text accompanying notes 24-56. Referring to "states' emissions" does not mean only emissions from state-owned or state-operated sources, and instead means emissions from all sources—public and private—in the state.

21. *See infra* text accompanying notes 80-86.

22. *See infra* text accompanying notes 24-56.

23. *See infra* text accompanying notes 80-86.

24. 42 U.S.C. § 7410(a)(2)(D)(i)(I) (1994).

25. *See* 63 Fed. Reg. at 57,366.

26. 42 U.S.C. § 7410(a)(2)(D)(i)(I) (1990) (emphasis added). *See supra* text of note 12. (describing primary and secondary standards). For an explanation of how the current version of

Although this provision clearly prohibits a state from emitting pollutants in amounts that will “contribute significantly” to another state’s “nonattainment,” that is, its inability to comply with air quality standards set by EPA, the statute does not define, quantitatively or otherwise, what is meant by “contribute significantly,” nor does it detail the methods to be used to identify which upwind emissions from one state might be contributing significantly to another state. EPA began, therefore, to develop its interpretation of section 110(a)(2)(D) by first turning to sophisticated air quality modeling data then available.²⁷

B. EPA’s Preliminary Determinations Based On Air Quality Modeling Data

For the NO_x SIP Call, EPA relied heavily on air quality modeling data provided by the Ozone Transport Assessment Group (OTAG). In 1995, in order to study interstate ozone pollution and develop strategies to reduce its transport from one state to another, thirty-seven states east of the Rockies joined together to create OTAG.²⁸ For two years, using state-of-the-art techniques, OTAG studied the complex science of ozone transport and concluded that reducing upwind NO_x emissions would reduce ozone levels in downwind regions, even in downwind regions several hundred miles away.²⁹

the good neighbor provision reflects improvements made by Congress in 1990, *see supra* text of note 14.

Section 110(a)(2)(D) not only focuses on upwind state emissions that contribute significantly to downwind nonattainment, but also emissions that interfere with a downwind state’s ability to maintain its already-established compliance with the air quality standards. EPA, however, did not focus on this aspect of the good neighbor provision, and instead focused on emissions that “contribute significantly” to downwind nonattainment. 62 Fed. Reg. at 60,326.

27. 63 Fed. Reg. at 57,381-83 (describing the major findings from the Ozone Transport Assessment Group technical analyses). *See also Michigan*, 213 F.3d at 673 (describing EPA’s technical analyses).

28. Ozone Transport Assessment Group Executive Report (1997) [hereinafter OTAG Executive Report] (on file with *Public Law Review*); 62 Fed. Reg. at 60,319-20. EPA, industry, and environmental representatives also participated in OTAG’s proceedings. OTAG Executive Report, at 3.

29. OTAG Executive Report, *supra* note 28, at 4, 30-32 (describing regional NO_x emissions reductions as effective in producing reduced ozone levels throughout the OTAG states, though recognizing that NO_x reductions have the greatest benefit in the immediate area where the reductions occur). *See also* 62 Fed. Reg. at 60,377 (presenting OTAG’s findings that “[r]egional NO_x reductions are effective in producing ozone benefits” and “[a]ir quality data documents the widespread and pervasive nature of ozone and indicates transport of ozone”) (emphasis added); 63 Fed. Reg. at 57,396 (describing, for example, Illinois’ contribution to ozone nonattainment in New York City).

As previously noted, NO_x and VOCs combine to form ozone. *See supra* text accompanying note 8. OTAG found, however, that reducing emissions of VOCs would only help reduce ozone levels in the immediate locales where the VOCs are created, which usually are major urban areas, and would not help alleviate ozone in distant downwind states. OTAG Executive Report, *supra* note 28, at 30; 62 Fed. Reg. at 60,332, 60,377 (summarizing OTAG’s

Although its studies provided considerable long-range ozone transport data,³⁰ OTAG did not determine which upwind states were the most substantial contributors to downwind ozone pollution.³¹ (This was due, in part, to OTAG's use of modeling that examined emissions, not from any individual state, but from upwind *regional groups* of states),³² OTAG also did not determine *which* pollution control measures an upwind region should adopt in order to reduce its NO_x emissions,³³ but instead recommended that the states conduct further studies.³⁴

In addition to relying on OTAG's studies, EPA also conducted its own more detailed modeling that focused on state-by-state, rather than regional, analyses.³⁵ This modeling predicted the impact of upwind emissions on downwind ozone levels using three measures: (1) the absolute magnitude of the ozone contribution from an upwind state to a downwind state; (2) the relative magnitude of the upwind state's contribution compared to the downwind state's ozone level; and (3) the frequency of the contributions.³⁶

With this air quality modeling data in hand, EPA then turned to the difficult task of determining which upwind emissions were *contributing*

recommendations). This is so because many VOCs are emitted from natural sources such as trees and plants. Thus, even if all man-made VOCs were eliminated, NO_x emissions could still interact with natural VOCs to form ozone. *See* Grumet, *supra* note 1, at 378.

30. *See* 62 Fed. Reg. at 60,330 (the OTAG process used an innovative approach to develop "the most comprehensive analysis of ozone transport ever conducted"); 63 Fed. Reg. at 57,381-382 (describing OTAG's technical analyses, including its quantification of contributions). *See also* OTAG Executive Report, *supra* note 28, at 1 ("OTAG improved the level of air pollution science and information by an order of magnitude. . .").

31. *See* 62 Fed. Reg. at 60,332-33 (OTAG divided the 23-state region into twelve "subregions" comprised of portions of multiple states and made conclusions about the contributions from one multistate region to another, not any one state to another state).

32. *Id.*

33. OTAG recommended to EPA a whole range of emissions controls—ranging from no controls beyond current requirements under the Clean Air Act to substantial controls on large sources such as power plants. OTAG Executive Report, *supra* note 28, at 52-54.

34. *Id.* at 5.

35. 62 Fed. Reg. 60,331-36 (describing OTAG's modeling, EPA's method for analyzing the results of OTAG's modeling, and other information EPA used to determine significant contributions); 63 Fed. Reg. at 57,377, 57,387-89 (describing additional air quality modeling EPA conducted after receiving comments).

36. 63 Fed. Reg. at 57,387. EPA analyzed an upwind state's contribution to exceedances of the original one-hour ozone standard *or* the 1997 revised eight-hour ozone standard. *Id.* at 57,387-88. EPA's findings based on the eight-hour standard, and the petitioners' challenges to those findings, were stayed after that standard was remanded in *American Trucking Assn's, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir.), *reh'g granted in part and denied in part*, 195 F.3d 4 (D.C. Cir. 1999), *cert. granted and reversed sub nom.*, *Whitman v. American Trucking Assn's Inc.*, 121 S. Ct. 903 (2001). *See Michigan*, 213 F.3d at 670-71 (describing stay of EPA's eight-hour findings and challenges thereto).

significantly to ozone levels in downwind states.³⁷ EPA's review of the data was informed by its notion of "collective contributions," that is, a recognition that, generally, ozone pollution is caused by the contributions of thousands of relatively small, diverse sources over wide areas.³⁸ Although no single source might contribute significantly to ozone pollution in a downwind state, many sources together certainly could do so.³⁹ Similarly, while a single state's emissions, in absolute terms, might be contributing relatively small amounts of ozone downwind, EPA determined that those emissions might nevertheless be contributing significantly to another state's ozone nonattainment when combined with the emissions from other states.⁴⁰ In addition, EPA examined not only the *amount* of ozone contributed but also the *frequency* of a state's contributions. An upwind state, according to EPA, might be contributing significantly to downwind ozone nonattainment if it contributed *infrequent but high* amounts of ozone or *frequent but low* amounts of ozone to one or more downwind states.⁴¹ Based on all of these determinations, and after reviewing all the air quality modeling data, EPA concluded *preliminarily*, pursuant to Clean Air Act section 110(a)(2)(D), that emissions from twenty-three upwind states, primarily in the midwest and southeast, were *contributing significantly* to ozone nonattainment in one or more downwind states.⁴²

C. EPA's Controversial Next Step: Consideration Of Pollution Control Costs

In an effort to ensure that the NO_x SIP Call would be affordable for the states to implement, EPA examined the costs of pollution control measures, that is, the means available for pollution sources in a state to reduce NO_x emissions, and defined as "highly cost-effective" any control measure that would eliminate one ton of NO_x emissions at a cost of no more than \$2,000.⁴³

37. 63 Fed. Reg. at 57,390-91.

38. *Id.* at 57,375-77.

39. *Id.* at 57,377 ("[T]he solution to the problem [of ozone transport] is the implementation over a wide area of controls on many sources, each of which may have a small or unmeasurable ambient impact by itself.").

40. *Id.* at 57,392. For example, EPA explained that several relatively small ozone contributions from several different states led to a substantial portion of New York City's ozone nonattainment. *See id.* at 57,391-92. In particular, except for the states in the immediate vicinity of New York City, no upwind state contributed more than 5% of the total average ozone contribution to that city. Yet together those upwind states contributed a total of 27% to the city's ozone nonattainment on average. *Id.* at Table II-3.

41. *Id.* at 57,391.

42. *Id.* at 57,394-98 (summarizing the results of EPA's assessment of air quality modeling data, described as the "first step" in EPA's efforts to identify the upwind emissions that contribute significantly downwind).

43. 63 Fed. Reg. at 57,377-78. Pollution control measures might include installing equipment to burn fuels more efficiently (for example, using "low-NO_x burners" or "overfire air") or installing post-combustion technologies to remove NO_x from a source's emissions (for

EPA determined that out of the hundreds of pollution sources that a state might regulate, highly cost-effective control measures were available for four: (1) large boilers and turbines that generate electricity at power plants ("large power plants");⁴⁴ (2) large boilers and turbines at industrial facilities ("large industrial boilers");⁴⁵ (3) cement kilns; and (4) stationary internal combustion engines (such as pipeline compressors).⁴⁶

EPA then took an important—and controversial—next step. Rather than relying on its preliminary determinations based on air quality modeling data alone, EPA defined as "contributing significantly" *only those upwind NO_x emissions that could be reduced using the highly cost-effective pollution control measures for the four types of sources it had identified.*⁴⁷ More specifically, for those four sources, EPA calculated the precise emissions levels expected *if* they were operating with highly cost-effective control measures, and *only* the emissions above those expected levels were deemed to be contributing significantly to downwind ozone.⁴⁸ Sources producing emissions at or below those levels were *not* considered to be contributing

example, using "selective catalytic reduction" or selective noncatalytic reduction"). *See id.* at 57,447.

Just as OTAG had found that VOC emissions reductions would not help alleviate long-range ozone transport, so EPA also did not consider any VOC emissions to be significant contributors to downwind states' ozone nonattainment and did not consider the control costs of VOC reductions. *See supra* text of note 29; 62 Fed. Reg. at 60,320. The *Michigan* court upheld EPA's decision not to give credit under the NO_x SIP Call for VOC reductions. 213 F.3d at 688.

44. Technically, EPA refers to this category as "large electricity-generating units" (large EGUs), which could include traditional, utility-owned power plants or other non-utility-owned power generators. *See* Supplemental Notice for the 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. 25,902, 25,923 (May 11, 1998) (explaining that the deregulation of the power-generation industry has led numerous non-utility sources to generate electricity). For ease, this article will refer to this category as "large power plants."

45. Industrial boilers are one category of what EPA refers to as "non-EGUs," 63 Fed. Reg. at 57,365, and can generate steam for a variety of uses within an industrial complex. *See id.* at 25,923.

46. *Id.* at 57,377-78, 57,399-402. EPA chose the figure of \$2,000 because several recent federal and state initiatives to control NO_x emissions had cost, on average, a little less than \$2,000/ton of NO_x removed. *See id.* at 57,400 & Table 1. EPA did not find any highly cost-effective pollution controls for common NO_x sources such as automobiles or municipal waste combustors. *Id.* at 57,402-03.

47. *Id.* at 57,377-78.

48. *Id.* at 57,378. EPA only reviewed the control availability for emissions in the twenty-three states that it had identified preliminarily based on air quality data alone. *See id.* ("Because EPA had also determined that the NO_x emissions from the affected upwind States have a large and/or frequent impact on downwind nonattainment or maintenance problems, EPA concludes that the amount of NO_x emissions from those States that can be eliminated through application of highly cost-effective control measures contributes significantly to nonattainment or maintenance problems downwind.").

significantly to downwind ozone.⁴⁹ For example, EPA had determined that a large power plant, using highly cost-effective control measures, could limit emissions to 0.15 pounds of NO_x per million British Thermal Units (Btus) of heat input (pounds/mmBtu).⁵⁰ If a plant emitted NO_x at a rate *greater* than 0.15 pounds/mmBtu, then only the emissions exceeding that level were considered to be contributing significantly to downwind ozone.⁵¹ Not considered to be significant were any NO_x emissions originating from a power plant emitting NO_x at a rate of 0.15 pounds/mmBtu or less, or, for that matter, any NO_x emissions originating from the many sources for which EPA had not specifically identified highly cost-effective control measures.⁵² NO_x emissions from automobiles, for example, were not deemed to be contributing significantly to downwind ozone at all.⁵³

EPA's final definition of "contribute significantly" could easily be seen as confusing two separate factors: first, based on scientific data, the actual amount of ozone an upwind state was contributing downwind; and second, the types of pollution sources in that state and whether highly cost-effective control measures were available for them. Arguably, emissions are no less significant if they originate from power plants (for which EPA had identified highly cost-effective control measures) than emissions originating from automobiles (for which EPA had not). Yet, under the NO_x SIP Call, two states contributing *the same amount of ozone* to downwind states, by EPA's definition, nevertheless could be contributing dramatically different "significant" amounts of ozone. For example, if Indiana's NO_x emissions primarily were produced by large power plants, while Kentucky's primarily were produced by automobiles, then, by EPA's definition, Indiana's emissions would be "contributing significantly" to a much greater extent than Kentucky's, *even if* both states contributed equally, as shown by air quality data, to downwind ozone levels.⁵⁴

49. *Id.* ("Because no highly cost-effective controls are available to eliminate the remaining amounts of NO_x emissions, EPA concludes that those emissions do not contribute significantly to downwind nonattainment or maintenance problems.")

50. *Id.* at 57,401-402. The heat input value of various fuels differs considerably; thus, emissions limits are expressed as a factor of heat inputs. In determining the cost of NO_x reductions for large power plants, EPA assumed that the twenty-three covered states would participate in an emissions trading program, whereby sources could buy and sell NO_x emissions reduction credits from state to state. *Id.* at 57,400.

51. *See id.* at 57,409-14 (calculating "emissions budgets" for each state assuming the "applicable [NO_x] emission rate" of 0.15 pounds/mmBtu). For a discussion of the state emissions budgets, *see infra* text accompanying notes 80-86.

52. *See* 63 Fed. Reg. at 57,378.

53. *Id.* at 57,402-03.

54. This example—far simpler than the more complex facts addressed in the NO_x SIP Call—assumes that Kentucky's emissions, in addition to originating from automobiles, also come from at least a few large power plants, large industrial boilers, cement kilns, and/or stationary internal

The petitioners in *Michigan* brought this apparent inconsistency to the D.C. Circuit's attention, suggesting that the NO_x SIP Call did not accomplish what should have been its primary goal, namely, reducing high levels of NO_x emissions that contributed to downwind ozone pollution without regard to the types of sources creating those emissions.⁵⁵ They argued that EPA's definition of "contribute significantly" improperly focused, not on whether sources in a state, such as power plants, were actually contributing significant amounts of ozone to downwind states, but rather on whether the power plants' NO_x emissions levels were as low as levels at power plants that implemented highly cost-effective control measures.⁵⁶ Although the petitioners' argument had some common-sense appeal, the *Michigan* court paid little heed to this practical concern, and instead focused on a more fundamental issue raised by the petitioners: whether section 110(a)(2)(D) even allowed EPA to consider the costs of pollution control measures in the first place.

D. EPA's Statutory Authority To Consider Costs: The Petitioners' Arguments And The Court's Decision

Before the *Michigan* court, the petitioners argued that the NO_x SIP Call's definition of "contribute significantly" not only defied common sense, but also violated the very terms of section 110(a)(2)(D) of the Clean Air Act. That provision, they claimed, precluded EPA from incorporating the costs of pollution control measures into its identification of significant upwind emissions.⁵⁷ Instead, EPA was required to rely primarily on air quality modeling data.⁵⁸

The *Michigan* court, however, disagreed. Writing for the majority, Judge Stephen F. Williams, joined by Judge Judith W. Rogers, held that EPA, when determining whether an upwind state's emissions were contributing significantly to downwind ozone nonattainment, permissibly considered whether any highly cost-effective pollution control measures were available for that state's sources.⁵⁹ Because, according to the court, the meaning of the phrase "contribute significantly" in section 110(a)(2)(D) was ambiguous, it required further interpretation by EPA,⁶⁰ and under the "settled law of this circuit," EPA could consider economic factors, such as the costs of implementing pollution control measures, to interpret such an ambiguous

combustion engines—the four categories targeted by EPA; otherwise, Kentucky would not have to reduce *any* emissions under the NO_x SIP Call.

55. See Final Brief of Petitioning States ("States' Brief"), at 17-19, *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (No. 98-1497) [hereafter States' Brief].

56. *Id.*

57. *Id.* at 15-16.

58. *Id.*

59. 213 F.3d at 674-79.

60. *Id.* at 677-78.

statutory phrase unless Congress has expressed its “clear . . . intent to preclude [such] consideration.”⁶¹ The majority decided that nothing in the text of section 110(a)(2)(D), the overall structure of the Clean Air Act, or the Act’s legislative history indicated that Congress intended to bar EPA from considering the costs that upwind sources might incur to implement pollution control measures.⁶² Although Congress had not expressly authorized EPA’s consideration of control costs under section 110(a)(2)(D), it had not expressly precluded such consideration either. EPA, therefore, could exercise its discretion under the statute.⁶³

In dissent, Judge David B. Sentelle concluded that EPA did *not* have discretion, under section 110(a)(2)(D), to consider the costs of pollution control measures.⁶⁴ He described EPA as a “creature of statute” with authority to consider costs only if Congress *expressly* provides that authority.⁶⁵ If

61. *Id.* (citing *NRDC v. EPA*, 824 F.2d 1146 (D.C. Cir. 1987) (*en banc*); *George E. Warren Corp. v. EPA*, 159 F.3d 616 (D.C. Cir. 1999); *Grand Canyon Air Tour Coalition v. FAA*, 154 F.3d 455 (D.C. Cir. 1998); *NRDC v. EPA*, 937 F.2d 641 (D.C. Cir. 1991)).

62. *Michigan*, 213 F.3d at 679 (summarizing conclusion regarding text, structure and history of the Clean Air Act).

63. 213 F.3d at 679. The court also rejected a related claim about EPA’s findings of significant contributions, namely, that EPA had exercised such unconstrained discretion in determining which upwind emissions contributed significantly to downwind ozone nonattainment that EPA had violated the nondelegation doctrine. *See id.* at 680-81. For this argument the petitioners relied on the D.C. Circuit’s decision in *American Trucking*, in which the court held that, pursuant to the nondelegation doctrine, an agency must identify a “determinate criterion,” derived from the governing statute, to restrain the agency’s exercise of discretion. 175 F.3d at 1034. *See generally* Patricia Ross McCubbin, *The D.C. Circuit Gives New Life and New Meaning to the Nondelegation Doctrine in American Trucking Ass’ns v. EPA*, 19 VA. ENVTL. L.J. 57 (2000). In the challenges to the NO_x SIP Call, the *Michigan* court held that EPA’s benchmark of \$2,000 for highly cost-effective pollution controls was not based on “anything in the language or function of section 110(a)(2)(D)” of the Clean Air Act, and was “essentially unbounded,” suggesting a violation of the nondelegation doctrine. *See supra* text accompanying notes 43-46; 213 F.3d at 680. However, the *Michigan* court held that the nondelegation doctrine only applies to agency actions that affect “all American enterprise,” and that, because the NO_x SIP Call applied to merely twenty-three states—just roughly “half of the nation”—the rule did not have to satisfy the doctrine. *Id.* at 680-81. This conclusion—difficult to justify—is now irrelevant because the Supreme Court reversed the D.C. Circuit’s decision in *American Trucking*, holding that the nondelegation doctrine does not serve as a constraint on agency discretion. 121 S. Ct. at 912-14.

64. 213 F.3d at 695. Judge Sentelle believed that EPA had authority to consider *only* air quality-related information when identifying significant upwind emissions. *Id.*

65. *Id.* For this notion, Judge Sentelle relied on the Supreme Court’s statement that “it is axiomatic that an administrative agency’s power to promulgate legislative regulations is limited to the authority delegated by Congress.” *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988).

Congress remains *silent*, then an agency cannot, as the majority and EPA suggested, infer that authority in its decisionmaking.⁶⁶

E. *Analysis Of The Court's Decision*

One argument suggests support for Judge Sentelle's position. In other sections of the Clean Air Act, Congress *expressly directs* EPA to consider costs. In section 111(a)(1), for example, Congress expressly directs EPA to set "new source performance standards" based, in part, on "the *cost* of achieving [an emissions] reduction."⁶⁷ One could reasonably conclude that had it intended EPA to consider pollution control costs under section 110(a)(2)(D), Congress would have similarly directed EPA to do so.⁶⁸

Such a literal reading of the Clean Air Act, however, might fail to give sufficient weight to the legislative history of the interstate pollution provisions in the statute.⁶⁹ Congress intended those provisions not only to improve overall

66. 213 F.3d at 695. Judge Sentelle's dissent did not address the several prior D.C. Circuit cases upon which the majority relied for the notion that EPA may consider costs unless Congress clearly bars their consideration. *See id.* at 678 (citing *NRDC v. EPA*, 824 F.2d 1146 (D.C. Cir. 1987) (*en banc*); *George E. Warren Corp. v. EPA*, 159 F.3d 616 (D.C. Cir. 1999); *Grand Canyon Air Tour Coalition v. FAA*, 154 F.3d 455 (D.C. Cir. 1998); *NRDC v. EPA*, 937 F.2d 641 (D.C. Cir. 1991)). And the majority opinion did not address the Supreme Court and D.C. Circuit cases upon which Judge Sentelle relied for the opposite notion. *Id.* at 696-97 (citing *Bowen*, 488 U.S. at 208; *American Petroleum Inst. v. EPA*, 52 F.3d 1113 (D.C. Cir. 1995); *Ethyl Corp. v. EPA*, 51 F.3d 1053 (D.C. Cir. 1995)).

67. 42 U.S.C. § 7411(a)(1) (1994) (emphasis added).

68. *See, e.g., Russello v. United States*, 464 U.S. 16, 23 (1983) ("[W]here Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.") (quoting *United States v. Wong Kim Bo*, 472 F.2d 720, 722 (5th Cir. 1972)).

This argument is buttressed by the recent decision of the Supreme Court in *American Trucking*. There the Court noted the many different provisions of the Clean Air Act, including section 111, under which Congress expressly has directed EPA to consider costs, and explained that it will not "find implicit in ambiguous sections of the [Clean Air Act] an authorization to consider costs that has elsewhere, and so often, been expressly granted." 121 S. Ct. at 909 (citations omitted). It held that section 109(b) of the Act, 42 U.S.C. § 7409(b) (1994), does not grant EPA express authority to consider costs when setting national ambient air quality standards. 121 S. Ct. at 911. Interestingly, the Court distinguished section 110 and the *Michigan* decision (along with a few other D.C. Circuit decisions), indicating that section 110 does not "share[] § 109(b)(1)'s prominence in the overall statutory scheme." 121 S. Ct. at 910 n.1. In other words, even though Congress did not expressly grant EPA authority to consider costs in section 110, the Court apparently was not troubled by the *Michigan* court's decision to allow EPA to do so because section 110 is not a "prominent" part of the Clean Air Act.

69. Along with section 110(a)(2)(D), other provisions of the Clean Air Act also address interstate pollution. Under section 176A, for instance, EPA may designate "transport regions"—areas of the country that are affected by a common interstate air pollution problem—and may establish a "transport commission" comprised of state representatives to recommend control measures for the transport region. 42 U.S.C. § 7506a (1994). In section 184, Congress

air quality but also to alleviate *economic disparities* between upwind and downwind states.⁷⁰ The legislature recognized that, historically, downwind states had imposed more stringent pollution control requirements on their emissions sources than had their upwind neighbors, thus imposing “a distinct economic and competitive disadvantage” for those sources.⁷¹ Congress intended “to equalize the positions of the States with respect to interstate pollution by making a source at least as responsible for polluting another State as it would be for polluting its own State.”⁷² The NO_x SIP Call, therefore, satisfied Congress’s intent by requiring upwind states to reduce their emissions to levels already obtained by sources using highly cost-effective control measures in downwind states.

An examination of the provision authorizing EPA to call SIPs for violations of section 110(a)(2)(D) also supports the *Michigan* decision. Under section 110(k)(5), EPA can require a state to “mitigate adequately” its

established one particular transport region: the Northeast Ozone Transport Region for twelve northeastern states and the District of Columbia. *Id.* § 7511c(a) (1994). *See also infra* text of note 87.

In addition, section 126 allows downwind states to petition EPA to impose limits directly on upwind stationary sources that violate section 110(a)(2)(D). 42 U.S.C. § 7426(b)-(c) (1994). While it was developing the NO_x SIP Call, EPA received petitions under section 126 from several northeastern states, requesting that EPA find that certain types of NO_x-emitting sources in specified upwind states were contributing significantly to nonattainment of the one-hour ozone air quality standard in the downwind, petitioning states. Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 63 Fed. Reg. 24,058, 24059 (Apr. 30, 1998). EPA determined that sources of NO_x located in twelve states (Delaware, Indiana, Kentucky, Maryland, Michigan, North Carolina, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia) and the District of Columbia contribute significantly to nonattainment of the one-hour ozone standard in the downwind states of Connecticut, Massachusetts, New York, and Pennsylvania, and by a later rule, EPA imposed federal NO_x reduction requirements on those sources (the “Section 126 Rule”). *See* Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250 (May 25, 1999); Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. 2674 (Jan. 18, 2000). Challenges to the Section 126 Rule are currently pending before the D.C. Circuit in *Appalachian Power Co. v. EPA* (No. 99-1200).

70. *See* S. Rep. No. 95-127 at 41 (1977), available at LEXIS, Clean Air Act Amendments of 1977 Legislative History, at 25 [hereinafter CAA77 Leg. Hist.] (Strong interstate pollution provisions were needed to address the “serious inequities among several States, where one State may have more stringent implement plan requirements than another State.”).

71. CAA Leg. Hist., *supra* note 70, at 25 (giving example of Ohio’s failure to adopt any control measures for sulfur dioxide until 1976, resulting in increased sulfur dioxide emissions transported to its downwind neighbor, West Virginia, which then had to impose “more stringent control[s]”).

72. *Id.* at 42.

contributions to “interstate pollutant transport,”⁷³ and when determining which state mitigation measures would be “adequate,” EPA can consider the costs that a state would incur to reduce its emissions.⁷⁴ Although the petitioners maintained that EPA could not consider pollution control costs under section 110(a)(2)(D) when it *identified* which upwind emissions were significant, the petitioners (and the court) agreed that EPA could have considered those costs under section 110(k)(5) when it *fashioned the remedy* for violation of section 110(a)(2)(D) and determined the emissions reductions required of the states. Perhaps if EPA had kept the two inquiries for its NO_x SIP Call analytically distinct—first, under section 110(a)(2)(D), using air quality data to identify which NO_x emissions were contributing significantly to downwind ozone nonattainment, and second, under section 110(k)(5), considering whether highly cost-effective control measures were available to reduce those emissions—the end result would have been a less controversial application of the Clean Air Act. The end result for the upwind states, however, would have been the same: a requirement to reduce NO_x emissions to a level reflecting the use of highly cost-effective control measures.

IV. COOPERATIVE FEDERALISM AND THE NO_x EMISSIONS BUDGETS

A. *Implementing The Clean Air Act: The Roles Of States And EPA*

The Clean Air Act establishes a scheme of “cooperative federalism” with distinct roles for EPA and the states.⁷⁵ To regulate ozone pollution, for example, EPA sets air quality standards prescribing permissible levels of the pollutant, while each state, by adopting a State Implementation Plan, has the authority to choose which sources to regulate and which pollution control measures to adopt in order to meet those levels.⁷⁶ One state might require

73. 42 U.S.C. § 7410(k)(5) (1994). That provision does not expressly refer to section 110(a)(2)(D). Instead, it refers to “interstate pollutant transport described in section [176A] of this title or section [184] of this title.” Sections 176A and 184, in turn, establish “transport commissions” that may make recommendations to EPA to bring states into compliance with the prohibition on contributions to interstate pollution established by section 110(a)(2)(D). *See* 42 U.S.C. § 7506a(b)(2) (1994) (interstate transport commission shall recommend to EPA “such measures as the Commission determines to be necessary to ensure that the plans for the relevant States meet the requirements of section 7410(a)(2)(D) of this title”); *id.* § 7511c(c)(5) (1994) (EPA may make a finding in response to a recommendation from the Northeast Ozone Transport Commission that a state’s SIP “is inadequate to meet the requirements of section 7410(a)(2)(D) of this title”). *See also infra* text accompanying notes 87-88.

74. *See* 63 Fed. Reg. at 57,376; 62 Fed. Reg. at 60,325. *See also* 213 F.3d at 676-77 (citing 42 U.S.C. § 7410(k)(5) (1994) and explaining petitioners’ concession that control costs could be considered under that provision).

75. *See Connecticut v. EPA*, 696 F.2d 147, 151 (2d Cir. 1982).

76. *See Train v. NRDC*, 421 U.S. 60, 79 (1975). *See also Bethlehem Steel Corp. v. Gorsuch*, 742 F.2d 1028, 1036 (7th Cir. 1984) (“The federal government through the EPA

emissions reductions from large industries or power plants, while another might require reductions from a broad array of smaller sources that might include dry cleaners, gas stations, or automobiles. Although it must review each state's SIP, EPA has no authority to question the state's choices as long as the SIP meets the requirements of the Clean Air Act.⁷⁷ This careful balance between federal and state authority is a key element of the statute,⁷⁸ and the eight states challenging the NO_x SIP Call argued that EPA upset this balance and violated the states' rights when it assigned specific "emissions budgets" for each state to meet.⁷⁹

B. EPA's NO_x Emissions Budgets

To determine the exact NO_x emissions reductions required of each state by the NO_x SIP Call, EPA took an unprecedented step, assigning a mandatory NO_x emissions budget to each of the twenty-three upwind states that were, according to EPA, contributing significantly to downwind ozone nonattainment.⁸⁰ Relying on its earlier assessment of pollution control costs, EPA determined a state's emissions budget by calculating what the state's total NO_x emissions output would be *if the state implemented the highly cost-effective pollution control measures available for the four types of sources that EPA previously had identified*.⁸¹ To determine the NO_x emissions budget for Ohio, for example, EPA calculated that *if* Ohio were to require all of its large power plants, large industrial boilers, cement kilns and stationary internal

determines the ends—the standards of air quality—but Congress has given the states the initiative and broad responsibility regarding the means to achieve those ends through state implementation plans and timetables for compliance.”) (citations omitted).

77. *Train*, 421 U.S. at 79. See also *Union Electric Co. v. EPA*, 427 U.S. 246, 256-57 (1976) (The Clean Air Act “place[s] the primary responsibility for formulating pollution control strategies on the States, but nonetheless subject[s] the States to strict minimum compliance requirements.”).

78. See Mark Squillace, *Cooperative Federalism Under The Surface Mining Control And Reclamation Act: Is This Any Way To Run A Government?*, 15 ENVTL. L. REP. 10039, 10039 (cooperation federalism is a hallmark of the Clean Air Act and other environmental statutes); Hope M. Babcock, *Dual Regulation, Collaborative Management, or Layered Federalism: Can Cooperative Federalism Models From Other Laws Save Our Public Lands?*, 3 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 193, 199 (Winter 1996) (describing the “state primacy” or “dual regulation” model of cooperative federalism found in various federal pollution control statutes).

79. See States' Brief, *supra* note 55, at 34-40.

80. 63 Fed. Reg. at 57,377-78.

81. *Id.* at 57,403 (“The above discussion described the controls for various source categories that EPA considers to be highly cost-effective. The next step in the process is to determine the amounts of NO_x emissions that would be eliminated by applying these highly cost-effective controls to the respective source categories. The EPA considers those emissions to be the amounts that contribute significantly to nonattainment in, or interfere with maintenance by, downwind States. By assuming that reductions of this magnitude should occur, EPA determined the resulting State-specific “budget.”).

combustion engines to implement the highly cost-effective pollution control measures identified by EPA, then Ohio's overall NO_x emissions would be reduced from 372,626 tons per year to 239,898 tons per year.⁸² Consequently, EPA set the NO_x emissions budget for Ohio at 239,898 tons per year, requiring Ohio to submit a SIP demonstrating that the state would meet that cap.⁸³

It is important to understand that EPA did *not* dictate that the states actually impose the highly cost-effective control measures on the four pollution sources it had identified, but simply set mandatory, state-wide emissions caps based on its calculations. Ohio, for example, in order to reduce its NO_x emissions to 239,898 tons per year, was not *required* to adopt the specific pollution controls for the four sources identified by EPA, but was free to obtain the necessary emissions reductions through whatever mix of control measures on whatever sources it chose.⁸⁴ The states challenging the NO_x SIP Call, however, argued that although EPA had not *explicitly* dictated which control measures each state should implement, the assumptions made by EPA when calculating the emissions budgets *effectively* dictated the states' choices.⁸⁵ For this argument, the petitioners relied on an earlier decision of the D.C. Circuit in *Virginia v. EPA*.⁸⁶

C. *Petitioners' Reliance On The Virginia Decision And The NOTC LEV Rule*

Established by Congress in 1990, and composed of representatives from thirteen northeastern states, the Northeast Ozone Transport Commission, or

82. *Id.* at 57,439 (showing total budget for Ohio of 239,898 as well as total budgets for the twenty-two other covered states); *id.* at 57,433-36, Table III-5 & Table III-7 (showing calculated emissions levels in each state if EGUs (*i.e.*, large power plants) and non-EGUs (*i.e.*, industrial boilers, cement kilns and stationary internal combustion engines) reduced their emissions to EPA's assumed control levels).

EPA revised the states' emissions budgets (twice) after receiving comments about some of the technical data EPA had gathered in the "emissions inventories" from which it calculated the budgets. *See* Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 64 Fed. Reg. 26,298 (May 14, 1999); Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 65 Fed. Reg. 11,222 (Mar. 2, 2000). The emissions inventories describe all the various sources of emissions in a state. Based on EPA's changes to the emissions inventories, Ohio's revised budget was set at 249,274 tons of NO_x. *See* 65 Fed. Reg. at 11,225. Challenges to EPA's budget revisions are currently pending before the D.C. Circuit in *Appalachian Power Co. v. EPA* (No. 99-1268).

83. *Id.* at 57,491-92 (to be codified at 40 C.F.R. § 51.121(a)(1) & (e)(2)).

84. 63 Fed. Reg. at 57,378 (quoting 62 Fed. Reg. at 60,328).

85. States' Brief, *supra* note 55, at 34-40.

86. *Id.* *See* *Virginia v. EPA*, 108 F.3d 1397, 1407 (D.C. Cir.), *modified on other grounds*, 116 F.3d 499 (D.C. Cir. 1999).

NOTC, serves as an advisory commission to EPA.⁸⁷ In 1994, a majority of the NOTC members voted to recommend that EPA require the thirteen NOTC states to enact a “Low Emission Vehicle” (LEV) program to help reduce intra- and interstate ozone pollution.⁸⁸ Adopting the NOTC’s recommendation, EPA issued the “NOTC LEV Rule,” which mandated that the NOTC states reduce NO_x and VOC emissions *either* by implementing the LEV program *or* by implementing alternative controls.⁸⁹ However, EPA’s NOTC LEV Rule required a state implementing alternative controls to achieve NO_x and VOC reductions *several times greater* than the reductions expected if it implemented the LEV program.⁹⁰

The Commonwealth of Virginia, one of the NOTC states that had voted against the recommendation, challenged the NOTC LEV Rule, claiming that although it *ostensibly* allowed states the ability to choose alternatives, the rule *effectively* mandated only one control measure, the LEV program.⁹¹ The D.C. Circuit agreed, concluding that, because “only a very foolish state” would choose to implement alternative controls that would require much greater emissions reductions, EPA had not given the states any real alternatives to the LEV program.⁹² Consequently, the court invalidated the NOTC LEV Rule.⁹³

Because the NOTC LEV Rule represented EPA’s only other effort to implement the good neighbor provision of section 110(a)(2)(D),⁹⁴ the states

87. 42 U.S.C. § 7511c(a) (1994). Those thirteen jurisdictions make up the Northeast Ozone Transport Region (NOTR). *Id.* While Congress did not specifically include all of Virginia within the NOTR, Virginia participates because the northern portion of that state lies within the “Consolidated Metropolitan Statistical Area” that includes the District of Columbia. *See Virginia*, 108 F.3d at 1401 n.2.

88. *See* Ozone Transport Commission; Recommendation that EPA Adopt Low Emission Vehicle Program for the Northeast Ozone Transport Region, 59 Fed. Reg. 12,914 (March 18, 1994). LEVs emit very few NO_x and VOC emissions. *Virginia*, 108 F.3d at 1401-02. As the *Virginia* case explained, the NOTC LEV program was modeled on the very stringent NO_x and VOC emissions limits of California’s LEV program. *Id.* at 1401.

89. Final Rule on Ozone Transport Commission; Low Emission Vehicle Program for the Northeast Ozone Transport Region, 60 Fed. Reg. 4712, 4712-13 (Jan. 24, 1995).

90. *Virginia*, 108 F.3d at 1404-05 (explaining that if Virginia chose not to adopt the LEV program and use alternative measures, it would have to reduce NO_x emissions 3.5 times, and VOC emissions 6.5 times, more than under the LEV program).

91. *Virginia*, 108 F.3d at 1398, 1404-05. *See also id.* at 1403-10 (analyzing whether EPA exceeded its authority under section 110, 42 U.S.C. § 7410).

92. *Id.* at 1404-05.

93. *Id.* at 1406-10 (applying *Train*, 421 U.S. at 60).

94. The NOTC LEV Rule, while issued pursuant to section 110(a)(2)(D), was formally initiated by the states’ recommendation and was not initiated by EPA itself, as was the NO_x SIP Call. *See* 60 Fed. Reg. at 4716 (“EPA is approving *the OTC’s LEV recommendation* based on the determination under sections 184(c) and [section] 110(a)(2)(D) of the Act that the recommended LEV program is necessary throughout the OTR to bring certain OTR nonattainment areas into attainment. . . .”) (emphasis added).

challenging the NO_x SIP Call in *Michigan*, mimicking the language in the *Virginia* opinion, argued that “only a very foolish state” would choose to implement pollution control measures other than those used by EPA to calculate the state’s emissions budget.⁹⁵ No state, they claimed, would seek emissions reductions from any sources except those four types for which EPA had identified highly cost-effective control measures, since choosing alternative pollution control measures, by definition, would be more costly.⁹⁶

D. Analysis Of The Court’s Decision

The *Michigan* court rejected the petitioners’ argument, holding that the NO_x SIP Call did not expressly require, or even effectively mandate, that the states implement the highly cost-effective control measures for the four sources identified by EPA.⁹⁷ Distinguishing *Virginia*, the court explained that while the earlier decision prohibited EPA’s adoption of a rule that left states with only “unreasonable or impracticable” alternatives, it did not prohibit a rule that gave states *reasonable yet more costly* alternatives.⁹⁸ The court found that, under the NO_x SIP Call, states not choosing to implement the highly cost-effective control measures identified by EPA still had *reasonably* cost-effective alternative controls available, including, for example, programs to reduce NO_x emissions from automobiles.⁹⁹ Moreover, states choosing alternative controls would not be penalized with additional emissions reduction requirements like those imposed by the NOTC LEV Rule.¹⁰⁰ Instead, the emissions budgets under the NO_x SIP Call set one—and only one—emissions reduction requirement for the state.¹⁰¹ Because “real choice exists for the

95. States’ Brief, *supra* note 55, at 39.

96. *Id.*

97. 213 F.3d at 685-88.

98. *Id.* at 688 (emphasis in original).

99. 63 Fed. Reg. at 57,438 (*e.g.*, vehicle inspection and maintenance programs and reformulated gasoline program); 62 Fed. Reg. at 60,328 (“[O]ne State may choose to primarily achieve emissions reductions from stationary sources while another State may focus on emissions reductions *from the mobile source sector.*”) (cited in *Michigan*, 213 F.3d at 688) (emphasis added). In addition, EPA had made no final determination about control costs for sources for which it lacked sufficient information, but it anticipated that states with adequate information could implement reasonably cost-effective control schemes. 63 Fed. Reg. at 57,416-17.

100. 63 Fed. Reg. at 57,369-70 (explaining that, unlike the *Virginia* case, states subject to the NO_x SIP Call “will have significant discretion to choose the appropriate mix of controls to meet the emissions budget”). *See also supra* text accompanying notes 89-90 (explaining the additional emissions requirements imposed by the NOTC LEV Rule if a state did not adopt the LEV program).

101. 63 Fed. Reg. at 57,492 (to be codified at 40 C.F.R. § 51.121(e)(1)) (setting one emissions budget for each of the twenty-three states).

covered states,” the *Michigan* court concluded that EPA had not contravened the cooperative federalism of the Clean Air Act.¹⁰²

The *Michigan* court’s conclusion is supported by a more detailed examination of EPA’s method for calculating the NO_x emissions budgets. Contrary to the petitioners’ argument, EPA had *not* identified the four sources used in its budgets calculations as the *only* sources for which highly cost-effective pollution control measures were available. Because it had averaged the costs of control measures for all twenty-three upwind states, EPA recognized that an individual state might find certain control measures costing less than this average.¹⁰³ For example, there are relatively few lime kilns throughout all twenty-three states, and, on average, it would not be cost-effective for most states to develop and implement regulations addressing so few sources.¹⁰⁴ However, for any state with several lime kilns, regulating them could very well be a highly cost-effective option.¹⁰⁵ Thus, contrary to the petitioners’ claim, choosing alternative control measures to meet the emissions budgets of the NO_x SIP Call would not be, by definition, more costly.

V. CONCLUSION

Regulating interstate ozone pollution is a complicated task, requiring sophisticated technical analyses to determine the degree to which one state’s NO_x emissions affect ozone levels in other states. For the NO_x SIP Call, EPA not only reviewed complex scientific data, but also developed a regulatory mechanism that reflected the costs of pollution control measures that states could reasonably adopt.

Although unprecedented and controversial, this approach was nevertheless consistent, according to the *Michigan* court, with the good neighbor provision of the Clean Air Act. The resulting emissions budgets, while appearing to restrict the states’ choices, in fact, allowed each state sufficient flexibility to implement a variety of pollution control measures, thereby preserving the careful balance of authority mandated by the cooperative federalism of the Clean Air Act.

102. 213 F.3d at 688.

103. 63 Fed. Reg. at 57,399-400, 57,438.

104. *Id.* at 57,416. EPA also believed that cost-effective controls might be available for several other types of sources, including medical waste incinerators, fiberglass manufacturers, and fluid catalytic cracking units at petroleum refineries, but recognized that the numbers of these sources were relatively small. *Id.*

105. *Id.* (acknowledging that “NO_x controls may be available at costs less than \$2,000 per ton for lime kilns”). *See also id.* at 57,438 (“In individual States, emissions from such sources [in categories with few numbers] could be a high percentage of uncontrolled emissions, and, thus, be subject to efficient, cost-effective controls for that particular State.”).