Being a Good Neighbor: Evaluating Federal Regulation of Interstate Air Pollution Under the Cross-State Air Pollution Rule

*Angela Luh**

The movement of air pollutants across state lines, or interstate air pollution, presents an externalities problem in which downwind states suffer from pollution originating from outside of the state and are powerless to address it. The Environmental Protection Agency has made multiple attempts to regulate interstate air pollution, its most notable success in the Cross-State Air Pollution Rule, upheld in EME Homer*, where the Supreme Court approved a framework that would allocate emissions among upwind states based on a cost-minimization principle. But in the years following* EME Homer*, EPA has repeatedly used this same principle to reject petitions to regulate polluting sources affecting attainment in downwind states. This Note challenges whether the Cross-State Air Pollution Rule produced a desirable framework, particularly in requiring downwind states to prove cost-effectiveness of pollution controls in section 126 petitions. The Note identifies four issues in EPA's regulation of interstate air pollution under the Cross-State Air Pollution Rule. It also suggests an alternative approach from California's ozone transport program. The Note highlights these problems in hopes of informing EPA's future rules around interstate air pollution as EPA has yet to produce regulations on pollution transport under the 2015 federal ozone standards or from non-power sector sources. More effective regulation of interstate air pollution would produce significant public health benefits, particularly in underserved communities that bear the greatest air pollution burdens.*

DOI: https://doi.org/10.15779/Z38T43J38T

* JD, University of California, Berkeley School of Law, 2021. Many thanks to Professor Holly Doremus and teaching assistant Naomi Wheeler for their dedicated guidance throughout the research and writing of this Note. I also want to express my immense gratitude to the *Ecology Law Quarterly* editorial team for improving this piece through thoughtful edits and suggestions.

INTRODUCTION

What can states do when their air quality is impacted by pollution from other states? This is a question the Environmental Protection Agency (EPA) has spent decades trying to answer, with varying levels of success. The physical problem of interstate air pollution is itself complex, given the vagaries of the wind and the chemical processes that transform some pollutants into other pollutants during transport. The regulatory solution for ensuring emissions in polluting states do not violate air quality standards in impacted states is therefore far from straightforward.

The 2014 Supreme Court case of *EPA v. EME Homer* seemed to make inroads for this long-standing problem.[1] The Court held that EPA's decision in its Cross-State Air Pollution Rule (CSAPR or "the Transport Rule") to allocate emissions reductions among upwind states based on a cost-minimization principle was permissible.[2] The Transport Rule set emissions thresholds for a group of upwind states that would allow downwind states to meet federal air quality standards.[3] The *EME Homer* decision was celebrated for breathing new life into interstate pollution regulation[4] and did so by giving EPA considerable deference in designing such rules. However, recent decisions by EPA to address interstate transport use the Transport Rule's framework as an excuse for inaction, rather than regulation.

This Note argues that EPA's current regulatory framework is inadequate in providing downwind states relief when sources in upwind states impact their air quality. It is important to explore a more effective framework for three central reasons. First, the lack of a clear and effective avenue for states to seek relief may compromise downwind states' attainment of federal air quality standards and perpetuate damaging health effects. Second, rethinking the Transport Rule, which regulates only power sector emissions, will help inform regulations of emissions from commercial and industrial facilities, of which there are currently none. Finally, more effective regulation of polluting sources can help facilitate a clean energy transition, which has significant benefits for public health and climate change.

The organization of this Note is as follows. Part I introduces the complex problem of interstate air pollution and the harms it causes. Part II provides the legislative and regulatory background on how the federal government has addressed interstate air pollution. Part III identifies four issues presented by

1. EPA v. EME Homer City Generation, L.P., 572 U.S. 489 (2014).

2. *Id.* at 524.

3. *Id.* at 502; *see* Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,207, 48,208 (Aug. 8, 2011) (to be codified at 40 C.F.R. pt. 51, 52, 72, 78, 97) [hereinafter Transport Rule].

4. *See, e.g.*, Brent Kendall & Cassandra Sweet, *Supreme Court Revives EPA Rule on Air Pollution Across State Lines*, WALL ST. J., https://www.wsj.com/articles/SB10001424052702304163604579531594097453658 (Apr. 29, 2014, 8:09 PM).

EPA's current regulatory framework that have posed obstacles to downwind states' Good Neighbor claims. Part IV explores California's regulatory scheme for ozone transport as a comparative model. Finally, Part V addresses other strategies for mitigating air pollution other than EPA regulations, such as state and national environmental policies and the growing clean energy market in the United States. The Note concludes that EPA should adopt changes to its regulatory framework on interstate pollution in order to carry out the principal purpose of the Clean Air Act's (CAA) Good Neighbor Provision, which is to offer relief to downwind states. However, external forces like energy policies and markets are just as crucial as regulations in mitigating interstate air pollution.

I. THE PROBLEM OF INTERSTATE AIR POLLUTION

Air pollution is the result of a mixture of small particles, most prominently particulate matter ($PM_{2.5}$), ozone (O_3), nitrogen oxides (NO_x), and sulfur dioxide (SO_2).[5] The latter two are so-called "precursor pollutants": Ground-level ozone is formed when NO_x and volatile organic compounds react in sunlight, while SO_2 and NO_x contribute to the formation of $PM_{2.5}$ in the air.[6] These pollutants can travel hundreds of miles through the atmosphere.[7]

The movement of air pollutants across state lines is known as "interstate transport."[8] EPA regulates the interstate transport of ambient air quality impacts from a range of mobile and stationary sources.[9] This Note focuses on EPA regulation of interstate transport from stationary sources, particularly power plants.

EPA's federal programs are designed to deal with the problem of interstate externalities.[10] Because air pollution does not respect borders, in many states, the pollution suffered within a state may originate from outside of the state. The CAA assigns responsibility to states to limit emissions from sources within their borders as needed to achieve federal air quality standards.[11] However, a downwind state is powerless in controlling emissions from an out-of-state source. Despite a downwind state's best efforts, interstate air pollution makes it

5. *Health Impacts of Air Pollution*, ENV'T DEF. FUND, https://www.edf.org/health/health-impacts-air-pollution (last visited Dec. 20, 2020).

6. *Ground-Level Ozone Pollution*, EPA, https://www.epa.gov/ground-level-ozone-pollution (last visited Dec. 20, 2020). $PM_{2.5}$ is also directly emitted by sources including construction sites, unpaved roads, smokestacks, and fires. *Particulate Matter (PM) Basics*, EPA, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#main-content (last visited Dec. 20, 2020).

7. *Interstate Air Pollution Transport*, EPA, https://www.epa.gov/airmarkets/interstate-air-pollution-transport (last visited Dec. 20, 2020); EPA, FACT SHEET: THE CROSS-STATE AIR POLLUTION RULE: REDUCING THE INTERSTATE TRANSPORT OF FINE PARTICULATE MATTER AND OZONE 1 (2016), https://www.epa.gov/sites/production/files/2016-09/documents/csaprfactsheet.pdf.

8. *See* Monica Derbes Gibson, *Interstate Transport and Regional Approaches to Regulating Air Pollution*, in CLEAN AIR ACT HANDBOOK 133–34 (Julie R. Domike & Alec C. Zacaroli eds., 4th ed. 2016).

9. *See generally* Clean Air Act, 42 U.S.C. §§ 7401–7671q.

10. *See* Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341, 2344 (1996).

11. 42 U.S.C. § 7410(a)(2)(D)(i).

difficult for the state to attain federally mandated National Ambient Air Quality Standards (NAAQS). Without federal regulation, citizens in upwind states may benefit from the economic advantages of fossil-fuel facilities while exporting such facilities' negative externalities to downwind states.[12]

The aim of these programs is to force polluting states to internalize interstate externalities. Without federal programs regulating interstate externalities, a state could meet federal air quality standards but export a great deal of pollution by locating sources near an interstate border.[13] The state enjoys the economic benefits of having the source in-state without absorbing its costs. One of the key challenges with regulating interstate air pollution is how to allocate responsibility for air pollution among multiple polluting states.[14]

This Part introduces the problem of interstate air pollution by first expounding on its health harms and then introducing the complex challenge of regulating it.

A. A Significant Number of Emissions-Related Deaths Result from Pollutants Occurring Outside the State

Air pollution is the biggest environmental cause of premature deaths.[15] It is "responsible for more than 6 million premature deaths each year from heart attacks, strokes, diabetes, and respiratory diseases."[16] Measures to alleviate air pollution in the last few decades have led to a significant drop in concentrations of air pollution and consequently a decrease in adverse health effects.[17] For example, between 2010 and 2020, programs to reduce ambient particulate matter prevented an estimated 230,000 early deaths.[18]

Even as air pollution has decreased, air pollution still poses a number of climate change, environmental equity, and public health concerns. Air pollution and climate change are inextricably linked: emissions that result from burning fossil fuels warm the planet, and a rapidly warming planet escalates climate catastrophes like wildfires that create widespread air pollution, worsening the effects of pollutants like ozone.[19] Further, because the burden of air pollution is

12. *See* Revesz, *supra* note 10, at 2343.

13. *See id.* at 2350.

14. *See* Daniel A. Farber, *Unpacking* EME Homer *Cost, Proportionality, and Emissions Reductions*, 4 MICH. J. ENV'T & ADMIN. L. 213, 222 (2015).

15. *See* ENV'T DEF. FUND, *supra* note 5; *see also* Fabio Caiazzo et al., *Air Pollution and Early Deaths in the United States. Part I Quantifying the Impact of Major Sectors in 2005*, 79 ATMOSPHERIC ENV'T 198–99 (2013).

16. *See* ENV'T DEF. FUND, *supra* note 5.

17. *Our Nation's Air*, EPA, https://gispub.epa.gov/air/trendsreport/2019/#introduction (last visited June 4, 2021); *see generally* OFF. OF AIR & RADIATION, EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT FROM 1990 TO 2020 (2011), https://www.epa.gov/sites/default/files/2015-07/documents/fullreport_rev_a.pdf.

18. *See* OFF. OF AIR & RADIATION, *supra* note 17, at 5-24.

19. *See How Are Our Air and Climate Connected?*, ENV'T DEF. FUND, https://www.edf.org/health/how-are-our-air-and-climate-connected (last visited Dec. 20, 2020); *see also* Alejandra Borunda, *The Science Connecting Wildfires to Climate Change*, NAT'L GEOGRAPHIC (Sept. 17, 2020),

not evenly shared, air pollution impacts are more severe for underserved communities.[20] Minority populations and populations with lower socioeconomic status tend to experience the highest concentrations of air pollution.[21] These groups are most at risk for the adverse health effects that come from breathing unhealthy air on a long-term basis.[22] For example, early evidence from studies of people infected by the novel coronavirus (COVID-19) suggests that there is a significant, positive association between poor air quality and COVID-19 death rates.[23]

One seminal study on the interstate impacts of NO_x and SO_2 emissions in the eastern United States concluded that an average of 77 percent of each downwind state's ozone and $PM_{2\,5}$ concentrations were attributed to emissions from upwind states.[24] Separately, a recent study in *Nature* assessed the causal link between interstate air pollutants and emissions-related deaths in downwind states.[25] The study found that about 40 percent of emissions-related deaths occur outside the state where the pollution was emitted.[26] The study further found that nearly 70 percent of deaths linked to pollutants from electric power generation—the sector with the highest cross-border impacts of premature mortality—occurred in states other than the one where the polluting plant was located.[27]

While interstate air pollution is a concern across the United States, eastern states, which receive substantial air pollution from upwind states, are affected

---

https://www.nationalgeographic.com/science/2020/09/climate-change-increases-risk-fires-western-us/; Vivian Ho, *West Coast Cities Face the World's Worst Air Quality as Wildfires Rage*, THE GUARDIAN (Sept. 14, 2020), https://www.theguardian.com/world/2020/sep/14/west-coast-air-quality-wildfires-oregon-california-washington.

20. *See* HEALTH & ENV'T IMPACTS DIV., EPA, EPA-452, POLICY ASSESSMENT FOR THE REVIEW OF THE NATIONAL AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER 3-44 (2020), https://www.epa.gov/system/files/documents/2021-10/final-policy-assessment-for-the-review-of-the-pm-naaqs-01-2020.pdf.

21. *See Disparities in the Impact of Air Pollution*, AM. LUNG ASS'N, https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities (last updated Apr. 20, 2020).

22. *See id*.

23. X. Wu et al., *Air Pollution and COVID-19 Mortality in the United States Strengths and Limitations of an Ecological Regression Analysis*, SCI. ADVANCES, Nov. 2020, at 1, https://advances.sciencemag.org/content/6/45/eabd4049; Sammy Roth, *Boiling Point These Maps Show How Air Pollution and COVID-19 Can Be a Deadly Mix*, L.A. TIMES (Oct. 8, 2020, 6:00 AM), https://www.latimes.com/environment/newsletter/2020-10-08/boiling-point-air-pollution-and-covid-19-can-be-a-deadly-mix-boiling-point.

24. Michelle S. Bergin et al., *Regional Air Quality Local and Interstate Impacts of NO_x and SO_2 Emissions on Ozone and Fine Particulate Matter in the Eastern United States*, 41 ENV'T SCI. & TECH. 4677, 4677 (2007).

25. *See* Irene C. Dedoussi et al., *Premature Mortality Related to United States Cross-State Air Pollution*, 578 NATURE 261, 262–63 (2020). The researchers did this work by modeling where pollution from electric power plants, industry, transportation and other sources traveled in the contiguous forty-eight states in 2005, 2011, and 2018 and by assessing emissions-related deaths in each of them. *Id.* In contrast to the high cross-state impacts of industrial and power sector emissions, residential, and commercial emissions had the smallest impacts. *Id.*

26. *See id.* at 261–62

27. *See id.* at 262.

the most.[28] By contrast, states on the west coast have a net exchange of around zero, owing to a combination of no upwind emissions attributable to any state, relatively sparse populations downwind, and large local populations.[29] In eastern states, there are general clusters of upwind states, or "pollution exporters," and downwind states, or "pollution importers." The largest exporters are in the northern Midwest, owing to low populations, high emissions, and large downwind populations.[30] Wyoming and North Dakota are the highest net exporters of emissions-related mortality, though this is partly because of their relatively low populations.[31] A cluster of states in the northeast are consistent net importers of pollution.[32] In 2011, about 60 percent of emissions deaths in New York were attributable to emissions from out of state.[33]

B. The Challenge of Regulating Interstate Air Pollution Has Persisted Despite Decades-Long Efforts by EPA

In *EME Homer*, Justice Ginsburg began her opinion by acknowledging the complexity of regulating interstate air pollution[34] and named three major challenges for regulation.[35] These were: (1) the difficulty of identifying upwind sources of pollutants, (2) the nonuniformity of pollutant migration given changing winds, and (3) the transformation of upwind pollutants into altogether different pollutants.[36]

These issues complicate how emissions responsibilities should be shared among downwind and upwind states. Professor Daniel Farber refers to this as the "allocation problem."[37] Farber illustrates the problem by using the example of two downwind states that are impacted by pollution from two upwind states.[38] In determining the quantity of emissions each upwind state should be required to cut, there are two main considerations. First, EPA must understand how much downwind states are contributing to their own pollution problem in order to allocate responsibilities between upwind and downwind states.[39] Second, EPA must consider how to divide the imported pollution between the two upwind states.[40] If Upwind State A is closer in proximity to a downwind state but

28. *See Clean Air Interstate Rule Summary*, ADIRONDACK COUNCIL, https://www.adirondack council.org/page/clean-air-interstate-rule-summary-79.html (last visited Nov. 28, 2021) (discussing the application of the Rule to the eastern United States).

29. Dedoussi et al., *supra* note 25, at 263.

30. *See id*.

31. *Id.*

32. *Id.* at app.

33. *Id.*

34. EPA v. EME Homer City Generation, L.P., 572 U.S. 489, 496 (2014).

35. *Id.* at 497.

36. *Id.* (referring to the transformation of precursor pollutants into ground-level ozone and $PM_{2.5}$ in downwind locations).

37. Farber, *supra* note 14, at 222.

38. *Id.*

39. *Id.*

40. *Id.* at 222–23.

produces fewer emissions than Upwind State B, how might emissions cuts in each upwind state impact air quality in the downwind state? As Farber acknowledges, "this already confusing situation is highly oversimplified" because it ignores the reality of how pollutants transform during transport and does not account for situations where more than two upwind and downwind states are involved.[41]

Congress began addressing interstate air pollution through federal regulations over fifty years ago. In 1963, Congress directed the EPA administrator to "encourage cooperative activities by the States and local governments for the prevention and control of air pollution . . . and encourage the making of agreements and compacts between States for the prevention and control of air pollution."[42] In 1970, Congress enacted the CAA, including section 110(a)(2)(D)(i)(I), better known as the Good Neighbor Provision. The Good Neighbor Provision requires State Implementation Plans (SIPs)—collections of regulations by each state to meet the NAAQS—to include "adequate provisions for intergovernmental cooperation" concerning interstate air pollution.[43] This general "cooperation" mandate was later expanded in 1977 to require states to submit compliant implementation plans.[44]

EPA has endeavored to implement the Good Neighbor Provision over the years, and its attempts have been repeatedly challenged in court. These challenges are owed not only to the physical complexities of interstate air pollution but also to the regulatory complexities of enforcing Good Neighbor compliance. The following Part provides an overview of EPA's mandate and authority to regulate interstate transport through the CAA. It also expounds EPA's framework under the Transport Rule for finding Good Neighbor violations. The key frictions involve allocating the responsibility for reducing emissions between states and the scope of EPA's discretion: to what extent EPA exceeds its authority under the CAA and to what extent it may be abdicating its duty to regulate.

II. CAA PROVISIONS ON INTERSTATE AIR POLLUTION AND EPA'S CROSS-STATE AIR POLLUTION RULE

This Part explains how the CAA defines EPA's duties to regulate interstate transport and the relief that is afforded to downwind states. It begins by introducing the key CAA provisions that address interstate transport: the Good

41. *Id.*

42. Clean Air Act, Pub. L. No. 88-206, § 2(a), 77 Stat. 392, 393 (1963) (codified as amended at 42 U.S.C. § 7402(a)).

43. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 110(2)(E), 84 Stat. 1676, 1681 (current version at 42 U.S.C. § 7410(a)(2)D)); *Interstate Air Pollution Transport*, EPA, https://www.epa.gov/interstate-air-pollution-transport/interstate-air-pollution-transport (last visited Nov. 28, 2021).

44. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 108(a)(4), Stat. 685, 693 (codified as amended at 42 U.S.C. § 7410(a)(2)(D)(i)(I)).

Neighbor Provision and section 126. It then delves into the Transport Rule, the rule by which EPA implemented the Good Neighbor Provision for a group of eastern states. The final Subpart provides an overview of the key court decisions that have shaped how EPA has recently approached interstate transport issues. These recent decisions shed light on the challenges borne by downwind states when petitioning EPA to resolve Good Neighbor violations.

A. The Good Neighbor Provision

The CAA directs EPA to establish and periodically revise NAAQS that set the maximum allowable concentrations for various air pollutants, including ozone.[45] In 2008, EPA promulgated an ozone standard of seventy-five parts per billion (ppb).[46] In 2015, based on updated scientific information about the health risks of ozone at lower concentrations, EPA made the ozone standard more stringent, lowering it to seventy ppb.[47] These standards "define [the] levels of air quality that must be achieved to protect public health and welfare."[48] EPA determines attainment based on a three-year "design value," which is calculated by taking the fourth-highest daily maximum ozone level measured in each of the three prior ozone seasons and averaging those values.[49] To measure compliance with NAAQS, EPA, in coordination with state governments, divides the country into "air quality control regions" by geography.[50] Some areas lie within a single state while others encompass portions of two or more states.

Within three years of EPA promulgating a new or revised NAAQS, each state must develop an implementation plan to ensure the standards are met within the state's air quality control region.[51] Under section 110 of the CAA, EPA must review each state's SIP and ensure its compliance with statutory requirements.[52] Additionally, under section 110, one of the requirements that SIPs must comply with is the Good Neighbor Provision.

The Good Neighbor Provision requires:

> Each [implementation plan] shall . . . contain adequate provisions . . . prohibiting . . . any source or . . . emissions activity within the State from emitting any air pollutant in amounts which . . . *contribute significantly* to nonattainment in, *or interfere with maintenance* by, any other State with

45. 42 U.S.C. §§ 7408(a), 7409.

46. National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436, 16,511 (Mar. 27, 2008).

47. National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292, 65,292 (Oct. 26, 2015).

48. Alaska Dep't of Env't Conservation v. EPA, 540 U.S. 461, 469 (2004) (alteration in original).

49. OFF. OF AIR QUALITY PLANNING & STANDARDS, EPA, EPA-454, GUIDELINE FOR SELECTING AND MODIFYING THE OZONE MONITORING SEASON BASED ON AN 8-HOUR OZONE STANDARD 35 (June 1998), https://nepis.epa.gov/Exe/ZyPDF.cgi/2000D44J.PDF?Dockey=2000D44J.PDF.

50. 42 U.S.C. § 7407; *see also* Nat. Res. Def. Council v. EPA, 777 F.3d 456, 458 (D.C. Cir. 2014).

51. 42 U.S.C. § 7410(a).

52. *Id.* § 7410(k)(1)–(4).

> respect to any . . . national primary or secondary ambient air quality standard . . . .[53]

After the SIP submission deadline, EPA has six months to issue findings describing which states submitted complete SIPs and which states failed to do so.[54] Within twelve months of a completeness finding, EPA must act on each submitted SIP through a full or partial approval or disapproval of the plan.[55] If a state fails to correct a deficiency in its plan in a timely manner, then EPA will promulgate a federal implementation plan (FIP) for the relevant region.[56]

Enforcement of the Good Neighbor Provision hinges on a key test: whether one state "contributes significantly to" a violation of NAAQS or "interfere[s] with maintenance" of NAAQS in another state.[57] The CAA does not define what constitutes a significant contribution and EPA has attempted to interpret this term through its numerous rulemakings.[58] This has proven to be a difficult task given that these rules "inherently involve[] a decision on how much emissions control responsibility should be assigned to upwind states, and how much responsibility should be left to downwind states."[59]

Not surprisingly, stakeholders have challenged the legality of EPA's interpretations over the years. Under the Administrative Procedure Act, a court may reverse an action by EPA only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[60] For questions regarding statutory interpretation, a court must give effect to the unambiguously expressed intent of Congress.[61] A court may defer to the agency's interpretation if the meaning of the statute is ambiguous and if the agency's interpretation is reasonable.[62] In the past, the courts have endorsed an "extreme degree of deference" to EPA's evaluation of "scientific data within its technical expertise."[63]

---

53. *Id.* § 7410(a)(2)(D)(i)(I) (emphasis added).

54. *Id.* § 7410(k)(1)(B).

55. *Id.* § 7410(k)(2)–(3).

56. *Id.* § 7401(c)(1).

57. *See id.* § 7410(a)(2)(D)(i)(I).

58. *See, e.g.,* Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 Fed. Reg. 74,504, 74,508 (Oct. 26, 2008) [hereinafter Update Rule].

59. *See* Transport Rule, *supra* note 3, at 48,248.

60. 42 U.S.C. § 7607(d)(9)(A). This standard is "the same" as the standard for reviewing general agency actions in the Administrative Procedure Act. *See* Ethyl Corp. v. EPA, 51 F.3d 1053, 1064 (D.C. Cir. 1995).

61. Chevron. v. Nat. Res. Def. Council, 467 U.S. 837, 842–43 (1984).

62. *Id.*

63. City of Waukesha v. EPA, 320 F.3d 228, 247 (D.C. Cir. 2003); *see also* Maine v. Norton, 257 F. Supp. 2d 357, 389 (D. Me. 2003) ("The court must defer to the agency's expertise, particularly with respect to decision-making which involves 'a high level of technical expertise.'" (quoting Marsh v. Ore. Nat. Res. Council, 490 U.S. 360, 377 (1989)); A.M.L. Int'l, Inc. v. Daley, 107 F. Supp. 2d 90, 102 (D. Mass. 2000) ("Indeed, a reviewing court must afford special deference to an agency's scientific expertise.").

B. Section 126 as an Avenue for States to Seek Relief

Section 126 of the CAA is another provision that allows states to seek relief.[64] Unlike the Good Neighbor Provision, which is focused on state-level remedies, section 126 provides a source-specific remedy that allows for emission controls to be placed on particular sources to address their distinct contributions to cross-state pollution. Section 126 requires EPA to expeditiously abate emissions from upwind power plants and other large stationary sources whose pollution undermines a downwind state's ability to comply with NAAQS.[65]

The statutory text provides that "[a]ny state or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of [the Good Neighbor Provision]."[66] EPA generally must respond within sixty days of receiving the petition with either a Good Neighbor violation finding or a denial of the petition.[67] However, it may grant itself an extension of up to six months "upon a determination that such extension is necessary to afford the public, and the agency, adequate opportunity to carry out the purposes of this subsection."[68] If an existing pollution source in another jurisdiction is found to be in violation of the Good Neighbor Provision, that source generally must cease operation within three months.[69] But EPA may allow operation if the administrator deems it practicable within three years after the date of the finding.[70]

1. Relationship Between Section 126 and the Good Neighbor Provision

The Good Neighbor Provision interlocks with section 126. A finding of a Good Neighbor violation is a "condition precedent for action under CAA section 126(b),"[71] and the Good Neighbor Provision requires that SIPs comply with section 126 notice requirements.[72] Section 110 prohibits states from adopting and EPA from approving state plans that create interstate pollution problems, requiring that EPA issue a "SIP call,"[73] calling on any state whose plan is inadequate to revise its SIP.[74] Section 126 "provide[s] a backstop in the event

64. 42 U.S.C. § 7426(b).
65. *Id.* § 7426(c).
66. *Id.* § 7426(b).
67. *Id.*
68. *Id.* § 7607(d)(1)(N), (d)(10).
69. *Id.* § 7426(c).
70. *Id.*
71. Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland, 83 Fed. Reg. 26,666, 26,675 (June 8, 2018).
72. 42 U.S.C. § 7410(a)(2)(D)(ii).
73. KATE C. SHOUSE & RICHARD K. LATTANZIO, CONG. RSCH. SERV., CLEAN AIR ACT: A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 8 (2020).
74. 42 U.S.C. § 7410(k)(5).

prohibited pollution nevertheless occurre[s]" by allowing states to petition EPA to remedy the violation.[75]

Both section 126 and SIP calls enforce the Good Neighbor Provision, but they differ in their implementation. First is a difference in procedure. A state or political subdivision (local government) must initiate the section 126 petition, whereas EPA initiates the SIP call. Second is a difference in the entities subject to regulatory action. While a section 126 petition seeks action from EPA to regulate a major source or group of stationary sources, a SIP call requires action from a state to revise its SIP. Third is a difference in EPA's role. EPA may directly regulate upwind sources if it approves a section 126 petition requiring such regulation, whereas EPA can only regulate sources when it initiates a SIP call if a state fails to adequately revise its SIP.[76] Another way to frame this distinction is that section 126 is an injunctive approach, whereas a SIP call embodies the spirit of cooperative federalism, allowing states to resolve their emissions before the federal agency imposes regulations. Section 126 can be a useful tool for downwind states seeking to meet impending compliance deadlines because of the possibility of relief within sixty days and the ability to obtain relief independent of the section 110 SIP process.[77]

2. The Legislative History of Section 126

What is the importance of section 126 when the Good Neighbor Provision also offers states an avenue for relief? Prior to the 1977 CAA Amendments, the implementation of the Good Neighbor Provision largely depended on states resolving interstate transport amongst themselves through information exchange.[78] Congress noted that "an effective program must not rely on prevention or abatement action by the State in which the source of the pollution is located, but rather by the State . . . which receives the pollution and the harm, and thus which has the incentive and need to act."[79] Section 126 thus provided a "[f]ederal mechanism for resolving disputes which cannot be decided through cooperation and consultation between the States [] involved."[80] The provision served as an "additional means of attacking interstate pollution" that would "supplement, not replace, the SIP requirement under [the Good Neighbor Provision]."[81]

The legislative history also points to Congress's intent for section 126 to serve as a timely remedy for states to obtain maintenance or attainment of

75. Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250, 28,261 (May 25, 1999).

76. *See* 42 U.S.C. § 7410(k)(5).

77. Genon Rema v. EPA, 722 F.3d 513, 521–22 (3d Cir. 2013).

78. *See* H.R. REP. NO. 95-294, at 329 (1977).

79. *Id.* at 330.

80. *Id.*

81. Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250, 28,261 (May 25, 1999).

NAAQS.[82] Intended to authorize EPA to take direct and expeditious actions to abate pollution, section 126 "allowed objection to and corresponding remediation of transported pollution at any time, not just when EPA was reviewing an upwind state plan for compliance with the transport prohibition."[83] In a house report, legislators wrote:

> This petition process is intended to expedite, not delay, resolution of interstate pollution conflicts. Thus, it should not be viewed as an administrative remedy which must be exhausted prior to bringing suit under [the Good Neighbor Provision]. Rather, the committee intends to create a second and entirely alternative method and basis for preventing and abating interstate pollution. The existing provision prohibiting any stationary source from causing or contributing to air pollution which interferes with timely attainment or maintenance or a national ambient air standard . . . in another State is retained. A new provision prohibiting any source from emitting any pollutant after the Administrator has made the requisite finding and granted the petition is an independent basis for controlling interstate air pollution.[84]

In 1990, Congress amended section 126(b) to allow states to petition EPA when a "group of stationary sources" are in violation of the Good Neighbor Provision.[85] This demonstrated an early understanding by the legislature that multiple upwind sources could contribute to a downwind state's nonattainment, a concern later addressed by EPA through the Transport Rule. However, it created some of the current incongruities between section 126, which looks at sources across multiple states, and the Good Neighbor Provision, which looks at whether sources within an individual state comply with their Good Neighbor obligation. This issue is discussed in Part III of this Note.

C. The Cross-State Air Pollution Rule (Transport Rule)

1. History of the Transport Rule

In 2005, EPA made findings that interstate transport of SO_2 and NO_x contributed significantly to, or interfered with maintenance of, ozone and $PM_{2.5}$ nonattainment in twenty-eight eastern states and the District of Columbia.[86] In response, EPA issued the Clean Air Interstate Rule (CAIR), which regulated NO_x and SO_2 from power sector sources and targeted 1997 $PM_{2.5}$ and ozone

82. *See* H.R. REP. NO. 95-294, at 330–31 (1977).

83. Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. at 28,261.

84. H.R. REP. NO. 95-294, at 331 (1977).

85. Clean Air Act Amendments of 1990, Pub. L. No. 101–549, § 109, 104 Stat. 2399, 2469–70 (1990) (codified at 42 U.S.C. § 7426).

86. Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule); Revisions to Acid Rain Program; Revisions to the NO_x SIP Call, 70 Fed. Reg. 25,162, 25,167 (May 12, 2005) (codified at 40 C.F.R. pts. 51, 72, 73, 74, 77, 78, 96).

NAAQS.[87] CAIR was vacated by the D.C. Circuit in *North Carolina v. EPA*.[88] The holding made clear that CAIR impermissibly established an interstate pollution trading program that would allow upwind states to continue emitting in violation of their Good Neighbor obligations.[89] On rehearing, the court left the rule in place, instructing EPA to act with dispatch in revising its flaws.[90]

In 2011, EPA promulgated the Transport Rule, which required twenty-seven states to reduce emissions to meet the 2006 ozone NAAQS.[91] Like CAIR, it regulated only power sector emissions and not non-utility industrial sources.[92] To quantify the necessary reductions, EPA excluded any upwind state that contributed less than 1 percent of NO_x, SO_2, or $PM_{2\,5}$ to any downwind state "receptor."[93] Then, among those upwind states which contributed more than 1 percent of the three named pollutants, the agency allocated emissions reductions based on cost-effectiveness to each state.[94] The "emissions budgets" for each state were based on uniform cost thresholds—emissions that could be reduced at $500 per ton.[95] These budgets represent the quantity of pollution that each upwind state can produce in a given period to stay in compliance. In other words, in implementing the Good Neighbor Provision, EPA considered emissions "significant" to downwind nonattainment if they (1) produced 1 percent or more of NAAQS in at least one downwind state and (2) could be eliminated cost-effectively as determined by EPA.[96] For each state regulated by the Transport Rule, EPA promulgated a FIP allocating the state's emission budget among its in-state sources, determining that the state had failed to submit a SIP adequate for compliance with the Good Neighbor Provision.[97]

Like its predecessor, the Transport Rule was challenged by upwind states and vacated by the D.C. Circuit.[98] The Supreme Court upheld the Transport Rule in *EME Homer*, a decision hailed as "exceedingly important," given that at least two of EPA's prior attempts at controlling interstate transport in the last decade had been struck down by litigation.[99] In 2015, EPA finalized the Transport Rule.

87. *Id.* at 25,170.

88. North Carolina v. EPA, 531 F.3d 896, 921 (D.C. Cir.), *modified on reh'g in part per curiam*, 550 F.3d 1176 (D.C. Cir. 2008).

89. *See id.* at 907 ("Theoretically, sources in Alabama could purchase enough NO_x and SO_2 allowances to cover all their current emissions, resulting in no change in Alabama's contribution to . . . North Carolina's nonattainment.").

90. *North Carolina v. EPA*, 550 F.3d at 1178.

91. Transport Rule, *supra* note 3, at 48,208; *see also* Appendix A, *infra*.

92. Transport Rule, *supra* note 3, at 48,211.

93. *Id.* at 48,236–37.

94. *Id.* at 48,236.

95. *Id.*

96. *Id.*

97. *See id.* at 48,209.

98. EME Homer City Generation, L.P. v. EPA, 696 F.3d 7, 12 (D.C. Cir. 2012), *rev'd*, 572 U.S. 489 (2014).

99. Brent Kendall & Cassandra Sweet, *Supreme Court Revives EPA Rule on Air Pollution Across State Lines*, WALL ST. J. (Apr. 29, 2014, 8:09 PM), https://www.wsj.com/articles/SB10001424052702304163604579531594097453658.

To account for the updated and more stringent 2008 ozone NAAQS, EPA promulgated an update to the CSAPR in 2016 ("Update Rule"), which applied to twenty-two states.[100] EPA admitted that the adoption of the Transport Rule provided only a "partial remedy" to downwind states under the 2008 ozone NAAQS.[101] EPA expected that a "full resolution of upwind transport obligations would require," among other factors, "further [] reductions," and that even after all of the Update Rule's reductions had been implemented, attainment and maintenance problems in downwind areas might remain.[102]

The Update Rule, too, was met by litigation, this time in a challenge by downwind states for being too lenient.[103] In 2019, the D.C. Circuit Court of Appeals partially vacated the Update Rule because it allowed upwind states to continue their contributions to downwind air quality problems beyond the statutory deadlines by which the downwind states must demonstrate their attainment.[104] The agency admitted that it had focused only on near-term emission reductions in crafting the Update Rule.[105] The D.C. Circuit also rejected EPA's argument that it would not be feasible to implement further cost-effective emissions controls, holding that it was inconsistent with the clear mandate in the Good Neighbor Provision, which could not be disregarded by "mere infeasibility."[106] The court ordered EPA to finalize a new rule by 2021.[107]

One month after the Update Rule decision, the D.C. Circuit also vacated EPA's 2018 Close-Out Rule, which purported to fully resolve the Good Neighbor obligations of twenty upwind states for the 2008 ozone standard.[108] Echoing its prior decision, the D.C. Circuit held that additional reductions in upwind emissions were necessary for Good Neighbor compliance, without regard to questions of feasibility.[109]

2. EPA's Four-Part Framework

EPA developed a four-part framework to assess a state's Good Neighbor obligations and has used this framework to promulgate regional ozone transport, like the Transport Rule and the Update Rule.[110] EPA has clarified that it applies

100. Update Rule, *supra* note 58, at 74,504.

101. *Id.* at 74,508; *see also* Complaint for Declaratory and Injunctive Relief at ¶ 33, New Jersey v. Wheeler, 475 F. Supp. 3d 308 (S.D.N.Y. Feb. 19, 2020) (No. 20-cv-01425), 2020 WL 837451.

102. Update Rule, *supra* note 58, at 74,521–22.

103. Wisconsin v. EPA, 938 F.3d 303, 319 (D.C. Cir. 2019).

104. *Id.* at 313.

105. *Id*.

106. *Id.* at 314, 319.

107. *Id.* at 318. EPA has since submitted their updated draft rule in response to the court order in *Wisconsin*, with the final rule planned for March 2021. *See* EPA, FACT SHEET: PROPOSED RULE: REVISED CROSS-STATE AIR POLLUTION RULE UPDATE FOR THE 2008 OZONE NAAQS (2020), https://www.epa.gov/sites/production/files/2020-10/documents/revised_csapr_update_factsheet_final.pdf.

108. New York v. EPA, 781 F. App'x 4, 7 (D.C. Cir. 2019).

109. *Id.* at 6.

110. Transport Rule, *supra* note 3, at 48,211; Update Rule, *supra* note 58, at 74,517.

this framework to determine whether a state has violated its Good Neighbor obligation when evaluating SIPs and section 126 petitions.[111] In applying the framework to section 126 petitions, EPA has implied that the petition can be denied in part or in full under any one of these four steps.[112] The burden of satisfying each of these steps is on the section 126 petitioner.[113]

The four steps are as follows:

At Step One, EPA identifies downwind monitoring receptors within each state that were expected to have problems meeting or maintaining clean air standards.[114]

At Step Two, EPA identifies upwind states that contributed at least 1 percent of the relevant NAAQS at downwind monitoring sites, which was sufficient to link them to downwind state air quality problems.[115]

At Step Three, EPA applies a multi-factor test, assessing cost, NO_x reduction potential, and downwind air quality impacts to quantify the emissions reductions required for each state.[116] These are the emissions that significantly contribute to nonattainment or interfere with downwind maintenance of NAAQS. EPA determines a cost threshold, representing turning on and operating existing, idled Selective Catalytic Reduction controls, that constitutes the point at which NO_x reduction potential from electric generating units and corresponding downwind ozone air quality improvements are maximized with respect to marginal cost.[117] In the Transport Rule, EPA determined a $500 per ton cost threshold for the 2006 ozone NAAQS.[118] In the Update Rule, this cost threshold was set at $1,400 per ton for the 2008 ozone NAAQS.[119] Emissions that can be reduced at or below the control cost are considered "significant" for purposes of Good Neighbor compliance.[120]

111. *See* Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland, 83 Fed. Reg. 50,444, 50,452 (Oct. 5, 2018) ("While either provision may be applied to address interstate transport, they are also closely linked in that a violation of the prohibition in CAA Section 110(a)(2)(D)(i) is a condition precedent for action under CAA Section 126(b) and, critically, significant contribution to nonattainment and interference with maintenance are construed identically for purposes of both provisions (since the identical terms are naturally interpreted as meaning the same thing in the two linked provisions)."); *see also* Response to Clean Air Act Section 126(b) Petition from New York, 84 Fed. Reg. 22,787, 22,793–94 (May 20, 2019) ("The EPA is evaluating the petition consistent with the same four-step interstate transport framework that the EPA has used in previous regulatory actions addressing regional ozone transport problems. The EPA is, therefore, using this framework to evaluate whether the petition meets the standard to demonstrate under CAA section 126(b) that the sources emit or would emit in violation of the good neighbor provision.").

112. *See*, *e.g.*, New York v. EPA, 964 F.3d 1214, 1219, 1221 (D.C. Cir. 2020).

113. *See id.* at 1221.

114. Update Rule, *supra* note 58, at 74,517.

115. *Id.* at 74,518.

116. *Id.* at 74,519.

117. *Id.* at 74,550.

118. Transport Rule, *supra* note 3, at 48,256.

119. Update Rule, *supra* note 58, at 74,550.

120. *See* Maryland v. EPA., 958 F.3d 1185, 1192 (D.C. Cir. 2020).

At Step Four, EPA requires states to adopt "permanent and enforceable measures needed to achieve [emissions reductions]."[121] EPA implements this step through promulgating FIPs, which specify the states' emissions budgets and required SO_2 and NO_x reductions, giving states the option to replace the FIP with a SIP.[122] States can also choose to meet their required emissions reductions by participating in allowance trading programs.[123] The total allowances—equaling each state's emissions budget—are allocated among sources in the state and capped to ensure that states do not exceed their emissions budgets plus the variability limit.[124]

This framework served as the basis for EPA's interstate transport programs. The Court gave EPA deference in their use of this framework for the Transport Rule, but the same framework was responsible for the Update Rule, which the D.C. Circuit struck down.[125] Whether this framework is desirable or consistent with the purpose of section 126 to provide expeditious remedies to downwind states is a key question that is addressed later in this Note.[126]

D. Judicial Treatment of Interstate Pollution Regulation

The following cases provide an overview of how EPA has interpreted significant contributions in the Good Neighbor Provision in its implementation of federal interstate transport programs.[127] These cases provide insight on the judicial treatment of EPA's methodologies and provide useful parameters for the scope of future regulations.

1. Michigan *and* North Carolina*: Early Cases on Cost and Trading*

In 1998, EPA issued a final rule that mandated twenty-two states and the District of Columbia to revise their SIPs to mitigate the interstate transport of ozone in compliance with the Good Neighbor Provision.[128] The rule required that each state reduce NO_x amounts accomplishable by "highly cost-effective controls," which petitioners challenged as an "arbitrary and unlawful" reading of

121. Memorandum from Peter Tsirigotis, Director of the EPA Office of Air Quality Planning and Standards to Regional Air Division Directors, EPA Regions 1-10, at 3 (Mar. 27, 2018), https://www.epa.gov/sites/production/files/2018- 03/documents/transport_memo_03_27_18_1.pdf.

122. Transport Rule, *supra* note 3, at 48,210, 48,212. The variability limit is each state's assurance level, which were set by the Transport Rule to ensure that emissions reductions required from each state occurred within the state. *Id.*

123. Update Rule, *supra* note 58, at 74,521.

124. *Id.* at 74,554; *see also* Transport Rule, *supra* note 3, at 48,210, 48,212.

125. EPA v. EME Homer City Generation, L.P., 572 U.S. 489 (2014); Wisconsin v. EPA, 938 F.3d. 303, 319 (D.C. Cir. 2019).

126. See *infra* Subpart III.C.

127. 42 U.S.C. § 7410(a)(2)(D)(i).

128. 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) (codified at 40 C.F.R. pt. 51, 72, 75, 96).

significant contribution under the Good Neighbor Provision.[129] On appeal, the D.C. Circuit held in *Michigan v. EPA* that nothing in the Good Neighbor Provision bars EPA from considering costs.[130] The D.C. Circuit's decision became an early indicator that cost considerations could serve as a permissible standard for allocating emissions reductions among the states.

In *North Carolina v. EPA* (2008), the D.C. Circuit struck down CAIR, which required twenty-seven states to reduce SO_2 and NO_x emissions in accordance with EPA's emissions budgets.[131] The primary holding of the case was that CAIR's emissions trading remedy could not guarantee measurable emissions reductions in each upwind state.[132] The court reasoned that emissions reductions by upwind states collectively was not enough to satisfy the Good Neighbor Provision.[133] CAIR should have included "some assurance that it achieves something measurable towards the goal of prohibiting sources 'within the State' from contributing to nonattainment or interfering with maintenance in 'any other State.'"[134] In sum, the court stressed that an emissions trading remedy, if any, must still ensure state-specific emissions reductions.

2. EPA v. EME Homer*: Cost-effectiveness as a Permissible Standard*

As mentioned, CAIR was replaced by the Transport Rule.[135] Upwind states challenged the Transport Rule's calculation of emissions budgets, arguing that EPA exceeded its authority by promulgating emissions budgets based on uniform cost thresholds at $500 per ton.[136] The proper method, petitioners contended, should have been a strict proportionality approach, based on each state's proximity to the out-of-attainment downwind receptor.[137] The D.C. Circuit ruled in favor of the upwind states, holding that the absence of explicit language allowing cost considerations in the Good Neighbor Provisions prohibited EPA's cost-effectiveness approach.[138]

In 2014, the Supreme Court reversed, 6-2, upholding the Transport Rule.[139] Justice Ginsburg, writing for the majority, determined that EPA could consider costs, among other factors, when quantifying the amount of NO_x and SO_2

129. *Id.* at 57,378; *see also* Michigan v. EPA, 213 F.3d 663, 676 (D.C. Cir. 2000).

130. *Michigan*, 213 F.3d at 679.

131. North Carolina v. EPA, 531 F.3d 896, 921 (D.C. Cir.), *modified on reh'g in part per curiam*, 550 F.3d 1176 (D.C. Cir. 2008).

132. *Id.* at 908 (holding that EPA must give independent effect to the prohibition against the "interfer[ence] with maintenance" of downwind attainment, as written in Good Neighbor Provision. In other words, an upwind state could interfere with downwind attainment even if the upwind state had never "contribute[d] significantly to nonattainment").

133. *Id.* at 926.

134. *Id.* at 908.

135. Transport Rule, *supra* note 3, at 48,212.

136. *Id.* at 48,236.

137. EME Homer City Generation, L.P. v. EPA, 696 F.3d 7, 23–24 (D.C. Cir. 2012), *rev'd*, 572 U.S. 489 (2014).

138. *Id.* at 37.

139. EPA v. EME Homer City Generation, L.P., 572 U.S. 489, 507 (2014).

emissions an upwind state was allowed to produce.[140] Because Congress left ambiguous the meaning of significant contribution and maintenance in the Good Neighbor Provision, EPA's cost-effectiveness approach in allocation of emissions responsibilities was a permissible construction of the statute.[141] Justice Ginsburg concluded that the cost effectiveness approach was a more "workable, and equitable interpretation of the Good Neighbor Provision" as compared to the alternate method of allocating emissions reductions by proportionality, which the D.C. Circuit asserted was the correct approach.[142]

Justice Scalia wrote a passionate dissent, sharply rejecting the consideration of costs in the CAA.[143] Citing to the Supreme Court's precedent in *Whitman v. American Trucking*, Justice Scalia asserted that authorization to consider costs could not be found in ambiguous sections of the Clean Air Act.[144] Instead, *American Trucking* "demanded 'a textual commitment of authority to the EPA to consider costs,'" and the Good Neighbor Provision "[came] nowhere close" to meeting this standard.[145]

3. Post-EME Homer*:* Maryland v. EPA*,* New York v. EPA

With the early cases and *EME Homer* in the back view, we move to recent litigation on interstate transport. Both of the following cases are appeals from EPA denials of section 126 petitions. They illustrate how judicial deference to EPA's past methodologies may have resulted in undesirable effects on downwind states seeking federal relief for interstate air pollution.

In 2016, Maryland and Delaware filed section 126 petitions. Both states requested that EPA impose additional limitations on certain upwind sources that were purportedly contributing to the two states' nonattainment of the 2008 and 2015 ozone NAAQS.[146] In the Update Rule, EPA had concluded that such optimization is a cost-effective strategy for reducing NO_x emissions.[147] Both states sought to require the optimization of existing selective catalytic reduction controls[148] at upwind sources.[149] Maryland additionally requested for the four

140. *Id.*
141. *Id.* at 492.
142. *Id.* at 524.
143. *Id.* at 528 (Scalia, J., dissenting).
144. *Id*. at 536 (Scalia, J., dissenting) (citing *Whitman v. American Trucking*, 531 U.S. 457, 467 (2001)).
145. *Id.* (citing *American Trucking*, 531 U.S. at 468).
146. Maryland v. EPA., 958 F.3d 1185, 1188 (D.C. Cir. 2020).
147. *Id.* at 1205.
148. Selective Catalytic Reduction (SCR) is an advanced active emissions control technology system that injects a liquid-reductant agent through a special catalyst into the exhaust steam of a diesel engine. *See About Clean Diesel What Is SCR?,* DIESEL TECH. FORUM, https://www.dieselforum.org/about-clean-diesel/what-is-scr (last visited Oct. 7, 2021).
149. *Maryland*, 958 F.3d at 1205. Maryland claimed that the units were not optimizing their existing controls or had ceased running these controls regularly during the ozone season. *Id.* at 1193. Maryland requested source-specific limitations at thirty-six EGUs that require them to run their existing NO_x control technology effectively on each day of the ozone season. *Id.* Delaware alleged that three of the facilities

named facilities which did not have catalytic controls to be required to operate their non-catalytic controls, and Delaware requested a fossil fuel facility to be required to burn only natural gas.[150]

In 2018, EPA denied both states' petitions.[151] EPA applied the four-part framework it developed in the Transport Rule.[152] EPA denied Delaware's petitions at Step One, finding that although Delaware monitors were currently exceeding ozone NAAQS, Delaware failed to show that there would be projected air quality violations in a future year corresponding with an attainment deadline.[153] EPA determined that Maryland satisfied Steps One and Two, having established a maintenance problem linked to upwind states' emissions.[154] EPA denied both Delaware and Maryland's petitions in full at Step Three, asserting that they had failed to identify any additional feasible and cost-effective controls at the named sources since they were already equipped with catalytic controls, even if they were operating optimally.[155] Maryland's petition additionally requested the regulation of sources operating non-catalytic controls.[156] EPA denied the request, asserting without explanation that "fully operating with non-catalytic controls is not a cost-effective NO_x emissions reductions strategy for these sources" because the Update Rule had concluded as such.[157]

On appeal, the D.C. Circuit determined that Delaware had carried its burden at Step One by proving a violation of the Good Neighbor Provision using data from out-of-state receptors.[158] However, the court upheld EPA's denial of Delaware's petition at Step Three.[159] Although the Update Rule provided that optimization of controls indicated cost-effectiveness, the D.C. Circuit rejected that optimization necessarily meant a source's "best rates."[160] The court deferred to EPA's meaning of optimization: "[A] rate that sources can usually hit by operating only their combustion controls."[161] The court rejected the petitioners' arguments that by failing to operate at optimal efficiency, the sources had not fully implemented cost-effective measures.[162]

The court remanded Maryland's petition in part, holding that EPA's rejection of Maryland's request to regulate sources with non-catalytic controls

---

were not optimizing their existing controls and that the fourth facility did not have catalytic controls installed. *Id.* Delaware asked EPA to impose an enforceable requirement that this fourth facility, Brunner Island, burn only natural gas, as opposed to burning both fossil fuels and natural gas. *Id.*

150. *Id.* at 1188.
151. *Id.*
152. *See supra* Subpart II.B.2.
153. *Maryland*, 958 F.3d at 1195.
154. *Id.* at 1194.
155. *Id.* at 1195.
156. *Id.* at 1194.
157. *Id.*
158. *Id.* at 1204.
159. *Id.* at 1205.
160. *Id.* at 1207.
161. *Id.*
162. *Id.* at 1207.

was inadequate.[163] Because the court had previously determined in *Wisconsin v. EPA* that the Update Rule had not fully discharged states' Good Neighbor obligations, EPA could not rely mechanically on the Update Rule for the proposition that non-catalytic controls are not cost effective.[164]

In March 2018, New York filed a section 126 petition that asked EPA to find that approximately 350 sources of NO_x in nine states (Illinois, Indiana, Kentucky, Maryland, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia) were contributing significantly to nonattainment in the New York Metropolitan Area under the 2008 and 2015 NAAQS.[165] The petition asked EPA to find that these facilities were violating the CAA's Good Neighbor Provision by producing emissions that contributed significantly to New York's inability to attain or maintain compliance with NAAQS for ozone.[166] The petition focused on the need to regulate facilities that emit at least 400 tons of NO_x per year.[167]

New York demonstrated that the upwind sources were linked to downwind nonattainment because they met the screening threshold for significant contribution: 1 percent of the ozone standards.[168] New York also quantified and described potentially available emissions reductions from the named sources.[169] It asserted that emissions reductions could be achieved simply by running existing, already-installed controls that EPA deemed in the 2008 Update Rule to be cost-effective.[170]

EPA denied the petition in September 2019.[171] Again applying the four-step framework, EPA found that, at Step One, the New York Metropolitan Area

163. *Id.* at 1209.

164. *Id.*; *see also* Wisconsin v. EPA, 938 F.3d. 303, 318 (D.C. Cir. 2019).

165. New York v. EPA, 964 F.3d 1214, 1219 (D.C. Cir. 2020). The New York Metropolitan Area was designated as being in "serious" nonattainment of the 2008 ozone standard, which imposes a 2021 attainment deadline. *See* Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards, 84 Fed. Reg. 44,238, 44,238, 44,244 (Aug. 23, 2019) (codified at 40 C.F.R. pts. 52, 81). Attainment by 2021 will be determined based on 2018–2020 ozone season monitoring data. *See* Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards, 83 Fed. Reg. 56,781, 56,784 (proposed Nov. 14, 2018) (to be codified at 40 C.F.R. pts. 52, 81).

166. Opening Proof Brief for Petitioners at 16–17, New York v. EPA, 964 F.3d 1214 (D.C. Cir. 2020) (No. 19-1231), 2020 WL 223978, at *16–17. New York City sits within a regional nonattainment area, the New York-Northern New Jersey-Long Island, NY-NJ-CT Nonattainment Area. *Id.* at *10. Such regional designations are authorized by the CAA. *Id.* at *11. If EPA determines that "even a single monitor in a multistate area is in nonattainment, all of the states in the multistate area will face direct consequences and responsibilities under the Act to address that nonattainment status." *Id.* (citing 42 U.S.C. §§ 7407(d)(1)(A)(i), 7511(a)).

167. *New York*, 964 F.3d at 1219.

168. Opening Proof Brief for Petitioners at 52, New York v. EPA, 964 F.3d 1214 (D.C. Cir. 2020) (No. 19-1231), 2020 WL 223978, at *52.

169. *Id.* at 17.

170. *Id.*

171. *New York*, 964 F.3d at 1220.

had no attainment problems under the 2008 ozone NAAQS.[172] EPA determined that New York did not demonstrate that there would be a nonattainment or maintenance problem in 2023, even though the 2008 ozone NAAQS have a statutory attainment deadline of 2021.[173]

EPA then denied the petition in full at Step Three, finding that New York failed to carry its burden of proof by sufficiently assessing whether further cost-effective controls could be implemented.[174] EPA wrote that New York could have met its evidentiary burden by producing one of the following analyses: (i) Verifying that the named sources whose emissions are those from the most recent emissions inventory continue to emit [NO_x] at the same rate or continue to operate; (ii) describing or quantifying potentially available emissions reductions from the named sources (*i.e.*, the control technologies/ techniques and the costs of those control technologies/techniques); (iii) describing the downwind air quality impacts of controlling the named sources relative to other sources; or (iv) providing information on the relative cost of the available emissions reductions and whether they are less expensive than other reductions from other sources.[175]

EPA contended that it could not determine whether it would be appropriate to regulate any of the hundreds of named sources unless they were all "compared to one another or . . . to other, unnamed sources in the same upwind states or in other states."[176] EPA seemed to suggest that New York was required to conduct "a comprehensive, comparative analysis of emissions from *all* sources—named and unnamed—within each designated State."[177] EPA claimed that without that broad swath of comparative data, it could not determine whether it could regulate any of the sources in New York's petition.[178] New York appealed, arguing that requiring such a comprehensive showing was akin to "presenting a complete regional transport rulemaking that would fully resolve all good neighbor obligations for all upwind sources, including those not named in the Petition, across numerous States and sectors."[179]

The D.C. Circuit vacated the denial, concluding that EPA "never offered a coherent explanation" for why, under Step Three, New York had not met its burden of proof, considering it had provided data on average emission rates by different sources from 2014 to 2016.[180] EPA's decision sent "contradictory messages about whether, or to what extent, New York had to produce a global comparative analysis of potential emission reductions at listed and unnamed

172. *Id.*
173. *Id.*
174. *Id.*
175. *Id.* at 1221.
176. *Id.*
177. *Id.* at 1223.
178. *Id.* at 1223–24.
179. Opening Proof Brief for Petitioners at 56, New York v. EPA, 964 F.3d 1214 (D.C. Cir. 2020) (No. 19-1231), 2020 WL 223978, at *56 (noting that EPA itself had never conducted such an analysis for either the 2008 or 2015 ozone standard).
180. *New York*, 964 F.3d at 1222.

sources."[181] The court observed that EPA's test at Step Three of the framework "at best [created] a moving target, at worst, demanded likely unattainable standards of proof" and called the standard for proving cost-effectiveness "nigh impossible to meet."[182] The court concluded that requiring a comparative analysis of all sources within each designated state would be "unworkable."[183] Because the analyses suggested by EPA as meeting a petitioner's burden of proof would require "detailed and intricate inside knowledge of each facility's equipment and operations, [which is] not frequently nor publicly available," EPA could not require such a showing.[184]

While the D.C. Circuit clearly rejected the standard of proof requested by EPA in *New York*, it did not provide additional guidance on what qualifies as sufficiently meeting a petitioner's burden of proof. Taking *New York* and *Maryland* together, it appears that the current standard for proving cost-effectiveness leaves considerable discretion to EPA in denying arguably meritorious petitions, since it is, by EPA's admission, "not 'a specific test.'"[185] Moreover, that a petition could be denied after establishing that a downwind air pollution problem exists in Step One, as Maryland and Delaware did, does not cohere with EPA's duty under the Good Neighbor Provision, which has been described as a "statutory mandate."[186] These issues and others are discussed in the following Part.

III. CHALLENGES IN SEEKING RELIEF UNDER EPA'S REGULATORY FRAMEWORK

A. Lack of Clarity Around a Downwind State's Burden of Proof in Bringing a Good Neighbor Claim

The *New York* decision highlights the lack of clarity around a downwind state's burden of proof in section 126 petitions.[187] Step Three of EPA's four-part framework, derived from the Transport Rule, requires that a petitioning state show that existing reductions are insufficient, and further cost-effective reductions can be made.[188] The D.C. Circuit in *New York* held that EPA's

181. *Id.* at 1223.

182. *Id.* at 1222. The Court also denied EPA's finding that, at Step One, the New York Metropolitan Area did not have a cognizable air quality problem under the 2008 NAAQS because the binding circuit precedent in *Wisconsin v. EPA* held that the CSAPR Update would not facilitate downwind states' attainment with 2008 ozone NAAQS by the statutory deadline of 2021. *Id.* at 1125; *see also* Wisconsin v. EPA, 938 F.3d 303, 309, 313–18 (D.C. Cir. 2019) (holding that the Update Rule violated the CAA by allowing upwind states to continue contributing to downwind air quality problems "beyond the statutory deadlines by which downwind states must demonstrate their attainment").

183. *New York*, 964 F.3d at 1217.

184. *Id.* at 1224.

185. *See id.* at 1223.

186. *Wisconsin*, 938 F.3d. at 319.

187. *See New York*, 964 F.3d. at 1223.

188. *See id.* at 1221.

interpretation of this requirement—requiring a "global comparative analysis of potential emission reductions at listed and unnamed sources within each of the nine states"—was unworkable.[189]

As demonstrated in *Maryland* and *New York*, whether EPA grants or denies a section 126 petition often turns on a downwind state's ability to meet Step Three of the four-part analysis. But as the court points out in *New York*, as a practical matter, this requested information is best provided by upwind sources and is frequently neither available to nor attainable by downwind states.[190] The downwind state lacks regulatory authority over out-of-state sources and cannot compel the sources to provide emissions data. By contrast, EPA has authority under the CAA to compel upwind sources to maintain records and provide them to EPA for its decision-making.[191]

The high burden of proof on petitioning states also frustrates the purpose of section 126. The intended purpose of section 126 was to allow downward states an additional, source-specific remedy for preventing and abating interstate air pollution in order to comply with federal air quality standards.[192] The petition process was meant to expedite EPA's resolution of interstate pollution, not to delay the petition process by saddling petitioning states with the heavy burden of "collect[ing] information from hundreds of sources outside of the [petitioning states]."[193] Nothing in section 126 requires a petitioning state to complete a comprehensive assessment of all upwind sources in order to obtain a remedy. Instead, "section 126 allows EPA to impose more tailored remedies, including daily or other short-term emission limits for sources, that are narrower than the seasonal average ozone budgets established by EPA's regional rulemakings under the Good Neighbor Provision."[194] Put differently, EPA's framework, while reasonable for EPA's promulgation of regional transport rules, is unreasonable when considering the structure and manifest purpose of section 126.

EPA's framework is neither required by statute nor a reasonable reading of EPA's duty to remedy sources emitting in violation of the Good Neighbor Provision under section 126. A more effective approach would be to lower the burden of proof by revising EPA's four-part framework in evaluating allegations of Good Neighbor violations. It should be sufficient for downwind states to prove Good Neighbor violations at Steps One and Two. This would require a downwind state, at most, to identify the downwind receptors that are expected to have problems meeting or maintaining clean air standards. It would also require downwind states to identify the upwind states and sources that are inhibiting

189. *Id.* at 1217.
190. *See id.* at 1224.
191. 42 U.S.C. § 7414(a)(1).
192. *Id.* § 7426(b)–(c).
193. Opening Proof Brief for Petitioners at 24, New York v. EPA, 964 F.3d 1214 (D.C. Cir. 2020) (No. 19-1231), 2020 WL 223978, at *24.
194. *Id.* at 57.

downwind states from complying with NAAQS. The burden would then shift to upwind states to prove that the proposed controls are unnecessary at the identified sources.

B. EPA's Erroneous Use of Cost as a Proxy for Significance

In contrast to its decision in *New York*, the D.C. Circuit in *Maryland* largely upheld EPA's denial of Maryland and Delaware's petitions because the states failed to identify additional cost-effective controls.[195] This was so even though both Maryland and Delaware, by the court's assessment, established that there would be significant contributions to or maintenance issues at downwind receptors under Step One of the analysis.[196]

This reasoning misunderstands the role of cost considerations in making determinations under the Good Neighbor Provision and sets a misguided precedent where cost is a proxy for significance. There have been decades-long debates over the use of cost in environmental rulemaking, and this Note does not intend to dive into this debate.[197] Based strictly on the judicial treatment of the Good Neighbor Provision and the legislative history of section 126, the following Subpart explains why EPA cannot consider costs in determining whether to regulate a source after a state has already established a nonattainment problem.

Agencies use cost-effectiveness analysis to identify the "least costly" option for meeting a pre-determined goal.[198] Cost-effectiveness is "an economic tool used to compare multiple regulatory actions with the same primary outcome. An action is cost-effective if it minimizes the cost of achieving this outcome."[199] Cost-effectiveness is distinct from a cost-benefit analysis, which involves weighing and comparing the costs and benefits of a course of action.[200] If the agency is under no obligation to meet a specific goal, cost-benefit analysis may be appropriate.[201] Where, however, an agency has a statutory mandate, an agency may choose a cost-effective pathway, but it cannot choose *not* to regulate because it would be costly to do so.[202]

Under the Good Neighbor Provision, the agency is under an obligation to provide downwind states a full remedy for emissions that significantly contribute

195. Maryland v. EPA, 958 F.3d 1185, 1205 (D.C. Cir. 2020).

196. *Id.* at 1185, 1194, 1204.

197. *See* Amy Sinden, *A "Cost-Benefit State?" Reports of Its Birth Have Been Greatly Exaggerated*, 46 Envtl. L. Rep. (Envtl. L. Inst.) 10,933, 10,935 (2016).

198. *See* OFF. OF MGMT. & BUDGET, EXEC. OFF. OF THE PRESIDENT, CIRCULAR A-4, REGULATORY ANALYSIS 10–11 (2003); *see also* Exec. Order No. 12,866, 58 Fed. Reg. 51,735, 51,736 (Oct. 4, 1993) (directing agencies to "design [] regulations in the most cost-effective manner to achieve the regulatory objective").

199. Richard L. Revesz, *Toward A More Rational Environmental Policy*, 39 HARV. ENV'T L. REV. 93, 100 (2015).

200. *See* Sinden, *supra* note 197, at 10,935.

201. Exec. Order No. 12,866, 58 Fed. Reg. at 51,735.

202. *Id.* at 51,736 (directing agencies to "design [] regulations in the most cost-effective manner to achieve the regulatory objective").

to or interfere with their maintenance of attainment.[203] In making the assessment of which pathway to choose among many that lead to the same goal, "EPA has the discretion to consider the cost-effectiveness of available control strategies, but it does not have discretion to completely decline to pursue attainment at all."[204] The relevant comparison in a cost-effectiveness analysis is, thus, "how the cost of eliminating emissions from the cited sources [relates to] the cost of achieving *other* reductions that would lead to attainment in the petitioning states."[205] In *Maryland*, EPA should have compared the cost of reductions requested in the section 126 petitions to other options for achieving attainment. Instead, the agency compared the costs of reductions requested in Maryland and Delaware's petitions to the reductions achieved by the Update Rule, which EPA had previously recognized as only a "partial remedy."[206]

The Supreme Court held in *EME Homer* that, between cost-effectiveness and proportionality, cost-effectiveness was "an efficient and equitable solution to the allocation problem the Good Neighbor Provision requires the Agency to address."[207] As Professor Revesz explains, cost-effectiveness is a tool "to compare multiple regulatory actions with the same primary outcome."[208] In other words, while cost-effectiveness may serve as a mechanism for allocating costs, *EME Homer* did not suggest that EPA could choose not to take regulatory action entirely if the abatement cost would be too high.[209] Indeed, section 126 generally requires that a source cease operations within three months if it is found to be violating the Good Neighbor Provision.[210] Therefore, if a section 126 petitioner has established that a nonattainment site is linked to an upwind source's emissions, EPA can choose not to adopt a section 126 petitioner's method of regulation *only if* it can identify other reductions that will lead to downwind attainment at lower cost.[211] EPA cannot set an arbitrary threshold for cost-effectiveness and find that additional reductions are too costly to pursue, even when reductions are necessary to achieve attainment in downwind states.[212]

EPA's failure to eliminate upwind states' significant contributions on the basis of cost, even when such contributions would lead to downwind nonattainment, is irreconcilable with the court's recognition of Good Neighbor compliance as a "statutory mandate."[213] As the D.C. Circuit has held, EPA

203. 42 U.S.C. § 7410(a)(2)(D)(i).

204. Bethany Davis Noll, Inst. for Pol'y Integrity, Comment Letter on Response to Clean Air Action Section 126(b) Petition from New York (July 12, 2019), https://policyintegrity.org/documents/Policy_Integrity_Comments.pdf.

205. *Id.*

206. Wisconsin v. EPA, 938 F.3d 303, 327 (D.C. Cir. 2019); Maryland v. EPA, 958 F.3d 1185, 1192 (D.C. Cir. 2020).

207. EPA v. EME Homer City Generation, L.P., 572 U.S. 489, 519 (2014).

208. Revesz, *supra* note 199, at 100.

209. *See EME Homer*, 572 U.S. at 519.

210. 42 U.S.C. § 7426(c).

211. *See id.*

212. *See EME Homer*, 572 U.S. at 523.

213. *See* Wisconsin v. EPA, 938 F.3d 303, 319 (D.C. Cir. 2019).

cannot "shirk [] its duties by reason of mere difficulty or inconvenience" and must meet a "heavy burden to demonstrate the existence of an impossibility."[214] To the extent that EPA's cost considerations in *Maryland* were about a lack of feasibility, the court had already rejected this line of reasoning in *Wisconsin.*[215] In sum, while EPA has considerable discretion in determining how to build its federal programs, it cannot ignore the core mandate of the Good Neighbor Provision, which is the goal of downwind attainment.[216]

C. Disconnect Between the Good Neighbor Provision and Section 126

The utility of section 126 also suffers from some practical problems. When downwind states bring a section 126 petition, they are asking for individual *sources*, often across a number of states, to be regulated to produce fewer emissions.[217] Section 126 allows a downwind state to request direct federal regulation of sources beyond its borders.[218] On the other hand, the Good Neighbor Provision obliges a state to regulate its *own* sources, with EPA stepping in only when state efforts fail.[219] While upwind states can ensure that in-state sources do not cause nonattainment in downwind states, an in-state source, in combination with *other states'* sources, may still cause nonattainment downwind. The D.C. Circuit clarified in *New York* that section 126 does not limit petitioning authority to states whose downwind receptors are strictly within their own geographic borders.[220] To the contrary, section 126 allows states whose receptors are located in multistate nonattainment areas to petition EPA to regulate those upwind sources contributing to their nonattainment or interfering with their maintenance of NAAQS.[221]

The problem lies in the fact that the D.C. Circuit has rejected the notion that section 126 creates an affirmative duty for EPA to review existing SIPs to determine whether they violate the Good Neighbor Provision.[222] In other words, according to the D.C. Circuit, a section 126 violation does not trigger review under the Good Neighbor Provision of upwind states' SIPs. This is the case even

214. Am. Hosp. Ass'n v. Price, 867 F.3d 160, 168 (D.C. Cir. 2017); *see also* Sierra Club v. EPA, 719 F.2d 436, 462 (D.C. Cir. 1983) (citing Ala. Power Co. v. Costle, 636 F.2d 323, 359 (D.C. Cir. 1979)).

215. *See Wisconsin*, 938 F.3d at 319.

216. *See EME Homer*, 572 U.S. at 517.

217. *See* 42 U.S.C. § 7426(b).

218. *Id.*

219. *Id.* § 7410(a)(2)(D)(i).

220. New York v. EPA, 964 F.3d 1214, 1226 (D.C. Cir. 2020). The court held that its "decision in *Maryland* firmly closed the door on that proposition, 'at least' with respect to monitors like New York's that are 'located in a multistate nonattainment area that includes the petitioning state.'" *Id.* (quoting Maryland v. EPA, 958 F.3d 1185, 1200–01 (D.C. Cir. 2020)). "To hold otherwise would have created an untenable incongruity in the statute—placing States in 'regulatory limbo' where they are subject to regulatory burdens based on their air quality control region's nonattainment, 'yet unable to avail [themselves] of the intended remedy for addressing upwind contributions' to that nonattainment." *Id.* (alteration in original) (quoting *Maryland*, 958 F.3d at 1200).

221. *See Maryland*, 958 F.3d at 1200.

222. *See New York*, 852 F.2d at 578.

when a polluting state's SIP is already under review: downwind states cannot compel EPA to stay approval of a SIP revision while section 126 proceedings are pending.[223] The fact that section 126 violations do not require EPA to affirmatively revise a state's SIP reflects a discordancy between section 126 and the Good Neighbor Provision, creating unnecessary inefficiencies.

A better interpretation would be to treat sections 126 and the Good Neighbor Provision as symbiotic, requiring challenges made under either section to be resolved before a polluting state's SIP is approved. One way to potentially remedy this discordancy is to have a section 126 petition trigger a SIP call. This would make sense because an approval of a section 126 petition implies a finding of a Good Neighbor violation, which would provide the statutory trigger for federal regulation.[224] EPA could arrange for this procedure to take place without amending the CAA, since it has the statutory authority to provide states relief under both provisions.[225]

D. Issues Presented by Emissions Trading

Although not the focus of this Note, the Transport Rule's emissions trading remedy presents challenges to downwind states' attainment of NAAQS. While well-implemented trading programs can "harness the power of the market to reduce emissions efficiently and at a lower cost than other regulatory mechanisms," they can also create uncertainty regarding the source of the emissions.[226]

More importantly, emissions allowance prices may lead to higher emissions. Emissions allowance prices are affected by a number of factors, including supply and demand, program design elements that influence supply and demand, and legal and regulatory uncertainty.[227] Allowance banking, which is the saving of allowances for future use, influences allowance supply; an oversupply will lead to lower prices.[228] As a result, some plant owners may decide not to run pollution controls at optimal levels, leading to higher emissions.[229] Some brokerage firms have recently reported that the allowance

223. *See* Appalachian Power Co. v. EPA, 249 F.3d 1032, 1045, 1048 (D.C. Cir. 2001) (suggesting that section 126 findings and the section 110 process "operate independently").

224. *See* Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland, 83 Fed. Reg. 26,666, 26,675 (June 8, 2018); 42 U.S.C. § 7410(a)(2)(D)(ii).

225. *See* 42 U.S.C. §§ 7410(a)-(k), 7426(c).

226. Sonja L. Rodman, *Legal Uncertainties and the Future of U.S. Emissions Trading Programs,* 24 NAT. RES. & ENV'T 7, 7 (2010).

227. *See* DALLAS BURTRAW & SARAH JO SZAMBELAN, RES. FOR THE FUTURE, RFF DP 09-40, U.S. EMISSIONS TRADING MARKETS FOR SO_2 AND NO_x 2 (2009), https://www.rff.org/publications/working-papers/us-emissions-trading-markets-for-so2-and-nox (discussing how SO_2 and NO_x markets have been undermined by regulatory uncertainty).

228. *See* Alexander E. Farrell, *The First Year of the NOx Budget* 7 (Carnegie Mellon Elec. Indus. Ctr., Working Paper No. 01-05) https://www.cmu.edu/ceic/assets/docs/publications/working-papers/ceic-01-05.pdf (discussing the effect of allowance supply on allowance prices).

229. EVOLUTION MARKETS, MARKET UPDATE: CROSS STATE AIR POLLUTION RULE 2 (2018), http://www.evomarkets.com/content/news/reports_28_report_file.pdf.

prices in the CSAPR Update Rule program have been lower than the marginal cost to reduce ozone season NO_x.[230] Depending on the trend in NO_x allowance prices, EPA may need to implement additional regulatory requirements and incentives to maximize their use of pollution controls.

IV. AN ALTERNATIVE STANDARD: CALIFORNIA'S OZONE TRANSPORT PROGRAM AS A POINT OF COMPARISON

In looking to improve its regulation of interstate pollution regulation, EPA may find it instructive to draw knowledge from California's intrastate Ozone Transport Program.[231] Under the California Clean Air Act (CCAA) and California's Health & Safety Code, the California Air Resources Board (CARB) is tasked with regulating the effects of downwind ozone transport from one upwind air quality district or basin to another.[232] As a whole, California's ambient air quality standards are more rigorous than national standards.[233] The following Part will examine California's intrastate Ozone Transport Program as it applies to transport from upwind air districts to downwind districts. The Transport Rule may benefit by adopting the stricter standards California employs in its program to mitigating downwind ozone emissions.

A. Overview of Ozone Transport Regulation in California

Transport mitigation is part of a broader effort to achieve state air quality standards in California. Some parts of the state, primarily rural or less populated areas, are overwhelmed by transport. In these areas, there are relatively few local emissions, and poor ozone air quality is largely the result of transport.[234] The Mountain Counties Air Basin, for example, violates the state's ozone standards as a result of transport from the Sacramento Valley, the San Joaquin Valley, and the San Francisco Bay Area.[235] Thus, in regions like the Mountain Counties, attainment with state ozone standards relies on reductions in emissions from upwind areas. In turn, San Joaquin Valley imports air pollution from the

230. *Id.* An "ozone season," which varies in length and time across the country, refers to the period of time in which ground-level ozone reaches its highest concentrations. *See Ozone Season Lengths Across the Country*, CLIMATE CENTRAL (July 31, 2019), https://www.climatecentral.org/gallery/maps/ozone-season-lengths-across-the-country.

231. *Ozone Transport*, CAL. AIR RES. BD., https://ww2.arb.ca.gov/our-work/programs/ozone-transport/about (last visited Dec. 20, 2020).

232. AIR RES. BD., CAL. ENV'T PROT. AGENCY, STAFF REPORT: INITIAL STATEMENT OF REASONS FOR THE PROPOSED AMENDMENTS FOR THE OZONE TRANSPORT MITIGATION REGULATIONS, at i (2003), https://ww3.arb.ca.gov/regact/trans03/isor.pdf?_ga=2.164918335.1252055844.1608515043-788607841.1597110597 [hereinafter CARB STAFF REPORT].

233. *California Ambient Air Quality Standards*, CAL. AIR RES. BD., https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards (last visited Dec. 1, 2021).

234. *See* Appendix C, *infra*.

235. AIR RES. BD., CAL. ENV'T PROT. AGENCY, OZONE TRANSPORT: 2001 REVIEW 15 (2001), https://ww2.arb.ca.gov/sites/default/files/classic//research/apr/reports/l3067.pdf.

Sacramento and the San Francisco Bay areas.[236] The San Joaquin Valley is already a district with some of the nation's worst air quality, and is one of only two areas in the nation with "extreme" ozone nonattainment.[237] Transport contributes to the environmental and social burdens already disproportionately borne by underserved communities in the area.[238]

The CCAA, like the federal statute, sets ambient air quality standards for local air districts and air basins.[239] The eight-hour standard ambient air quality standard for ozone is 0.07 ppm, like the national standard, but California also has a one-hour standard for ozone at 0.09 ppm.[240] Unlike the federal standard, which designates nonattainment only if a state has exceeded the standard four times in three years, under the state ozone standard nonattainment occurs after a single exceedance.[241] Thus, even a single one-hour period with levels in excess of 0.09 ppm is enough to designate an area in nonattainment for the state standard.[242] Further, unlike the federal standard, state law does not establish attainment dates for ambient standards. Instead, state law requires evaluation of trends and continued progress in reducing emissions that lead to unhealthy pollutant levels.[243]

Federal law does not establish specific transport mitigation requirements for transport within state boundaries. CARB, in cooperation with local air districts, is required by the CCAA to evaluate intrastate ozone transport and to suggest mitigation measures for such transport.[244] For ozone, the CCAA specifically recognizes that local air pollution control districts need to mitigate the impact of pollutants and precursors that are carried by prevailing winds from emission points in upwind air districts to downwind air districts.[245] CARB first adopted transport mitigation requirements for air districts in 1990 based on an analysis of transport relationships between districts. CARB identified transport couples—

236. *Frequently Asked Questions*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DIST., https://ww2.valleyair.org/about/frequently-asked-questions/ (last visited Oct. 8, 2021).

237. Press Release, California Air Res. Bd., California Supports U.S. EPA Action to Strengthen National Ozone Standard (Oct. 1, 2015), https://ww2.arb.ca.gov/news/california-supports-us-epa-action-strengthen-national-ozone-standard.

238. *See Ambient Air Quality Standards & Valley Attainment Status*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DIST., https://www.valleyair.org/aqinfo/attainment.htm (last visited March 31, 2021); Ian C. Faloona et al., *The California Baseline Ozone Transport Study (CABOTS)*, 101 BULL. AM. METEOROLOGICAL SOC'Y E427, E430 (2020).

239. *See* CARB STAFF REPORT, *supra* note 232, at 1.

240. *See Ozone & Health Health Effects of Ozone*, CAL. AIR RES. BD., https://ww2.arb.ca.gov/resources/ozone-and-health (last visited Dec. 20, 2020).

241. San Joaquin Valley Air Pollution Control Dist., *Triennial Progress Report and Plan Revision*, *Chapter 8 – California Clean Air Act*, *in* 2004 EXTREME OZONE ATTAINMENT DEMONSTRATION PLAN 8-2 (2004), http://www.sjvapcd.dst.ca.us/Air_Quality_Plans/docs/final_one_hour/Ch%208%20Final.pdf.

242. *See id.*

243. *Id.*

244. *See* CARB STAFF REPORT, *supra* note 232, at 4.

245. *Id.* at 6.

source and receptor areas—throughout California; some districts are both receptors and sources of transport pollutants.[246]

The CCAA requires upwind districts to establish a strategy that will help them achieve local attainment of ozone standards. Health & Safety Code section 40914 requires each district that is in nonattainment for the state ozone standard to develop and implement an ozone attainment plan.[247] Prior to the 2003 amendments to the Ozone Transport Program, the plans were required to include measures that would achieve at least a 5 percent annual reduction in district-wide emissions for ozone precursors.[248] If the district were unable achieve the 5 percent reductions, the attainment plan had to include "all feasible measures" to achieve the ozone standards.[249] While this helped districts achieve local emission reductions within their own districts, it did not address the issue of emissions reductions needed to mitigate transport impacts between upwind and downwind districts.[250] Some downwind districts indicated that a mechanism was needed to ensure continued implementation of all feasible measures as upwind districts got close to attaining the ozone standard.[251]

The primary mitigation requirement had been the application of Best Available Retrofit Control Technology (BARCT) on existing stationary sources.[252] In 2001, CARB updated the transport assessment and began pursuing the possibility of strengthening the mitigation regulation.[253] In 2003, CARB amended state regulations for ozone transport mitigation.[254] CARB retained the requirement for upwind transport districts to apply BARCT but added new requirements. Relevant to this Note's discussion was a requirement for upwind districts to adopt "all feasible measures" for ozone-forming pollutants for transport purposes, independent of the upwind district's attainment status.[255] The goal was to ensure that upwind districts would adopt and implement "all feasible measures" in a timely way.[256]

The amendments also addressed implementation requirements, including an annual review, as opposed to the previous three-year cycle of review; a consultation and public comment forum; and a reporting process for the

246. *Id*. at 7; *see also* Appendix B, *infra*.

247. CAL. HEALTH & SAFETY CODE § 40914 (2021); CARB STAFF REPORT, *supra* note 232*,* at 4.

248. CARB STAFF REPORT*, supra* note 232, at 4.

249. *Id.*

250. *Id*. at 1.

251. *Id.* at 2.

252. *See* CAL. HEALTH & SAFETY CODE § 40406 (2021).

253. CARB STAFF REPORT, *supra* note 232, at i.

254. *Transport Mitigation*, CAL. AIR RES. BD.*,* https://ww2.arb.ca.gov/our-work/programs/resource-center/technical-assistance/air-quality-and-emissions-data/ozone-0 (last visited Dec. 10, 2010).

255. CARB STAFF REPORT, *supra* note 232, at 9. CARB also implemented "no-net-increase" thresholds on upwind districts for new source review permitting programs. CARB STAFF REPORT, *supra* note 232, at 9. Because this Note focuses on federal regulations over existing sources, the following subpart does not discuss the no-net-increase threshold and instead focuses on the "all feasible measures" approach.

256. *Id.*

implementation of all feasible measures.[257] The purpose of these additional requirements was to encourage the pooling of district resources and expertise.[258] It also represented a greater effort by CARB to require districts to more expeditiously mitigate transport impacts.[259]

B. "All Feasible Measures" Approach

As previously discussed, CARB amended its Ozone Transport Program by requiring upwind districts to control ozone transport with "all feasible measures," in addition to BARCT, regardless of their attainment status. CARB's stated purpose for requiring upwind districts to implement "all feasible measures" was to establish a framework by which upwind and downwind districts could work together to implement the most effective measures and to mitigate transport as expeditiously as possible.[260] The addition of the "all feasible measures" approach ensured that upwind districts, even after they have come close to or have achieved attainment, must continue to adopt measures to reduce ozone transport.[261] The revised implementation process also served this purpose, by requiring upwind districts to make a finding annually as to whether or not their attainment plan continued to include all feasible measures.[262]

CARB defined "all feasible measures" to broadly include all air pollution control measures. This includes emissions standards and limitations applicable to all air pollution sources under a district's authority that achieve the maximum possible degree of reduction of emissions of ozone precursors, taking into account technological, social, environmental, economic, and energy factors.[263] It represented a broader concept than BARCT, which addresses the concept of retrofitting existing equipment. The "all feasible measures" requirement applies to equipment as well as a variety of different operations from both large and small stationary sources.[264]

There is an exemption, or what CARB calls a "limitation procedure," for upwind districts that believe sources in their district should be excluded from the BARCT or "all feasible measures" mitigation requirements.[265] In order to qualify for the exemption, a district must demonstrate why one or more sources should be excluded. They can do so by demonstrating one of the following: (1) emissions from the source do not contribute to ozone violations in any downwind

257. *Id.* at 9.
258. *Id.* at 11.
259. *Id.* at 10.
260. *Id.* at 4.
261. *Id.* at 9.
262. *Id.* at 18.
263. *Id.* at 11.
264. *Id.* at 11–12. The requirement applies to permitted facilities with high emissions output as well as smaller, non-permitted facilities whose operations may emit air pollutants; for example, facilities that generate emissions from architectural and other types of coatings. *Id.* at 11.
265. *Id.* at 15.

area, (2) reductions from the source are not needed to attain the state ozone standard in any downwind area, or (3) an alternative emission reduction strategy would comply with CCAA requirements and would be as effective and expeditious for attainment of the ozone standard in the downwind area as the implementation of the BARCT mitigation requirement.[266] The implementation process requires that districts consult with one another to ensure that they are achieving all feasible measures.[267] This district consultation requirement was meant to encourage the pooling of district resources and expertise in evaluating whether a new measure adopted by one district is feasible and appropriate for other districts.[268]

CARB has not conducted an analysis after the adoption of these changes, but there is at least some evidence that the new requirement has produced benefits toward air pollution control planning. One example is in the San Joaquin Valley Air Basin, which has had a history of severe air pollution and, like many districts, is nonattainment for ozone and $PM_{2.5}$.[269] The San Joaquin Valley Air Basin is both a source and a receptor of transported pollutants. The area receives approximately 27 percent of its emissions from the San Francisco Bay and Sacramento areas and is a source of emissions for downwind districts like the Mojave Desert Air Basin or the Great Basin Valleys Air Basin.[270]

In order to comply with the "all feasible measures" requirement for its district-wide sources, the San Joaquin Valley Air Pollution Control District reviewed the adopted rules of other California air districts to determine whether other measures should be incorporated.[271] Working with the California Air Pollution Control Officers Association, the District developed a list of the most stringent rules adopted by California air districts, reviewed its own adopted rules, and proposed control measures to ensure that the District met the "all feasible measures" requirement.[272]

EPA should consider whether an "all feasible measures" standard for reducing interstate emissions would better serve the goals of downwind states' attainment. As suggested in the *EME Homer* holding, EPA has considerable discretion in determining what method to choose in requiring emissions reductions among the states.[273] As it currently stands, the Transport Rule's cost-effectiveness approach is weaker than even CARB's BARCT requirement. Like the Transport Rule, BARCT requires retrofitting existing equipment, but unlike the Transport Rule, it does not impose a cost-effectiveness requirement on those

266. *Id.* at 8.
267. *Id.* at 10.
268. *Id.*
269. *See* Appendix B, *infra*.
270. *Frequently Asked Questions*, *supra* note 236.
271. San Joaquin Valley Air Pollution Control Dist., *supra* note 241, at 8–13.
272. *Id.*
273. *See* EPA v. EME Homer City Generation, L.P., 572 U.S. 489, 513 (2014).

retrofits.[274] An "all feasible measures" standard also takes into account economic factors, but, unlike emissions budgets, does not set a threshold that prevents further controls.[275] As Professor David Driesen writes, "Adoption of [a] feasibility principle for determining the stringency of regulation does not imply any particular position in the debate between traditional regulation and 'economic incentives.' . . . The feasibility principle offers, at a minimum, a proposal about how to consider costs in environmental decisionmaking."[276]

Additionally, the adoption of an exemption—or "limitation procedure"—for the "all feasible measures" standard could serve as a safeguard for upwind districts. The "all feasible measures" approach would require upwind states to adopt new measures so long as sources within the state contribute to downwind nonattainment.[277] Notably, this approach deviates from the Transport Rule framework, the latter of which puts the burden on downwind states to identify cost-effective controls for polluting sources. The limitation procedure would apply such that upwind sources may be excluded from federal regulation by demonstrating one of the following: (1) emissions from the source, because of the location, do not contribute to ozone violations in any downwind area, (2) reductions from the source are not needed to attain the state ozone standard in any downwind area, or (3) an alternative emission reduction strategy would be as effective and expeditious for downwind attainment.[278]

Adopting the "all feasible measures" approach of the California intrastate Ozone Transport Program could help shift the burden of proving cost-effectiveness from downwind states to where it rightfully belongs: upwind states. This simple adoption could improve EPA's regulatory process by ensuring that EPA properly acts upon meritorious Good Neighbor claims and section 126 petitions. But while regulatory improvements would enforce pollution controls at violating sources and states, actually improving air quality in downwind states would require more than better regulation. The next Part discusses the outsized effect of clean energy policies and markets on air pollution mitigation.

V. EXTERNAL STRATEGIES FOR MITIGATING INTERSTATE AIR POLLUTION

An obvious strategy for mitigating interstate air pollution is to address and mitigate greenhouse emissions as a whole. Outside of CAA regulations, state and national policies about clean energy could produce air quality benefits, incentivize fuel switching, and accelerate renewable energy investments. In addition to policies and clean energy mandates, invigorating energy markets by

274. *See* CARB STAFF REPORT, *supra* note 232, at i.

275. *See id.* at 11.

276. David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection The Feasibility Principle, Cost-Benefit Analysis, and Regulatory Reform*, 32 B.C. ENV'T AFFS. L. REV. 1, 19 (2005).

277. *See id.*

278. *See id.* at 15.

boosting the appetite for clean energy and driving down costs of clean energy technologies is also critical for achieving robust emissions reductions.

The following Subparts illustrate how forces external to EPA's programs and regulations can shift companies away from building new pollution sources or continuing operations of existing pollution sources. Increasing the share of clean energy in the United States would naturally abate ozone emissions and long-range transport.

A. State and National Environmental Policies on Clean Energy

Environmental policies at the federal level waned during the Trump administration. The federal government under President Trump gutted programs that would have reduced precursor pollutants from stationary sources. For example, the administration abandoned the Clean Power Plan (CPP), which would have had significant public health co-benefits, by some estimates $34 to $54 billion each year by 2030.[279] Aside from languishing on its statutory obligation to curb emissions causing climate change, Trump also withdrew the country from the Paris Agreement, wherein the United States had committed to reduce domestic greenhouse gases by 26 to 28 percent by 2025.[280] As of January 2021, the Trump administration had reversed twenty-eight federal air pollution and emissions regulations, with two pending.[281] More air pollution and emissions rules were rolled back than any other environmental rules and regulations, which altogether amounted to around one hundred rollbacks.[282] The public health impact of Trump's rollbacks would probably ultimately be negligible if regulations are reinstated by the Biden administration.[283]

Federal policies could have a large impact on reducing overall greenhouse emissions. If President Biden succeeds in pushing an ambitious federal climate policy, perhaps similar to the Obama-era CPP, it would help accelerate reductions in power sector emissions, which are the main source of interstate pollution transport. President Biden has also set a goal to set the U.S. on track to achieve 100 percent clean energy generation by 2035.[284] If such targets are met,

279. *See* DANIEL A. FARBER & CINNAMON P. CARLARNE, CLIMATE CHANGE LAW 102, 151 (2018); THE STATE ENERGY & ENV'T IMPACT CTR., N.Y.U. SCH. OF L., CLIMATE & HEALTH SHOWDOWN IN THE COURTS: STATE ATTORNEYS GENERAL PREPARE TO FIGHT (2019), https://www.law.nyu.edu/sites/default/files/climate-and-health-showdown-in-the-courts.pdf.

280. *Paris 2015 Tracking Country Climate Pledges*, CARBONBRIEF, https://www.carbonbrief.org/paris-2015-tracking-country-climate-pledges (last updated Feb. 6, 2017).

281. Nadja Popovich et al., *The Trump Administration Rolled Back More than 100 Environmental Rules. Here's the Full List.*, N.Y. TIMES, https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks.html (last updated Jan. 20, 2021).

282. *See id.*

283. Jim Daley, *Deadly Air Pollution Doesn't Respect State Borders*, SCI. AM. (Feb. 12, 2020), https://www.scientificamerican.com/article/deadly-air-pollution-doesnt-respect-state-borders.

284. Press Release, The White House, Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), https://www.whitehouse.gov/briefing-room/statements-

the problem of interstate air pollution would be alleviated through the replacement and retirement of fossil fuel plants.

Another strategy for reducing greenhouse gases is through section 115 of the CAA.[285] Section 115 directs EPA to require states to revise their implementation plans to prevent or eliminate U.S. emissions that cause environmental problems in other countries.[286] Like the Good Neighbor Provision, EPA can intercede and impose a FIP if states' plans are inadequate to prevent international air pollution.[287] Previous rules aimed at cutting carbon emissions from power plants, like Obama's CPP and Trump's Affordable Clean Energy Rule, were based on section 111(d) of the CAA, which governs performance standards for existing stationary sources.[288] The legal grounding of section 111(d) has been uncertain at best, as seen in the extensive litigation over both rules, which resulted in the abandonment of the CPP and the vacatur of the Affordable Clean Energy Rule.[289] It may be prudent for the Biden administration to instead look to section 115 as a strategy for imposing tighter controls on polluting stationary sources.[290] Legal scholars have argued that a clean energy rule at least partially based upon section 115 would accelerate the retirement of fossil-fuel plants and produce significant climate benefits, without running into the legal problems that plagued the CPP.[291]

State-level policies have also created promising prospects for increasing the share of clean energy. Over three-quarters of states have state climate action plans, and many states have adopted renewable portfolio standards, which require that a certain percentage of retail electricity sales be derived from renewable sources.[292] For example, the California Global Warming Solutions Act required California to reduce emissions to 1990 levels by 2020, which California achieved ahead of time.[293] CARB's early implementation of the Act included measures that focused on reducing emissions of non-CO_2 greenhouse gases, targeting fossil fuel distributors and industrial facilities.[294] Many of the

releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies.

285. *See* 42 U.S.C. § 7415.

286. MICHAEL BURGER, COMBATING CLIMATE CHANGE WITH SECTION 115 OF THE CLEAN AIR ACT: LAW AND POLICY RATIONALES 3 (2020).

287. 42 U.S.C. § 7410(c)(1).

288. *Id.* § 7411(d).

289. *See* Dan Farber, *Biden's Dilemma Limiting Carbon from Existing Power Plants*, LEGAL PLANET (Mar. 29, 2021), https://legal-planet.org/2021/03/29/bidens-dilemma-limiting-carbon-from-existing-power-plants.

290. *See id.*

291. *See, e.g.*, Michael Burger et al., *Legal Pathways to Reducing Greenhouse Gas Emissions Under Section 115 of the Clean Air Act*, 28 GEO. ENV'T L. REV. 362 (2016).

292. Andrew Place, *State and Utility Decarbonization Commitments*, CLEAN AIR TASK FORCE (Oct. 1, 2020), https://www.catf.us/2020/10/state-and-regional-decarbonization-commitments/.

293. *Climate Pollutants Fall Below 1990 Levels for the First Time*, CAL. AIR RES. BD. (July 11, 2018), https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time.

294. *AB 32 Global Warming Solutions Act of 2006*, CAL. AIR RES. BD. (Sept. 28, 2018), https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006.

states within the Transport Rule have developed targets or mandates on clean or renewable energy.[295]

B. Growing Share of Clean Energy in the U.S. Energy Economy

The United States has seen recent emissions reductions from the electric power sector, correlating with a decrease of about 13,000 premature deaths associated with poor air quality over a thirteen-year period.[296] This has largely been linked to the retirement of coal-fired power plants, which may have more to do with energy markets than energy policies.[297]

The decreased cost competitiveness of coal-fired plants have led to the retirement of coal-fired electricity generating capacity in the United States.[298] From 2011 to mid-2020, ninety-five gigawatts of coal capacity were closed or switched to another fuel, and another twenty-five gigawatts are slated to shut down by 2025.[299] As coal has been displaced by cheaper generation from natural gas and renewable energy, coal plant owners assert that they are often unable to operate for enough hours to produce annual revenue covering their costs.[300] As remaining plants are utilized less, plant owners are considering new operating models, such as seasonal operation, which would limit operators' financial losses.[301] However, even partial operation may not improve the economics of coal plants. In 2018, owners of a plant in Wisconsin and a plant in Texas switched to seasonal operation, only to completely shut down the plants later.[302]

The cost of renewables has dropped considerably, accelerating the replacement of fossil fuels by renewable energy in electricity generation as well as other sectors.[303] The choice to replace fossil fuels with renewables, while largely driven by economics, is also the result of other benefits. These include more efficient energy production, cheaper transport, lower environmental costs, and public health benefits.[304] There is also a long-term cost-savings

295. Place, *supra* note 292.

296. *See* Dedoussi et al., *supra* note 25, at 262.

297. JOSHUA LINN & KRISTEN MCCORMACK, THE ROLES OF ENERGY MARKETS AND ENVIRONMENTAL REGULATION IN REDUCING COAL-FIRE PLANT PROFITS AND ELECTRICITY SECTOR EMISSIONS 2–3 (2017), https://media.rff.org/documents/RFF20Rpt-NOx20Costs.pdf.

298. *As U.S. Coal-Fired Capacity and Utilization Decline, Operators Consider Seasonal Operation*, U.S. ENERGY INFO. ADMIN. (Sept. 1, 2020), https://www.eia.gov/todayinenergy/detail.php?id=44976.

299. *See id.*

300. *See id.*

301. *See id.*

302. *See* Chuck Quirmbach, *Pleasant Prairie Power Plant Ends Operation*, WIS. PUB. RADIO (Apr. 4, 2018, 10:35 PM), https://www.wpr.org/pleasant-prairie-power-plant-ends-operation.

303. *See generally* Tomas Kåberger, *Progress of Renewable Electricity Replacing Fossil Fuels*, 1 GLOB. ENERGY INTERCONNECTION 48 (2018).

304. *See Benefits of Renewable Energy Use*, UNION OF CONCERNED SCIENTISTS (Dec. 20, 2017), https://www.ucsusa.org/resources/benefits-renewable-energy-use.

consideration: studies have shown that the costs of wholesale electricity in 2035 under a 90 percent clean energy scenario would be lower than they are today.[305]

In sum, the economics of clean energy will likely lend themselves to greater fuel-switching, resulting in reduced air pollution overall and therefore mitigated transport. This does not diminish the need for more effective regulations for interstate air pollution regulation, as regulations would complement a robust clean energy market to reduce pollution in downwind states.

CONCLUSION

Regulating interstate air pollution is a complex mission. EPA's decades-long efforts to address this issue found a promising turning point in *EME Homer*, but in the years after the Court's decision, federal regulations continue to hit roadblocks. Using the same framework that led to an ambitious policy in the Transport Rule, EPA has promulgated lackluster regulations that even EPA admits offer only "partial remed[ies]."[306] Requiring petitioning states to establish their burden of proof under this framework also has had unanticipated consequences. While Congress was clear about providing downwind states with an "expedient," "timely," and "effective" remedy for interstate air pollution when writing section 126,[307] EPA has denied petitions even in the face of clear Good Neighbor violations.[308]

In this way, EPA has strayed from its mandate under the Good Neighbor Provision, which is to regulate interstate air pollution.[309] As discussed, interstate pollution is a problem that can be best addressed by regulation at the federal level because downwind states are powerless to control sources outside of their borders. The absence of effective federal programs to enable downwind states to achieve federal air quality standards undermines the legitimacy of cooperative federalism, the principle underpinning the CAA.[310]

Looking ahead, EPA should consider creating a more effective regulatory framework in order to address the problems discussed in this Note: the burden of proof on the petitioner; misguided cost considerations, the disconnect between the Good Neighbor Provision and section 126, and the fact that emissions trading may lead to higher emissions. In addition, EPA should consider an alternative standard to the cost-effectiveness approach, with California's "all feasible measures" approach[311] as an option. Finally, in reworking the Transport Rule in accordance with the court order in *Wisconsin,* EPA should consider a framework

305. *See* GOLDMAN SCH. OF PUB. POL'Y, UNIV. OF CAL. BERKELEY, 2035: THE REPORT (2020), http://www.2035report com/wp-content/uploads/2020/06/2035-Report.pdf.

306. Update Rule, *supra* note 58, at 74,508.

307. *See* H.R. REP. 95-294, at 330–31.

308. *See* New York v. EPA, 964 F.3d 1214, 1220 (D.C. Cir. 2020); Maryland v. EPA, 958 F.3d 1185, 1188 (D.C. Cir. 2020).

309. *See* 42 U.S.C. § 7410(a)(2)(D)(i).

310. *See* Revesz, *supra* note 199, at 104.

311. *See supra* Subpart IV.B.

that will also address non-power sector emissions, particularly industrial emissions which are currently not covered under the Transport Rule or Update Rule.[312]

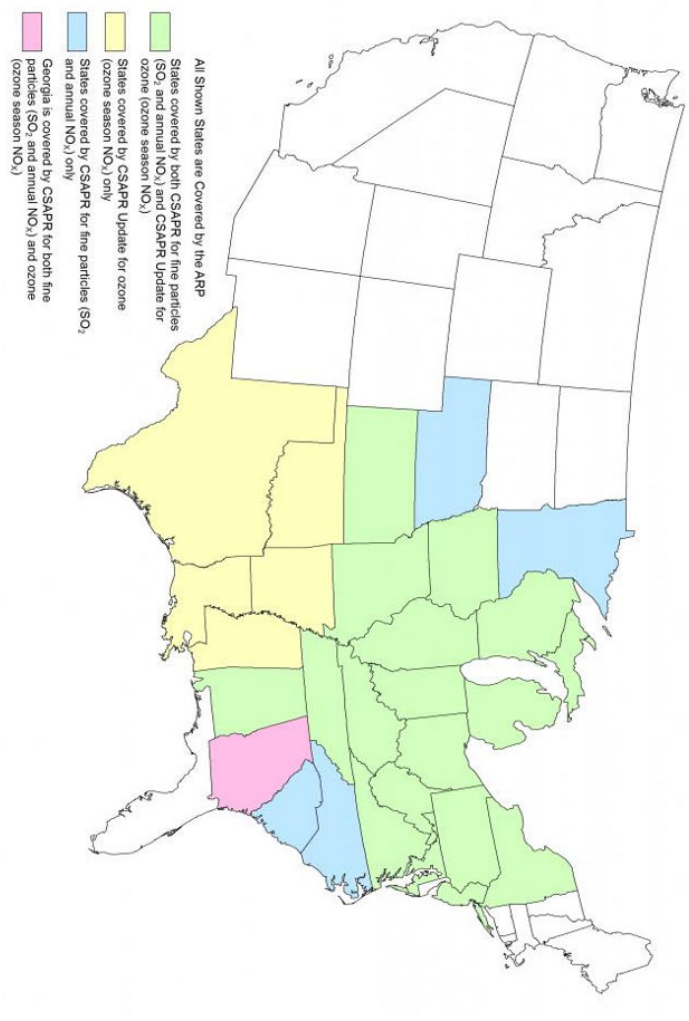
These improvements would help give effect to the Good Neighbor Provision, whose principal purpose is to offer relief to downwind states. Measures by EPA to craft a more effective regulatory framework by which to assess section 126 petitions and Good Neighbor claims would help remedy the externalities of interstate air pollution. It is also necessary to note the obvious: The problem of interstate air pollution is ultimately a problem of air pollution. The importance of enacting policies that mitigate air pollution generally cannot be understated. Policies that drive the displacement of pollution sources would reduce illnesses and save lives. Critically, solutions to interstate air pollution must address the inequities caused by polluting sources and focus on giving relief to minority and low-income populations, who are most impacted by air pollution and its adverse effects.[313]

312. *See* Wisconsin v. EPA, 938 F.3d 303, 318 (D.C. Cir. 2019).

313. *See Disparities in the Impact of Air Pollution*, *supra* note 21.

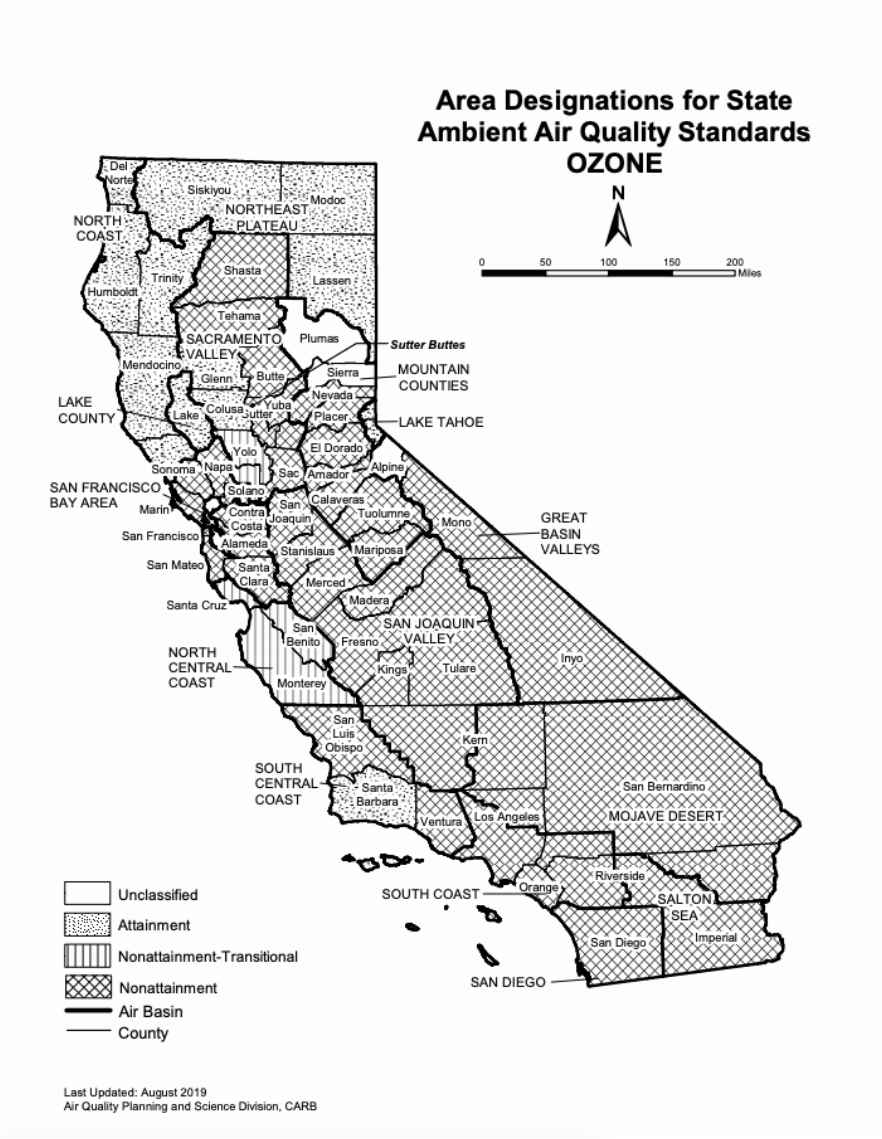
APPENDIX

A. States that are Affected by the Cross-State Air Pollution Rule (CSAPR)[314]



314. EPA, States that are Affected by the Cross-State Air Pollution Rule (CSAPR), https://www.epa.gov/csapr/states-are-affected-cross-state-air-pollution-rule-csapr (last accessed Nov. 15, 2020).

B. Area Designations for State Ambient Air Quality Standards: Ozone[315]



315. California Air Resources Board, Air Quality Planning and Science Division, available at https://ww3.arb.ca.gov/desig/adm/2019/state_o3.pdf. (updated August 2019).

C. Downwind Areas Impacted by Upwind Emissions (CARB 2003 Staff Report)[316]

	Downwind Areas Impacted											
Upwind Area	**Mountain Counties**	**San Joaquin Valley**	**Bay Area**	**Broader Sacramento**	**Upper Sacramento**	**North Central Coast**	**North Coast**	**South Central Coast**	**Great Basin Valleys**	**South Coast**	**San Diego**	**Mojave Desert**
Broader Sacramento	X	X	X		X							
Bay Area	X	X		X		X	X	X				
San Joaquin Valley	X			X		X		X	X			X
South Central Coast										X		
South Coast								X			X	X

Note: Only the Santa Barbara and Ventura counties portion of the South Central Coast Air Basin are subject to the mitigation requirements

316. CARB STAFF REPORT, *supra* note 232, at 7.