

ORAL ARGUMENT SCHEDULED FOR APRIL 13, 2012

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 11-1302 (and consolidated cases)

COMPLEX

EME HOMER CITY GENERATION, L.P., at al.

Petitioners,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, et al.

Respondents.

On Petition for Review of EPA Final Action, 76 Fed. Reg. 48,208

FINAL BRIEF OF INDUSTRY RESPONDENT INTERVENORS

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

The following information is provided pursuant to D.C. Circuit Rule 28(a)(1).

(A) Parties and *Amici*

Except for the following, all parties, intervenors, and *amici* appearing before this Court are listed in the Brief of Industry and Labor Petitioners.

Amicus Curiae for Respondent: American Thoracic Society

(B) Rulings Under Review

The agency action under review is “Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals,” 76 Fed. Reg. 48,208 (Aug. 8, 2011).

(C) Related Cases

Each of the petitions for review consolidated under No. 11-1302 is related. The consolidated cases are Nos. 11-1315, 11-1323, 11-1329, 11-1338, 11-1340, 11-1350, 11-1357, 11-1358, 11-1359, 11-1360, 11-1361, 11-1362, 11-1363, 11-1364, 11-1365, 11-1366, 11-1367, 11-1368, 11-1369, 11-1371, 11-1372, 11-1373, 11-1374, 11-1375, 11-1376, 11-1377, 11-1378, 11-1379, 11-1380, 11-1381, 11-1382, 11-1383, 11-1384, 11-1385, 11-1386, 11-1387, 11-1388, 11-1389, 11-1390, 11-1391, 11-1392, 11-1393, 11-1394 and 11-1395. These consolidated cases have not previously been reviewed by this Court or any other court.

Petitions for review of a related agency action, “Final Rule, Implementation Plans for Iowa, Michigan, Missouri, Oklahoma and Wisconsin and Determination of Kansas Regarding Interstate Transport for Ozone,” 76 Fed. Reg. 80,760 (Dec. 27, 2011), are pending in this Court in *Public Service Co. v. EPA*, No. 12-1023 and consolidated cases.

March 16, 2012

/s/ Brendan K. Collins
Brendan K. Collins

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, the Industry Intervenors provide the following corporate disclosures:

Calpine Corporation states that Calpine Corporation (“Calpine”) is a major U.S. power company which owns 93 primarily low-carbon, natural gas-fired and renewable geothermal power plants that are capable of delivering more than 28,000 megawatts of electricity to customers and communities in 20 U.S. states and Canada. Calpine’s fleet of combined-cycle and combined heat and power plants is the largest in the nation. Calpine is a publicly-traded corporation, organized and existing under the laws of the State of Delaware. Its stock trades on the New York Stock Exchange under the symbol CPN. Calpine has no parent company, and no publicly-held company has a 10 percent or greater ownership interest in Calpine

Exelon Corporation states that Exelon Corporation (“Exelon”) is a publicly-traded corporation, organized and existing under the laws of the Commonwealth of Pennsylvania. Its stock trades on the New York Stock Exchange under the ticker symbol EXC. Exelon has no parent company, and no publicly-held company has a 10 percent or greater ownership interest in Exelon.

Exelon owns Exelon Generation Company, LLC which owns or controls approximately 35,000 MW of generating facilities, and is engaged in the generation and sale of electricity in wholesale and retail markets. Exelon is also engaged in the purchase, transmission, distribution and sale of electricity through its regulated electric utility subsidiaries, Baltimore Gas and Electric Company (“BGE”) of Baltimore, MD, Commonwealth Edison Company (“ComEd”), of Chicago, IL, and PECO Energy Company (“PECO”), of Philadelphia, PA. Together, BGE, ComEd and PECO own transmission and distribution systems and serve approximately 6.6 million retail electric customers in central Maryland, northern Illinois, and the Philadelphia area.

On March 12, 2012, Exelon merged with Constellation Energy Group, Inc. in a stock-for-stock transaction. The resulting company retained the Exelon name and is headquartered in Chicago.

Public Service Enterprise Group, Inc. states that Public Service Enterprise Group, Inc. (“PSEG”) is a diversified energy company whose family of companies distributes electricity and gas to more than two million utility customers in New Jersey and owns and operates approximately 13,500 megawatts of electric generating capacity concentrated in the Northeast. PSEG owns a diverse fleet of generating units, including 2,400 megawatts of coal-fired capacity and 3,700 megawatts of nuclear capacity. PSEG is a publicly-traded New Jersey corporation.

It has no parent companies and no publicly-held company holds a 10 percent or greater ownership interest.

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* Authorities chiefly relied upon are marked with an asterisk.

GLOSSARY

APBr.	Consolidated Brief of Intervenor for Petitioners San Miguel Electric Cooperative, Inc. and Amici Industrial Energy Consumers of America, Southeastern Legal Foundation, Inc., and Putnam County, Georgia, Doc. 1358441
CAA	Clean Air Act, 42 U.S.C. § 7401 et seq.
CAIR	Clean Air Interstate Rule, <i>Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule); Revisions to Acid Rain Program; Revisions to the NO_x SIP Call</i> , 70 Fed. Reg. 25,162 (May 12, 2005)
CAMx	Comprehensive Air Quality Model with Extensions
CSAPR	Cross-State Air Pollution Rule, <i>Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals</i> , 76 Fed. Reg. 48,208 (Aug. 8, 2011)
EGU	Electric Generating Unit
EPA	U.S. Environmental Protection Agency
EPABr.	Brief for Respondents, Doc. 1361451
ERCOT	Electric Reliability Council of Texas
FERC	Federal Energy Regulatory Commission
GW	Gigawatts (one thousand Megawatts)
IPBr.	Brief of Industry and Labor Petitioners, Doc. 1357526
ISO/RTO	Independent System Operators and Regional Transmission Organizations
IPM	Integrated Planning Model
JA	Joint Appendix
MATS	Mercury and Air Toxics Rule, <i>National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric</i>

Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9304 (Feb. 16, 2012)

NAAQS	National Ambient Air Quality Standards
NERC	North American Electric Reliability Corporation
NO _x	Nitrogen oxides
NO _x SIP Call	<i>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)</i>
Revision Rule	<i>Final Rule, Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone, 77 Fed. Reg. 10,324 (Feb. 21, 2012); and Direct Final Rule, Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone, 77 Fed. Reg. 10,342 (Feb. 21, 2012)</i>
RIA	Regulatory Impact Analysis
RTC	Response to Comments
SPBr.	State and Local Petitioners' Opening Brief, Doc. 1357570
SO ₂	Sulfur dioxide
SPP	Southwest Power Pool
TSD	Technical Support Document

SOURCES INCLUDED IN JOINT APPENDIX

Air Quality Modeling Final Rule TSD, EPA-HQ-OAR-2009-0491-4140 (“Air Quality TSD”)

Allowance Allocation Final Rule TSD, EPA-HQ-OAR-2009-0491-4517

Congressional Research Service, “*EPA’s Utility MACT: Will the Lights Go Out?*” (Jan. 9, 2012), <http://www.epi.org/files/2012/MATS-CRS-Jan.pdf> (“CRS Report”)

Declaration of Bruce Biewald (Ex. A to Doc. 1339081) (“Biewald Decl.”)

Declaration of Sam Napolitano (Attachment 1 to Doc. 1345210), EPA-HQ-OAR-2009-0491-4834 (“Napolitano Decl. 1”)

Declaration of Sam Napolitano (Exhibit I to Doc. 1335282), EPA-HQ-OAR-2009-0491-4943 (“Napolitano Decl. 2”)

Direct Final Rule, *Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone*, 77 Fed. Reg. 10,342 (Feb. 21, 2012)

Documentation for EPA Base Case v.4.10 Using the Integrated Planning Model, EPA-HQ-OAR-2009-0491-0309 (“Base Case v.4.10”)

Engineering Feasibility RTC, EPA-HQ-OAR-2009-0491-4529

Exelon Corporation Comments on 75 Fed. Reg. 45,210, *Federal Implementation Plans to Reduce Interstate Transport of Final Particulate Matter and Ozone; Proposed Rule*, EPA-HQ-OAR-2009-0491-2666 (“Exelon Comments”)

Exelon Corporation Comments on 76 Fed. Reg. 63,860, *Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone*, EPA-HQ-OAR-2009-0491-4810

Final Rule, *Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals*, 76 Fed. Reg. 48,208 (Aug. 8, 2011) (“CSAPR” or “Rule”)

Final Rule, *Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone*, 77 Fed. Reg. 10,324 (Feb. 21, 2012) (“Revision Rule”)

Final Rule, *Federal Implementation Plans for Iowa, Michigan, Missouri, Oklahoma, and Wisconsin and Deterioration for Kansas Regarding Interstate Transport of Ozone*, 76 Fed. Reg. 80,760 (Dec. 27, 2011)

ICF Technical Memorandum - Basis for Natural Gas Resource Assumptions in EPA Base Case v.4.10, EPA-HQ-OAR-2009-0491-0311

IPM Run - TR Base Case v.4.10 - 2012 Parsed File, EPA-HQ-OAR-2009-0491-0307

M.J. Bradley & Associates LLC & Analysis Group, *Ensuring a Clean Modern Electric Generating Fleet While Maintaining Electric System Reliability: Fall 2011 Update*, (Nov. 2011),
<http://www.mjbradley.com/sites/default/files/ReliabilityUpdateNovember202011.pdf> (“M.J. Bradley Report”)

NEEDS Source-Specific Adjustments in EPA Base Case v.4.10_Ftransport.xlsx, EPA-HQ-OAR-2009-0491-4507 (“NEEDS Source-Specific Adjustments”)

NERC, *2011 Long-Term Reliability Assessment*, (Nov. 2011),
http://www.nerc.com/files/2011LTRA_Final.pdf (“NERC Report”)

Notice of Data Availability (“NODA”) for the Proposed Transport Rule, *Notice of Data Availability Supporting Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone*, 75 Fed. Reg. 53,613 (Sept. 1, 2010)

NODA, *Notice of Data Availability Supporting Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone: Revisions to Emissions Inventories*, 75 Fed. Reg. 66,055 (Oct. 27, 2010)

NODA, *Notice of Data Availability Supporting Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone: Request for Comment on Alternative Allocations, Calculation of Assurance Provision Allowance-Surrender Requirements, New-Unit Allocations in Indian Country, and Allocations by States*, 76 Fed. Reg. 1109 (Jan. 7, 2011)

NODA, *Data Availability Concerning Transport Rule Allowance Allocations to Existing Units*, 76 Fed. Reg. 42,055 (July 18, 2011)

Proposed Rule, *Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone*, 75 Fed. Reg. 45,210 (Aug. 2, 2010)

PSEG Services Corporation Comments on 75 Fed. Reg. 45,210, *Federal Implementation Plans to Reduce Interstate Transport of Final Particulate Matter and Ozone; Proposed Rule*, EPA-HQ-OAR-2009-0491-2726 (“PSEG Comments”)

Regulatory Impact Analysis for the Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone in 27 States; Correction of SIP Approvals for 22 States (June 2011), EPA-HQ-OAR-2009-0491-4547 (“RIA”)

Resource Adequacy and Reliability in the IPM Projections for the Transport Rule TSD, EPA-HQ-OAR-2009-0491-4455 (“Resource Adequacy TSD”)

Transport Rule Primary Response to Comments (June 2011), EPA-HQ-OAR-2009-0491-4513 (“RTC”)

U.S. Department of Energy, *Resource Adequacy Implications of Forthcoming EPA Air Quality Regulations*, (Dec. 2011), http://energy.gov/sites/prod/files/2011%20Air%20Quality%20Regulations%20Report_120111.pdf. (“DOE Report”)

STATUTES AND REGULATIONS

The pertinent statutes and regulations are set forth in the Petitioners' addenda.

INTRODUCTION

Respondent Intervenors Calpine Corporation, Exelon Corporation and Public Service Enterprise Group, Inc. (“Intervenors”) own generation capacity of over 66 GW, enough to serve over 66 million households. In 2011, Intervenors accounted for 9% of all electricity generated in the CSAPR region. Intervenors’ generation fleets are comprised primarily of EGUs emitting far less pollution than the uncontrolled coal-fired EGUs owned by many Petitioners. Because Intervenors’ cleaner, environmentally-controlled units can be more expensive to own and operate than Petitioners’ uncontrolled EGUs, Intervenors are placed at a disadvantage in competitive electricity markets. In general, cheaper higher-polluting EGUs operate the most, increasing interstate pollution transport. CSAPR provides an economic incentive to reduce this pollution by rewarding the operation of pollution controls and low-emitting generating units.

This brief offers Intervenors’ perspective as knowledgeable industry members supporting CSAPR, answering Petitioners’ arguments on technical points of market structure, modeling, compliance and reliability. Intervenors address sections I-III and V-VI of Industry/Labor Petitioners’ brief, sections II-IV of State/Local Petitioners’ brief, and Petitioner Intervenor/Amici’s brief.

SUPPLEMENTAL STATEMENT OF THE CASE AND FACTS¹

Most states covered by CSAPR are served by competitive wholesale electricity markets operated by independent system operators or regional transmission organizations (“ISO/RTOs”). ISO/RTOs ensure that adequate electricity is always available to satisfy demand and match the amount of electricity generated to electricity demand in real time.² ISO/RTOs use a market-based mechanism to determine the order in which to call upon (“dispatch”) EGUs to generate power, so that the least expensive units are dispatched first and progressively more expensive units are dispatched as demand rises.³

Each EGU owner submits a “bid” to the ISO/RTO indicating the price at which it is willing to run its generating unit, usually at least the unit’s operating cost. (JA03817-3818). Units with higher operating costs submit higher bids and are dispatched only after all lower cost units. This system has significant implications for interstate pollution transport.

¹ Intervenor incorporate by reference the Statement of Issues, Statement of the Case and Statement of the Facts (as supplemented herein) and Statement of the Standard for Review set forth in Respondents’ brief.

² *See* Allowance Allocation Final Rule TSD at 13-19 (JA03054-3060). *See, e.g.*, ISO New England, http://www.iso-ne.com/nwsiss/grid_mkts/elec_works/oview_brochure.pdf.

³ *See* PJM Market Overview, <http://www.pjm.com/Home/about-pjm/learning-center/markets/market-overview.aspx?faq=%7b7481FB1F-941C-4B10-A8D5-B73DAB5CF2A2>.

Pollution control imposes not only significant capital costs for equipment, but also significant operating costs, including low-sulfur fuel, treatment chemicals, waste disposal and electricity and water consumption. Hence, EGUs operating pollution controls have higher operating costs, resulting in higher bids and less frequent dispatch compared to uncontrolled units. Similarly, unless required to do so, EGUs that have controls will not operate them, so they will have lower costs, lower bids and more frequent dispatch. Pollution can also be reduced by dispatching natural gas-fired EGUs, which produce virtually no SO₂ and a fraction of the NO_x produced by coal-fired EGUs, but these plants can have higher costs than uncontrolled coal-fired EGUs. If all competing generation units faced identical regulatory requirements, operating costs for pollution controls might make little difference, but that is not the case.

Most ISO/RTOs cover multiple states,⁴ and power from one ISO/RTO region can be sold into another. EGUs do not, therefore, compete only against units in the same state, subject to the same regulations. They also compete against units in other states, including states where pollution control requirements are less stringent. Accordingly, when a downwind state suffering poor air quality increases pollution control requirements, the effect may be to drive electric generation from

⁴ PJM Interconnection, the largest ISO/RTO, covers parts of thirteen states and D.C.

increasingly expensive in-state units to units in upwind states with less stringent pollution control requirements, merely replacing in-state pollution with imported out-of-state pollution. This effect, known as “leakage,” is a major air transport concern considered by EPA in developing CSAPR. These market forces make it impossible for any individual CSAPR state to address air quality completely without a federally-enforceable program to eliminate all existing and potential substantial contributions to non-attainment, interference with maintenance, and contribution to deterioration from out-of-state sources as required by CAA section 110(a)(2)(D) (collectively, “Downwind Impacts”).

Whenever generation shifts among EGUs, pollution travels to different areas, often in tiny amounts that nevertheless cause Downwind Impacts when combined with impacts from all other units. In developing CSAPR emission budgets, EPA used both an air pollution transport model, CAMx, and a complex model developed for the electric industry, IPM, to evaluate how pollution control costs would shift dispatch, and how downwind air quality would be affected. IPM is designed to “provide[] forecasts of least cost capacity expansion, electricity dispatch, and emission control strategies while meeting energy demand and environmental, transmission, dispatch, and reliability constraints.” Base Case v.4.10 at 1-1 (JA02333). IPM allowed EPA to evaluate how emissions would change if, for example, generation units were required to incur an additional \$500

in costs for each ton of NO_x or SO₂ emitted. EPA used IPM outputs, air quality modeling and other information to determine the “highly cost-effective” levels of control that define each state’s contribution to Downwind Impacts.

SUMMARY OF ARGUMENT

Given the economic realities of the electricity market, CSAPR represents a reasonable, well-considered program to eliminate interstate pollution transport, well within EPA’s broad rulemaking authority. EPA properly used state-of-the-art modeling to develop the state emission budgets at the heart of CSAPR. EPA set reasonable and attainable compliance deadlines for CSAPR that will not disrupt electric reliability.

ARGUMENT

I. EPA Properly Applied CAA § 110(a)(2)(D) to Eliminate Each Upwind State’s Downwind Impacts.

In challenging EPA’s methodology for determining state budgets, Petitioners mischaracterize this Court’s decisions and confuse EPA’s mechanism for selecting states for inclusion in CSAPR based on whether the state’s emissions exceed a threshold of Downwind Impacts (the “Inclusion Threshold”) with the concept of “significant contribution” used to derive state emission budgets, based on emissions that can be reduced at or below a reasonable cost. Petitioners’ arguments regarding CSAPR are legally indistinguishable from those rejected by this Court in *Michigan v. EPA*, which explicitly approved EPA’s method for

defining “substantial contribution” based on the cost of reductions. *Michigan v. EPA*, 213 F.3d 663, 674-681 (D.C. Cir. 2000); *see* EPABr. 20-27.

The nature of electricity markets makes EPA’s cost-based method essential to address the “somewhat intractable” problem (EPABr. 4) of eliminating Downwind Impacts, and undermines Petitioners’ claim that EPA may not require reductions to levels below the Inclusion Threshold. Petitioners’ unrealistic two state/one receptor “examples” (SPBr. 35-36) ignore both the fact that it is the combination of many contributions from generation units in many states that cause any Downwind Impact, 76 Fed. Reg. 48,208, 48,237, EPABr. 29, and that the magnitude and location of these contributions will necessarily be altered by market-driven changes in generation unit dispatch.

EPA included states in CSAPR if they exceeded the Inclusion Threshold at one downwind receptor. However, most CSAPR states contribute to Downwind Impacts at multiple receptors, often at levels *below* the Inclusion Threshold. Emission reductions under CSAPR cannot be targeted to a single downwind receptor; they will reduce all of a state’s downwind contributions, whether above or below the Inclusion Threshold. More than two dozen upwind states may contribute to Downwind Impacts at a given receptor (EPABr. 29 n.15), and many of those contributions may be below the Inclusion Threshold. The

elimination of these sub-threshold contributions is an essential component of CSAPR.

For example, nine upwind states contribute to impacts at the Madison, Illinois receptor at levels above the Inclusion Threshold, the largest being Missouri. However, nineteen other states have sub-threshold contributions, which are collectively as large as Missouri's, and nearly as large as Illinois'. Air Quality TSD Tables D-7, D-8 (JA02706-2707). Though below the threshold at Madison, twelve of these nineteen are included in CSAPR and required to eliminate their "significant contribution" because they exceed the Inclusion Threshold at some other receptor. CSAPR's elimination of "significant contributions" from these twelve states *in addition to* those from the nine large contributors combine to eliminate Downwind Impacts at Madison. Capping upwind contributions at 1%, as Petitioners suggest, would allow a remaining upwind contribution of more than 17% of the NAAQS at Madison (1% each from nine large contributors, plus 8.5% total from nineteen sub-threshold contributors), offering no certainty that Downwind Impacts will be eliminated. *Id.* Moreover, changes in generation patterns could cause emissions from any of the twelve sub-threshold CSAPR states to increase up to 1%, further threatening attainment.

This example also demonstrates EPA's point that requiring reductions to 1% in every instance would result in *overcontrol*. CSAPR eliminates most

Downwind Impacts from the CSAPR states.⁵ Yet, after implementation of the Rule's cost-effective reductions, every state but one (Maryland) will still be contributing to at least one downwind receptor at levels above the Inclusion Threshold. EPABr. 33 n.20. It would be even costlier to reduce these states' contributions to 1% – if that were the test for “significant contribution” – and unnecessary to achieve CSAPR's goals.

By using cost to define “significant contribution,” EPA harmonizes CSAPR with the dynamics of the electricity market, and mobilizes market forces to reduce pollution and to eliminate Downwind Impacts. As explained above, operating cost determines which generation units operate, and thus the magnitude and location of EGU emissions. By synchronizing CSAPR's operational principle — budgets based on the cost of emission control — with the market's operational principle — dispatch based on operating cost (including emission control costs), EPA designed CSAPR to work *with* the electricity market, not *against* it. The inflexible approach advocated in Petitioners' brief, though notably not in their comments (EPABr. 30), would impose rigidity on a market that requires fluidity, and do far more violence to electricity markets than CSAPR.

⁵ *But see* Public Health Intervenors Brief 12.

EPA's cost-based scheme also promotes the salutary goal of fairness. Downwind states like New Jersey and North Carolina, and cities like Chicago and Philadelphia, already require emission controls more stringent than those reflected in CSAPR. Generators there, including Intervenors, have incurred capital costs to reduce emissions, only to find that their cleaner equipment will be dispatched less frequently. This same fate would befall units in states contributing more than 1% to a downwind receptor, if reductions below that threshold were not also required of other states. However, if costs of control are uniformly imposed upon *all relevant units*, by way of a comprehensive state-by-state cap reflecting how generation units are dispatched, the market will not drive emissions to high-pollution EGUs, because the operating cost of these units will rise as they must purchase more allowances. By establishing a pollution control cost for all competitors equal to at least the cost of running controls,⁶ CSAPR will eliminate Downwind Impacts while ensuring that downwind generators who have already incurred capital costs to build clean generation capacity will not continue to suffer reduced dispatch and reduced revenue. Moreover, downwind states and cities will get relief from upwind contributions to poor air quality that adversely affect health

⁶ Contrary to Petitioners' unsupported speculation, EPA found that \$500/ton represents the cost of operating controls and therefore the minimum required to induce companies to operate existing control equipment. 76 Fed. Reg. at 48,256-257.

and reduces economic growth, tax revenue and employment. Exelon Comments 4-5, 14, Exhibit 2 at iv-v (JA00664-665, 674, 742-743).

Petitioners have failed to carry their heavy burden of showing that EPA was arbitrary and capricious in determining “significant contribution” and setting state emission budgets.

II. EPA Properly Used IPM To Develop State Emission Budgets.

EPA used IPM to predict emissions on a state-by-state basis under multiple scenarios, utilizing the resulting information to develop state emission budgets. IPM is recognized as the most comprehensive, sensitive model for predicting the operation of generation units based on factors including electricity demand, emission controls and economic conditions.⁷ IPM is routinely peer-reviewed, readily available and used by EPA as well as FERC, states, ISO/RTOs, trade groups, and most major electric generators, including Intervenors.⁸ EPA’s reliance on IPM was approved in *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1052-53 (D.C. Cir. 2001). Even so, EPA did not rely *solely* on IPM. EPA used IPM’s predictions as a starting point, adjusting state emission budgets to reflect any data not taken into account by the model.

⁷ Base Case v.4.10 at 2-1 (JA02339).

⁸ *Id.* (JA02339). For a complete discussion of the purpose and capabilities of IPM, see *id.* § 2.1 (JA02339-2340).

Petitioners contend that “significant errors” in IPM so undermine the model that it was error for EPA to use IPM. IPBr. 48. Intervenor/Amici take this argument farther, asserting that EPA’s use of IPM results in emission budgets so erroneous as to threaten reliability. APBr. 7-12. Petitioners and Intervenor/Amici claim that IPM understates emissions because it cannot account for local conditions that might require EGUs to be dispatched in other than the economic order assumed by the model, or for emissions from cogeneration units when they must operate to produce steam, but not electricity. Even assuming this were true, it does not follow that the budgets established by EPA are arbitrary and capricious. In fact, the limitations of IPM identified by Petitioners, known to EPA and all users of the model, are amenable to adjustment when data supporting adjustment are provided. Moreover, these limitations are insignificant under CSAPR’s cap-and-trade program, where budgets may be exceeded by a variability margin of up to 21% without penalty.

When commenters provided EPA with data showing that IPM underestimated unit emissions, EPA considered those comments and adjusted budgets where appropriate.⁹ EPA did so in the final Rule and again in the Revision

⁹ See RTC 2106-08, 2171-72 (JA02088-2090, 2097-2098); compare NEEDS Source-Specific Adjustments (JA02993) with PSEG Comments 9 (JA00921).

Rule, considering comments submitted after the final Rule.¹⁰ Petitioners cannot identify any remaining “errors” that are meaningful in the context of the entire Rule, or even any one state, but insist that IPM is defective because it required the very adjustments that EPA made in response to comments. IPBr. 51.

Because CSAPR is a cap-and-trade system, it does not impose any control requirement on any specific unit. Thus, even if IPM shows that a given EGU will not operate when local conditions actually require that unit to run, CSAPR does not *actually* force the unit to shut down, as Intervenor/Amici suggest. The unit may continue to operate, even if it needs to purchase allowances covering its emissions. The Rule’s variability construct was designed to provide flexibility for variations in electricity demand among units and among states. EPA developed the 18% and 21% variability margins by studying EGU emissions over an eleven-year period. 76 Fed. Reg. at 48,267.

Like petitioners in *Michigan*, Petitioners complain of “errors” and “flaws,” but fail “to explain why the so-called problems... amount to an arbitrary and capricious decisionmaking[.]” *See Michigan*, 213 F.3d at 691. While Petitioners complain that EPA lacked perfect knowledge of all model inputs, Petitioners “had repeated opportunities to provide correct information... during the

¹⁰ *See* 77 Fed. Reg. 10,324; 77 Fed. Reg. 10,342.

rulemaking process.” *Id.* It is no indictment of IPM that it does not perfectly predict real-world outcomes; no model does. EPA considered and addressed IPM’s limitations, including idiosyncratic circumstances raised by commenters, and its choices were not arbitrary or capricious. *See ATK Launch Systems, Inc., v. EPA*, 2012 WL 593097 at *12-13 (D.C. Cir. Feb. 24, 2012) (citation omitted).

State Petitioners attack IPM indirectly. They argue that EPA failed to provide adequate notice of changes to emission budgets between the proposed and final Rule because EPA upgraded the model version and refreshed the model assumptions after the proposed rule was published. SPBr. 44-45. Although these changes often resulted in reduced final budgets, IPM is far from the proprietary “black box” that Petitioners suggest. One could easily anticipate, for example, that the lower natural gas price used by EPA would inevitably decrease projected emissions, since lower gas prices cause low-pollution natural gas units to be dispatched before high-pollution coal-fired units. Moreover, IPM is readily available from its author, ICF, which is routinely engaged by states, RTOs and many major electric generators to perform tasks using IPM. The model is

exhaustively documented, including on EPA's own website,¹¹ and both the model and its key inputs have been subject to notice and comment.¹²

Many commenters offered useful and appropriate comments on EPA's application of IPM, and could do so precisely because the strengths and limitations of IPM are so well-understood. EPA's application of the model was transparent, as reflected in the numerous notices EPA published, and the voluminous information on IPM placed in the regulatory docket.¹³ EPA's NEEDS database, which contains unit-level data used for IPM inputs, is a simple spreadsheet open for public comment, far from the mystery Petitioners suggest it to be. If Petitioners were caught unaware by the budgets contained in the final rule, despite three post-proposal opportunities for comment, that was due to their failure to provide timely information or persuasive data supporting their complaints about EPA's use of IPM. To keep the model up-to-date during the rulemaking process was not arbitrary and capricious. Regardless, any notice defect was cured by the multiple

¹¹ See <http://www.epa.gov/airmarkets/progsregs/epa-ipm/transport.html>.

¹² See 75 Fed. Reg. 45,210; 75 Fed. Reg. 53,613; 75 Fed. Reg. 66,055; 76 Fed. Reg. 1109; 76 Fed. Reg. 42,055.

¹³ See, e.g., IPM Run - TR Base Case v.4.10 - 2012 Parsed File (JA02321); Base Case v.4.10 (JA02322); ICF Technical Memorandum - Basis for Natural Gas Resource Assumptions in EPA Base Case v.4.10 (JA02379).

additional opportunities for comment, and EPA's adoption of revised budgets in the Revision Rule.¹⁴

III. Industry Can Comply With CSAPR Cost-Effectively and Without Disruption of Service.

A. The Deadlines are Reasonable in Light of Statutory Requirements and *North Carolina*.

Industry/Labor Petitioners incorrectly allege that CSAPR's compliance dates are arbitrary and unachievable. IPBr. 52. The CAA requires that NAAQS be attained as expeditiously as practicable and no later than statutorily-prescribed. *See* 42 U.S.C. § 7502(a)(2)(A); 76 Fed. Reg. at 48,214, 48,277. The attainment dates for NAAQS have long passed or will soon pass, or reach their maximum extension periods. 76 Fed. Reg. at 48,277-278 (listing relevant dates). EPA coordinated its CSAPR compliance deadlines in 2012 and 2014 to allow downwind states to meet these compliance dates as expeditiously as practicable, as required by *North Carolina*. *Id.* at 48,277. This Court struck down CAIR, in part, because it did not tie compliance deadlines to the 2010 NAAQS attainment date but rather gave upwind states until 2015 for purposes of feasibility. *North Carolina v. EPA*, 531 F.3d 896, 911-12 (D.C. Cir. 2008). *North Carolina* required EPA to remedy the flaws in CAIR quickly. Because an overly-extended

¹⁴ *See* 75 Fed. Reg. 53,613; 75 Fed. Reg. 66,055; 76 Fed. Reg. 1109; 76 Fed. Reg. 42,055; 77 Fed. Reg. 10,324.

compliance date was among those flaws, EPA reasonably chose for CSAPR more imminent deadlines based on attainment dates. 76 Fed. Reg. at 48,278-279.

B. The Compliance Deadlines are Attainable.

Petitioners' argument that the compliance dates are unachievable fails because many companies, including Intervenors, are able to meet those deadlines. Far from being clairvoyant, Petitioners need only have read *North Carolina* to recognize that EPA would need to tighten emission controls to reduce interstate transport, and could have taken reasonable and prudent actions to prepare. See EPABr. 88-89. Intervenors and others invested in advanced controls for their coal-fired units and in cleaner generation capacity, while many owners of high-pollution coal-fired units chose to comply with CAIR through allowance purchases, deferring installation of emission controls as long as possible.

CSAPR is a cap-and-trade system. EGUs holding insufficient allowances can comply with the Rule either by reducing emissions or by purchasing more allowances. Unless the budgets are insufficient, and thus the total allowances too few, the level of control that a given unit achieves has no effect on its ability to comply. In setting 2012 emission budgets, EPA required only reductions that could be achieved without installing any emission controls beyond what had already been installed or planned. 76 Fed. Reg. at 48,252, 48,279-280.

Indeed, EPA calculated that by 2012, more than half the national coal capacity will be operating with advanced controls for SO₂ and NO_x. *Id.* at 48,280.

Using IPM, EPA calculated CSAPR's 2012-13 state budgets based on a control cost that would not require construction of any new post-combustion controls that would not be feasible before 2012. Budgets are based on use of many viable compliance options, including increased use of existing combustion and post-combustion controls, use of lower-sulfur coals and dispatch of lower-emitting units, such as existing, underutilized natural gas units. EPA found that only a small number of units need less costly, incremental combustion modifications to reduce NO_x emissions to achieve state emission budgets, and those modifications could be completed by 2012. *Id.* at 48,279-281.

EPA determined that by 2014, generators could install additional "highly cost-effective" controls, including where necessary advanced SO₂ controls and modifications for use of lower sulfur coals for those in Group 1 states requiring greater reductions. *Id.* at 48,279-284; RIA 258-259 (JA03194-3195). Further, EPA found that the "highly compatible" Mercury and Air Toxics Standards ("MATS") requiring compliance in 2015 would incentivize generators to retrofit EGUs to meet both rules.

Because budgets are based on readily achievable reductions, they are sufficient to ensure that generation units that emit more tons of pollution than

allowances received will be able to comply by purchasing allowances. 76 Fed. Reg. at 48,283. EPA correctly observed that an allowance market began developing upon CSAPR's promulgation. EPABr. 91.

Petitioners fail to show how EPA's findings, modeling and assumptions were unreasonable or arbitrary. They rely on their own experts, who state that advanced controls cannot be constructed by 2014. IPBr. 53-55. EPA considered these and similar comments, but discounted them based on real world observations of new construction and supply chain availability. 76 Fed. Reg. at 48,282-283 (noting two EGUs constructed with advanced controls more quickly than Petitioners allege to be possible). *See also* Engineering Feasibility RTC at 5-10 (JA02117-2122). Intervenors, among others, submitted comments supporting EPA's determinations. *See* RTC 608, 771-774, 793, 1503-1504 (JA01917, 2042-2045, 2046, 2062-2063).¹⁵

EPA's findings are entitled to substantial deference. EPA weighed comments from many sources, developed its own analysis and ultimately concluded that CSAPR's state budgets could be achieved in the time provided. Petitioners may disagree, but it is EPA's responsibility to weigh competing views. Petitioners have not shown that EPA acted arbitrarily or capriciously.

¹⁵ EPA determined that Group 1 states could comply with 2014 SO₂ budgets even without any scrubber retrofits. 76 Fed. Reg. at 48,282-283.

C. EPA Reasonably Determined that CSAPR Would Have No Impact on Reliability.

The record disproves Intervenor/Amici's claims that EPA did not consider the impact of CSAPR on electric reliability, and that CSAPR will adversely affect reliability. EPA thoroughly considered the impact of CSAPR and other rules on reliability and determined that CSAPR would have minimal impact. This conclusion is well supported by reliable expert reports in the record and confirmed by updates submitted in connection with the Revision Rule.

1. EPA Adequately Considered Impacts on Reliability.

From the beginning, EPA was aware of and assessed CSAPR's potential impact on resource adequacy and reliability. In the proposed rule, EPA identified as a "key guiding principle" that "requirements for EGUs... be structured in a way that ensures a reliable power supply." 75 Fed. Reg. at 45,227. In the final Rule, EPA made certain that emission budgets took "into account the need to ensure reliability of the electric generation system." 76 Fed. Reg. at 48,270. Ensuring reliability was one basis for EPA's choice of a cap-and-trade program providing flexibility through interstate allowance trading, accommodating variability in state emission budgets and authorizing allowance banking. *Id.* at 48,265, 48,272-273, 49,294, 48,347. EPA considered transmission reliability by accounting for transmission constraints in its development of budgets using IPM and in its analysis of the rule under *Executive Order 13211*. *Id.* at 48,346-347.

EPA specifically considered comments that CSAPR would adversely impact resource adequacy and reliability, and reasonably concluded that any impacts were minimal. RTC 1498, 1514-16 (JA02057, 2073-2075). Based on modeling, EPA concluded that CSAPR could lead to a maximum reduction of 4.8 GW of coal-fired power,¹⁶ well within the replacement capacity of utilities and ISO/RTOs, especially considering existing excess natural gas-fired capacity. 76 Fed. Reg. at 48,346; Resource Adequacy TSD 2-4 (JA02919-2921). EPA's modeling considered required regional reserve margins and limitations of firm power transfers between regions "so that the basic reliability requirements are already incorporated in the analysis of the impact of the rule." RTC 1515 (JA02074). Since sources would have the flexibility to trade allowances or reduce emissions, any projected plant retirements are most likely based on economic considerations unrelated to CSAPR. *Id.*¹⁷

EPA did not consider CSAPR in a vacuum, as Intervenor/Amici suggest, but considered its impacts cumulatively with other new or potential rules impacting the power sector. EPA stated it would coordinate utility-related air

¹⁶ This amount represents 1% of all coal-fired capacity and .5% of total U.S. generating capacity. EPA estimated 3 GW of capacity would close by 2014 without CSAPR for economic reasons. RIA 15, 262 (JA03188, 3198).

¹⁷ EPA specifically modeled whether sources could meet CSAPR requirements without retrofits and determined they could with only moderate adjustments. 76 Fed. Reg. at 48,283; RTC 1515 (JA02074).

pollution rules and consider their cumulative effect to the extent consistent with legal authority. EPA committed to “approach these rulemakings in ways that allow the industry to make practical investment decisions that minimize costs in complying with all of the final rules, while still securing the fundamentally important environmental and public health benefits” of the rules. 76 Fed. Reg. at 48,216, 48,343.

2. EPA’s Reliability Assessment Has Been Validated.

EPA’s reliability assessment is supported by credible sources in the record for CSAPR and for the Revision Rule. Intervenor/Amici mischaracterize or overstate the reports they cite, none of which were before EPA when adopting CSAPR, including a November 29, 2011 report by the North American Electric Reliability Corporation (“NERC”).¹⁸ If the Court entertains these post-rulemaking materials, it will see that NERC actually confirms EPA’s assessment that CSAPR will result in at most 4.8 GW of retirements, and may result in none. NERC Report 118, fig. 55 (JA03982). NERC’s findings were confirmed in a Department of Energy report, concluding that adequate generation capacity would be maintained in virtually every NERC region upon full implementation of CSAPR and MATS, including temporary outages while control equipment is installed.¹⁹

¹⁸ NERC Report (JA03973).

¹⁹ DOE Report v-vii (JA04230-4232).

A survey of recent corporate earnings statements revealed widespread conviction within the electric industry that generation owners are able to comply with CSAPR (and MATS) without compromising reliability.²⁰ These same views are reflected in the record in comments from Intervenors and other generators that have invested in clean energy and advanced controls. *See* RTC 45, 772-773, 1498-1504 (JA01535, 2043-2044, 2057-2063); Exelon Comments 15-20 (JA00675-680).

Intervenor/Amici rely on dubious post-rulemaking studies by two reliability organizations in the Southwest, ERCOT and SPP. ERCOT's conclusion that generation may fall below its reserve margin is irrelevant in light of NERC's findings suggesting that EPA rules do not contribute materially to ERCOT's low margins.²¹ SPP's analysis is fundamentally flawed because it excludes available gas-fueled peaking capacity from its modeling. *See* Biewald Decl. ¶ 13 (JA03765); Napolitano Decl. 1 ¶¶ 53-62 (JA04085-4088). In any case, EPA has taken action to address any credible reliability concerns when commenters have

²⁰ M.J. Bradley Report at 15, Appendix A (JA04055, 4059-4064). This and the NERC Report are cited in the record of the Revision Rule and cited in Industry Intervenors' Response to Motions for Stay at 1-3, Doc. 1345216.

²¹ NERC Report 156 (JA04020); *see* CRS Report 9-10 (JA04278-4279) (concluding that ERCOT margins affected by economics, not EPA rules). *See also* Napolitano Decl. 2 ¶¶ 23-35 (JA03661-3665).

provided timely, adequate information.²² EPA did not act arbitrarily or capriciously in concluding, when adopting both CSAPR and the Revision Rule, that CSAPR will not adversely affect reliability.

CONCLUSION

For the reasons set forth herein and the briefs filed by Respondents and other Respondent Intervenors, Intervenors respectfully request that the Court dismiss the petitions, and immediately lift the stay.

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Respectfully submitted,

/s/ Brendan K. Collins

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²² For example, EPA increased Oklahoma's 2012 ozone season NO_x budget so as not to require the installation of low-NO_x burners until 2013. 76 Fed. Reg. 80,760, 80,764-765.

CERTIFICATE OF COMPLIANCE

In accordance with Federal Rule of Appellate Procedure 32(a)(7) and Circuit Rule 32(a), I hereby certify that the foregoing Final Brief of Industry Respondent Intervenors contains 4,686 words as counted by the Microsoft Office Word 2003 word processing system. I further certify that the combined words of the Public Health Intervenors, the State and Local Intervenors, and the Industry Intervenors do not exceed 14,000, as mandated by this Court's January 18, 2012 Order.

March 16, 2012

/s/ Brendan K. Collins
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CERTIFICATE OF SERVICE

I, Brendan K. Collins, a member of the Bar of this Court, hereby certify that on March 16, 2012, I electronically filed the foregoing “Final Brief of Industry Respondent Intervenors” with the Clerk of the Court for the United States Court of Appeals for the D.C. Circuit by using the appellate CM/ECF system.

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.

Participants in the case who are registered CM/ECF users will be served by the appellate ECF system.

/s/ Brendan K. Collins

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