United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued March 25, 2008 Decided July 11, 2008

No. 05-1244

STATE OF NORTH CAROLINA,
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

UTILITY AIR REGULATORY GROUP, ET AL.,
INTERVENORS

Consolidated with
05-1246, 05-1249, 05-1250, 05-1251, 05-1252, 05-1253, 05-1254, 05-1256, 05-1259, 05-1260, 05-1262, 06-1217, 06-1222, 06-1224, 06-1226, 06-1227, 06-1228, 06-1229, 06-1230, 06-1232, 06-1233, 06-1235, 06-1236, 06-1237, 06-1238, 06-1240, 06-1241, 06-1242, 06-1243, 06-1245, 07-1115

On Petitions for Review of an Order of the
Environmental Protection Agency

Robin L. Juni argued the cause for petitioners on SO_2 Issues. *Bart E. Cassidy* argued the cause for petitioners on Title

IV Exempt Units Issues. With them on the briefs were *Peter H. Wyckoff*, *Jeffrey A. Knight*, *Lisa M. Jaeger*, *Brian J. McManus*, *William H. Lewis Jr.*, *Steven J. Shimberg*, *Deborah E. Jennings*, *Meredith DuBarry Huston*, *Michael R. Barr*, *Sheldon A. Zabel*, *Kathleen C. Bassi*, *Stephen J. Bonebrake*, *Sam Kalen*, *Kyle W. Danish*, and *Alvin Bruce Davis*. *Carol F. McCabe* entered an appearance.

Marc D. Bernstein, Special Deputies Attorney General, Attorney General's Office of State of North Carolina, argued the cause for petitioners on North Carolina Issues. With him on the briefs were *Roy Cooper*, Attorney General, *James C. Gulick*, Senior Deputy Attorney General, *J. Allen Jernigan*, Special Deputies Attorney General, and *John C. Evans*, Assistant Attorney General.

William M. Bumpers, *Robert A. Manning*, and *Michael W. Steinberg* argued the causes for petitioners on Border State Issues. With them on the briefs were *David A. Savage*, *Michael B. Heister*, *William H. Lewis Jr.*, and *Alvin Bruce Davis. James S. Alves* and *Winston K. Borkowski* entered appearances.

Alvin B. Davis argued the cause for petitioners on Fuel-Adjustment Issues. With him on the briefs was *David A. Savage*. *Joshua B. Frank* entered an appearance.

Sheldon A. Zabel, *Kathleen C. Bassi*, *Stephen J. Bonebrake*, and *Robert A. Manning* were on the briefs of petitioners Northern Indiana Public Service Company and Florida Association of Electric Utilities on NO_x-Related Claims.

Angeline Purdy and *Norman L. Rave, Jr.*, Attorneys, U.S. Department of Justice, argued the cause for respondents. With them on the brief were *John C. Cruden*, Deputy Assistant Attorney General, and *Steven E. Silverman* and *Geoffrey Wilcox*,

Counsel, U.S. Environmental Protection Agency. *Paul D. Tanaka*, Attorney, U.S. Department of Justice, entered and appearance.

Andrew M. Cuomo, Attorney General, Attorney General's Office of the State of New York, *Barbara D. Underwood*, Solicitor General, *Daniel Chepaitis*, Assistant Solicitor General, *J. Jared Snyder*, Assistant Attorney General, *Richard Blumenthal*, Attorney General, Attorney General's Office of the State of Connecticut, *Stuart Rabner*, Attorney General, Attorney General's Office of the State of New Jersey, *Joseph R. Biden, III*, Attorney General, Attorney General's Office of the State of Delaware, *Lisa Madigan*, Attorney General, Attorney General's Office of the State of Illinois, *Douglas F. Gansler*, Attorney General, Attorney General's Office of the State of Maryland, *Martha Coakley*, Attorney General, Attorney General's Office of the Commonwealth of Massachusetts, *Kelly A. Ayotte*, Attorney General, Attorney General's Office of the State of New Hampshire, *Gary K. King*, Attorney General, Attorney General's Office fo the State of New Mexico, *Patrick C. Lynch*, Attorney General, Attorney General's Office of the State of Rhode Island, and *Linda Singer*, Attorney General at the time the brief was filed, Attorney General's Office for the District of Columbia, were on the brief of *amici* states in support of petitioner North Carolina. *Michael J. Myers*, Assistant Attorney General, Attorney General's Office of the State of New York, *Matthew I. Levine*, Assistant Attorney General, Attorney General's Office of the State of Connecticut, *Jean P. Reilly*, *Ruth E. Carter*, and *Kevin P. Auerbacher*, Assistant Attorneys General, Attorney General's Office of the State of New Jersey, and *James R. Milkey*, Assistant Attorney General, Attorney General's Office of the Commonwealth of Massachusetts, entered appearances.

Kristen M. Campfield, Attorney, was on the brief for amicus curiae Commonwealth of Pennsylvania, Department of

Environmental Protection, in support of petitioner ARIPPA and seeking remand.

Sean H. Donahue, *Vickie L. Patton*, and *John D. Walke* were on the joint brief of intervenors in support of respondent.

Peter Glaser, *Harold P. Quinn*, *Norman W. Fichthorn*, *C. Grady Moore III*, *P. Stephen Gidiere III*, *Claudia M. O'Brien*, and *Nathan H. Seltzer* were on the brief for industry intervenors.

Before: SENTELLE, *Chief Judge*, and ROGERS and BROWN, *Circuit Judges*.

Opinion for the Court filed PER CURIAM.

PER CURIAM: These consolidated petitions for review challenge various aspects of the Clean Air Interstate Rule. Because we find more than several fatal flaws in the rule and the Environmental Protection Agency ("EPA") adopted the rule as one, integral action, we vacate the rule in its entirety and remand to EPA to promulgate a rule that is consistent with this opinion.

I. Background

A. Title I of the Clean Air Act

Title I of the Clean Air Act ("CAA"), 42 U.S.C. §§ 7401 *et seq.*, requires EPA to issue national ambient air quality standards ("NAAQS") for each air pollutant that "cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare [and] the presence of which in the ambient air results from numerous or diverse mobile or stationary sources . . . ," *id.* § 7408(a)(1)(A), (B). It also requires EPA to divide the country into areas designated as "nonattainment," "attainment," or "unclassifiable"

for each air pollutant, depending on whether the area meets the NAAQS. *Id.* § 7407(c), (d). Title I gives states "the primary responsibility for assuring air quality" within their borders, *id.* § 7407(a), and requires each state to create a state implementation plan ("SIP") to meet the NAAQS for each air pollutant and submit it to EPA for its approval, *id.* § 7410. If a state is untimely in submitting a compliant SIP to EPA, EPA must promulgate a federal implementation plan ("FIP") for the state to follow. *Id.* § 7410(c)(1).

One provision of Title I requires SIPs to

> contain adequate provisions —(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any [NAAQS] . . . .

42 U.S.C. § 7410(a)(2)(D)(i)(I) (statutory provision to which we refer throughout this opinion as "section 110(a)(2)(D)(i)(I)"). In 1998, EPA relied on this provision to promulgate the NO_x SIP Call, which imposed a duty on certain upwind sources to reduce their NO_x emissions by a specified amount so that they no longer "'contribute significantly to nonattainment in, or interfere with maintenance by,' a downwind State." Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,356, 57,358 (Oct. 27, 1998) ("NO_x SIP Call"). The NO_x SIP Call created an optional cap-and-trade program for nitrogen oxides ("NO_x"). *Id.* at 57,359. Like the NO_x SIP Call, the Clean Air Interstate Rule—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 (May 12, 2005) ("CAIR")—which is the rule at issue in these consolidated petitions for review, also derives its statutory authority from section 110(a)(2)(D)(i)(I).

B. Title IV of the Clean Air Act

Title IV of the CAA, 42 U.S.C. §§ 7651–7651*o*, aims to reduce acid rain deposition nationwide and in doing so creates a cap-and-trade program for sulfur dioxide ("SO_2") emitted by fossil fuel-fired combustion devices. Congress capped SO_2 emissions for affected units, or electric generating units ("EGUs"), at 8.9 million tons nationwide, *id.* § 7651b(a)(1), and distributed "allowances" among those units. One "allowance" is an authorization for an EGU to emit one ton of SO_2 in a year. *Id.* § 7651a(3). Title IV includes detailed provisions for allocating allowances among EGUs based for the most part on their share of total heat input of all Title IV EGUs during a 1985–87 baseline period. *Id.* §§ 7651a(4), 7651c, 7651d, 7651e, 7651h, 7651i. Whenever an EGU emits one ton of SO_2 in a year, it must surrender one allowance to EPA. *See id.* § 7651b(g). But Title IV also permits EGUs to transfer unused allowances to deficient EGUs throughout the nation or to "bank" excess allowances and use or sell them in future years. *Id.* § 7651b(b).

Title IV exempts EGUs that are "simple combustion turbines, or units which serve a generator with a nameplate capacity of 25 Mwe [megawatt electrical] or less," 42 U.S.C. § 7651a(8), those that are not fossil fuel-fired, *id.* § 7651a(15), those that do not sell electricity, *id.* § 7651a(17)(A)(i), and those that cogenerate steam and electricity unless they sell a certain amount of electricity, *id.* § 7651a(17)(C). It also provides that certain exempt units—"qualifying small power production facilities" and "qualifying cogeneration facilities," defined in 16

U.S.C. § 796(17)(C), (18)(B) (delegating power to FERC to define the terms), and certain "new independent power production facilities," defined in 42 U.S.C. § 7651*o*(a)(1)—may elect to become a part of Title IV. 42 U.S.C. § 7651d(g)(6)(A); *see id.* § 7651i (detailing "electing-in" provisions).

C. Clean Air Interstate Rule

Pursuant to its Title I authority to ensure that states have plans in place that implement the requirements in section 110(a)(2)(D)(i)(I), EPA promulgated CAIR. CAIR, 70 Fed. Reg. at 25,165. CAIR's purpose is to reduce or eliminate the impact of upwind sources on out-of-state downwind nonattainment of NAAQS for fine particulate matter ("$PM_{2.5}$"), a pollutant associated with respiratory and cardiovascular problems, and eight-hour ozone, a pollutant commonly known as smog. *Id.* at 25,162. For the most part, EPA defines sources at the state level. EPA determined that 28 states and the District of Columbia ("upwind states") contribute significantly to out-of-state downwind nonattainment of one or both NAAQS. *Id.* Because SO_2 "is a precursor to $PM_{2.5}$ formation, and NO_x is a precursor to both ozone and $PM_{2.5}$ formation," CAIR requires upwind states "to revise their [SIPs] to include control measures to reduce emissions" of SO_2 and NO_x. *Id.* CAIR requires upwind states to reduce their emissions in two phases. *Id.* at 25,165. NO_x reductions are to start in 2009, SO_2 reductions are to start in 2010, and the second reduction phase for each air pollutant is to start in 2015. *Id.* at 25,162. To implement CAIR's emission reductions, the rule also creates optional interstate trading programs for each air pollutant, to which, in the absence of approved SIPs, all upwind sources are now subject. *Id.*; *see* Rulemaking on Section 126 Petition from North Carolina To Reduce Interstate Transport of Fine Particulate Matter and Ozone; Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone;

Revisions to the Clean Air Interstate Rule; Revisions to the Acid Rain Program, 71 Fed. Reg. 25,328, 25,328 (Apr. 28, 2006) ("FIP") (in the absence of approved SIPs for CAIR, applying the rule's model trading programs via EPA's Federal Implementation Plan to all sources in upwind states). In addition, CAIR revises Title IV's Acid Rain Program regulations governing the SO_2 cap-and-trade program and replaces the NO_x SIP Call with the CAIR ozone-season NO_x trading program.

At issue in much of this litigation is the definition of the term "contribute significantly." In other words, in order to promulgate CAIR, EPA had to determine what amount of emissions constitutes a "significant contribution" to another state's nonattainment problem. *See* 42 U.S.C. § 7410(a)(2)(D)(i)(I). CAIR uses several factors to define "contribute significantly," including one state's impact on another's air quality, the cost of "highly cost-effective" emissions controls, fairness, and equity in the balance between regional and local controls. CAIR, 70 Fed. Reg. at 25,174–75. The air quality factor is the threshold step in the analysis, determining whether an upwind state is subject to CAIR, and the other factors help EPA determine the quantitative level of emissions reductions required of upwind sources.

CAIR uses a different air quality threshold for each of the two pollutants it regulates. A state meets the air quality threshold for $PM_{2.5}$ (and is therefore subject to CAIR) if it contributes 0.2 micrograms per cubic meter ("$\mu g/m^3$") or more of $PM_{2.5}$ to out-of-state downwind areas that are in nonattainment. *Id.* at 25,174–75, 25,191. CAIR uses a more complicated process to define the air quality threshold for ozone NAAQS. CAIR first eliminates a state from inclusion in the CAIR ozone program if it has the following characteristics: (1) it contributes less than 2 parts per billion ("ppb") to a

nonattainment area's ozone concentration as measured using either a "zero-out method" or a "source apportionment method," or (2) its relative contribution to the nonattainment area's excess ozone concentration (the number of particles exceeding 85 ppb) is less than one percent. *Id.* at 25,191; *see also* Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule): Reconsideration, 71 Fed. Reg. 25,304, 25,320 (Apr. 28, 2006) ("Reconsideration"). States that survive the screening criteria are then assessed to determine if they contribute significantly to ozone nonattainment in another state using three metrics: (1) magnitude of contribution, (2) frequency of contribution, and (3) relative amount of contribution to the area's ozone concentration that exceeds attainment levels. CAIR, 70 Fed. Reg. at 25,191–92.

States that "contribute significantly" to nonattainment for ozone NAAQS are subject to CAIR's ozone-season limits for NO_x and those that "contribute significantly" to nonattainment for $PM_{2.5}$ NAAQS are subject to CAIR's annual limits for NO_x and SO_2. The ozone-season NO_x limits are a percentage reduction in the annual limits for NO_x calculated for $PM_{2.5}$ contributors. In order to eliminate a state's significant contribution to $PM_{2.5}$ NAAQS, CAIR sets an annual cap on NO_x and SO_2 emissions in the region. Each state participating in CAIR's allowance-trading programs receives a budget of allowances, calculated according to a different formula for SO_2 and NO_x. If a state develops a SIP that opts out of the trading programs to which all its upwind sources are now subject in the absence of an approved SIP, *see* FIP, 71 Fed. Reg. at 25,328, the state must limit its emissions to a cap specified by CAIR.

CAIR sets each state's NO_x emissions budget by allocating the regionwide NO_x budget among CAIR states according to each state's proportion of oil-, gas-, and coal-fired facilities. CAIR, 70 Fed. Reg. at 25,230–31. The regionwide budget is

equal to the upwind states' average annual heat input for EGUs from 1999 to 2002 multiplied by the uniform emissions rate if EGUs were to use "highly cost-effective" emissions controls. *Id.* at 25,231. For Phase One, which starts in 2009, the multiplier is 0.15 pounds per million British thermal units ("lb/mmBtu") and for Phase Two, which starts in 2015, the multiplier is 0.125 lb/mmBtu. *Id.* at 25,230. Even though EPA determined that emissions controls in both phases are "highly cost effective," it only deemed Phase Two to eliminate the upwind states' "significant contribution" to downwind nonattainment. *Id.* at 25,198. In 2009, EPA has supplemented the budget of 1.5 million tons of NO_x emissions with a one-time Compliance Supplement Pool of 200,000 NO_x allowances. *Id.* at 25,231–32. Like SO_2 allowances in Title IV, one CAIR NO_x allowance permits an EGU to emit one ton of NO_x in one year. State budgets are based on their average annual heat input, adjusted by fuel type (coal, gas, oil) during the 1999–2002 time period. *Id.* at 25,231. The use of fuel-adjustment factors means states with higher percentages of gas- and oil-fired facilities receive comparably fewer NO_x allowances than states with higher percentages of coal-fired facilities. States have discretion to accomplish their NO_x emissions caps as they see fit in their SIPs, but if a state takes part in the EPA-administered trading program for NO_x, it must follow EPA's rules for that program.

CAIR sets each state's SO_2 budget using a process similar to the one used for NO_x budgets; it allocates the regionwide SO_2 budget among upwind states. However, EPA used a different method to determine the regionwide budget for SO_2. Instead of using 1999–2002 data, the agency summed all the Title IV allowances allotted to EGUs in the covered states and reduced them by 50% for 2010 (Phase One) and 65% for 2015 (Phase Two). *Id.* at 25,229. As stated above, Title IV allocates allowances among EGUs based for the most part on their share of the total heat input of all Title IV EGUs during a 1985–87

baseline period, not the later time period used for NO_x allowances in CAIR. 42 U.S.C. §§ 7651a(4), 7651c, 7651d, 7651e, 7651h, 7651i. States subject to CAIR may opt into the EPA-administered trading program for SO_2, but if they do not opt in and at the same time choose to regulate EGUs, their SIPs must include a mechanism for retiring Title IV SO_2 allowances in excess of the budget CAIR allocates to each state. CAIR, 70 Fed. Reg. at 25,259. A state not participating in CAIR's trading program but regulating other sources of SO_2 in addition to EGUs, does not need to surrender quite as many of its Title IV SO_2 allowances. *Id.* Any surrendered allowance may not be used for Title IV compliance purposes and is forever out of circulation. *Id.* at 25,291. A state does not have to surrender any Title IV SO_2 allowances if it adopts a SIP that regulates only non-EGUs to accomplish its SO_2 cap, *id.* at 25,295, but EPA notes that EGUs are projected to contribute 70% of SO_2 emissions in 2010, *id.* at 25,214, making such a scenario unlikely.

EPA issued two additional rules clarifying CAIR that are also under review in this proceeding. One rule responds to various petitions for reconsideration, which are discussed in more detail below. Reconsideration, 71 Fed. Reg. 25,304. Another rule, *inter alia*, sets forth a FIP to regulate EGUs until upwind states implement EPA-approved SIPs that conform with CAIR requirements. FIP, 71 Fed. Reg. 25,328.

D. Petitions for Review

Section 307 of the CAA requires petitions for judicial review of CAIR to be filed within 60 days of the rule's publication in the Federal Register. 42 U.S.C. § 7607(b)(1). On May 12, 2005, EPA published CAIR and on April 28, 2006, EPA published its Reconsideration and FIP, which describes the Federal Implementation Plan required of sources while states

formulate their SIPs. CAIR, 70 Fed. Reg. 25,162; Reconsideration, 71 Fed. Reg. 25,304; FIP, 71 Fed. Reg. 25,328. In the 60 days after EPA published CAIR and its Reconsideration, several petitions for review were filed in this Court.

Among those petitions are North Carolina's objections to EPA's trading programs, EPA's interpretation of the "interfere with maintenance" language in section 110(a)(2)(D)(i)(I), Phase Two's 2015 compliance date, the NO_x Compliance Supplement Pool, EPA's interpretation of "will" in "will contribute significantly," and the air quality threshold for $PM_{2.5}$. Several electric utility companies ("SO_2 Petitioners") contest EPA's authority under Title I and Title IV to limit the number of Title IV allowances in circulation, to set state SO_2 budgets as percentage reductions in Title IV allowances, and to require units exempt from Title IV to acquire Title IV allowances. Petitioners Entergy Corporation and FPL Group, to which we refer as "Entergy," contest EPA's authority to base state NO_x budgets on the number of coal-, oil-, and gas-fired facilities a state has compared to other states in the CAIR region. Electric utilities operating in Texas, Florida, and Minnesota and one municipality argue against the inclusion of all or part of those States in CAIR. And Florida Association of Electric Utilities petitions for review of EPA's 2009 start date for Phase One of NO_x restrictions. We consider these petitions below.

II. Analysis

Our jurisdiction derives from the CAA, which also establishes our standard of review. We "may reverse any such action found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . [or] in excess of statutory jurisdiction, authority, or limitations, or short of statutory right . . . ." 42 U.S.C. § 7607(d)(9). We refer to the

review standard in 42 U.S.C. § 7607(d) instead of the similar standard of review set forth in the Administrative Procedure Act ("APA") because the CAA directs that its review standard apply to "such . . . actions as the Administrator may determine." *Id.* § 7607(d)(1)(V); *see* Supplemental Proposal for the Rule To Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule), 69 Fed. Reg. 32,684, 32,686 (June 10, 2004) (applying section 307(d), 42 U.S.C. § 7607(d), "to all components of the rulemaking").

The petitions under review involve EPA's construction of the CAA, a statute it administers. Where the statute speaks to the direct question at issue, we afford no deference to the agency's interpretation of it and "must give effect to the unambiguously expressed intent of Congress." *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842–43 (1984). But where the statute does "not directly address[] the precise question at issue, . . . the question for the court is whether the agency's answer is based on a permissible construction of the statute," and we only reverse that determination if it is "arbitrary, capricious, or manifestly contrary to the statute." *Id.* at 843. An action is "arbitrary and capricious" if it

> has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983); *see Motor Vehicle Mfrs. Ass'n. v. EPA*, 768 F.2d 385, 389 n.6 (D.C. Cir. 1985) (noting that "the

standard we apply (i.e., whether the EPA's actions were in excess of statutory authority or arbitrary and capricious) is the same under" the CAA and the APA).

A. North Carolina Issues

Petitioner North Carolina challenges CAIR's programs for pollution-trading, EPA's interpretation of the "interfere with maintenance" provision in section 110(a)(2)(D)(i)(I), the 2015 compliance deadline for Phase Two of CAIR, the NO_x Compliance Supplement Pool, EPA's interpretation of the word "will" that precedes "contribute significantly" in section 110(a)(2)(D)(i)(I), and EPA's use of a 0.2 $\mu g/m^3$ air quality threshold for including upwind states in CAIR's $PM_{2.5}$ program. We grant North Carolina's petition as to the trading programs, the "interfere with maintenance" language, and the 2015 compliance deadline, deny its petition as to its interpretation of "will" and the air quality threshold, and take no action on the NO_x Compliance Supplement Pool issue.

1. Pollution-Trading Programs

North Carolina challenges the lawfulness of CAIR's trading programs for SO_2 and NO_x. North Carolina contests the lack of reasonable measures in CAIR to assure that upwind states will abate their unlawful emissions as required by section 110(a)(2)(D)(i)(I), but does not submit that any trading is per se unlawful. EPA designed CAIR to eliminate the significant contribution of upwind states, as a whole, to downwind nonattainment. CAIR, 70 Fed. Reg. at 25,195. EPA did not purport to measure each state's significant contribution to specific downwind nonattainment areas and eliminate them in an isolated, state-by-state manner. Reasoning that capping emissions in each state would not achieve reductions in the most cost-effective manner, EPA decided to take a regionwide

approach to CAIR and include voluntary emissions trading programs.

> In modeling the CAIR . . . EPA assumes interstate emissions trading. While EPA is not requiring States to participate in an interstate trading program for EGUs, we believe it is reasonable to evaluate control costs assuming States choose to participate in such a program since that will result in less expensive reductions.

Id. at 25,196. In CAIR's trading system, states are given initial emissions budgets, but sources can choose to sell or purchase emissions credits from sources in other states. As a result, states may emit more or less pollution than their caps would otherwise permit.

Because EPA evaluated whether its proposed emissions reductions were "highly cost effective," at the regionwide level assuming a trading program, it never measured the "significant contribution" from sources within an individual state to downwind nonattainment areas. Using EPA's method, such a regional reduction, although equivalent to the sum of reductions required by all upwind states to meet their budgets, would never equal the aggregate of each state's "significant contribution" for two reasons. State budgets alone, without trading, would not be "highly cost effective." And although EPA has measured the "air quality factor" to include states in CAIR, it has not measured the unlawful amount of pollution for each upwind-downwind linkage. "As noted earlier in the case of SO_2, EPA recognizes that the choice of method in setting State budgets, with a given regionwide total annual budget, makes little difference in terms of the levels of resulting regionwide annual SO_2 and NO_x emissions reductions." *Id.* at 25,230–31. Thus EPA's apportionment decisions have nothing to do with each state's "significant contribution" because under EPA's method

of analysis, state budgets do not matter for significant contribution purposes.

But according to Congress, individual state contributions to downwind nonattainment areas do matter. Section 110(a)(2)(D)(i)(I) prohibits sources "*within the State*" from "contribut[ing] significantly to nonattainment *in . . . any other State* . . ." (emphasis added). Yet under CAIR, sources in Alabama, which contribute to nonattainment of $PM_{2.5}$ NAAQS in Davidson County, North Carolina, would not need to reduce their emissions at all. *See* CAIR, 70 Fed. Reg. at 25,247 tbl. VI-8. 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 Davidson County, North Carolina's nonattainment. CAIR only assures that the entire region's significant contribution will be eliminated. It is possible that CAIR would achieve section 110(a)(2)(D)(i)(I)'s goals. EPA's modeling shows that sources contributing to North Carolina's nonattainment areas will at least reduce their emissions even after opting into CAIR's trading programs. 71 Fed. Reg. at 25,344–45. But EPA is not exercising its section 110(a)(2)(D)(i)(I) duty unless it is promulgating a rule that achieves something measurable toward the goal of prohibiting sources "within the State" from contributing to nonattainment or interfering with maintenance "in any other State."

In *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000), we deferred to EPA's decision to apply uniform emissions controls to all upwind states despite different levels of contribution of NO_x to nonattainment areas caused by the differing quantities of emissions produced in upwind states and the varying distances of upwind sources to downwind nonattainment areas. *Id.* at 679. We did so because these effects "flow[] ineluctably from the EPA's decision to draw the 'significant contribution' line on a

basis of cost differentials" and "[o]ur upholding of that decision logically entails upholding this consequence." *Id.* But the flow of logic only goes so far. It stops at the point where EPA is no longer effectuating its statutory mandate. In *Michigan* we never passed on the lawfulness of the NO_x SIP Call's trading program. *Id.* at 676 ("Of course we are able to assume the existence of EPA's allowance trading program only because no one has challenged its adoption."). It is unclear how EPA can assure that the trading programs it has designed in CAIR will achieve section 110(a)(2)(D)(i)(I)'s goals if we do not know what each upwind state's "significant contribution" is to another state. Despite *Michigan*'s approval of emissions controls that do not correlate directly with each state's relative contribution to a specific downwind nonattainment area, CAIR must include 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."

Because CAIR is designed as a complete remedy to section 110(a)(2)(D)(i)(I) problems, as EPA claims, FIP, 71 Fed. Reg. at 25,340, CAIR must do more than achieve something measurable; it must actually require elimination of emissions from sources that contribute significantly and interfere with maintenance in downwind nonattainment areas. To do so, it must measure each state's "significant contribution" to downwind nonattainment even if that measurement does not directly correlate with each state's individualized air quality impact on downwind nonattainment relative to other upwind states. *See Michigan*, 213 F.3d at 679. Otherwise, the rule is not effectuating the statutory mandate of prohibiting emissions moving from one state to another, leaving EPA with no statutory authority for its action. Whether EPA could promulgate a section 110(a)(2)(D)(i)(I) remedy that would bar alternate relief, such as would be available under section 126, 42 U.S.C. § 7426,

is a question that is not before the court.

2. "Interfere With Maintenance"

Section 110(a)(2)(D)(i)(I) requires EPA to ensure that SIPs "contain adequate provisions" prohibiting sources within a state from emitting air pollutants in amounts which will "contribute significantly to nonattainment in, *or* interfere with maintenance by, any other State with respect to any [NAAQS]." 42 U.S.C. § 7410(a)(2)(D)(i)(I) (emphasis added). North Carolina argues that EPA unlawfully ignored the "interfere with maintenance" language in section 110(a)(2)(D)(i)(I), divesting it of independent effect in CAIR. It contends that instead of limiting the beneficiaries of CAIR to downwind areas that were monitored to be in nonattainment when EPA promulgated CAIR *and* were modeled to be in nonattainment in 2009 and 2010, when CAIR goes into effect, CAIR, 70 Fed. Reg. at 25,244, EPA should have also included in CAIR upwind states, such as Georgia, that send pollution into downwind areas that are projected to barely meet attainment levels of NAAQS in 2010. North Carolina only contests EPA's interpretation of the "interfere with maintenance" prong as applied to EPA's determination of which states are beneficiaries of CAIR for the ozone NAAQS.

North Carolina explains that even though all of its counties are projected to attain NAAQS for ozone by 2010, several of its counties are at risk of returning to nonattainment due to interference from upwind sources. Specifically, it notes that Mecklenburg County, which projections show will have ozone levels of 82.5 ppb in 2010 (2.5 ppb below the 85.0 ppb NAAQS) without help from CAIR, could fall back into nonattainment because of the historic variability in the county's ozone levels. Technical Support Document for the Final Clean Air Interstate Rule, Air Quality Modeling, at Appendix E (March 2005)

("Technical Support Document"). EPA has stated that "historical data indicates that attaining counties with air quality levels within 3 ppb of the standard are at risk of returning to nonattainment." EPA, Corrected Response to Significant Public Comments on the Proposed Clean Air Interstate Rule, at 148 (April 2005) ("Corrected Response"). "The information also indicates that even if CAIR receptors were to [be] 3–5 ppb below the standard, they would have a reasonable likelihood of returning to nonattainment." *Id.* And in the case of Fulton County, Georgia, EPA determined that the "interfere with maintenance" provision justified imposing controls on upwind states in 2015 even though it is projected to attain the NAAQS by a margin of 7 or 8 ppb because its ozone levels have varied by at least that margin several times in the recent past. *Id.* at 150. North Carolina argues that EPA must utilize this "historic variability" standard to determine which downwind areas suffer interference with their maintenance in 2010, not just 2015. If it did so, EPA would see that Mecklenburg County, North Carolina, has varied by at least 3 ppb (the relevant margin between attainment and nonattainment for that county in 2010) six times in the recent past and consequently would include in CAIR any state, such as Georgia, that is contributing an unlawful amount of pollution to this downwind area. *Id.* at 1042.

EPA contends that it interpreted "interfere with maintenance" just as it did in the NO_x SIP Call, in which it gave the term a meaning "much the same as" the one given to the preceding phrase, "contribute significantly to nonattainment." CAIR, 70 Fed. Reg. at 25,193 n.45. EPA maintains that "the 'interfere with maintenance' prong may come into play only in circumstances where EPA or the State can reasonably determine or project, based on available data, that an area in a downwind state will achieve attainment, but due to emissions growth or other relevant factors is likely to fall back into nonattainment."

Id. In the NO_x SIP Call, it meant that areas monitored to be in attainment when that rule was promulgated but which were modeled to be in nonattainment in 2007, when the rule went into effect, were considered downwind areas with which upwind sources' emissions interfered. NO_x SIP Call, 63 Fed. Reg. at 57,379. EPA states it gave effect to the "interfere with maintenance" prong in CAIR by using it as a basis for implementing further emissions reductions in Phase Two of CAIR, by which time some downwind states will have attained NAAQS. CAIR, 70 Fed. Reg. at 25,195.

First, we note that we did not consider EPA's interpretation of "interfere with maintenance" in *Michigan*. Thus any interpretation it used in that rulemaking cannot provide support for EPA's contention that its current interpretation, even if identical to that in the NO_x SIP Call, comports with the statute. So we analyze EPA's interpretation of "interfere with maintenance" for the first time here. Despite using "interfere with maintenance" as a justification for imposing further emissions controls in 2015, CAIR gave no independent significance to the "interfere with maintenance" prong of section 110(a)(2)(D)(i)(I) to separately identify upwind sources interfering with downwind maintenance. Under EPA's reading of the statute, a state can never "interfere with maintenance" unless EPA determines that at one point it "contribute[d] significantly to nonattainment." EPA stated clearly on two occasions "that it would apply the interfere with maintenance provision in section 110(a)(2)(D) in conjunction with the significant contribution to nonattainment provision and so did not use the maintenance prong to separately identify upwind States subject to CAIR." FIP, 71 Fed. Reg. at 25,337 (citing CAIR, 70 Fed. Reg. at 25,193); *see also* Corrected Response, at 63. EPA reasoned that this interpretation "avoid[s] giving greater weight to the potentially lesser environmental effect" and strikes "a reasonable balance between controls in upwind states

and in-state controls." FIP, 71 Fed. Reg. at 25,337. EPA stated that an interpretation that permitted states that are able to attain NAAQS on their own to benefit from CAIR "could even create a perverse incentive for downwind states to increase local emissions." *Id.*

All the policy reasons in the world cannot justify reading a substantive provision out of a statute. *See Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 485 (2001). Areas that find themselves barely meeting attainment in 2010 due in part to upwind sources interfering with that attainment have no recourse under EPA's interpretation of the interference prong of section 110(a)(2)(D)(i)(I). 2010 is not insignificant because that is the deadline for downwind areas to attain ozone NAAQS. *See* 42 U.S.C. § 7511 (setting forth deadlines for attaining ozone NAAQS). An outcome that fails to give independent effect to the "interfere with maintenance" prong violates the plain language of section 110(a)(2)(D)(i)(I). The provision at issue is written in the disjunctive: SIPs must "contain adequate provisions prohibiting . . . any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will contribute significantly to nonattainment in, *or* interfere with maintenance by, any other State . . . ." 42 U.S.C. § 7410(a)(2)(D)(i)(I) (emphasis added). "Canons of construction ordinarily suggest that terms connected by a disjunctive be given separate meanings, unless the context dictates otherwise . . . ." *Reiter v. Sonotone Corp.*, 442 U.S. 330, 339 (1979). There is no context in section 110(a)(2)(D)(i)(I) directing an alternate result; therefore EPA must give effect to both provisions in the statute.

EPA contends in its brief that CAIR is just one step in carrying out its section 110(a)(2)(D)(i)(I) duties, hinting that it may later choose to give independent effect to the "interfere with maintenance" language. There is some general language

in the record to support this contention. *See* CAIR, 70 Fed. Reg. at 25,175 ("This overall plan is well within the ambit of EPA's authority to proceed with regulation on a step-by-step basis."). But more specific language in the rule belies this claim. "The [section 110(a)(2)(D)(i)(I)] violation is eliminated once a State adopts a SIP containing the CAIR trading programs (or a SIP containing other emission reduction options meeting the requirements specified in CAIR), or EPA promulgates a FIP to achieve those same reductions." FIP, 71 Fed. Reg. at 25,340. Because EPA describes CAIR as a complete remedy to a section 110(a)(2)(D)(i)(I) violation and does not give independent significance to the "interfere with maintenance" language to identify upwind states that interfere with downwind maintenance, it unlawfully nullifies that aspect of the statute and provides no protection for downwind areas that, despite EPA's predictions, still find themselves struggling to meet NAAQS due to upwind interference in 2010. For this reason, we grant North Carolina's petition on this issue. Although North Carolina challenged CAIR on the "interfere with maintenance" issue only with regard to ozone, the rule includes the same flaw with regard to $PM_{2.5}$. The court does not address North Carolina's separate contention that EPA failed to comply with notice-and-comment requirements regarding its proposed test for an "interfere with maintenance" violation, or the propriety of the test itself.

3. 2015 Compliance Deadline

North Carolina argues that the 2015 deadline for upwind states to eliminate their "significant contribution" to downwind nonattainment ignores the plain language of section 110(a)(2)(D)(i), 42 U.S.C. § 7410(a)(2)(D)(i), contradicts EPA's goal of "balanc[ing] the burden for achieving attainment between regional-scale and local-scale control programs," CAIR, 70 Fed. Reg. at 25,166, violates the Supreme Court's holding that EPA may not consider economic and technological

infeasibility when approving a SIP, *Union Elec. Co. v. EPA*, 427 U.S. 246 (1976), and departs from the contrary approach it took in the NO_x SIP Call without explanation, NO_x SIP Call, 63 Fed. Reg. at 57,449.

North Carolina challenges the 2015 Phase Two deadline for upwind states to come into compliance with CAIR as incompatible with section 110(a)(2)(D)(i)(I)'s mandate that SIPs contain adequate provisions prohibiting significant contributions to nonattainment "consistent with the provisions of [Title I]." 42 U.S.C. § 7410(a)(2)(D)(i)(I). Title I dictates the deadlines for states to attain particular NAAQS. $PM_{2.5}$ attainment must be achieved "as expeditiously as practicable, but no later than 5 years from the date such area was designated nonattainment . . . except that the Administrator may extend the attainment date . . . for a period no greater than 10 years from the date of designation as nonattainment . . . ." 42 U.S.C. § 7502(a)(2)(A). North Carolina, along with the rest of the CAIR states, must meet $PM_{2.5}$ NAAQS by 2010. *See* 40 C.F.R. § 81.301 *et seq.* Ozone nonattainment areas must attain permissible levels of ozone "as expeditiously as practicable," but no later than the assigned date in the table the statute provides. 42 U.S.C. § 7511. North Carolina's statutory deadline is June 2010, but it could be even sooner if EPA upon repromulgating its regulations sets an earlier deadline. *See S. Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882 (D.C. Cir. 2006). North Carolina argues that despite the statutory mandate that section 110(a)(2)(D)(i), 42 U.S.C. § 7410(a)(2)(D)(i), be consistent with the rest of Title I, which requires compliance with $PM_{2.5}$ and ozone NAAQS by 2010, CAIR gives states that "contribute significantly" to nonattainment until 2015 to comply based solely on reasons of feasibility. CAIR, 70 Fed. Reg. at 25,177; *see also* Corrected Response, at 58, 61; CAIR, 70 Fed. Reg. at 25,222–25 (citing feasibility restraints such as the difficulty of securing project financing and the limited amount of specialized

boilermaker labor to install controls).

EPA contends that the phrase "consistent with the provisions of [Title I]" does not require incorporating Title I's NAAQS attainment deadlines into CAIR. It argues that section 110(a)(2)(D)(i)(I) does not mandate any particular time frame and that the language about consistency only requires EPA to make a rule consistent with *procedural* provisions in Title I, not substantive ones. It comes to this conclusion because the phrase "consistent with the provisions of this title" follows the word "prohibiting." Due to this placement, EPA argues that the phrase requiring consistency only modifies the word "prohibiting." EPA does not explain how it jumps from this observation to the conclusion that a phrase modifying the word "prohibiting" can only refer to procedural requirements. The word "procedural" is simply not in the statute. If there were any ambiguity as to Congress's intent in excluding the limiting language EPA proposes, an examination of the relevant language in the context of the whole CAA dispels any doubts as to its meaning. In the CAA, Congress differentiates between requiring consistency with provisions in a title and requiring consistency "with the *procedures* established" under a title. *Compare* 42 U.S.C. § 7410(a)(2)(D)(i), *with id.* § 7661b(c) (emphasis added). Section 110(a)(2)(D)(i), 42 U.S.C. § 7410(a)(2)(D)(i), is not limited to procedural provisions in Title I; thus it requires EPA to consider all provisions in Title I—both procedural and substantive—and to formulate a rule that is consistent with them.

Despite section 110(a)(2)(D)(i)'s requirement that prohibitions on upwind contributions to downwind nonattainment be "consistent with the provisions of [Title I]," EPA did not make any effort to harmonize CAIR's Phase Two deadline for upwind contributors to eliminate their significant contribution with the attainment deadlines for downwind areas.

42 U.S.C. § 7410(a)(2)(D)(i). As a result, downwind nonattainment areas must attain NAAQS for ozone and $PM_{2.5}$ without the elimination of upwind states' significant contribution to downwind nonattainment, forcing downwind areas to make greater reductions than section 110(a)(2)(D)(i)(I) requires. Because EPA ignored its statutory mandate to promulgate CAIR consistent with the provisions in Title I mandating compliance deadlines for downwind states in 2010, we grant North Carolina's petition challenging the 2015 Phase Two deadline. We need not address petitioner's other arguments against this provision.

EPA justified the deadline partly on the basis that additional reductions will be required through the year 2015 in order to satisfy the "interfere with maintenance" provision of the statute. Although this may be a valid reason to require maintenance-based emissions reductions beyond the year 2010, EPA does not explain why it did not coordinate the final CAIR deadline to provide a sufficient level of protection to downwind states projected to be in nonattainment as of 2010.

4. NO_x Compliance Supplement Pool

North Carolina contends that the NO_x Compliance Supplement Pool of 200,000 tons defies section 110(a)(2)(D)(i)(I)'s mandate to eliminate the significant contribution of upwind sources to downwind NAAQS nonattainment and that the Compliance Supplement Pool is an arbitrary exercise of power that contradicts EPA's own record findings.

Under CAIR without the Compliance Supplement Pool, states can only begin to bank CAIR NO_x allowances in 2009, the year in which Phase One of the CAIR NO_x limits go into effect. The Compliance Supplement Pool gives states an incentive to

make emissions cuts early; states that can show "surplus" NO_x emissions reductions in 2007 and 2008 can receive bankable (and tradeable) credits for those reductions. CAIR, 70 Fed. Reg. at 25,285. The 200,000 NO_x credits are apportioned to states in accordance with their share of the 2009 regionwide NO_x budget. *Id.* at 25,286. States may distribute the credits to sources based on "(1) [a] demonstration by the source to the State of NO_x emissions reductions in surplus of any existing NO_x emission control requirements; or (2) a demonstration to the State that the facility has a 'need' that would affect electricity grid reliability." *Id.* EPA created the Compliance Supplement Pool to "mitigat[e] some of the uncertainty regarding the EPA projections of resources to comply with CAIR" and to "provide[] incentives for early, surplus NO_x reductions." *Id.*

North Carolina first argues that the Compliance Supplement Pool is unlawful because it permits states to emit NO_x in excess of the 1.5 million ton annual regional NO_x cap, which EPA measured to be the upwind states' significant contribution to downwind nonattainment in the years 2009 to 2014. *See* CAIR, 70 Fed. Reg. at 25,210. EPA contends that North Carolina's argument is flawed. EPA based its measurement of upwind states' "significant contribution" on the level of reductions that would be "highly cost effective" in 2015, not 2009. The Phase One deadline is simply EPA's measurement of the reductions that would be feasible by 2009; it is not an independent measurement of "significant contribution" in that year. *See id.* at 25,177. Thus any emissions that exceed the 1.5 million ton level due to the extra 200,000 allowances from the Compliance Supplement Pool do not affect the elimination of upwind states' "significant contribution." The elimination of upwind states' significant contribution will not happen until Phase Two's 2015 deadline.

Because we grant North Carolina's petition that CAIR's

Phase Two deadline of 2015 is unlawful, we will not pass judgment on the lawfulness of the Compliance Supplement Pool. As EPA explains, it created the Compliance Supplement Pool under the assumption that 2015 was an appropriate deadline for CAIR compliance. It is not. EPA does not argue that it can set a level of emissions that is an upwind state's "significant contribution" and then allow that state to exceed it. On remand, EPA must determine what level of emissions constitutes an upwind state's significant contribution to a downwind nonattainment area "consistent with the provisions of [Title I]," which include the deadlines for attainment of NAAQS, and set the emissions reduction levels accordingly.

5. EPA's Definition of "Will" in "Will Contribute Significantly"

North Carolina contends that EPA altered its definition of "will" from a term that meant certainty in the NO_x SIP Call to one that denotes the future tense in CAIR and that EPA made this change without any explanation. *See* 42 U.S.C. § 7410(a)(2)(D)(i)(I). North Carolina also argues that EPA's interpretation of "will" violates the plain text of the statute. As a result, EPA did not consider upwind states for consideration in CAIR that contributed to monitored (or "certain") nonattainment in North Carolina counties at the time EPA promulgated CAIR; EPA only included upwind states that contributed to projected nonattainment in 2010.

In the NO_x SIP Call, EPA stated "that the term 'will' means that SIPs are required to eliminate the appropriate amounts of emissions that presently, or that are expected in the future [to], contribute significantly to nonattainment downwind." NO_x SIP Call, 63 Fed. Reg. at 57,375. This isolated phrase provides some support for North Carolina's contention that EPA considered upwind states that contributed to monitored

nonattainment at the time it was promulgating the NO_x SIP Call to be subject to the rule even if those states did not contribute to projected nonattainment in 2007, the year the rule went into effect. However, EPA later in the same rulemaking explained its approach to measuring nonattainment in more detail:

> In determining whether a downwind area has a nonattainment problem under the 1-hour standard to which an upwind area may be determined to be a significant contributor, EPA determined whether the downwind area currently has a nonattainment problem, and whether that area would continue to have a nonattainment problem as of the year 2007 assuming that in that area, all controls specifically required under the CAA were implemented, and all required or otherwise expected Federal measures were implemented. If, following implementation of such required CAA controls and Federal measures, the downwind area would remain in nonattainment, then EPA considered that area as having a nonattainment problem to which upwind areas may be determined to be significant contributors.

Id. at 57,377. In the NO_x SIP Call, EPA interpreted "will" to indicate sources that presently *and* at some point in the future "will" contribute to nonattainment. Because the NO_x SIP Call was to go into effect in 2007, that rule used 2007 as the relevant future year for measuring nonattainment. This approach is identical to the one EPA took in CAIR. Because CAIR goes into effect in 2009 and 2010 respectively, those are the future years used in the measurement. *See* CAIR, 70 Fed. Reg. at 25,241. North Carolina's claims about an arbitrary change in EPA's interpretation of "will" are unfounded because there was no change. And because "will" can mean either certainty or indicate the future tense, it was reasonable for EPA to choose to

give effect to both interpretations of the word. Simply because CAIR does not include states based upon present-day violations that will be cured by 2010 does not mean that EPA may ignore present-day violations for which there may be another remedy, such as relief pursuant to section 126, 42 U.S.C. § 7426. Therefore we deny North Carolina's petition on this issue.

6. $PM_{2.5}$ Contribution Threshold

North Carolina argues that EPA acted arbitrarily by proposing an air quality threshold for $PM_{2.5}$ at 0.15 $\mu g/m^3$ but finally settling on an air quality threshold of 0.2 $\mu g/m^3$. The air quality threshold for $PM_{2.5}$ is the amount of $PM_{2.5}$ that sources in a state must contribute to a downwind nonattainment area to be regulated as an upwind state in CAIR's $PM_{2.5}$ program. North Carolina also challenges EPA's decision to truncate, rather than round, the numbers it compared to the threshold. As a result, states that contributed 0.19 $\mu g/m^3$ or less to a downwind nonattainment area were not linked with North Carolina by CAIR.

EPA contests North Carolina's standing to raise this issue. It notes that only two states would be affected if EPA were to use the 0.15 $\mu g/m^3$ threshold. Illinois, which is already subject to CAIR's requirements for $PM_{2.5}$ contributions, would be subject to the exact same requirements for an additional reason—its contributions to Catawba County, North Carolina. Technical Support Document, at Appendix H. This additional upwind-downwind "link" would not change any of Illinois's duties under CAIR; therefore it would not change any effects felt by Catawba County, North Carolina. The lower threshold would also subject Arkansas to CAIR's $PM_{2.5}$ controls. CAIR, 70 Fed. Reg. at 25,191; Technical Support Document, at 42 tbl. VII-1. EPA states that Arkansas does not contribute at threshold levels to nonattainment in North Carolina, but it cites no record

support for this assertion.

North Carolina has standing to raise this issue for three reasons. First, if in repromulgating CAIR to comply with section 110(a)(2)(D)(i)(I), EPA removes or modifies its interstate trading options, Illinois would be barred outright from contributing significantly to North Carolina's nonattainment areas. Second, EPA does not provide support for its assertion that Arkansas does not contribute to nonattainment areas in North Carolina because it never modeled the State. North Carolina claims that models for sources in Louisiana, Missouri, and Texas, which are further from North Carolina than those in Arkansas, show that Arkansas contributes at the 0.15 $\mu g/m^3$ threshold to nonattainment areas in North Carolina. Third, because EPA designed CAIR to be a complete statutory remedy, whether North Carolina is linked with Illinois by CAIR under section 110(a)(2)(D)(i)(I) is likely to affect related remedies that North Carolina may have against Illinois, for example, pursuant to section 126, 42 U.S.C. § 7426. Although we cannot anticipate what a new rule will look like, there is a "substantial probability" that a favorable decision by this court would redress the injury North Carolina asserts.

Because North Carolina has demonstrated an injury-in-fact caused by the rule it is challenging which a favorable decision by this Court could likely remedy, we can turn to the merits of North Carolina's petition. North Carolina notes that EPA first considered a threshold of 0.1 $\mu g/m^3$. NPR, 69 Fed. Reg. at 4584. In the Notice of Proposed Rulemaking, EPA stated that a 0.1 $\mu g/m^3$ threshold "is the smallest one that can make the difference between compliance and violation of the NAAQS for an area very near the NAAQS . . . ." *Id.* EPA then decided that it is "on balance, more appropriate to adopt a small percentage value of the standard level" and chose the percentage of the NAAQS standard of 15.0 $\mu g/m^3$ that is closest to 0.1 $\mu g/m^3$,

which was one percent. *Id.* One percent of 15.0 $\mu g/m^3$ is 0.15 $\mu g/m^3$, so EPA initially chose that number as the threshold. *Id.* However, EPA then "request[ed] comments on the use of higher or lower thresholds for this purpose." *Id.* In CAIR, EPA finally settled on a threshold value of 0.2 $\mu g/m^3$. It did so because EPA was "persuaded by commenters[']arguments on monitoring and modeling that the precision of the threshold should not exceed that of the NAAQS," which only measure $PM_{2.5}$ concentration to the tenths column. CAIR, 70 Fed. Reg. at 25,191; *see id.* at 25,190 (commenters). North Carolina believes it was arbitrary for EPA to round 0.15 $\mu g/m^3$ up to 0.2 $\mu g/m^3$ instead of reverting to the earlier 0.1 $\mu g/m^3$ number that "is the smallest one that can make the difference between compliance and violation of the NAAQS." *See* NPR, 69 Fed. Reg. at 4584.

EPA did not explain why it chose the larger number instead of the smaller number in the final rule; it only explained why it chose a number that ended at the tenths column. CAIR, 70 Fed. Reg. at 25,191. Based on EPA's reasoning in the Notice of Proposed Rulemaking, it may have made more sense to return to the 0.1 $\mu g/m^3$ threshold instead of "[r]ounding the proposal value of 0.15," which is what it did. *See id.* But EPA was concerned that the 0.15 $\mu g/m^3$ threshold it originally proposed was too low, requesting comments on "the use of higher or lower thresholds." NPR, 60 Fed. Reg. at 4584. And in raising the threshold number, EPA was responding to comments citing concerns about the "measurement precision of existing $PM_{2.5}$ monitors." CAIR, 70 Fed. Reg. at 25,190. We cannot say in this circumstance that EPA's decision to round the 0.15 $\mu g/m^3$ threshold to 0.2 $\mu g/m^3$ instead of reverting to the original threshold considered of 0.1 $\mu g/m^3$ was wholly unsupported by the record.

Likewise, we cannot say that EPA's decision to truncate rather than round the $PM_{2.5}$ contribution levels it compared to

the 0.2 $\mu g/m^3$ threshold was arbitrary. The parties dispute which C.F.R. provision applies to the number it compares to the threshold—one mandating rounding, 40 C.F.R. pt. 50, App. N, § 4.3(a) (preferred by petitioner), or another mandating truncating, 40 C.F.R. pt. 50, App. N § 3.0(b) (preferred by EPA). The number EPA compares to the threshold, which is measured as "the average of annual means [of $PM_{2.5}$ contribution] from three successive years," is the contribution of $PM_{2.5}$ from one upwind state to a nonattainment area. CAIR, 70 Fed. Reg. at 25,190. Section 4.3(a) applies to annual $PM_{2.5}$ standard design values. Design values "are the metrics (i.e., statistics) that are compared to the NAAQS levels to determine compliance." 40 C.F.R. pt. 50 App. N § 1.0(c). Design values are composed of the average of annual means of $PM_{2.5}$ for three consecutive years, 40 C.F.R. pt. 50 App. N § 4.1(b), but design values are measurements of $PM_{2.5}$ levels in a stationary area—not levels of $PM_{2.5}$ moving from one area to another. Because the contribution level is not a design value, section 4.3(a)'s rounding mandate does not apply. Similarly, section 3.0(b)'s truncation mandate applies to $PM_{2.5}$ hourly and daily measurement data and says nothing about the contribution level EPA is assessing in CAIR.

Without a rule mandating any particular method, EPA is free to round or truncate the numbers it is comparing to the 0.2 $\mu g/m^3$ threshold as long as its choice is reasonable. EPA chose to truncate numbers because the "truncation convention for $PM_{2.5}$ is similar to that used in evaluating modeling results in applying the ozone significance screening criterion of 2 ppb in the NO_x SIP call and the CAIR proposal, as well as today's final action." CAIR, 70 Fed. Reg. at 25,191 n.42 (internal citation omitted). EPA's choice to truncate the numbers is reasonable. As a result, we deny North Carolina's petition challenging the 0.2 $\mu g/m^3$ threshold and EPA's choice to truncate the numbers compared to it.

B. SO_2 and NO_x Budgets

SO_2 Petitioners and petitioner Entergy challenge CAIR's budgets for the SO_2 and NO_x trading programs. EPA set states' SO_2 budgets for 2010 to 50% (35% in 2015) of the allowances the states' EGUs receive under Title IV. SO_2 Petitioners argue EPA never explained how these budgets related to section 110(a)(2)(D)(i)(I)'s mandate of prohibiting significant contributions to downwind nonattainment. Therefore, they claim, the budgets and the regionwide cap, are "arbitrary, capricious, . . . or otherwise not in accordance with law," 42 U.S.C. § 7607(d)(9)(A). As for NO_x, EPA reduced states' budgets to the extent their EGUs burned oil or gas. Entergy claims EPA made this adjustment purely in the interests of fairness—an improper reason under section 110(a)(2)(D)(i)(I). We grant the petitions, agreeing EPA chose the budgets for both pollutants in an improper manner. In short, the fact that SO_2 and NO_x are precursors to ozone and $PM_{2.5}$ pollution does not give EPA plenary authority to reduce emissions of these substances. Section 110(a)(2)(D)(i)(I) obligates states to prohibit emissions that contribute significantly to nonattainment or interfere with maintenance downwind, and EPA must exercise its authority under this provision to make measurable progress towards those goals.

1. SO_2 Budgets

We first address EPA's choice of SO_2 budgets. EPA claims to have based state budgets for SO_2 and NO_x on the amount of emissions sources can eliminate by applying controls EPA deems "highly cost-effective controls"—an approach EPA says we approved in *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000). We observe initially that state SO_2 budgets are unrelated to the criterion (the "air quality factor") by which EPA included

states in CAIR's SO_2 program. Significant contributors, for purposes of inclusion only, are those states EPA projects will contribute at least 0.2 $\mu g/m^3$ of $PM_{2.5}$ to a nonattainment area in another state. While we would have expected EPA to require states to eliminate contributions above this threshold, EPA claims to have used the measure of significance we mentioned above: emissions that sources within a state can eliminate by applying "highly cost-effective controls." EPA used a similar approach in deciding which states to include in the NO_x SIP Call, which *Michigan* did not disturb since "no one quarrel[ed] either with its use of multiple measures, or the way it drew the line at" the inclusion stage. 213 F.3d at 675. Likewise here, the SO_2 Petitioners do not quarrel with EPA drawing the line at 0.2 $\mu g/m^3$ or its different measure of significance for determining states' SO_2 budgets. Again, we do not disturb this approach.

Even so, EPA's method in setting the SO_2 budgets is not what *Michigan* approved. In that case, the petitioners argued section 110(a)(2)(D)(i)(I) does not permit EPA to consider the cost of reducing ozone. After reconciling petitioners' shifting (and somewhat conflicting) arguments, we answered a well-defined question: Could EPA, in selecting the "significant" level of "contribution" under section 110(a)(2)(D)(i)(I), choose a level corresponding to a certain reduction cost? *Michigan*, 213 F.3d at 676–77. Answering that question in the affirmative, we held EPA may "after [a state's] reduction of all [it] could . . . cost-effectively eliminate[ ]," consider "any remaining 'contribution'" insignificant. *Id.* at 677, 679.

Michigan also rejected claims that applying a uniform cost-criterion across states was irrational because both smaller and larger contributors had to make reductions achievable by the same highly cost-effective controls. This, we said, "flow[ed] ineluctably from the EPA's decision to draw the 'significant

contribution' line on a basis of cost." *Id.* at 679. Upholding that decision "logically entail[ed] upholding this consequence." *Id.* And while EPA's approach did not necessarily ensure "aggregate health benefits" at roughly the lowest cost, EPA researched alternatives, and found none that significantly improved air quality or reduced cost. *Id.* Since no one offered a "material critique" of this research, we did not upset EPA's judgment. *Id.*

Here, EPA did not use cost in the manner *Michigan* approved. Even worse, EPA's choice of SO_2 budgets does not track the requirements of section 110(a)(2)(D)(i)(I). That much is evident from EPA's decision to base the budgets on allowances states' EGUs receive under Title IV. Those allowances are not, as EPA asserts, a "logical starting point" for setting CAIR's SO_2 emissions caps, CAIR, 70 Fed. Reg. at 25,229. Congress designed the Title IV allowance scheme using EGU data from 1985 to 1987 to address the national acid rain problem. Nowhere does EPA explain how reducing Title IV allowances will adequately prohibit states from contributing significantly to downwind nonattainment of the $PM_{2.5}$ NAAQS. And while "Congress chose a policy of not revisiting and revising these allocations and, apparently, believed that its allocation methodology would be appropriate for future time periods," Reconsideration, 71 Fed. Reg. at 25,308, it is unclear how the quantitative number of allowances created by 1990 legislation to address one substance, acid rain, could be relevant to 2015 levels of an air pollutant, $PM_{2.5}$.

EPA also explains that it chose Title IV as a starting point "to preserve the viability and emissions reductions of the highly successful title IV program." *Id.* This goal may be valid, but it is not among the objectives in section 110(a)(2)(D)(i)(I). And if it is somehow compatible with states' obligations to include "adequate provisions" in their SIPs, prohibiting emissions

"within the State from . . . contribut[ing] significantly" to downwind nonattainment, then EPA should explain how. It has failed to do so. Apart from the arbitrary Title IV baseline, EPA has insufficiently explained how it arrived at the 50% and 65% reduction figures. Though unclear, these numbers appear to represent what EPA thought would be "'a cost-effective and equitable governmental approach to attainment with the NAAQS for [$PM_{2.5}$].'" CAIR, 70 Fed. Reg. at 25,199 (quoting Proposed CAIR, 69 Fed. Reg. 4566, 4612 (Jan. 30, 2004)).[1] As with the need to "preserve the viability" of the Title IV program, EPA's notions of what is an "equitable governmental approach to attainment" is not among the objectives of section 110(a)(2)(D)(i)(I). Nor does EPA even attempt to reconcile its choice of "equitable" emissions caps with those objectives.

Having chosen these equitable caps for the CAIR region, EPA then "ascertained the costs of these reductions and . . . determine[d] that they should be considered highly cost effective." *Id.* at 25,176. EPA's use of cost in this manner is not what we approved in *Michigan*. Whereas *Michigan* permits EPA to draw the "significant contribution" line based on the cost of reducing that "contribution," here EPA did not draw the line at all. It simply verified sources could meet the SO_2 caps with controls EPA dubbed "highly cost-effective." Nor would EPA necessarily cure this problem merely by beginning its analysis with cost. While EPA may require "termination of only a *subset of each state's contribution*," by having states "cut[ ] back the

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[1] EPA briefly summarized a series of analyses and dialogues with various stakeholder groups in which the participants considered "regional and national strategies to reduce interstate transport of SO_2 and NO_x." *See* CAIR, 70 Fed. Reg. at 25,199. The most recent of these, EPA's analysis in support of the proposed Clear Skies Act, considered nationwide SO_2 caps of, coincidentally, "50 percent and 67 percent from . . . title IV cap levels." *Id.*

amount that could be eliminated with 'highly cost-effective controls,'" *Michigan*, 213 F.3d at 675 (emphasis added), EPA can't just pick a cost for a region, and deem "significant" any emissions that sources can eliminate more cheaply. Such an approach would not necessarily achieve something measurable toward the goal of prohibiting sources "within the State" from contributing significantly to downwind nonattainment.

Because EPA did not explain how the objectives in section 110(a)(2)(D)(i)(I) relate to its choice of SO_2 emissions caps based on Title IV allowances, we conclude that choice was "arbitrary, capricious, . . . or not otherwise in accordance with law," 42 U.S.C. § 7607(d)(9)(A).

2. NO_x Budgets

Next, we address EPA's use of "fuel factors" to allocate the regional NO_x cap among the CAIR states. EPA determined the cap by multiplying NO_x emissions rates (0.15 mmBtu in 2010 and 0.125 mmBtu in 2015) by the heat input of states in the CAIR region. Then, EPA distributed to each state, as its budget of NO_x emissions allowances, its proportionate share of the regional cap. But in determining these shares, EPA adjusted each state's heat input for the mix of fuels its power plants used: while a coal-fired EGU contributed its full heat input to the state total, an oil-fired EGU counted for only 60% of its heat input and a gas-fired EGU only 40%. Entergy argues this fuel adjustment was irrational because EPA made it purely for the sake of sharing the burden of emissions reductions fairly. We agree EPA's notion of fairness has nothing to do with states' section 110(a)(2)(D)(i)(I) obligations to prohibit significant contributions to downwind nonattainment.

EPA's NO_x analysis began, inauspiciously, in a manner similar to its SO_2 decisions. But instead of beginning with "the

existing title IV annual SO_2 cap," it began with the existing NO_x SIP Call emissions rate of 0.15 pounds of NO_x emitted per mmBtu of heat input. CAIR, 70 Fed. Reg. at 25,205. It is not clear why EPA considered this rate a useful starting point beyond the fact that such an emissions rate had been "considered in the past." *Id*. So far as we can tell, these numbers represent, like the SO_2 caps, EPA's effort "'to set up a reasonable balance of regional and local controls to provide a cost-effective and equitable governmental approach to attainment.'" *Id*. at 25,199 (quoting Proposed CAIR, 69 Fed. Reg. at 4612). Thus, rather than explaining how its planned emissions rates related to states' significant contributions to downwind nonattainment, EPA simply asserted they would create an equitable balance of controls. As with the SO_2 caps, EPA did not draw the "significant contribution" line on the basis of cost, *Michigan*, 213 F.3d at 676–77, or, for that matter, draw the significance line at all. Instead, EPA "determin[ed] the regionwide control level" and then "evaluat[ed] it to assure that it is highly cost-effective." CAIR, 70 Fed. Reg. at 25,206.

Nevertheless, Entergy does not challenge the regional NO_x emissions rate. It argues that if EPA thinks a certain rate reflects a state's level of "significant contribution" to downwind nonattainment, then section 110(a)(2)(D)(i)(I) requires EPA to assign each state a budget equal to the emissions rate times the state's heat input. The fuel adjustment reduces a state's budget below that level if, say, its power plants use gas instead of coal, without any justification besides fairness. Remarkably, EPA does not deny that fairness is the only reason for the fuel adjustment. According to EPA, "[t]he factors would reflect the inherently higher emissions rate of coal-fired plants, and consequently the greater burden on coal plants to control emissions," thereby creating "a more equitable budget distribution." *Id*. at 25,231. Instead, EPA criticizes Entergy's preferred method of distributing credits as being equally

unjustified. In the EPA's view, assigning credits without the fuel adjustment is just one of "a number of ways that EPA could have distributed the regionwide NO_x emissions budget," among which the fuel adjustment is another, equally valid method, and EPA reasonably chose the fuel adjustment as the fairest method. Resp't's Br. 105.

Not all methods of developing state emission budgets are equally valid, because an agency may not "trespass beyond the bounds of its statutory authority by taking other factors into account" than those to which Congress limited it, nor "substitute new goals in place of the statutory objectives without explaining how [doing so comports with] the statute." *Indep. U.S. Tanker Owners Comm. v. Dole*, 809 F.2d 847, 854 (D.C. Cir. 1987); *see also Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1150 (D.C. Cir. 1980). Section 110(a)(2)(D)(i)(I) addresses emissions "within the State" that contribute significantly to downwind pollution. Naturally we defer to EPA's interpretation of the Clean Air Act so far as it is reasonable, *Chevron*, 467 U.S. 837, and we have recognized that significance may include cost, *Michigan*, 213 F.3d at 677–79. However, EPA's interpretation cannot extend so far as to make one state's significant contribution depend on another state's cost of eliminating emissions.

Yet that is exactly what EPA has done. For example, Louisiana's EGUs use more gas and oil than most states' EGUs. Consequently, instead of the budget of 42,319 tons per year that would be Louisiana's proportional share of the regionwide cap without fuel adjustment, the State only received 29,593 tons per year. The rest of those credits went to states with more coal-fired EGUs than average, which necessarily received "larger NO_x emissions budgets" than their unadjusted proportional shares. Resp't's Br. 103. EPA favored coal-fired EGUs in this way because they face a "greater burden . . . to control emissions" than gas- and oil-fired EGUs. CAIR, 70 Fed. Reg.

at 25,231. In essence, a state having mostly coal-fired EGUs gets more credits because Louisiana can control emissions more cheaply.

EPA responds by suggesting that any allocation of the NO_x cap would amount to equitable burden-sharing because EPA did the analysis "on a regionwide basis," and therefore not even the unadjusted shares have any relation to states' significant contributions. Resp't's Br. 104; CAIR, 70 Fed. Reg. at 25,231.[2] If so, that is a weakness of CAIR generally. Having chosen not to evaluate contributing emissions on a state-by-state basis, EPA cannot now rely on the resulting paucity of data to justify its *ad hoc* approach to spreading the burden of reducing them. When a petitioner complains EPA is requiring a state to eliminate more than its significant contribution, it is inadequate for EPA to respond that it never measured individual states' significant contributions.

No doubt all this pother seems unnecessary to EPA, since it believed "the choice of method in setting State budgets . . . makes little difference in terms of the levels of resulting regionwide annual SO_2 and NO_x emissions reductions." CAIR, 70 Fed. Reg. at 25,230–31. Since EPA planned a market for emissions credits, it assumed EGUs would trade credits as necessary to achieve the "least-cost outcome," which would not depend "on the relative levels of individual State budgets." *Id.* at 25,231. As we noted in *Michigan*, the market would only

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[2] To be sure, the unadjusted shares would not correspond much better to a state's downwind contribution in 2010 and 2015 because EPA based the regional cap on heat input data from 1999 to 2002 without accounting for the growth in states' economies. *See* CAIR, 70 Fed. Reg. 25,230–31. In any case, a budget allocation based on such shares would only be hypothetical at this point, so we express no opinion as to its propriety.

bear out that assumption if the transaction costs of trading emissions were small, which is hardly likely. 213 F.3d at 676 & n.3. But even if the state budgets affect only the distribution of the burden, not the regionwide aggregate of emissions, that distribution is important.[3] EPA contends the greatest reductions will take place where the greatest emissions are, because that is where most cost-effective reductions are available. Resp't's Br. 168. Of course, those states with the greatest emissions are those with mainly coal-fired EGUs, which are precisely the states that get extra credits under EPA's fuel-adjustment method. *See* CAIR, 70 Fed. Reg. at 25,231 n.88 ("States receiving larger budgets . . . are generally expected to be those having to make the most reductions."). Presumably those EGUs will make their greater reductions and sell them to other EGUs, in states the fuel-adjustment method docked, to recoup their investment in reductions. The net result will be that states with mainly oil- and gas-fired EGUs will subsidize reductions in states with mainly coal-fired EGUs. Again, EPA's approach contravenes section 110(a)(2)(D)(i)(I); the statute requires each state to prohibit emissions "within the State" that contribute significantly to downwind pollution, not to pay for other states to prohibit their own contributions.

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[3] In focusing on the beneficial regionwide results from trading, EPA completely ignores the fact that any state that elected not to participate in the NO_x trading program would receive a maladjusted budget as a mandatory cap on its emissions. We do not focus on this problem because EPA had, by the time it promulgated CAIR, already found all the relevant states to have violated section 110(a)(2)(D), 42 U.S.C. § 7410(a)(2)(D), with respect to the CAIR pollutants, so that EPA's Federal Implementation Plan, incorporating the trading program, covers all of them until they submit SIPs complying with CAIR. FIP, 71 Fed. Reg. 25,328, 25,340 (Apr. 28, 2006); 70 Fed. Reg. 21,147 (Apr. 25, 2005) (finding of violation).

EPA's redistributional instinct may be laudatory, but section 110(a)(2)(D)(i)(I) gives EPA no authority to force an upwind state to share the burden of reducing other upwind states' emissions. Each state must eliminate its own significant contribution to downwind pollution. While CAIR should achieve something measurable towards that goal, it may not require some states to exceed the mark. Because the fuel-adjustment factors shifted the burden of emission reductions solely in pursuit of equity among upwind states—an improper reason—the resulting state budgets were arbitrary and capricious.

C. Title IV Allowances

SO_2 Petitioners and a trade association of waste-coal EGUs (together "SO_2 Petitioners") also challenge EPA's effort to "harmonize" CAIR's regulation of SO_2 with the existing program for trading SO_2 emissions allowances under Title IV of the CAA. Since EPA set states' SO_2 budgets for 2010 to 50% (35% in 2015) of the allowances the states' EGUs receive under Title IV, EGUs in the region would emit significantly less SO_2 under CAIR and could be expected to have substantial numbers of excess Title IV allowances to emit SO_2. Concerned about this sudden excess, EPA structured CAIR so that EGUs in states electing to trade give up 2 allowances per ton in 2010, and 2.68 allowances per ton in 2015. (Recall, a Title IV allowance gives the holder the right to emit one ton of SO_2 within the Title IV program.) States electing not to trade must have SIP provisions for retiring excess allowances. In addition, CAIR regulates waste-coal EGUs that do not receive Title IV allowances because they are exempt from Title IV. Thus, waste-coal EGUs in trading states must acquire Title IV allowances by purchasing allowances from EGUs in the Title IV program, or, as EPA suggests, by opting into the program.

SO_2 Petitioners argue EPA lacks authority to terminate or limit Title IV allowances, either through a trading program under section 110(a)(2)(D), 42 U.S.C. § 7410(a)(2)(D), or by requiring that SIPs have allowance retirement provisions. We agree and grant the petition on this issue. We do not, however, consider whether CAIR unlawfully forces waste-coal EGUs into the Title IV program, or irrationally includes waste-coal units while excluding other waste-burning units. That argument assumes EPA has the authority to terminate or limit Title IV allowances.

In demonstrating EPA's absence of authority, the SO_2 Petitioners cite a variety of Title IV provisions supposedly showing that Title IV allowances are fixed currency, the value of which EPA may not manipulate. However, the allowances are "limited authorization[s] to emit sulfur dioxide" and "[n]othing . . . in any . . . provision of law shall be construed to limit the authority of the United States to terminate or limit" such authorizations. 42 U.S.C. § 7651b(f). While EPA and petitioners quibble over whether EPA is the "United States" to which § 7651b(f) applies, both agree that this section does not grant EPA any authority.[4]

Thus, EPA claims section 110(a)(2)(D)(i)(I) gives it authority to set up a program for trading SO_2 emissions allowances, and to require EGUs to use Title IV allowances as currency. Once EGUs spend Title IV allowances in the CAIR market, EPA says it can terminate the authorization the allowances provide within the Title IV market. CAIR, 70 Fed. Reg. at 25,292. But whatever authority EPA may have to establish such a trading program, we find nothing in section

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[4] In view of EPA's absence of authority to terminate or limit Title IV allowances, we express no opinion on the meaning of "United States" in this provision.

110(a)(2)(D)(i)(I) granting EPA authority to remove Title IV allowances from circulation in the Title IV market.

Environmental groups, intervening in support of EPA, argue section 301(a) of the CAA also provides EPA authority. That provision authorizes EPA "to prescribe such regulations as are necessary to carry out [its] functions under" the CAA. 42 U.S.C. § 7601(a). EPA does not rely on section 301(a), and for good reason: EPA cannot claim retiring excess Title IV allowances is "necessary" for EPA to ensure SIPs comply with section 110(a)(2)(D)(i)(I). Nor does section 301(a), 42 U.S.C. § 7601(a), "provide [EPA] Carte blanche authority to promulgate any rules, on any matter relating to the Clean Air Act, in any manner that the [EPA] wishes." *Citizens to Save Spencer County v. EPA*, 600 F.2d 844, 873 (D.C. Cir. 1979).

Lacking a statutory foundation, EPA appeals to "logic." Logically, says EPA, it was not "required to structure CAIR as a stand-alone program without taking account whatsoever of the effect this might have on the pre-existing" Title IV program. Resp't's Br. 82. Environmental intervenors add some legal flavoring here, analogizing EPA's action to a court's interpretative obligation to "fit, if possible, all parts" of a statute "into a harmonious whole," *FTC v. Mandel Bros.*, 359 U.S. 385, 389 (1959). Although it may be reasonable for EPA, in structuring a program under section 110(a)(2)(D)(i)(I), to consider the impact on the Title IV market, it does not follow that EPA has the authority to remove allowances from that market. Nor can EPA cure its absence of authority by foisting onto SO_2 Petitioners the burden of explaining why "two independent programs . . . would produce a better result." Resp't's Br. 87. Lest EPA forget, it is "a creature of statute," and has "only those authorities conferred upon it by Congress"; "if there is no statute conferring authority, a federal agency has none." *Michigan v. EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001).

So too here: no statute confers authority on EPA to terminate or limit Title IV allowances, and EPA thus has none.

Similarly, EPA cannot require non-trading states to have SIP provisions for retiring excess Title IV allowances. Although such provisions are "related to harmonizing a State's choice of reduction requirements" with the Title IV program, Resp't's Br. 92, the CAA "gives [EPA] no authority to question the wisdom of a State's choices of emission limitations if they are part of a plan which *satisfies* the standards of § 110(a)(2)." *Train v. Natural Res. Def. Council*, 421 U.S. 60, 79 (1975) (emphasis added). SIPs prohibiting emissions within a state from contributing significantly to downwind nonattainment satisfy section 110(a)(2)(D)(i)(I). Because provisions retiring Title IV allowances are unrelated to achieving that goal, EPA cannot require states to adopt them.

D. Border State Issues

Under Title I of the CAA, there is a presumption of state-level regulation generally, *see, e.g.*, 42 U.S.C. § 7407(a); *Union Elec.*, 427 U.S. at 256, 267, and the text of section 110, 42 U.S.C. § 7410, establishes the state as the appropriate primary administrative unit to address interstate transport of emissions. To take action regarding a state pursuant to section 110(a)(2)(D)(i)(I) EPA need only have evidence that emissions "within the State" contribute significantly to another state's nonattainment or interfere with its maintenance of a national ambient air quality standard ("NAAQS"), unless there is evidence that exculpates part of the upwind state from that determination. *See Michigan*, 213 F.3d at 684. Thus, in developing a rule, EPA may select states as the unit of measurement. *Id.* The burden is on the party challenging inclusion of part of a state to present "finer-grained computations" showing that it is "innocent of material

contributions" to the state's overall downwind pollution. *Id.*; *see Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1050–51 (D.C. Cir. 2001). In response to such data, EPA must ensure that the contested area makes a "measurable contribution," *Michigan*, 213 F.3d at 684, such that it is "part of the problem" of the state's aggregate downwind impact, *Appalachian Power*, 249 F.3d at 1050.

Various utilities and one municipality,[5] but not the States themselves, challenge inclusion in CAIR of the upwind States of Texas, Florida, and Minnesota. The court denies all except Minnesota Power's petition.

1. Texas

The final rule included the State of Texas due to its maximum downwind contribution of 0.29 $\mu g/m^3$ to $PM_{2.5}$ nonattainment, which is above the air quality threshold of 0.2 $\mu g/m^3$. Petitioners unsuccessfully sought reconsideration of inclusion of that part of the State west of the north-south I-35/I-37 corridor ("West Texas"), submitting modeling that showed few emitting facilities were located in West Texas. Petitioners contend that under *Michigan*, 213 F.3d at 681–85, EPA, on its own initiative, should have excluded West Texas given the State's size, location, low emissions density, and logical intrastate dividing line, and that EPA's concern about "in-state pollution havens" developing in West Texas is unfounded. See Corrected Response, at 230. They also contend that EPA acted

[5] Southwestern Public Service Company d/b/a Xcel Energy, Occidental Permian Ltd., and the City of Amarillo, Texas petition regarding the State of Texas. The Florida Association of Electric Utilities and FPL Group, Inc. petition regarding the State of Florida. Minnesota Power petitions regarding the State of Minnesota. In this part, we refer to "petitioners" generally.

unreasonably in denying reconsideration in view of the modeling data showing that sources in West Texas "demonstrably were not significant contributors to nonattainment in downwind states." Pet'rs' Br. at 14. However, the record establishes that EPA appropriately included all of the State in CAIR.

The record includes data showing that the State of Texas makes a maximum downwind contribution greater than the 0.2 $\mu g/m^3$ air quality threshold for inclusion. Petitioners have neither challenged this threshold nor presented data that would require EPA to determine whether West Texas makes a "measurable contribution." *See Michigan*, 213 F.3d at 684. Instead, their comments on the proposed rule and the August 2004 Notice of Data Availability speculated that West Texas's contribution level was likely to be less than 0.05 $\mu g/m^3$. Neither did petitioners claim that they were unable to present modeling without assistance from EPA and that such assistance was refused. After EPA released updated data in November 2004, petitioners did submit comments expressing concern about EPA's analysis, but again did not include any new modeling or indicate that they could not do so without EPA assistance that was denied. EPA effectively responded to petitioners' concerns by referring to the possibility that dividing the State could create "in-state pollution havens" in West Texas where exclusion from CAIR would lead to increased capacity with a consequent increase in emissions, Corrected Response, at 230; there is at least one western source connected to the eastern grid and a possibility that more could be integrated through the Electric Reliability Council of Texas. In these circumstances, EPA had no duty to divide the State or to model West Texas separately.

In seeking reconsideration, petitioners for the first time presented new modeling on West Texas. However, EPA found, as the record shows, that petitioners had already had a

meaningful opportunity to comment on the inclusion of West Texas and had not shown that it was impracticable for them to present the new modeling sooner or that a new issue arose after the close of the comment period. *See* 42 U.S.C. § 7607(d)(7)(B). Although petitioners insist that they could not satisfy their evidentiary burden without receiving data from EPA, they do not explain why the data from August and November 2004 on which they commented was insufficient to allow them to do so. That they may have failed to realize that EPA had not already conducted more detailed, subregional modeling is beside the point; the lack of record discussion of West Texas should have alerted them to the need to present data to challenge its inclusion. Because petitioners did not request assistance duplicating EPA's modeling until after the final rule was promulgated, they fail to advance a reason for reconsideration or demonstrate prejudice due to EPA's late disclosure of data, *see, e.g.*, *West Virginia v. EPA*, 362 F.3d 861, 869 (D.C. Cir. 2004); *see also Am. Radio Relay League v. FCC*, 524 F.3d 227, 237–38 (D.C. Cir. 2008), which they also have not shown was any more than "supplementary" as to the State, *see Solite Corp. v. EPA*, 952 F.2d 473, 484 (D.C. Cir. 1991).[6]

[6] Although petitioners object that EPA has not defined the "measurable contribution" standard, they do so only in their reply brief and did not present this issue to EPA; therefore, the court does not address it. *See* 42 U.S.C. § 7607(d)(7)(B); *S. Coast Air Quality Mgmt. Dist.*, 472 F.3d at 891. In any event, West Texas contributes 0.05 $\mu g/m^3$ of $PM_{2.5}$ to downwind areas, which is one-quarter of the amount of pollution needed for the State as a whole to meet the air quality threshold, and thus should qualify at least as a "material" amount "worthy of special concern." *See Michigan*, 213 F.3d at 682, 684; *Appalachian Power*, 249 F.3d at 1050.

2. Florida

The final rule included the State of Florida for ozone and $PM_{2.5}$. However, the proposed rule had included the State only for $PM_{2.5}$. Petitioners sought reconsideration contesting the inclusion of the State as a whole for ozone and the inclusion of southern subregions for ozone and for $PM_{2.5}$. Upon granting reconsideration as to ozone only, EPA affirmed its determination that the State should be included in CAIR. Petitioners now object to EPA's use of rounding at an initial screening stage for including the State for ozone as arbitrary and capricious. *See* 42 U.S.C. § 7607(d)(9)(A). Alternatively they contend that under *Michigan*, 213 F.3d 663, EPA was required to exclude parts of Southern Florida (south of latitude 28.67 for ozone and south of latitude 29.2 for $PM_{2.5}$) that do not make a significant contribution to nonattainment, or at least the area south of latitude 26 for both ozone and $PM_{2.5}$ because EPA initially had no data for this area. The record supports EPA's reasoned explanation for including the entire State for ozone and $PM_{2.5}$.

As an initial screening indicator of whether to include a state in CAIR for ozone, EPA considered whether the state's average contribution to ozone nonattainment in a downwind area was "less than one percent of total nonattainment in the downwind area."[7] CAIR, 70 Fed. Reg. at 25,191. If so, then EPA would not test the state further; if not, then EPA would perform additional analysis to determine whether the state should be included. EPA found the State of Florida's average percent of contribution to nonattainment in Fulton County,

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[7] The average percent contribution of nonattainment metric is calculated by dividing the concentration of total ozone in the nonattainment area into the state's contribution. *See* Reconsideration, 71 Fed. Reg. at 25,320 n.14.

Georgia to be 0.81 percent. Upon rounding up to one percent, EPA determined after further analysis that the State makes "large and frequent contributions . . . to elevated ozone concentrations in Fulton Co[unty]" and should be included for ozone. Reconsideration, 71 Fed. Reg. at 25,320. Although petitioners characterize this rounding as "creating the nonsense result of transforming a number . . . that is clearly 'less than one percent' to one," Pet'rs' Br. at 28, the court owes substantial deference to EPA's technical expertise, *see Appalachian Power*, 249 F.3d at 1051–52, absent a showing of legal or factual error.

Because petitioners challenge only the initial screening indicator and not the record evidence showing that the State of Florida meets the air quality threshold,[8] they can hardly protest that rounding did not serve the appropriate purpose of identifying the State for further analysis. EPA treated this State no differently than others at the initial screening stage. Even assuming the rounding convention were flawed, it was not dispositive of the State's inclusion in CAIR. Hence, no prejudice could be shown on the basis of that error alone. EPA reasonably explained that its use of the rounding convention is "commonplace" and "customary" as well as a reasonable means of creating a "conservative" initial indicator that "cast[s] a wider net, with further winnowing to occur in subsequent steps when more detailed analysis is applied." Reconsideration, 71 Fed. Reg. at 25,320. Petitioners neither identify error resulting from use of rounding at the initial screening stage nor offer any persuasive reason to question EPA's choice of a technical

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[8] Petitioners' additional reasons not to include the State of Florida are unpersuasive because they concede that the air quality threshold is a lawful basis for inclusion in CAIR. That Fulton County, Georgia may attain the ozone NAAQS by 2015 does not justify excluding the State of Florida as 2010 is the determinative year in CAIR to provide downwind relief.

convention that is reasonable on this record. *See* 42 U.S.C. § 7607(d)(9)(A).

Neither have petitioners shown that EPA should have excluded any part of Southern Florida. EPA was not obligated to measure pollution coming from each possible slice of the State. *See Michigan*, 213 F.3d at 684. The lack of information about a subregion conceivably might result in a miscalculation of the downwind contribution of the State as a whole, *see id.* at 682, but alone could not exonerate a subregion and does not undermine EPA's inclusion of the area south of latitude 26 for either ozone or $PM_{2.5}$. Given the rulemaking record, EPA appropriately determined that the State of Florida as a whole should be included.

In regard to inclusion of the area south of latitude 29.2 for $PM_{2.5}$, petitioners submitted no modeling or data during the comment period to show that it was "innocent" of contributing to the State's collective downwind pollution impact. *See id.* at 684; *Appalachian Power*, 249 F.3d at 1050–51. Instead, their first request to EPA for assistance in duplicating EPA's modeling results came after the final rule was promulgated. They offer no reason why they could not present such modeling during the comment period. EPA thus properly denied reconsideration on inclusion of the State for $PM_{2.5}$. *See* 42 U.S.C. § 7607(d)(7)(B).[9]

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[9] Petitioners did not present the issue of the "standard for a portion-of-a-state's contribution to nonattainment," Reply Br. at 20, to EPA; *see supra* note 6. In any event, their data does not show that the area south of latitude 29.2 is "innocent of material contributions" for $PM_{2.5}$. *See Michigan*, 213 F.3d at 684. The northern part of the State's contributions range from 0.11 to 0.20 $\mu g/m^3$ and the contributions from the southern area appear to be quite similar, ranging from 0.09 to 0.15 $\mu g/m^3$, with even the minimum in the

In regard to ozone, petitioners submitted data in support of their request for reconsideration of inclusion of the area south of latitude 28.67. EPA declined to exclude this area. First, EPA found that the data was unpersuasive inasmuch as it has authority to regulate an upwind area even if its "specific contribution may appear insubstantial" as long as it contributes a "measurable" amount of pollution to the State's "collective contribution to downwind nonattainment." Reconsideration, 71 Fed. Reg. at 25,321. The court agrees; EPA was not required to exclude an area that petitioners have drawn precisely in order to avoid the significance threshold. *See Michigan*, 213 F.3d at 684; *Appalachian Power*, 249 F.3d at 1050. Second, EPA found that the area south of latitude 28.67 is not "innocent of material contribution" but "contribute[s] [a] substantial portion[] of the total ozone loading from Florida to Fulton County[, Georgia]." Reconsideration, 71 Fed. Reg. at 25,321 (citing *Michigan*, 213 F.3d at 683–84). As the contested area contributes almost one-third of the State's entire downwind ozone contribution, petitioners' challenge to its inclusion fails. Petitioners' other concerns, such as the test for "measurable contribution" and the alleged departure from EPA precedent, were not presented to EPA and thus the court does not address them. *See supra* notes 6 & 9; 42 U.S.C. § 7607(d)(7)(B); *S. Coast Air Quality Mgmt. Dist.*, 472 F.3d at 891.

3. Minnesota

In the proposed rule, EPA included the State of Minnesota after determining that its downwind contribution of $PM_{2.5}$ was 0.39 $\mu g/m^3$, well above the air quality threshold of 0.2 $\mu g/m^3$ needed for inclusion in CAIR. In the preamble to the final rule, however, EPA indicated that it had recalculated Minnesota's

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southern range almost half the threshold for inclusion of the entire State.

contribution to be 0.21 $\mu g/m^3$, and included the State in CAIR. Upon reconsideration, EPA again recalculated and determined that the State's contribution was actually 0.20 $\mu g/m^3$, the exact threshold for inclusion.

Minnesota Power challenges the inclusion of the State for $PM_{2.5}$ as resting on two types of unaddressed flawed data resulting in an overstatement of emissions: (1) projecting units' emissions as of 2010 to be at a significantly higher rate than as of 2001, with some above the permitted level, and (2) misallocating energy production or heat input projections between units. In view of these claimed errors, Minnesota Power contends that EPA has failed to provide a "complete analytic defense," *Appalachian Power*, 249 F.3d at 1054 (quotation omitted), of its model's treatment of Minnesota. The court grants the petition because EPA's failure to address the claimed errors was unjustifiable. Although EPA maintains that this concern was not timely presented or with sufficient specificity to satisfy CAA § 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B), and thus the issue has been forfeited, *see S. Coast Air Quality Mgmt. Dist.*, 472 F.3d at 891, the record is to the contrary.

Prior to the deadline for petitioning for reconsideration, Minnesota Power raised its emissions overstatement concern, and identified three units with disparities between 2001 actual and 2010 projected emissions. After EPA released additional analysis of the State that included changes based upon comments received about the Metropolitan Emission Reduction Proposal ("MERP"), Minnesota Power set forth by letter of May 10, 2005 to EPA claimed errors in the new analysis, including emissions measurements for the Boswell Energy Center, and the

predominantly wood waste unit of Hibbard Energy Center.[10] The final rule was promulgated on May 12, 2005, and Minnesota Power timely petitioned for reconsideration to challenge the "moving target" of EPA's data and determination regarding the State, and referred to its May 2005 letter. Minn. Power, Pet. for Recon. at 7 (Aug. 5, 2005), docketed as EPA-HQ-OAR-2003-0053-2211. In granting reconsideration in December 2005, EPA again recalculated the State's contribution to be 0.20 $\mu g/m^3$, after removing about 16,500 tons of NO_x and about 5,800 tons of SO_2 emissions, and requested comments on the corrected 2010 inputs. Minnesota Power submitted comments on January 13, 2006, again raising the measurement issue and attaching the May 10, 2005 letter describing as examples the claimed errors at the Boswell and Hibbard units and referring as well to error at the Sherco unit. Minnesota Power also met with EPA officials on February 2, 2006 regarding its measurement concerns.

Nothing in the CAA requires a petitioner's comments to be more specific or to raise every potential explanation for claimed disparities in order to receive a response to timely concerns. *See Appalachian Power Co. v. EPA*, 135 F.3d 791, 817–18 (D.C. Cir. 1998). EPA thus lacked discretion not to address the claimed errors in view of the timely May 2005 letter, petition for

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[10] The May 2005 letter stated that "[t]he total SO_2 emitted from Boswell unit 4 appears to be overstated by a factor of two or 4000 to 5000 tons" and that "SO_2 emissions from the Hibbard Energy Center appear to be significantly overstated, by over 2000 tons. This appears to be a result of how the units can burn a mix of wood waste, natural gas and coal . . . . 80% to 90% of energy input is from wood waste, making overstatement of emissions a prospect if coal combustion is presumed." Letter from Michael Cashin, Sr. Env'tl Eng'r, Minn. Power, to Sam Napolitano, Ofc. of Air & Radiation, EPA (May 10, 2005), docketed as attachment to EPA-HQ-OAR-2003-0053-2284.2 (Jan. 13, 2006).

reconsideration, and January 2006 comments. *See* 42 U.S.C. §§ 7607(d)(6)(B), (7)(B). EPA's suggestion that the May 2005 letter was part of a "data dump" in the reconsideration comments, Resp't's Br. at 53, ignores that the comments referred to the May 2005 letter on the first page. Even if EPA had previously overlooked the May 2005 letter,[11] as of January 2006 there was no need for EPA "to cull through" more than a few pages of comments to confront the claimed errors. *See Nat'l Ass'n of Clean Air Agencies v. EPA*, 489 F.3d 1221, 1231 (D.C. Cir. 2007) (quotation omitted).

EPA twice reanalyzed Minnesota's contribution to address the MERP issue, but never addressed the claimed measurement errors at the Boswell, Hibbard, or Sherco units. On reconsideration, EPA explained that it was not responding because it was "unable to find any [such] instances [of a double value]," i.e., overstated emissions. Reconsideration, 71 Fed. Reg. at 25,318. Yet a double value was identified by Minnesota Power at the Boswell unit and other substantial disparities were identified at the Hibbard and Sherco units in the May 2005 letter and January 2006 comments. EPA's suggestion that "many other factors . . . may change in the future" leading to greater projected than actual emissions, *id.*, is insufficient in view of the fact that these claimed errors, if confirmed by EPA, could affect inclusion of the State in CAIR. *See West Virginia v. EPA*, 362 F.3d at 869.

The inclusion of the State of Minnesota in CAIR was a borderline call, and the State's actual downwind contribution to $PM_{2.5}$ remains uncertain. EPA acknowledges on appeal that

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[11] It is unclear why the May 2005 letter did not become part of the rulemaking record until January 13, 2006 as EPA has not stated that it did not receive the letter. Regardless, the letter was timely presented with the reconsideration comments.

even after two recalculations it is still an open question "whether the information would . . . change[] [EPA's] determination" to include the State in CAIR. Resp't's Br. at 47. Minnesota Power estimates that corrected inputs could remove 25,911.4 tons of emissions and thus reduce the State's contribution below the threshold, to the amount of 0.1878 $\mu g/m^3$. Contrary to EPA's suggestion, Minnesota Power is not challenging the Integrated Planning Model itself, *see Appalachian Power*, 249 F.3d at 1052–53; rather, the claimed data disparities would require a response regardless of methodology. The claims of error involving the Boswell, Hibbard, and Sherco units, including the treatment of Hibbard as a coal rather than predominantly biomass unit, do not appear to be an improper request for a "selective[]" rather than "holistic[]" methodological approach. *See* Reconsideration, 71 Fed. Reg. at 25,318. Instead, Minnesota Power has presented these units as examples to illustrate that the overstatement objection requires a response from EPA. A remand is therefore appropriate. *See Appalachian Power*, 249 F.3d at 1054. On remand, EPA also should respond to Minnesota Power's concern about shifting of heat input allocations between units. *See* Pet'rs' Br. at 23–25.

E. Phase I Compliance Deadline

The Florida Association of Electric Utilities contends that EPA failed to provide adequate notice of the nullification of vintage 2009 NO_x SIP Call allowances that resulted from its acceleration of the first-phase NO_x compliance deadline from January 1, 2010 to January 1, 2009. However, in the NPRM EPA requested comments on the timing of each phase of CAIR, specifically asking "whether the first phase deadline should be as proposed, or adjusted earlier or later, in light of [] competing factors." 69 Fed. Reg. at 4623. EPA's Supplemental Proposal made the same request. *Id.* at 32,690. Because the issue of what allowances may be used in compliance with CAIR's

NO_x program is directly linked with the start of the program, *see* CAIR, 70 Fed. Reg. at 25,285, the resulting nullification was a "logical outgrowth" of changing the compliance deadline. *Ne. Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936, 951 (D.C. Cir. 2004). Petitioner has not demonstrated that it was impracticable to raise such objection within the comment period or that the grounds for such objection arose afterward, much less that such objection is of central relevance. 42 U.S.C. § 7607(d)(7)(B). Although petitioner vaguely alludes to EPA's "incorrect factual assumptions" as a reason mandating reconsideration of the compliance deadline, NO_x Br. at 8, it fails to support this assertion. Therefore, petitioner fails to demonstrate a statutory ground that would require reconsideration.

In any event, EPA's change to the NO_x compliance deadline was not arbitrary. EPA explained that the earlier date is better coordinated with the ozone and fine particulate attainment dates mandated by the CAA. CAIR, 70 Fed. Reg. at 25,216. Having determined that the earlier deadline is preferable, EPA concluded that the change is consistent with its CAA obligation "to require emission reductions for obtaining NAAQS to be achieved as soon as practicable." *Id.*

III. Remedy

The petitioners disagree about the proper remedy, with positions ranging from Minnesota Power's demand that we vacate CAIR with respect to Minnesota to North Carolina's request that we vacate only the Compliance Supplement Pool but remand most of CAIR for EPA to make changes to the compliance date, the set of included states, and the trading program. Unfortunately, we cannot pick and choose portions of CAIR to preserve. "Severance and affirmance of a portion of an administrative regulation is improper if there is 'substantial doubt' that the agency would have adopted the severed portion

on its own." *Davis County Solid Waste Mgmt. & Energy Recovery Special Serv. Dist. v. EPA*, 108 F.3d 1454, 1459 (D.C. Cir. 1997). Whether a regulation is severable "depends on the issuing agency's intent." *North Carolina v. FERC*, 730 F.2d 790, 795–96 (D.C. Cir. 1984). EPA has been quite consistent that CAIR was one, integral action. It developed both the SO_2 and NO_x programs assuming all states would participate in the trading programs as implemented in CAIR's Model Rule, and it modeled the crucial cost-effectiveness of the caps "assum[ing] interstate emissions trading." CAIR, 70 Fed. Reg. at 25,196. The model also took into account "the use of the existing title IV bank of SO_2 allowances." *Id*. Moreover, EPA justified the SO_2 and NO_x portions of CAIR as complementary measures to mitigate $PM_{2.5}$ pollution. *See id*. at 25,184. In sum, CAIR is a single, regional program, as EPA has always maintained, and all its components must stand or fall together.

Indeed, they must fall. We have, in reviewing EPA actions under 42 U.S.C. § 7607(d)(9), ordinarily applied the two-part test of *Allied-Signal, Inc. v. Nuclear Regulatory Comm'n*, 988 F.2d 146, 150–151 (D.C. Cir. 1993), under which this answer "depends on 'the seriousness of the order's deficiencies (and thus the extent of doubt whether the agency chose correctly) and the disruptive consequences of an interim change.'" *See Davis County*, 108 F.3d at 1459 (applying *Allied-Signal* in § 7607(d)(9) review). We are sensitive to the risk of interfering with environmental protection, which is one potential disruptive consequence, *see Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 635 (D.C. Cir. 2000). But the threat of disruptive consequences cannot save a rule when its fundamental flaws "foreclose EPA from promulgating the same standards on remand," *Natural Res. Def. Council v. EPA*, 489 F.3d 1250, 1261–62 (D.C. Cir. 2007).

We must vacate CAIR because very little will "survive[ ] remand in anything approaching recognizable form." *Id*. at

1261. EPA's approach—regionwide caps with no state-specific quantitative contribution determinations or emissions requirements—is fundamentally flawed. Moreover, EPA must redo its analysis from the ground up. It must consider anew which states are included in CAIR, after giving some significance to the phrase "interfere with maintenance" in section 110(a)(2)(D), 42 U.S.C. § 7410(a)(2)(D). It must decide what date, whether 2015 or earlier, is as expeditious as practicable for states to eliminate their significant contributions to downwind nonattainment. The trading program is unlawful, because it does not connect states' emissions reductions to any measure of their own significant contributions. To the contrary, it relates their SO_2 reductions simply to their Title IV allowances, tampering unlawfully with the Title IV trading program. The SO_2 regionwide caps are entirely arbitrary, since EPA based them on irrelevant factors like the existence of the Title IV program. The allocation of state budgets from the NO_x caps is similarly arbitrary because EPA distributed allowances simply in the interest of fairness. It is possible that after rebuilding, a somewhat similar CAIR may emerge; after all, EPA already promulgated the apparently similar NO_x SIP Call eight years ago. But as we have explained, the similarities with the NO_x SIP Call are only superficial, and CAIR's flaws are deep. No amount of tinkering with the rule or revising of the explanations will transform CAIR, as written, into an acceptable rule. Of course the Federal Implementation Plan EPA imposed is intimately connected to CAIR, and we vacate the FIP as well.[12]

Finally, we note that in the absence of CAIR, the NO_x SIP Call trading program will continue, because EPA terminated the

[12] EPA published its decision on North Carolina's petition under 42 U.S.C. § 7426 in the same notice as the FIP, but that decision is subject to challenge in a separate case still pending. Today's decision takes no action with respect to that petition.

program only as part of the CAIR rulemaking. CAIR, 70 Fed. Reg. at 25,317 (codified at 40 C.F.R. § 51.121(r)). The continuation of the NO_x SIP Call should mitigate any disruption that might result from our vacating CAIR at least with regard to NO_x. In addition, downwind states retain their statutory right to petition for immediate relief from unlawful interstate pollution under section 126, 42 U.S.C. § 7426.

To summarize, we grant the petitions of Entergy, SO_2 Petitioners, and Minnesota Power. We grant North Carolina's petition with respect to the "interfere with maintenance" language, CAIR's 2015 compliance date, and the unrestricted trading of allowances; we deny it with respect to EPA's definition of "will" in "will contribute significantly," and the $PM_{2.5}$ contribution threshold. We deny the petitions of the Florida and Texas petitioners, and the Florida Association of Electric Utilities. Accordingly, we vacate CAIR and its associated FIP and remand both to the EPA.

So ordered.