

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued March 23, 2001 Decided June 8, 2001

No. 99-1268

Appalachian Power Company, et al.,  
Petitioners

v.

Environmental Protection Agency,  
Respondent

Commonwealth of Pennsylvania,  
Department of Environmental Protection, et al.  
Intervenors

Consolidated with  
99-1270, 99-1274, 99-1276, 99-1277, 99-1279,  
99-1280, 99-1281, 99-1286, 99-1287, 00-1169,  
00-1187, 00-1189, 00-1190, 00-1191, 00-1192,  
00-1194

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

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Norman W. Fichthorn argued the cause for the Industry Petitioners on the Electric Generating Facility Issues. With him on the briefs were Andrea Bear Field, James D. Elliott, Mel S. Schulze, David M. Flannery, Kathy G. Beckett, Gale R. Lea, Scott D. Goldman, and Jeff F. Cherry. Kyle W. Danish entered an appearance.

Marc D. Bernstein, Assistant Attorney General, State of North Carolina, argued the cause for the Petitioning States. With him on the briefs were Michael F. Easley, Attorney General, James C. Gulick and J. Allen Jernigan, Special Deputy Attorneys General, James P. Longest, Jr. and Amy R. Gillespie, Assistant Attorneys General, Betty D. Montgomery, Attorney General, State of Ohio, Bryan F. Zima, Assistant Attorney General, Bill Pryor, Attorney General, State of Alabama, Tommy E. Bryan and Prudence A. Cash-Brown, Assistant Attorneys General, Jennifer Granholm, Attorney General, State of Michigan, Alan F. Hoffman, Assistant Attorney General, Charles M. Condon, Attorney General, State of South Carolina, Samuel L. Finklea and Thomas G. Eppink, Attorneys, Mark L. Earley, Attorney General, Commonwealth of Virginia, Roger L. Chaffe, Senior Assistant Attorney General, Stewart T. Leeth, Assistant Attorney General, and Thomas H. Zerbe, Senior Counsel, State of West Virginia.

Theodore L. Garrett argued the cause for the Split State Petitioners Kansas City Power & Light Company, et al. With him on the briefs were Michael D. Hockley and Terry W. Schackman.

Scott H. Segal argued the cause for the Non-Electric Generating/Industrial Petitioners. With him on the briefs were Lisa M. Jaeger, Charles S. Carter, Deborah Ann Hotel, Kathy G. Beckett and Scott Goldman.

Andrew J. Doyle, Attorney, U.S. Department of Justice, argued the cause for respondent. With him on the brief were

Lois J. Schiffer, Assistant Attorney General, and Sara Schneeberg, Attorney, U.S. Environmental Protection Agency.

Robert A. Reiley and M. Dukes Pepper, Jr. were on the brief of Intervenor Commonwealth of Pennsylvania. Thomas Y. Au entered an appearance.

Before: Edwards, Chief Judge, Williams and Sentelle, Circuit Judges.

Opinion for the Court filed by Circuit Judge Sentelle.

Sentelle, Circuit Judge: This case involves multiple challenges to "Technical Amendments" to the "NOx SIP Call" rulemaking at issue in *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000), cert. denied, 121 S.Ct. 1225 (2001). At issue here are revisions to the database used to establish state "budgets" for emissions of nitrogen oxide ("NOx") which are regulated by the Environmental Protection Agency ("EPA") under the Clean Air Act ("CAA"). Petitioners include upwind states subject to the NOx SIP Call and industries located therein. The Commonwealth of Pennsylvania intervenes in support of the EPA.

We hold that petitioners' challenges to the EPA's growth factors are neither time-barred nor estopped by principles of *res judicata*. On the merits, we remand the EPA's growth factors for electric generating units for the same reasons as in *Appalachian Power Co. v. EPA*, Nos. 99-1200, et al. (May 15, 2001). The remaining claims in the various petitions for review are denied with two exceptions. We remand the EPA's source definitions pending completion of further rulemakings in accordance with *Michigan*, and remand and vacate the NOx emission budget for the state of Missouri as the EPA continues to include portions of the state for which no significant contribution findings have been made.

## I. Background

### A. Relevant Facts

In October 1998, the EPA issued the "NOx SIP Call"--a final rule under CAA section 110(k)(5), 42 U.S.C. s 7410(k)(5), requiring 22 states and the District of Columbia ("upwind states") to revise their State Implementation Plans ("SIPs") to impose additional controls on NOx emissions. See Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,356 (Oct. 27, 1998) ("NOx SIP Call"). The EPA concluded that emissions from the upwind states "contribute significantly" to ozone nonattainment in downwind states, in violation of CAA section 110(a)(2)(D)(i). 42 U.S.C. s 7410(a)(2)(D)(i). Under the SIP Call, upwind states are required to reduce NOx emissions by the amount accomplishable by "highly cost-effective controls," defined as those controls capable of removing NOx at a cost of \$2,000 or less per ton.

Under the NOx SIP Call, each upwind state must limit its summertime NOx emissions to a statewide emission "budget" for the year 2007. "The budgets represent the amount of allowable NOx emissions remaining after a covered state prohibits the NOx amount contributing significantly to downwind nonattainment." Michigan, 213 F.3d at 686. Specifically, the NOx state budgets represent the EPA's projection for what NOx emissions in 2007 would be for each state were "highly cost-effective controls" implemented. Under the NOx SIP Call, states have substantial flexibility in selecting combinations of emission control measures to meet their respective budgets, so long as they do so by the regulatory deadline.

In setting the NOx budgets, the EPA relied upon emission inventory data collected by the Ozone Transport Assessment Group, a working group comprised of federal, state, industry, and environmental group representatives. See Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250, 28,253 (May 25, 1999); Michigan, 213 F.3d at 672. The EPA divided each state's NOx emissions according to five source types or "sectors": electric generating units ("EGUs"), non-EGU stationary sources (such as industrial boilers), area sources (smaller stationary sources), highway mobile sources, and nonroad mobile sources. The

EPA calculated 2007 budget allocations for each sector. Under the NOx SIP Call, the EPA assumed that emission reductions would occur primarily in the EGU and non-EGU sectors, representatives of which are petitioners here. In developing their SIPs, however, states are free to achieve emission reductions from other sources, so long as the SIP provides for attainment of the requisite emission reduction level.

To calculate the EGU emission budgets, the EPA obtained source-specific "utilization" (heat-input) data for either 1995 or 1996. To this baseline, the EPA applied "growth factors" derived from growth projections for the years 2001 through 2010 generated by the "Integrated Planning Model" ("IPM"), a widely used utility planning model. Even though the EPA had 2007 utilization projections from the IPM, the EPA instead opted to apply the 2001-2010 growth factors to project growth over the 1996-2007 period in each state. The resulting 2007 emission projections were then reduced based on the EPA's estimate of the amount of emission reductions that could be achieved through "highly cost-effective" means. The resulting 2007 budgets are at issue in this case.

On March 3, 2000 this Court upheld the bulk of the EPA's NOx SIP Call. See *Michigan*, 213 F.3d 663. Relevant to this case, we specifically upheld the EPA's ability to set state-specific NOx budgets. At the same time, this Court remanded the regulatory definition of EGU because the EPA failed to provide an adequate explanation. This Court also partially vacated and remanded the SIP call as it applied to Missouri because the EPA included portions of Missouri in the SIP call with no evidence that these areas contributed to downwind nonattainment.

At the same time that it promulgated the NOx SIP Call, the EPA also proposed a Federal Implementation Plan ("FIP") that would impose direct emission controls on EGUs and non-EGUs in any state that failed to implement an adequate SIP by the regulatory deadline--May 31, 2004. In January 2000, the EPA also mandated specific NOx emission controls on EGUs and non-EGUs in upwind states in re-

sponse to petitions filed by eight Northeastern states under section 126 of the CAA. 42 U.S.C. s 7426. Both the FIP and the section 126 rule seek NOx reductions in accordance with the NOx budgets established for the NOx SIP Call, as amended by the rules challenged in this case. Earlier this year, this Court upheld the EPA's section 126 rule in most respects, though some portions of that rule relevant to this case were remanded to the EPA for additional consideration. See *Appalachian Power Co. v. EPA*, Nos. 99-1200, et al. (May 15, 2001).

#### B. The Technical Amendments

In the final SIP Call rule promulgated on October 27, 1998, the EPA reopened public comment on the accuracy of data upon which the emission inventories and budgets were based. See NOx SIP Call, 63 Fed. Reg. at 57,427. On December 24, the EPA extended the comment period "for emission inventory revisions to 2007 baseline sub-inventory information used to establish each State's budget in the NOx SIP Call," and further explained that it was seeking comment on the relevant data and assumptions so the agency could correct errors and update information used to compute the 2007 budgets. See *Correction and Clarification to the Finding of Significant Contribution and Rulemaking for Purposes of Reducing Regional Transport of Ozone*, 63 Fed. Reg. 71,220 (Dec. 24, 1998) ("SIP Call Correction"). The EPA also announced that it would reopen the comment period on equivalent inventory data for the FIP and section 126 rulemakings as well because all three rules relied upon the same inventories. *Id.*

Following this rulemaking, the EPA published two "Technical Amendments" ("TAs") revising the SIP Call NOx emission budgets. In the first TA published May 14, 1999 ("May 1999 TA"), the EPA made some modifications to source-specific emissions data, as well as to the 2007 baseline inventories. *Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone*, 64 Fed. Reg. 26,298 (May 14, 1999). In the second Technical Amendment published March 2, 2000 ("March 2000 TA"), the EPA made addi-

tional "corrections" based upon additional public comments it received and the EPA's own internal review of the accuracy of its data and calculations. Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 65 Fed. Reg. 11,222 (Mar. 2, 2000). The EPA also explained that the March 2000 TA was "necessary to make the NOx SIP Call inventory consistent with the inventory adopted" by the EPA in the final section 126 rule, as the two rules were to be based upon the same inventory. *Id.* The EPA also made "corrections to the growth rates of many non-EGU sources" because it had "misapplied" these growth rates in the May 1999 TA "version of the budget." *Id.* at 11,223. These changes altered the 2007 baselines for some source categories and some states.

## II. Industry Petitioners--Electric Generating Issues

### A. EGU Growth Factors

Industry Petitioners challenge the lawfulness of the NOx emission budgets as set forth in the TAs, specifically, the particular "growth factors" the EPA used to project future utilization rates for EGUs in 2007. Petitioners allege that the EPA's reliance upon these growth factors was arbitrary and capricious because the growth factors were unsupported and in conflict with state-based growth estimates. Petitioners further contend that the EPA arbitrarily failed to determine whether the resulting emission budgets could be achieved in a cost-effective manner. Other petitioners raise similar challenges to the TAs. Before turning to the merits of these arguments, we must first address several jurisdictional issues raised by the EPA. Specifically, the EPA claims that petitioners' claims are time barred and precluded by our Michigan decision under principles of *res judicata* and collateral estoppel.<sup>1</sup>

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<sup>1</sup> The EPA's alternative claim that this Court should stay consideration of these issues pending resolution of *Appalachian Power Co. v. EPA*, Nos. 99-1200, et al. (May 15, 2001), is obviously moot.

1. Statute of Limitations

The EPA contends that petitioners' objections to the EGU growth factor determinations are not properly before this Court because they were resolved in the underlying NOx SIP Call rulemaking, not in the TA proceeding. Therefore, the growth factors were subject to challenge in Michigan, and not here. The EPA outlined and finalized its method for determining state emission budgets, including the use of growth factors, in the NOx SIP Call rulemaking. See NOx SIP Call, 63 Fed. Reg. at 57,405-39. The EPA argues that under CAA section 307(b)(1), 42 U.S.C. s 7607(b)(1), petitioners had sixty days from the publication of the SIP Call in the Federal Register to challenge the EPA's final growth factor determinations. By these lights, petitioners may not challenge the growth factors because they did not raise their challenges within sixty days of publication of the SIP Call.

In October 1998, the EPA reopened comment on "the source-specific data used to establish each State's budget." NOx SIP Call, 63 Fed. Reg. at 57,427. However, the EPA maintains petitioners' claims are precluded because it did not explicitly invite comments on growth rate methodology. In other words, the EPA argues that it undertook the TA rulemakings for the purpose of ensuring the accuracy of the EPA's data inputs, and not to reconsider prior methodological determinations, such as how to construct growth factors and how to use those growth factors in determining 2007 emission budgets. According to the EPA, "[c]omments related to the use of growth factors in determination of State budgets" were addressed "in the context of the final NOx SIP call." May 1999 Response to Comments at 47. Therefore, the agency pleads, petitioners' growth factor arguments are time-barred under National Ass'n of Reversionary Property Owners v. Surface Transportation Board, 158 F.3d 135, 141 (D.C. Cir. 1998) ("NARPO") ("If NARPO's reopening theory does not apply, we are without jurisdiction to consider NARPO's due process claim.").

The TA proceedings are not as clear cut as the EPA maintains, nor are our precedents so restrictive. The initial

TA rulemaking invited comment on both the source-specific emission data used to calculate state budgets and the "2007 baseline sub-inventory information." NOx SIP Call, 63 Fed. Reg. at 57,493. As the EPA recognizes, the 2007 baseline sub-inventory information is nothing more than the product of growth factors and the source-specific emission data used to calculate state budgets. See SIP Call Correction, 63 Fed. Reg. at 71,223 (noting that 2007 baseline inventory "is based on the universe of sources in the 1995 inventory and a growth factor ..." (emphasis added)). Therefore, insofar as the EPA reopened comment on the 2007 baselines, it would seem that the EPA reopened comment on the growth factors in addition to the source-specific emission data used to calculate state budgets. While the EPA did not reopen comment on the broader issues of its authority to impose NOx emission budgets on states, it did open comment on the budgets themselves. Insofar as the agency was ambiguous on this point, that only further supports petitioners' argument that the growth factor issue was reopened. See NARPO, 158 F.3d at 142 ("Ambiguity in an NPRM may also tilt toward a finding that the issue has been reopened.").

Even accepting that the EPA did not explicitly reopen growth factors for public comment, this does not preclude petitioners' claim. Under *Public Citizen v. NRC*, "whether an agency has in fact reopened an issue" is dependent upon "the entire context of the rulemaking including all relevant proposals and reactions of the agency," and not just on the agency's stated intent. 901 F.2d 147, 150 (D.C. Cir. 1990). Thus, "if an agency's response to comments 'explicitly or implicitly shows that the agency actually reconsidered the rule, the matter has been reopened.'" *Panamsat Corp. v. FCC*, 198 F.3d 890, 897 (D.C. Cir. 1999) (citation omitted).

The EPA claims that the growth factors were completely settled for the purposes of the NOx SIP Call by the time the TA rulemaking began in October 1998. Yet this claim is difficult to square with the EPA's purported justification for the TA rulemakings--specifically to conform the emission inventories of the NOx SIP Call and section 126 rules. The TA rulemaking began in October 1998, but the first section

126 rule was not final until May 1999. Thus, if the EPA was sincere in seeking to use the TA rulemaking to conform the emission inventories of the two rules, then the EPA's various growth factor methodologies must have been open for comment for the purposes of the NOx SIP Call as they were subject to revision in the section 126 rulemaking at least up until the close of that proceeding.

Where a rulemaking notice is ambiguous "and could fairly be read to 'suggest [ ] that the search for harmony might lead to the rethinking of old positions' " this Court has "found that the earlier decision was reopened." NARPO, 158 F.3d at 142 (citation omitted). This is an apt description of what happened here. Therefore, insofar as there are problems with section 126 inventories and budgets, the EPA implicitly gave petitioners an opportunity to identify the equivalent problems with the NOx SIP Call inventories and budgets when the EPA opened the TA rulemaking for the purpose of conforming the inventories for the two rules.

## 2. Res Judicata and Collateral Estoppel

Res judicata "bars relitigation not only of matters determined in a previous litigation but also ones that a party could have raised." NRDC v. Thomas, 838 F.2d 1224, 1252 (D.C. Cir. 1988) (emphasis in EPA brief). Collateral estoppel further bars parties from relitigating issues of law or fact resolved in prior cases between those parties. Securities Indus. Ass'n v. Bd. of Governors, 900 F.2d 360, 363 (D.C. Cir. 1990) ("When a court determines an issue of fact or law that is actually litigated and necessary to its judgment, that conclusion binds the same parties in a subsequent action."). As the growth factor determinations were made as part of the NOx SIP Call, the EPA maintains that petitioners should have presented any challenge to the growth factors in Michigan, where "there were actual legal and factual challenges on budget and growth-related topics" and where "nearly all" of the petitioners here were represented. Brief for Respondent EPA at 24-25.

Petitioners' challenges are based upon the emission inventories and budgets laid out in the TAs. As such, they present

issues not litigated in Michigan. Though it is true that petitioners could have challenged the EPA's growth factor methodologies in that litigation, we hold here that the EPA reopened comment on that issue. Just as it would be absurd for the EPA to argue that res judicata and collateral estoppel would preclude review had the EPA decided to change its growth factor methodologies in response to invited comments, so too is it absurd for the EPA to argue here that res judicata and collateral estoppel preclude review of its decision not to change in response to those same invited comments.

### 3. Merits

On the merits, Industry Petitioners allege that the EPA's emission budget determinations for EGUs are arbitrary and unsupported on several grounds. First, they maintain that the 2007 emission baselines reflect the unrealistic assumptions that utilization growth will be linear. Second, they question the EPA's use of IPM-generated 2001-2010 growth rates to estimate growth over the 1996-2007 period. Third, they claim the EPA's reliance upon the growth factors resulted in unrealistic utilization estimates. For example, 1998 utilization rates in some states, such as Michigan and West Virginia, are greater than the 2007 baselines estimated by the EPA.

Petitioners contend that the arbitrariness of the growth factors is compounded by the fact that more representative growth estimates were available. In conducting its cost-effectiveness analysis, the EPA used the IPM to generate growth assumptions for 1996-2001, as well as to generate state-by-state EGU utilization estimates for 2007. Yet the EPA did not use this data for the purpose of developing its growth factors for the 2007 baseline, and it offered no reasonable explanation for its choice. Even if the EPA finds on remand that its choice was the better one, failure to "examine the relevant data and articulate a satisfactory explanation for its action" either is arbitrary decisionmaking or at least prevents a court from finding it non-arbitrary. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

We confronted nearly identical challenges to the EPA's use of growth factors to estimate baseline NOx emissions for 2007 in the section 126 litigation. See *Appalachian Power Co. v. EPA*, Nos. 99-1200, et al. (May 15, 2001). Although the NOx SIP Call covers more states than the section 126 rule, the EPA's methodological choices and explanations (or lack thereof) were the same. Therefore, we see no reason to depart from our conclusions in that litigation.

There is no question that "[a]gency determinations based upon highly complex and technical matters are 'entitled to great deference.'" *Id.*, slip op. at 32 (quoting *Public Citizen Health Research Group v. Brock*, 823 F.2d 626, 628 (D.C. Cir. 1987)). The EPA has "undoubted power to use predictive models," such as the IPM, but it must "explain the assumptions and methodology used in preparing the model" and "provide a complete analytic defense" should the model be challenged. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983) (citations and internal quotation marks omitted). "Given the highly deferential standard of review applied to such questions, and the EPA's clear authority to rely upon computer models in place of inconsistent, incomplete, or unreliable empirical data, the Agency's decision to rely upon the IPM, rather than the projections offered by individual states, was not arbitrary and capricious." *Appalachian Power Co.*, slip op. at 34. However, this Court cannot excuse the EPA's reliance upon a methodology that generates apparently arbitrary results particularly where, as here, the agency has failed to justify its choice.

In the case at hand, the EPA adopted a particular methodology to estimate EGU utilization rates in 2007 that generated seemingly implausible results, such as a negative growth forecast for some states in the coming decade. The EPA adopted this methodology without offering any reasoned explanation for its choice. The EPA's decision not to use the IPM projections for 2007 that were used to estimate the cost-effectiveness of emissions controls may well have been reasonable. So too may have been the EPA's choice to rely upon IPM projections for the 2001-2010 period in order to gener-

ate a growth factor for the 1996-2007 period. However, there is no way for us to tell because the EPA never offered an explanation. Merely asserting that the choice was "reasonable" is not enough.

As we held in the section 126 litigation, so too here:

the EPA has not fully explained the bases upon which it chose to use one set of growth-rate projections for costs and another for budgets, nor has it addressed what appear to be stark disparities between its projections and real world observations. "With its delicate balance of thorough record scrutiny and deference to agency expertise, judicial review can occur only when agencies explain their decisions with precision, for 'it will not do for a court to be compelled to guess at the theory underlying the agency's action ...' " *American Lung Ass'n v. EPA*, 134 F.3d 388, 392 (D.C. Cir. 1998) (quoting *SEC v. Chenery Corp.*, 332 U.S. 194, 196-97 (1947)). As a result, we have no choice but to remand the EPA's EGU growth factor determinations so that the agency may fulfill its obligation to engage in reasoned decisionmaking on how to set EGU growth factors and explain why results that appear arbitrary on their face are, in fact, reasonable determinations.

Id. at 37-38.

#### 4. Cost-Effectiveness

Industry Petitioners make the additional argument that the EPA failed to find the 2007 budgets achievable at the \$2,000/ton significant-contribution cut-off established in the NOx SIP Call rule. Essentially, petitioners contend that the budgets the EPA analyzed for cost-effectiveness purposes were different from the emission budgets imposed on the states. This argument is without merit. The emission budget levels themselves are based upon reductions deemed by the EPA to be cost-effective. In the case of EGUs, the EPA concluded that an average emissions rate of 0.15 lb/mmBtu could be achieved at a cost of less than \$2000/ton. NOx SIP Call, 63 Fed. Reg. at 57,399-403. Thus, insofar as the EPA properly

generates, and adequately explains, estimated 2007 utilization rates, it need not repeat its cost-effectiveness analysis.

#### B. Significant Contribution

Industry petitioners also allege that the TAs are arbitrary because they rely upon emission inventories that are substantially different from those that were used to make the initial "contribution" findings for the NO<sub>x</sub> SIP Call. Essentially, petitioners argue that because the TAs changed the underlying state emission inventories and budgets, thereby altering the relative contributions of upwind states to downwind nonattainment, the EPA was obligated to reevaluate its "significant contribution" findings for each of the affected states. For example, the TAs decreased the 2007 baseline emissions for West Virginia, an upwind state, and increased baseline emissions for New York, a downwind state. Due to this change, petitioners contend, the EPA could not continue to assume that West Virginia contributes to New York nonattainment without additional analysis.

It is black-letter administrative law that "[a]bsent special circumstances, a party must initially present its comments to the agency during the rulemaking in order for the court to consider the issue." *Tex Tin Corp. v. EPA*, 935 F.2d 1321, 1323 (D.C. Cir. 1991) (citing *Eagle-Picher Indus. v. EPA*, 822 F.2d 132, 146 (D.C. Cir. 1987)). Generalized objections to agency action or objections raised at the wrong time or in the wrong docket will not do. "An objection must be made with sufficient specificity reasonably to alert the agency." *Id.* An agency cannot be faulted for failing to address such issues that were not raised by petitioners. Petitioners waived their argument, and can cite no "special circumstances" to justify their waiver.

Petitioners are able to cite no comments that were in the relevant docket that raise the significant contribution issue. For example, petitioners note that the West Virginia Manufacturers Association argued that "[i]f EPA has in fact made adjustments to the inventories, we believe that this would dramatically affect the modeled impact of the contribution of upwind states and sources to downwind ozone nonattain-

ment." The problem is that this document was submitted to the dockets for the section 126 and FIP rulemakings, and was not part of the TA rulemaking. Petitioners do cite other documents which were part of the relevant rulemaking, but these documents do not address the significant contribution argument. This is insufficient; notice does not operate by osmosis. Having failed to raise their concern in the relevant agency docket, petitioners could perhaps have cured their waiver by seeking reconsideration before the EPA, but they did not. Thus, petitioners waived their argument that the EPA was required to revisit its significant contribution findings.

### III. State Petitioners

State Petitioners echo many of the arguments addressed above. Their claims are unique insofar as they object to the EPA's imposition of "erroneous projections of their economic growth" on states through the NOx SIP Call. Joint Brief of Petitioning States at 4. The State Petitioners' primary complaint is with the EPA's reliance upon the IPM to generate state-by-state growth rates without promulgating a mechanism to review these projections based upon actual growth rates. Petitioning states contend that the EPA's projections underestimate actual growth in some affected states, but the EPA refused to address this concern in the TA rulemaking. While the EPA acknowledged some inconsistency between IPM growth projections and those provided by individual states, the EPA rejected the claim that the states' projections are inherently more reliable. State Petitioners claim that it was unreasonable for the EPA to reach this conclusion without conducting any analysis of the state projections.

State Petitioners aver that deference to the EPA's findings in this area is unwarranted because deference is only due within an agency's area of expertise. See *NRDC v. EPA*, 194 F.3d 130, 136 (D.C. Cir. 1999). Were the EPA making environmental projections, they concede, deference would be warranted. Since, however, the growth projections are essentially economic projections, this Court should give the

EPA no more deference "than it would to the agency's predictions of 2007 interest rates or the level of the Dow Jones Index." Joint Brief of Petitioning States at 10 (citing *Montana v. EPA*, 137 F.3d 1135, 1141 (9th Cir. 1998)). While the EPA has authority to impose emission limits on states, they argue, it does not have the authority to regulate a state's economic growth. Insofar as the EPA has done this through its growth projections, it has adopted an "overly broad" reading of the CAA that "usurps States' sovereign power to manage their own economic growth." *Id.* at 12.

The EPA raises the same untimeliness arguments discussed above. See *infra* Part II.A.1-2. We reject them for the same reasons. However, insofar as the State Petitioners seek relief beyond that which is provided above, their complaints are not well taken. The EPA has sufficient discretion to use the IPM model in the first instance even if states believe that some other state-specific modeling is more accurate. When it comes to these sorts of technical matters, the EPA is entitled to great deference. See *Environmental Action, Inc. v. FERC*, 939 F.2d 1057, 1064 (D.C. Cir. 1991) ("[I]t is within the scope of the agency's expertise to make such a prediction about the market it regulates, and a reasonable prediction deserves our deference notwithstanding that there might also be another reasonable view."). "[I]t is only when the model bears no rational relationship to the characteristics of the data to which it is applied that we will hold that the use of the model was arbitrary and capricious." *Appalachian Power Co. v. EPA*, 135 F.3d 791, 802 (D.C. Cir. 1998).

"That the EPA's projections depend, in large part, on economic projections, rather than environmental factors, makes little difference." *Appalachian Power Co. v. EPA*, Nos. 99-1200, et al. (May 15, 2001), slip op. at 34. Congress has delegated to the EPA the power to set emissions limits under the Clean Air Act. Merely because this requires the selection and utilization of complex computer models to forecast future emissions does not change the standard with which we evaluate the agency's actions, so long as the agency's actions are, as here, confined to those technical issues

that must be resolved for the agency intelligently to address the matters over which Congress has given it authority. See generally *id.*; *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983). State Petitioners' hyperbolic suggestion that the EPA's choice of industry forecasting models is tantamount to stock market forecasting is simply absurd.

Similarly, that the EPA's selection of a computer model and forecasting methodology results in the imposition of emission controls on states that crimp economic growth does not change the underlying analysis. In *Michigan*, this Court squarely upheld the EPA's authority to establish state-specific NOx budgets against a claim that such authority impermissibly intrudes on the statutory rights of states to select their own emission control policies in the first instance. *Michigan v. EPA*, 213 F.3d 663, 686-87 (D.C. Cir. 2000). Acknowledging this point, State Petitioners seek to argue that the *Michigan* holding somehow left open the claim that the EPA's authority to set state emission budgets did not entail authority to make the state-specific growth projections upon which such emission budgets are inevitably based. This is a distinction without a meaningful difference. Given the regulatory structure created by the Clean Air Act, the former authority clearly encompasses the latter, notwithstanding State Petitioners' veiled appeals to federalism principles.

For these reasons, we hold that State Petitioners are not entitled to any relief beyond that which is entailed by remanding the growth factor determinations for further proceedings in response to Industry Petitioners' claims.

#### IV. Non-Electric Generating Facility Issues

Non-Electric Generating Petitioners ("Non-EGU Petitioners") make two additional arguments against the EPA's TAs to the NOx SIP Call. First, petitioners allege that the EPA modified its methodology for calculating budgets for non-EGUs in its final rule without providing non-EGUs with adequate notice of the change. Second, Non-EGU Petitioners claim that insofar as the EPA's emission budgets for

Non-EGUs rely upon the source definitions remanded in Michigan v. EPA, they are contrary to law and must be remanded here as well, if not vacated in their entirety. We conclude that the EPA's misapplication of non-EGU growth factors constituted little more than clerical error, which the EPA corrected without additional notice and comment. While petitioners erroneously challenge the characterization of the error as clerical, they do not challenge the power of the EPA to correct clerical errors, compare Utility Solid Waste Activities Group v. EPA, 236 F.3d 749 (D.C. Cir. 2001), and we do not address that issue. The petitioners are therefore not entitled to vacatur. However, petitioners are correct that the EPA continues to rely upon source definitions that were issued without adequate notice and comment and remanded in Michigan. Therefore, we remand the source definitions here as well.

A. Notice

The EPA began the budget-setting process with incomplete data on emission sources upon which to base its 2007 projections. The EPA also began the process relying on one set of growth factors, Non-EGU Petitioners charge, but then substituted other factors. The constant changes to the EPA's methodology, "combined with the virtual inaccessibility of the files containing the growth factors," made it impossible for affected parties to determine whether the EPA's calculations were reasonably accurate. Joint Brief of Non-Electric Generating/Industrial Petitioners at 6. As the aggregate non-EGU budget changed over time, petitioners allege the EPA did not maintain a consistent explanation for these revisions. In the May 1999 TA, the EPA said that a fourteen percent increase in the aggregate non-EGU budget was due to source reclassifications. May 1999 TA, 64 Fed. Reg. at 26,299. In the March 2000 TA, however, it claimed that the budget change was due to the EPA's prior misapplication of the proper growth factors. Rather than consistently modify its estimates, Petitioners attest that the EPA should have explained how the growth factors were misapplied and specifically sought comment from affected parties. In failing to do so, it disregarded regulated entities' rights to notice and

comment. Even if providing such opportunity to comment would have delayed SIP implementation, Non-EGU Petitioners argue that this would not authorize the EPA to deprive regulated entities of their rights to notice and comment.

The EPA responds that Non-EGU Petitioners allege no more than a harmless procedural error. See 5 U.S.C. s 706 (instructing courts to take "due account ... of the rule of prejudicial error."). The EPA merely adjusted inventory data to fix clerical errors to ensure conformity between the various rules. Petitioners had ample opportunity to comment and yet have failed to identify "a single source that has not been able to determine the growth factor assigned to it." Brief for Respondent EPA at 42. The EPA readily admits that it did not announce the correction of its previous misapplication of non-EGU growth factors until the March 2000 TA. Insofar as Non-EGU Petitioners challenge specific changes in the Non-EGU portion of emission budgets, we agree with the EPA. The record suggests that the changes complained of here were little more than fixes to technical errors, and not the sort of modifications that evince a change in policy or methodology. Therefore, this portion of the petition for review is denied. Petitioners' entreaty at oral argument that their notice challenge was tantamount to an unintelligible rulemaking challenge is likewise denied, as it came too late.

#### B. Source Definitions

Non-EGU Petitioners further challenge the EPA's reliance upon regulatory definitions of EGUs and non-EGUs that were remanded by this Court in Michigan. There, we found that the EPA changed the definition of "EGU" in the final NOx SIP Call rule without providing sufficient notice and opportunity to comment. Michigan, 213 F.3d at 692. The altered definition reclassified some non-EGUs as EGUs. This is significant because the EPA assumed that EGUs can reduce more NOx emissions cost effectively, on a percentage basis, than can non-EGUs. The EPA maintains that a new source definition rulemaking is imminent, see Brief for Respondent EPA at 51 ("EPA is, in fact, presently reconsidering

its EGU definition and intends to issue a proposed rule in the near future, perhaps as early as December 2000."). However, as of oral argument, a year had passed since the Michigan remand and the EPA had yet to initiate new administrative proceedings on source definitions.

Non-EGU Petitioners maintain that the EPA's continued reliance on the remanded source definitions requires remanding and vacating the TAs in their entirety because the EPA cannot accurately apply growth factors and calculate state budgets until source categories are final. The EPA contends that Non-EGU Petitioners seek more relief here than they were afforded in Michigan. As the EPA notes, we did not vacate the budgets or any other portion of the NOx SIP Call in Michigan. Instead, we left the budgets in place while EPA reconsidered a handful of narrow issues, including the proper delineation of what constitutes an EGU. It seems that Non-EGU Petitioners are entitled to the same relief here-no more and no less. Therefore, because the "EPA did not provide sufficient notice and opportunity to comment for its redefinition of EGUs," 213 F.3d at 693, we remand this portion of the rulemaking to the EPA for further consideration in light of this opinion and that in Michigan.

#### V. Missouri ("Split-State Petitioners")

A group of Missouri utilities and the City of Independence, Missouri ("Split-State Petitioners") argue that the Technical Amendments are unlawful insofar as they establish a budget for the state of Missouri. In Michigan, this Court vacated and remanded the NOx SIP Call insofar as it applied to Missouri because the EPA's Missouri NOx budget was "calculated on the basis of hypothesized cutbacks from areas that have not been shown to have made significant contributions." 213 F.3d at 684. Specifically, the EPA set a NOx emission budget for the entire state of Missouri, even though the computer models upon which the EPA relied only included the eastern portion of the state. Before requiring a state or portion thereof to control emissions that make a "significant" contribution to downwind nonattainment, we held the EPA

"must first establish that there is a measurable contribution." Id. at 683-84 (emphasis in original). Where the agency's own data "inculcate part of a state and not another, EPA should honor the resulting findings." Id. at 684.

Even though the NOx emission budget for Missouri was vacated and remanded in Michigan, the EPA included Missouri's budget in the TAs. It is undisputed that insofar as the TAs include a statewide Missouri emission budget they are unlawful under Michigan. The only real dispute between Split-State Petitioners and the EPA is on the proper remedy for EPA's failure to address the Michigan holding.

Split-State Petitioners contend that this court must vacate the entire Missouri budget, covering the budget for the "1-hour" ozone standard as well as the "8-hour" ozone standard at issue in *American Trucking Ass'ns v. EPA*, 175 F.3d 1027, reh'g granted in part and denied in part, 195 F.3d 4 (D.C. Cir. 1999), rev'd in part sub nom. *Whitman v. American Trucking Ass'ns*, 121 S. Ct. 903 (2001). The EPA prefers a more limited remand. In Michigan, this Court vacated the budget for the 1-hour standard, but stayed addressing the applicability of the 8-hour standard to the NOx SIP Call, at the EPA's request, due to the pendency of the *American Trucking* litigation. *Michigan*, 213 F.3d at 671. On this basis, we only resolved issues involving the EPA's 1-hour ozone standard, leaving issues related to the 8-hour standard until another day.

Because we did not consider 8-hour issues in Michigan, the EPA suggests, we should only vacate and remand Missouri's budget under the 1-hour standard and stay consideration of a statewide Missouri budget under the 8-hour standard pending completion of litigation. In other circumstances, we might be inclined to offer the more modest remedy the EPA suggests. After all, the EPA is simply asking that the judgment in this case mirror that in Michigan, and that this Court stay consideration of the 8-hour basis for Missouri's budget until such time as the stay on the 8-hour standard is lifted. Were there reason, any reason, to believe that the EPA could justify a statewide Missouri budget based upon

existing record evidence, this would be a prudent step. As it happens, the record and briefing in Michigan addressed both standards, and the EPA offered no evidence that would suggest western Missouri contributes significantly to downwind nonattainment of any ozone standard. The EPA asserts that "it is entirely possible that the EPA's record could support including Missouri in the SIP Call under the 8-hour standard and assigning it a budget." Brief for Respondent EPA at 49. However, the EPA does not dispute that it has never modeled western Missouri sources under any standard. In other words, it is undisputed that the EPA has no more analytical basis for setting a statewide Missouri NOx budget under the 8-hour standard than it did for the 1-hour standard, for which it had no analytical basis at all. While there may be areas for which the EPA could, with existing data and analysis, justify setting an emission budget for purposes of the 8-hour standard, but not for purposes of the 1-hour standard, western Missouri is not among them.

So long as any statewide NOx budget remains in place, Split-State Petitioners and other entities potentially subject to emission controls in western Missouri must operate under the cloud of potential future controls. Therefore, we find it prudent to vacate and remand the TAs insofar as they include a budget for Missouri under any ozone standard. While we vacate and remand the statewide Missouri budget, it should be clear that we take this step only upon the record proffered to date. As noted above, the EPA concedes that it has never conducted the analyses that would be required to impose a statewide budget for Missouri. Should the agency ever conduct such analyses and, for instance, model the contribution of facilities located in western Missouri to downwind nonattainment of the 8-hour standard, it is quite possible that such a budget could be justified. This decision should be read neither to endorse nor to preclude such action. If the EPA some day decides to impose a statewide NOx budget for Missouri, that decision will be evaluated on its own merits at that time.

## VI. Conclusion

In accordance with the above, we remand the EPA's EGU growth factors as well as the source definitions challenged by Non-EGU Petitioners. We further remand and vacate the NOx emission budget for Missouri. With respect to all other issues, including those not discussed expressly herein, the petitions are denied.