ORAL ARGUMENT SCHEDULED FOR APRIL 13, 2012

No. 11-1302 (and consolidated cases)
COMPLEX

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

EME Homer City Generation, L.P., et al.,
Petitioners,
v.
Environmental Protection Agency, et al.,
Respondents.

On Petition for Review of a Final Order of the
U.S. Environmental Protection Agency

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*Authorities upon which we chiefly rely are marked with an asterisk.

OTHER AUTHORITIES

GLOSSARY

CAA	Clean Air Act
CAMx	Comprehensive Air Quality Model with Extensions
CAIR	Clean Air Interstate Rule
CSAPR	Cross State Air Pollution Rule
EGU	Electric Generating Unit
Envt'l-Interv'sBr.	Brief of Respondent-Intervenor Environmental Organizations
EPA	United States Environmental Protection Agency
EPABr.	Respondent EPA's Brief
FIP	Federal Implementation Plan
Industry/LaborBr.	Opening Brief for Industry and Labor Petitioners
Industry-Resp.Interv'sBr.	Brief of Industry Respondent-Intervenors
IPM	Integrated Planning Model
LNB	Low-NO_X Burner
NAAQS	National Ambient Air Quality Standards
NO_X	Nitrogen Oxides
NSPS	New Source Performance Standards
$PM_{2.5}$	Fine Particulate Matter
SIP	State Implementation Plan

SNCR	Selective Noncatalytic Reduction
SO_2	Sulfur Dioxide
State-Interv'sBr.	Brief of Respondent-Intervenor States

SUMMARY OF ARGUMENT

CSAPR must be vacated. EPA's method for measuring "significant contribution" violated CAA §110(a)(2)(D)(i)(I) by doing precisely what this Court in *North Carolina v. EPA,* 531 F.3d 896, 918 (D.C. Cir. 2008), said EPA "can't" do: "pick a cost for a region, and deem 'significant' any emissions that sources can eliminate more cheaply." In response, EPA simply ignores this holding. Then, in an effort to avoid obvious legal flaws in its approach, EPA claims it did not mean what it said in defining its own methodology. *Compare* 76 FR 48208, 48236 (Aug. 8, 2011) ("[S]tates whose contributions are below [1%] thresholds do not significantly contribute") *with* EPABr. 33 (1% thresholds "say nothing about what . . . should be considered 'significant.'"). Neither EPA's efforts nor its repeated pleas for deference can save a rule that violates the express command of the CAA.

EPA also violated §110(a)(2)(D)(i)(I) in a second, independent respect by imposing reductions exceeding those necessary for "attainment." EPA does not dispute that the statute imposes this limitation and that CSAPR's reductions go beyond attaining NAAQS in most areas. Nevertheless, EPA asserts that the "complexities" of interstate transport preclude compliance with the CAA. But EPA made no such showing in promulgating CSAPR, and its claim is unavailing in any event. For example, EPA could have addressed the issue by examining whether cost thresholds *below* $500/ton would achieve statutorily-sufficient air quality. EPA instead

ignored comments showing lower cost thresholds sufficed, and its brief now ignores the same point.

EPA's responses to our remaining arguments are similarly unavailing. EPA does not and cannot dispute that, measured against its own real-world data, EPA's air quality models illogically predict post-CSAPR air quality will be *worse* than under CAIR even though CSAPR requires *deeper* emissions reductions than CAIR. EPA likewise cannot dispute that its own data showed that CSAPR is unnecessary for many downwind locations to attain and maintain NAAQS. EPA further ignored serious infirmities in the IPM that produced a rash of inaccuracies in emissions budgets. And its response confirms that EPA's compliance schedule was based on the untenable view that industry should have initiated costly compliance efforts even *before* EPA promulgated CSAPR. In short, even putting aside the fact that EPA lacked authority under §110(a)(2)(D)(i)(I) to adopt its methodology in the first place, its implementation of that methodology was patently arbitrary and CSAPR must be vacated.

ARGUMENT

I. EPA'S "SIGNIFICANT CONTRIBUTION" METHODOLOGY IS FATALLY FLAWED.

As we demonstrated (at 19-26), CSAPR's failure to set emissions budgets based on the "amounts" (if any) of each State's "significant contribution" to downwind air quality contravenes the plain terms of CAA §110(a)(2)(D)(i)(I), and this Court's

precedent, *North Carolina*, 531 F.3d 896; *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000) (per curiam). In response, EPA abandons its own "significant contribution" thresholds, ignores a central holding of *North Carolina,* and attempts, *post hoc*, to recast its methodology to fit within *Michigan*. Those efforts are unavailing.

A. EPA Disavows Its Own "Significant Contribution" Methodology.

In CSAPR, EPA employed a two-step approach to set each State's emissions reduction requirements. Industry/LaborBr. 19-20. First, it determined whether to include States in CSAPR based on whether a State was projected to contribute more than 1% of NAAQS to projected nonattainment or maintenance locations. If the State's contribution fell below that threshold, EPA determined it "*d[id] not significantly contribute* to nonattainment or interfere with maintenance of the relevant NAAQS." 76 FR at 48236 (emphasis added); *see also id.* at 48237 (same). Second, for States not excluded in step one, EPA determined emissions budgets based on the costs of EGU emissions reductions. *Id.* at 48248-49, 48257-59.

EPA tries to run away from its rule, asserting now that the 1% threshold "say[s] nothing about what part of each State's contribution should be considered 'significant'" and instead simply "screen[s] out the upwind states with the lowest contributions." EPABr. 33. But EPA's newly minted position is flatly contrary to EPA's express statements in CSAPR that the numerical thresholds identify "states whose contributions do not significantly contribute." 76 FR at 48237. Between the

two versions EPA offers, EPA's statements in CSAPR necessarily trump its *post hoc* litigation position. *Cf. SEC v. Chenery Corp.*, 318 U.S. 80 (1943).

It is understandable that EPA has tried to recharacterize CSAPR. As we explained (at 21-24), CSAPR's "significant contribution" methodology deviates from §110(a)(2)(D)(i)(I) in at least two fundamental respects. First, contrary to the statute's plain language, EPA fails to identify *each State's* "significant contribution" to downwind air quality and instead bases emissions budgets on uniform cost controls. Second, the application of those cost controls permits EPA to require a State to reduce contributions *below* the 1% threshold that EPA set to determine what is *not* "significant." Industry/LaborBr. 21-24.

Once EPA identified States in step one, it analyzed the emissions reductions that each State could achieve at a specific uniform cost threshold. In so doing, EPA did not consider a State's resulting "contribution" in relation to the 1% numerical threshold. EPA's budgets, therefore, simply require *all* reductions available at or below the cost threshold. Because EPA only analyzed whether its uniform cost thresholds *collectively* resolved downwind nonattainment, 76 FR at 48255, 48259, a State may well be forced to eliminate portions of its contribution that EPA has deemed indisputably "insignificant" in order to balance the contributions of other upwind States. Regardless of the level of deference EPA seeks, this far exceeds EPA's authority under §110(a)(2)(D)(i)(I), which requires state-specific consideration of "significant contribution."

EPA concedes it did not determine whether its blanket application of uniform cost-thresholds at the second step may require a State to make emissions reductions *below* the level EPA had already deemed insignificant at the first step. EPABr. 33 n.20 (acknowledging "this was not an issue that EPA analyzed in a direct fashion for the rule"). That flaw itself requires that CSAPR be vacated. CAA §110(a)(2)(D)(i)(I) authorizes EPA to address only the "amount" of each State's "*significant* contribution."

EPA acknowledges (at 32-33) that it is "possible" that an upwind State will be required to "reduc[e] its emissions below that needed to reach the one percent screening level." Yet it argues that this scenario is "hypothetical[]." *Id.* This response ignores that the statute limits EPA's authority to addressing only "significant contributions." EPA was thus obligated to ensure that its rule did not require reductions below its own 1% "insignificance" level. *Chamber of Commerce v. SEC*, 412 F.3d 133, 140 (D.C. Cir. 2005) ("rule is 'arbitrary and capricious' if agency fails to consider factors 'it must consider under its organic statute'"). But EPA did not even look. Moreover, given CSAPR's deep emissions reductions, EPA's suggestion that this mandated-reductions-below-its-1%-threshold scenario is "extremely unlikely" rings hollow. Indeed, intervenors acknowledge that "elimination of these sub-threshold contributions is an essential component of CSAPR." Industry-Resp.Interv'sBr. 6-7.

In a footnote (at 33 n.20), EPA now says it "believes" no State would go below the 1% threshold as to $PM_{2.5}$. But in making that assessment, EPA used "base case

nitrate contributions"—*i.e.*, the amount of nitrate-based contributions to $PM_{2.5}$ formation *without* the imposition of CSAPR's emissions budgets. This renders EPA's calculations meaningless. EPA does not even attempt to show the level of "contribution" post-CSAPR, underscoring EPA's failure to compile data to undertake the necessary calculations. Moreover, EPA has *no* data showing a State's remaining *ozone* contribution after CSAPR is implemented. And having conceded it did not even attempt to measure each State's contribution to $PM_{2.5}$ *or* ozone after the imposition of its budgets, EPA cannot defend its rule based on an analysis sketched out for the first time in a footnote in its appellate brief. *See Chenery*, 318 U.S. at 87.[1]

[1] EPA erroneously contends (at 32) that petitioners have "likely" waived this argument. But commenters expressly argued that EPA should not use uniform cost thresholds to require a State to eliminate more than its "significant contribution." *See e.g.*, Tennessee Comments, EPA-HQ-OAR-2009-0491-0553, at 1 (JA__) (urging that "[a] lower cost threshold [than EPA's proposed thresholds] … be considered for any State that can reduce their contribution below 1%" at such lower thresholds and that EPA indicate "independently of cost, the amounts necessary to eliminate the significant contribution and interference with maintenance from upwind States"); Wisconsin Comments, EPA-HQ-OAR-2009-0491-2829, at 7 (JA__) (urging EPA to determine significant contribution on the basis of air quality and not "arbitrarily low cost threshold[s]"). Indeed, commenters proposed similar approaches before EPA issued its Notice, but EPA expressly rejected these suggestions. *See* 75 FR 45210, 45299 (Aug. 2, 2010) (noting that EPA met with stakeholders who suggested a "variety of ideas" including, in EPA parlance, "air quality-only approaches" that would have precluded EPA from reducing a State's "contribution" below a specified air quality level). The requirements for determining "significant contribution" were also posed by *North Carolina*'s remand and considered by EPA, and would thus be before this Court anyway. *See NRDC v. EPA*, 824 F.2d 1146, 1151 (D.C. Cir. 1987) (en banc).

B. EPA Ignores *North Carolina*'s Most Salient Holding.

Remarkably, while claiming (at 23) that our interpretation of *North Carolina* is "mistaken," EPA does not address the decision's most salient holding. *North Carolina* invalidated CAIR because EPA failed to set budgets based on "each state's significant contribution to specific downwind nonattainment areas." 531 F.3d at 907; *see also id.* at 918. As we pointed out (at 24), *North Carolina* specifically held that "EPA can't just pick a cost for a region, and deem 'significant' any emissions that sources can eliminate more cheaply." 531 F.3d at 918. That is precisely what CSAPR does; yet EPA fails even to acknowledge this critical holding.

EPA instead suggests that *North Carolina* is inapposite because it only addressed EPA's use of fuel factors and an unlimited trading program. According to EPA (at 24), CSAPR "faithfully responded" to *North Carolina* "by not using fuel factors and by adopting 'assurance provisions'" for CSAPR's trading program. But EPA ignores entirely the Court's *rationale* for rejecting EPA's approach to fuel factors: §110(a)(2)(D)(i)(I), "[e]ach state must eliminate its own significant contribution to downwind pollution" and EPA "may not require some states to exceed the mark." 531 F.3d at 921. Likewise, *North Carolina* faulted CAIR's trading program because 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." *Id.* at 907. Just because CSAPR does not use fuel factors or retain CAIR's trading program does not mean that EPA's methodology is lawful when it forces

some States to reduce more than their significant contribution. CSAPR may rely on a different *means* of achieving that result, but the result is just as *ultra vires* as in *North Carolina*.

EPA claims (at 34-36) that it engaged in a state-specific analysis in setting emissions budgets. Although EPA determined the reductions that could be achieved in each State at various cost thresholds, s*ee* 76 FR at 48249-52; Significant Contribution TSD at 10-15 (JA__-__), EPA ultimately chose cost thresholds that were applied *uniformly* to the States (or crude groupings of States). Thus, EPA's alleged State-by-State analysis bore no relation to *each State's* contribution to downwind nonattainment, and EPA confirmed only that upwind States *collectively* reduced emissions enough to address nonattainment, 76 FR at 48255, 48258-59—in violation of *North Carolina*. Indeed, as noted, EPA concedes (at 33 n.20, 36) it did not evaluate the extent to which each State's reductions would address that State's own contribution or whether they would force a State to eliminate emissions that EPA concluded are insignificant.

EPA and its intervenors contend that "complexities" of multiple, overlapping upwind and downwind States make it impossible to determine and regulate "significant contributions" on the state-specific basis that *North Carolina* requires. They suggest doing so would require either massive over-control, EPABr. 19, 28-30, or under-control, State-Interv'sBr. 16-17. But even if an agency could ignore §110(a)(2)(D)(i)(I)'s plain language because implementing it would be difficult, EPA

and intervenors offer no reason (and none exists) that EPA could not objectively define a State's contribution by reference to actual impact on the most affected downwind State (thus avoiding undercontrol) and then, consistent with *Michigan*, alleviate any excessive burden that would result (thus avoiding over-control).

C. EPA's Attempt To Recast Its Methodology To Fit Within *Michigan* Fails.

Having now (wrongly) claimed (at 33) that its use of the 1% threshold "say[s] nothing" about the measurement of significant contribution, EPA grasps at straws in claiming (at 26-27) that *Michigan* endorsed CSAPR's methodology (or at least EPA's revisionist view of that methodology). In *Michigan*, EPA relied on cost-considerations to "reduce" the emissions reductions required by States determined to be "significant contributors." 213 F.3d at 675. The Court recognized EPA had "first determined that 23 jurisdictions are 'significant' contributors" based on each State's contribution, *id.*, but held EPA could thereafter consider costs to "terminat[e]" only a "subset of each state's contribution," *id.* It based that holding on the common-sense interpretive principle that Congress intends for agencies "to consider the costs of demanding *higher* levels of environmental benefit" and reduce the level of control required when costs are disproportionate to benefits. *Id.* at 679 (emphasis added).

By contrast, under EPA's new interpretation of its methodology, CSAPR relied almost exclusively on cost considerations to *define* "significant contribution." EPABr. 17-18, 22, 33. Moreover, instead of using cost to *reduce* the amount of significant

contribution that a State must actually eliminate (as in *Michigan*), CSAPR's reliance on costs makes it possible that States will be required to address contributions *below* EPA's 1% significant contribution threshold. *See supra* pp. 4-5. In that regard, EPA's reliance on costs in CSAPR would, if anything, *expand* the reach of its jurisdiction under §110(a)(2)(D)(i)(I), allowing EPA to impose *greater* demands on States beyond any significant contribution. Neither §110(a)(2)(D)(i)(I) nor *Michigan* remotely countenances that entirely different use of costs.

Finally, we are not advocating an "air quality-only" approach. *Cf.* EPABr. 30. Under *Michigan*, costs may be used to reduce the level of emissions reductions required by a State that has already been "marked [as] a 'significant contributor.'" 213 F.3d at 675. But the novel and expansive use of costs by CSAPR is unlawful.

II. EPA LACKS AUTHORITY TO MANDATE CONTROLS BEYOND THOSE NEEDED FOR ATTAINMENT.

As we explained (at 26), under the plain language of §110(a)(2)(D)(i)(I), EPA lacks authority to "prohibit" upwind emissions based on downwind States that can achieve and maintain NAAQS. EPA does not dispute this. EPABr. 36-39. Indeed, EPA rejected alternative approaches to CSAPR precisely because it concluded they would have resulted in "substantial over-control compared with cumulative air quality improvements needed for all monitoring locations to meet the NAAQS standards." Alternative Significant Contribution Approaches TSD at 6 (JA__).

Rather than comply with the CAA's mandate that downwind States have primary responsibility for ensuring they meet NAAQS, EPA shifted that burden to upwind States and then further required upwind States to make far greater emissions reductions than necessary for downwind States to attain NAAQS. *See* Industry/LaborBr. 26-29. EPA dismisses (at 37) this statutory violation as "entirely theoretical." But under EPA's modeling, the problem is real—CSAPR results in downwind receptors that are superior to attainment in many instances. Industry/LaborBr. 27-29.

EPA's attempts to justify this unlawful outcome by explaining that addressing contribution in one area "may coincidentally" bring monitors in other areas below attainment fall flat. EPA Br. 37-38; *see also* Envt'l-Interv'sBr. 12-15; State-Interv'sBr. 21. EPA does not—and cannot—claim this is always the case for CSAPR's excessive results. More critically, EPA never analyzed the issue. Had it done so, EPA would have discovered that it could have addressed the issue by, for example, considering cost curves lower than $500/ton or more refined groupings of States. *See infra* §III.[2]

[2] Contrary to EPA's suggestion (at 37-38), we do not argue there can be *no* over-control. Petitioners recognize that regulating an upwind State linked to multiple downwind States may result in some degree of "over-control" at some of the downwind States in order to reduce the significant contribution to nonattainment that may exist at the one downwind State where the upwind State has the greatest impact. EPA, however, never demonstrated its over-control was limited to that scenario because EPA never considered the issue.

III. EPA'S APPLICATION OF ITS METHODOLOGY IS ARBITRARY.

Even if CSAPR's methodology were authorized by §110(a)(2)(D)(i)(I), EPA's subsequent application was arbitrary.

Cost Thresholds. EPA offers no meaningful response to our argument (at 31-34) that it arbitrarily failed to consider whether lower (*i.e.*, less expensive) SO_2 or NO_X "cost thresholds" would still achieve NAAQS at "problem" locations. Indeed, EPA does not respond at all to our argument (at 32) that EPA ignored its own record data showing that lower-cost SO_2 controls achieved the same air quality benefits as the more stringent controls it imposed. *Compare* Notice-Stage Significant Contribution TSD at 6, 30-31 (JA__, __-__) (at proposal, "[f]or SO_2 emissions, the lowest marginal cost that EPA modeled is $100 per ton") *with* Significant Contribution TSD at 5 (at final-rule stage, "[f]or SO_2 emissions, the lowest cost threshold that EPA examined was $500 per ton") (JA__). EPA's failure to "consider evidence bearing on the issue before it constitutes arbitrary agency action." *Butte Cnty., v. Hogen*, 613 F.3d 190, 194 (D.C. Cir. 2010).

With regard to NO_X controls, EPA merely resurrects (at 39) its *ipse dixit* from CSAPR: it selected a $500/ton threshold "because it represented the minimum level that would secure 'a significant amount of lowest-cost NO_X emissions reductions from EGUs.'" But, having never looked below $500/ton, EPA never explains how it would know this. *Cf. USTA v. FCC*, 188 F.3d 521, 525 (D.C. Cir. 1999) (reversing agency for failing to provide substantial basis for proposed cost factor). EPA also

suggests (at 39) that the $500/ton floor was necessary to prevent sources from ceasing to operate some existing controls. But, as explained, EPA has no authority to mandate the *status quo* control levels where evidence shows less costly controls would allow downwind States to achieve and maintain NAAQS. Industry/LaborBr. 32.

In defending its decision to lump together into Group 1 all States linked to any downwind receptor with SO_2 issues not resolved at $500/ton, EPA asserts (in a footnote) that because *Michigan* allowed it to use "a single, uniform cost-effectiveness criterion," it was reasonable for EPA to use two. EPABr. 40-41 n.26. But, again, *Michigan*'s "logic only goes so far. It stops at the point where EPA is no longer effectuating its statutory mandate." *North Carolina*, 531 F.3d at 908. Where, as here, the data show that just a few Group 1 States drive the $2,300/ton threshold (because they have the largest downwind contribution), Industry/LaborBr. 34, EPA's refusal to address each Group 1 State's significant contribution individually is arbitrary.

One-Way Ratchet. EPA concedes (at 42) it deviated from its methodology for certain States by making inconsistent adjustments that always resulted in lowering budgets. Given EPA's litigating position that "significant contribution" is appropriately determined by costs, EPA's *ad hoc* departure from that analysis exceeds its authority even under EPA's approach. *Cf.* Industry/LaborBr. 36.

Nor is EPA's deviation "minor." EPABr. 42. For example, EPA's arbitrary ratchet cut Georgia's 2014 SO_2 budget by 40%, and Kansas's 2014 budget was set

25% below what Kansas sources can achieve for $500/ton. Industry/LaborBr. 35-36 & n.18; Significant Contribution TSD at 14 (JA__).[3]

EPA's defense is unavailing. For States like Georgia, EPA says (at 43) it was only "faithfully implement[ing]" the $500/ton threshold. But EPA cannot explain why, if a higher budget eliminates Georgia's "significant contribution" in 2012, a lower budget is required in 2014. Nor does it explain why States that legislated emissions reductions should then have their budgets further slashed as a result. *Cf.* Industry/LaborBr. 35. This approach highlights how EPA's definition of "significant contribution" is disconnected both from any fixed determination of individual State "significant contribution" and from downwind air quality.

Conversely, for States like Kansas, EPA reverses course and *refuses* to implement a $500/ton threshold. EPA claims (at 42) that it capped such States at 2012 budgets to prevent "'emissions leakage'" "from certain States to others as the result of efforts by utilities to minimize costs." But when EPA determined that downwind air quality problems were resolved by its budgets, it did so with such States at their *higher* (*i.e.*, pre-ratchet) 2014 SO_2 budgets. *E.g.*, Significant Contribution TSD at 8-9, 15 (JA __-__, __) (projecting air quality using Kansas's 2014 SO_2 budget of 55,308 tons). Thus, EPA's analysis already accounted for such "leakage." By further

[3] Although EPA subsequently adjusted Georgia's 2014 SO_2 budget to correct conceded errors, 77 FR 10342, 10343 (Feb. 21, 2012), it did not fix its one-way ratchet, which decreases Georgia's budget by 14.5% in 2014. *Id.*

ratcheting such States, EPA does not ensure that each State eliminates its own "significant contribution," but instead "require[s] some states to exceed the mark." *North Carolina*, 531 F.3d at 921.[4]

IV. EPA'S AIR QUALITY MODELING IS ARBITRARY.

1. EPA ignores our argument (at 37-42) that it arbitrarily refused to compare its air quality model results "against real outcomes," *NRDC v. Jackson*, 650 F.3d 662, 665 (7th Cir. 2011), and such comparisons would have demonstrated that EPA's projections were flawed. CSAPR indisputably requires deeper emissions reductions than CAIR. Industry/LaborBr. n.23. As we showed (at 37-42), however, EPA's models predict that the reductions mandated by CSAPR would paradoxically produce poorer air quality than CAIR *in fact* produced. Indeed, the thrust of EPA's analysis is that CSAPR's more aggressive reductions are necessary to achieve attainment at locations that are in attainment today under CAIR's less stringent requirements. Such projections cannot be right.

The real-world data thus demonstrate that EPA's models overstate how much States "contribute" to nonattainment and understate the extent to which more modest emissions reductions would achieve the NAAQS. Commenters urged that EPA "verify" its projections against the "most recent ambient data," particularly at

[4] EPA's "leakage" argument—which is premised on the cost differential between SO_2 Group 1 and Group 2 States in 2014 (76 FR at 48261-62)—also cannot explain the downward ratchet for NO_X, where States are subject to a uniform $500/ton threshold.

"receptors [that] are already attaining the ozone and/or $PM_{2.5}$ NAAQS," 76 FR at 48230, but EPA refused. That was arbitrary. *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1054 (D.C. Cir. 2001) (per curiam).

In response, EPA simply repeats (at 74-78) the *non sequitur* that EPA needed to estimate air quality without CAIR and thus could not assume that CAIR would remain in effect. But that proposition hardly renders the real-world results from CAIR "irrelevant." EPABr. 74. That emission levels mandated by CAIR led to attainment is highly relevant to whether EPA's CSAPR projections—which illogically predict that deeper, CSAPR-level reductions are necessary to achieve attainment (or will produce poorer air quality) at the same locations—are reliable.[5]

These comparisons alone demonstrate that EPA's projections are arbitrary. But EPA's projections are also contrary to its own findings about expected air quality at purported "problem" locations. For example, EPA projects Allegan, Michigan will be in non-attainment notwithstanding EPA's own findings that the receptor would remain in attainment going forward even *without CAIR*. 75 FR 42018, 42026-28 (July 20, 2010). EPA's models make predictions about air quality in Madison, Illinois that are contrary to its own findings about Madison's air quality. Industry/LaborBr. 39-40

[5] EPA's alternative air quality benchmarks (at 78) are irrelevant. They merely show, unsurprisingly, that air quality under CSAPR will be better than if CSAPR were not in effect. That says nothing about whether the *magnitude* of EPA's air quality projections is reasonable.

(discussing 76 FR 29652, 29654 (May 23, 2011)). And EPA ultimately concedes (at 79 & n.43) that its models make counter-factual predictions in numerous instances.

Rather than confront these problems, EPA complains (at 74) that *some* of our other examples rely in part on extra-record 2010 data that were not certified when CSAPR issued. But these *examples* merely illustrate that EPA's "projections can be benchmarked against real-world data." Industry/LaborBr. 38. In all events, EPA considered and relied on preliminary 2010 data and found that $PM_{2.5}$ and ozone formation was "considerably higher" than in 2009, 76 FR at 48231—making our reference to 2010 data *conservative*.[6] EPA thus does not contend use of certified (versus preliminary) data matters.

Finally, EPA asserts (at 75-76) it appropriately ignored recent real-world data because those data include 2009, which had below-average $PM_{2.5}$ and ozone levels. This argument is meritless. As discussed further below, EPA's models intentionally started with a 2005 "base year" to project future air quality because 2005 had "relatively high" $PM_{2.5}$ and ozone formation. 76 FR at 48230. EPA's position thus amounts to the arbitrary claim that it may use "high" data to project future air quality while ignoring contradictory "low" data. *Cf. Ass'n of Oil Pipe Lines v. FERC*, 281 F.3d

[6] Thus, EPA's air quality models predicted counter-factual results even judged against 2009 certified data. *See* Luminant Stay Reply at 13-14 & n.5 (Doc. 1336040).

239, 245 (D.C. Cir. 2002) (shifting and inconsistent treatment of outlier data is arbitrary).[7]

2. Petitioners identified deficiencies in EPA's modeling that might explain these flawed results. While EPA takes issue with some of our examples,[8] it misses the fundamental point: regardless of whether those examples help explain the models' flawed results, EPA's models make undeniably flawed projections of future air quality. In all events, EPA's defense of its use of "atypical" air quality data in its models confirms that this error contributed to the models' flaws. *Cf.* Industry/LaborBr. 44. EPA concedes (at 69 & n.37) it specifically "favored" 2005 air quality data as the

[7] In any event, the portion of CSAPR EPA cites did not address the argument that EPA should have benchmarked its air quality modeling against recent real-world data. EPA addressed a different question: whether it should have reduced its maximum air quality projections to account for the post-CAIR downward trend in pollutant concentration. 76 FR at 48231. In this regard, EPA never compared modeled results against recent real-world air quality data, let alone found that 2009 data could not be used for such comparisons. Nor could it. EPA has expressly relied on 2009 data to find that air quality satisfies NAAQS. *See, e.g.*, 76 FR 29652 (May, 23, 2011); 75 FR 42018; 75 FR 36316 (June 25, 2010).

[8] EPA does not address our argument (at 43-44) that it failed to account for controls that protect air quality in Allegan and Madison, errors that led to improperly including several States in CSAPR. *See* 76 FR at 48241, 48243, 48246. Even as to the examples it addressed, EPA's arguments (at 79-80) are unpersuasive. Although the asphalt NESHAP does not regulate SO_2 or NO_X, the NESHAP does impose limits on PM which, in turn, assist in eliminating $PM_{2.5}$ nonattainment. 74 FR 63236, 63260 & 63264 (Dec. 2, 2009). EPA is wrong that the 2009 NSPS apply only to new thermal dryers; they extend to reconstructed and modified *existing* dryers. 74 FR 51950, 51978-99 (Oct. 8, 2009).

starting point for its projections because 2005 meteorological conditions were unusually "conducive" to $PM_{2.5}$ and ozone formation. *See also* 76 FR at 48230.[9]

3. EPA does not dispute our showing (at 45) that it ignored its own projections that, because of independent State regulation and other industry actions, numerous "problem" receptors will satisfy NAAQS by 2014 even if EPA imposed *no* emissions budgets under §110(a)(2)(D)(i)(I). *See* EPABr. 82-83. Nor does EPA dispute that it did not make 2013 air quality predictions. EPA's imposition of post-2012 budgets therefore contravenes §110(a)(2)(D)(i)(I). EPA cannot "prohibit" any "amounts" of emissions once a downwind State attains NAAQS. *See* §II.

EPA does not dispute that a significant number of receptors would attain NAAQS in 2014 even without CAIR/CSAPR, but merely quibbles about precisely how many. EPABr. 83-84 nn.47-48. But even under EPA's view, this Court should still vacate EPA's post-2012 budgets. EPA imposed emissions budgets on States that are linked solely to receptors that indisputably will achieve attainment by 2014 even absent CSAPR. For example, Florida is linked only to Harris, Texas, but EPA projects that without CAIR/CSAPR, Harris will attain ozone NAAQS in 2014. Air Quality TSD at B30 (JA__). So too for Texas. 76 FR at 48243 (linking Texas solely

[9] EPA insists (at 69 n.37), however, that using outlier air quality data as the starting point for projections was necessary to make its models "responsive to changes in emissions in the future." 76 FR at 48230. Even if EPA's preferred base-year data were necessary to ensure its models accurately calculated relative *changes* in air quality, *id.*, EPA failed to adjust for its use of a "high" starting point and resulting "high" $PM_{2.5}$ and ozone projections.

to Madison for $PM_{2.5}$); Air Quality TSD at B16, B70 (projected Madison air quality within NAAQS) (JA__, __). Indeed, given the "web of interconnecting upwind/downwind linkages" purportedly reflected in EPA's methodology, EPABr. 37-38, correcting a significant number of "problem" receptors would require EPA to revise and recalculate linkages and budgets.

4. In response to our demonstration (at 46) that EPA's 2012 projections did not justify its 2012 budgets, EPA argues (at 86, 90) that the CAA attainment date provision required the 2012 budgets. But EPA (i) ignores the statutory default attainment date for $PM_{2.5}$ of 5 years from nonattainment-area designation (and that the statutory default dates for ozone can be even longer), and (ii) has not found attainment can "practicab[ly]" be "achieved" before the default deadline. 42 U.S.C. §§7502(a)(2)(A), 7511; *see* 76 FR at 48277. Accordingly, and as EPA acknowledged, in many instances, downwind States are *not currently* required to attain the NAAQS at issue by 2012 and States can obtain compliance extensions for the $PM_{2.5}$ NAAQS. 76 FR at 48277-79.[10]

The CAA imposes the primary burden of achieving attainment on the State with nonattainment areas and gives them years to reach attainment.

[10] *See also* EPA, Fact Sheet, Final Area Designations for the 24-hour Fine Particle Standard Established in 2006, http://www.epa.gov/pmdesignations/2006standards/documents/2009-10-08/factsheet.htm. For example, Houston (including Harris county receptors to which Florida and South Carolina are solely linked) has until 2019 for ozone attainment, 76 FR at 48277-79, and the 24-hour $PM_{2.5}$ attainment deadline is not until December 2014, *see id.*

Industry/LaborBr. 24-26, 46. By imposing budgets in 2012 before many attainment deadlines, EPA essentially shifted that burden—temporally and substantively—to upwind States.

Alternatively, EPA argues (at 88) that *North Carolina* required it to adopt an "expeditious compliance schedule." But *North Carolina* did not say EPA should adopt a schedule that is impracticable and unprecedented. *See infra* §VI. Rather, the Court faulted EPA for failing to explain why it delayed full implementation of CAIR until 5 years after the then-applicable NAAQS attainment deadlines. 531 F.3d at 912. Here, EPA made the mirror-image error—requiring that upwind States reduce emissions years *before* attainment deadlines and even when EPA expects attainment to occur by the deadlines without CSAPR. *See supra* p. 19.

V. EPA USED ARBITRARY METHODS TO DETERMINE BUDGETS.

As we explained (at 47-52), EPA's IPM projections used to develop CSAPR's budgets are flawed by critical limitations, omissions, and faulty assumptions. Petitioners provided two examples of modeling flaws that caused understated budgets. *Id.* at 48-50 (failure to consider intraregional transmission constraints and cogeneration-unit steam production). EPA concedes these limitations and has no defense for IPM's basic flaws.

EPA is entitled to deference when applying computer modeling (EPABr. 59, 64) only when it has "explain[ed] the assumptions and methodology used" and provided a "complete analytic defense" of its model. *Appalachian Power*, 249 F.3d at

1052 (citations omitted). Because EPA failed to do so for its IPM results, the model's predictions merit no deference. EPA's IPM modeling purports to account for *interregional* transmission constraints but admittedly fails to account for *local and intraregional* constraints.[11] Accordingly, while IPM predicts sufficient generation capacity will exist to meet regional demand, IPM ignores the impacts of local and intraregional transmission constraints.[12] Thus, the *mix* of generating units that actually must run to meet demand differs substantially from what IPM predicts, and the "real-world" generation mix will produce different levels of emissions than IPM predicts.[13] IPM, therefore, sets emissions budgets based on generation forecasts that bear no relationship to reality. Industry/LaborBr. 48-49.

EPA attempts to deflect criticism of IPM's failings by blaming petitioners. EPABr. 62 ("[S]uch constraints are frequently treated as confidential business information and thus rarely made publicly available"). But EPA has a duty to

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[11] EPA received substantial comment on CSAPR's potential to threaten reliability. Primary Response to Comments at 1498-1526 (JA__-__). Rather than address the issue head-on, EPA abdicated the problem to local planners. *See id.* at 1505 ("EPA recognizes that local grid issues, such as shifts in congestion patterns and transmission impacts … will need to be coordinated at the utility and regional levels ….").

[12] Industry Respondent-Intervenors (at 21–22) cite extra-record material for the proposition that adequate generating capacity will be available, but do not address IPM's failure to account for local and intraregional constraints in setting budgets.

[13] For example, IPM could predict that a region will run only gas-fired units and set a budget based on this prediction. If the coal-fired units in that region must run due to local transmission issues, emissions from the same amount of generation would be higher than erroneously predicted by IPM.

demonstrate that use of a flawed IPM was the "product of reasoned decisionmaking." *A.L. Pharma, Inc. v. Shalala*, 62 F.3d 1484, 1492 (D.C. Cir. 1995). If EPA had insufficient information for IPM, it was EPA's duty to cure that defect. EPA cannot blame petitioners for the failings of an inaccurate and unrealistic model.

EPA fails to explain or justify this major methodological flaw. EPA's argument (at 63) that the localized transmission constraints were addressed by EPA "chang[ing] its methodology for allocating allowances to individual units to rely on historic data rather than IPM projections," is simply false. The manner in which EPA *allocates* allowances to individual sources has no bearing on the flawed levels of the statewide budgets. Similarly, EPA touts (at 63-64) CSAPR's "inherent flexibility" in the form of trading or other compliance options. Yet these flexibilities ignore the methodological flaws and can succeed only if budgets are set properly in the first place. *See* Industry/LaborBr. 48-49.

EPA's claim (at 62) that unit-level IPM errors will balance out when aggregated is meritless.[14] Indeed, such claims are belied by EPA's Error Corrections Rule, which attempts to address some of the unit-level errors through arithmetic adjustments, 77 FR 10324, and which resulted in significant changes to some statewide budgets, Industry/LaborBr. 51.

[14] Contrary to EPA's assertion (at 60), the statewide budgets are the result of aggregation of unit-level predictions. EPA later acknowledges this. EPA Br. 62 (IPM discrepancies "are statistically likely to negate themselves when aggregated to the State level.").

IPM's inability to account for cogeneration-unit steam production highlights the model's methodological failings. Although EPA claims (at 65) that IPM addressed this through application of a "multiplier" to cogeneration units' electricity-generating emissions, the multiplier is useless when IPM incorrectly predicts that many cogeneration units *will not operate at all*. Industry/LaborBr. 49-50. Further, in many instances, the multiplier is "1.00," meaning EPA made no adjustment. *See* Base Case v4.10 Supplement at 4–34 (JA__-__). Such errors are not overcome by EPA's claims (at 65) that cogeneration units comprise "only" 6% of total generating capacity covered by IPM. Six percent is not an insignificant amount—it is almost 12 times what EPA believes (at 61) will be CSAPR's overall effect on nationwide operational capacity.

Finally, EPA fails (at 65-67) to justify its failure to benchmark IPM's predictions against *real-world data*. *See Jackson,* 650 F.3d at 665-66. EPA's failure to do so is yet another reason the IPM predictions on which CSAPR relies are flawed, deserve no deference, and are not the product of reasoned decisionmaking.

VI. CSAPR'S DEADLINES ARE ARBITRARY AND UNLAWFUL.

CSAPR's deadlines can stand only if they are "practicable." *North Carolina*, 531 F.3d at 930. EPA failed to make that showing.

A. CSAPR's Deadlines Are Premised On An Unlawful And Arbitrary Assumption Of Retroactive Compliance.

EPA defends its deadlines based on the erroneous proposition that compliance with CSAPR should have begun *before* CSAPR's promulgation. *See* EPABr. 86-88, 89 n.50; 76 FR at 48281, 48283. But EPA does not, and cannot, dispute that it lacks authority to regulate retroactively. *See* Industry/LaborBr. 57.

Contrary to EPA's unsupported suggestion (at 86), petitioners have a record of meeting final regulatory requirements where adequate time is allowed *after* promulgation. *See* Industry/LaborBr. 52 n.44. But EPA cannot compel costly compliance with requirements *before final rulemaking determines* those requirements—particularly here, where CSAPR's structure and critical elements were unknown pending final EPA action:

- EPA proposed three *mutually exclusive* regulatory regimes, each with distinct requirements. 75 FR at 45303-33. It was arbitrary to premise CSAPR's deadlines on the theory that sources should have made potentially great, unrecoverable expenditures to meet *proposed* options that could be discarded at final rulemaking;

- EPA's three "notices of data availability"[15] introduced potential revisions to key provisions;
- The final rule—including budgets and covered States—differed markedly from EPA's proposal; and
- Even after CSAPR's promulgation, EPA revised it, with three amendatory rules.

Accordingly, it was not "easy to anticipate" (EPABr. 96) CSAPR's requirements. Moreover, contrary to EPA and intervenors' suggestions, *North Carolina* did not foreordain "tighten[ed] emission controls," Industry-Resp.Interv'sBr.16—this Court *never* mandated stricter-than-CAIR budgets or required unreasonable deadlines premised on retroactive compliance.

EPA's reference (at 87) to the time that has passed since NAAQS promulgation misses the mark because EGUs were not told of their obligations before CSAPR's promulgation. *EPA* is responsible for having adopted the legally unsound CAIR and then taking *three years* to replace it. Indeed, EPA in November 2008 announced that its CAIR-replacement rulemaking would "take about two years" and "it would [then] take sources and States *several more years* to make the transition to

[15] 75 FR 53613 (Sept. 1, 2010); 75 FR 66055 (Oct. 27, 2010); 76 FR 1109 (Jan. 7, 2011).

the new regulatory regime" (emphasis added).[16] EPA cannot now justify deadlines premised on pre-promulgation compliance with a "new regulatory regime," implementation of which EPA made clear would take "several more years" *after* promulgation, not the mere months CSAPR allowed.

B. CSAPR's Deadlines Are Not "Practicable."

EPA's own data demonstrate that most CSAPR States' 2012 budgets are *lower* than their 2010 emissions *and* that aggregate CSAPR 2012 budgets are lower than aggregate 2010 emissions, thus requiring large emissions reductions within months. Notwithstanding EPA's assurances (at 90-92 & n.53):

- 2010 SO_2 emissions in 61% of covered States (14 of 23) exceeded those States' 2012 CSAPR SO_2 budgets;
- 2010 annual- and seasonal-NO_x emissions in 78% (18 of 23) and 75% (15 of 20) of States exceeded those States' respective 2012 annual- and seasonal-NOx budgets;
- Aggregate 2010 SO_2 emissions in Group 1 and Group 2 States exceeded aggregated 2012 budgets by 23% and 32%, respectively; and

[16] EPA Reply in Support of Rehearing Petition at 5, Doc. 1150104, *North Carolina v. EPA,* No. 05-1244 (D.C. Cir. Nov. 17, 2008).

- Aggregate 2010 annual- and seasonal-NO_x emissions in covered States exceeded aggregated 2012 budgets by 11% and 13.5%, respectively.[17]

Necessary reductions cannot be achieved without retrofits of long-lead-time controls like low-NO_x burner (LNB), flue gas desulfurization (FGD), and SCR equipment. In the rulemaking, EPA recognized that retrofits of NO_x and SO_2 controls (including LNB and FGD) were needed. 76 FR at 48280-82.[18] Although EPA (at 94-95) cites hypothetical scenarios suggesting no FGD retrofits are "required," EPA admitted this "no-FGD" scenario entails escalated costs and pre-2014 retrofits of yet *another* technology (dry sorbent injection), 76 FR at 48283, the feasibility of which EPA never subjected to public comment.

EPA, in any event, failed to justify its claims that control retrofits are feasible within CSAPR's deadlines. For example:

- **LNB.** EPA's argument that CSAPR allowed adequate time to retrofit LNBs by the January 2012 deadline is baseless. EPA conceded its "aggressive" 6-month LNB-retrofit schedule likely required pre-promulgation compliance. *Id.* at 48281.

[17] "[A]ssurance levels" (EPABr. 92 n.53) do not solve the region-wide problem: Any State's above-budget emissions must effectively be deducted (through allowance transfers) from other States' budgets.

[18] Industry Respondent-Intervenors' assertion (at 16) that meeting 2012 deadlines involves no new retrofits is contradicted by EPA. 76 FR at 48280 ("[a]ssum[ing] … [LNB] retrofits for the January 1, 2012 deadline").

- **SCR.** In another contemporaneous rulemaking, EPA announced that, based on its "independent investigation" and "*confirm[ed]*" by an expert's report submitted with comments *in the CSAPR rulemaking*, SCR retrofits "average … 37 months," 76 FR 52388, 52408 (Aug. 22, 2011) (emphasis added),[19] rather than the 21 months EPA assumed in CSAPR, 75 FR at 45281, 45286; 76 FR at 48282.

- **FGD.** EPA-cited "examples" of FGD retrofits "executed within 30 months," EPABr. 95, are apposite only if pre-promulgation compliance is assumed, *see* 76 FR at 48282-83 (acknowledging 30 months allows no "time for owners' project planning"). And EPA's acceptance of the above-referenced expert's report with respect to SCR installations undermines EPA's rejection of that same report's FGD-schedule information. Cichanowicz Report at 1-1 to 3-7, 5-1 to 5-4, 6-1 to 6-3 (JA__-__, __-__, __-__). Further, because EPA consistently assumed FGD installations take longer than SCR, 75 FR at 45273, 45281 (6 months longer for FGD); 76 FR at 48282 (same), and because EPA found SCRs average 37 months, EPA's assumption that FGD retrofits take only 27 months is unsupportable.

[19] Thus, petitioners do not simply "rely on their own experts," Industry-Resp.Interv's.Br. 18, but on *EPA's acceptance* of their expert's conclusions.

EGUs' indisputably excellent "track record[]" of reducing emissions under CAIR and the NO_X SIP Call, EPABr. 95, was achieved when adequate time was allowed, making compliance practicable. In contrast, CSAPR's unprecedented schedule regulates retroactively, is entirely impracticable, and cannot stand.

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CERTIFICATE OF COMPLIANCE

In accordance with Circuit Rule 32(a) and Rule 32(a)(7) of the Federal Rules of Appellate Procedure, the undersigned certifies that the accompanying brief has been prepared using 14-point Garamond Roman typeface, and is double-spaced (except for headings and footnotes). The undersigned further certifies that the brief is proportionally spaced and contains 6,943 words exclusive of the table of contents, table of authorities, glossary, signature lines, and certificates of service and compliance. The combined words of the Industry and Labor Petitioners' Brief and the State and Local Petitioners' Brief do not exceed 14,000 words, as mandated by this Court's January 18, 2012 Order. Dkt. 1353334. The undersigned used Microsoft Word 2007 to compute the count.

/s/ Peter D. Keisler
Peter D. Keisler

CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of March, 2012, I electronically filed the foregoing Reply Brief of Industry and Labor Petitioners with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to all registered CM/ECF users.

Pursuant to D.C. Circuit Rules 25 and 31, and the Court's Order of January 26, 2012, nine (9) paper copies of the foregoing brief will be hand-delivered to the Clerk of the Court.

I further certify that some of the participants in the case are not registered CM/ECF users. I have caused two copies of the foregoing brief to be sent by U.S. first-class mail to the following non-CM/ECF participants:

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