#### ORAL ARGUMENT SCHEDULED 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.

# U.S. ENVIRONMENTAL PROTECTION AGENCY,

**Respondent.** 

On Petition for Review of *Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals; Final Rule*, 76 Fed. Reg. 48,208 (August 8, 2011)

## 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

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# **CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES**

All parties, intervenors, and amici appearing in this court are listed in the Brief for Industry/Labor Petitioners. Intervenor and Amici adopt the Certificate as to Parties, Rulings, and Related Cases set forth in that brief.

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# **GLOSSARY**

BEPC	Brazos Electric Power Cooperative, Inc.
BPU	Kansas City Board of Public Utilities
CAA	Clean Air Áct
CAIR	Clear Air Interstate Rule
CEQ	Council on Environmental Quality
CSAPR	Cross-State Air Pollution Rule
EGU	Electric generating unit
EPA	United States Environmental Protection Agency
ERCOT	Electric Reliability Council of Texas
FERC	Federal Energy Regulatory Commission
FIP	Federal implementation plan
FGD	Flue Gas Desulfurization
GW	Gigawatt
IECA	Industrial Energy Consumers of America
ILPBr	Industry/Labor Petitioners' Brief
IPM	Integrated Planning Model
ISO	Independent System Operator
MISO	Midwest Independent Transmission System
	Operator
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NERC	North American Electric Reliability Corporation
NO <sub>x</sub>	Nitrogen oxide
PRB	Powder River Basin
RIA	Regulatory Impact Analysis
RTC	Transport Rule Primary Response to Comments
SCR	Selective Catalytic Reduction
SIP	State implementation plan
SLF	Southeastern Legal Foundation, Inc.
SO <sub>2</sub>	Sulfur dioxide
SPP	Southwest Power Pool
STEC	South Texas Electric Cooperative, Inc
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## **RULE 26.1 CERTIFICATES OF INTERVENORS AND AMICI CURIAE**

San Miguel Electric Cooperative, Inc. San Miguel Electric Cooperative, Inc. (San Miguel) is a 400 MW, mine-mouth, lignite-fired electric generating unit ("EGU") located in Atascosa County, Texas roughly 45 miles south of San Antonio. San Miguel was created on February 17, 1977, under the Rural Electric Cooperative Act of the State of Texas, for the purpose of owning and operating the generating plant and associated mining facilities that furnish power and energy to Brazos Electric Power Cooperative, Inc. ("BEPC") and South Texas Electric Cooperative, Inc. ("STEC"). San Miguel is a not-for-profit electric cooperative incorporated in the State of Texas under the Electric Cooperative Corporation Act, Tex. Util. Code, Chapter 161. San Miguel does not have any outstanding shares or debt securities in the hands of the public nor any parent, subsidiary, or affiliates that have issued shares or debt securities to the public and no publicly owned company has an ownership interest in San Miguel.

**Industrial Energy Consumers of America**. The Industrial Energy Consumers of America ("IECA") is a 501 (C) (6) nonprofit corporation comprised of leading manufacturing companies with \$700 billion in annual sales and with more than 650,000 employees nationwide. IECA represents a diverse set of industries including: chemicals, plastics, cement, paper, food processing, brick, fertilizer, steel, glass, industrial gases, pharmaceutical, aluminum and brewing. It was created to promote the interests of manufacturing companies through research, advocacy, and collaboration for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA has no parent companies, subsidiaries, or affiliates that have issued shares or debt securities to the public, although IECA's individual members have done so.

<u>Southeastern Legal Foundation, Inc.</u> The Southeastern Legal Foundation, Inc. ("SLF") is a non-profit Georgia corporation and constitutional public interest law firm and policy center that advocates limited government, individual economic freedom, and the free enterprise system in the courts of law and public opinion. SLF has no parent companies. No publicly-held corporation has 10% or greater ownership interest in SLF.

**Putnam County, Georgia**. Located approximately 70 miles southeast of Atlanta, Putnam County is one of the smallest counties in Georgia, with a population of just over 20,000 residents. Home to the four coal-fired units at Georgia Power Company's Plant Branch, Putnam County funds most of its critical services through the collection of property and sales taxes which are significantly generated from activities related to coal-fired units. Typical of other cities and counties home to other coal-fired power plants throughout the United States, Putnam County's interests in the impacts of the final rule reflect the concerns and fears of local governments that are home to coal-fired units.

#### STATUTES AND REGULATIONS

The text of 42 U.S.C. § 7410 is reproduced in the Statutory Addendum to Industry/Labor Petitioners' Brief.

#### JURISDICTIONAL STATEMENT

Intervenor-Amici adopt the Jurisdictional Statement in Industry/Labor Petitioners' Brief.

#### **STATEMENT OF ISSUES**

The issues presented in this brief are:

1. Whether EPA's application of its cost-effectiveness test in formulating the Cross-State Air Pollution Rule ("CSAPR")<sup>1</sup> was arbitrary and capricious because it failed to adequately model the ability of the post-CSAPR electric power grid to operate reliably.

2. Whether, in assessing the ability of the post-CSAPR electric power grid to operate reliably, EPA acted arbitrarily and capriciously by failing to consider the impacts of CSAPR cumulatively with EPA's other power sector regulations.

3. Whether EPA failed to consider the health and welfare disbenefits of an unreliable power grid and other important factors.

4. Whether EPA's method for allocating emissions allowances is contrary to statute and arbitrary and capricious.

<sup>&</sup>lt;sup>1</sup> Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals; Final Rule, 76 Fed. Reg. 48,208 (Aug. 8, 2011).

#### STATEMENT OF THE CASE

Intervenor-Amici adopt the Statement of the Case in Industry/Labor Petitioners' Brief.

#### SUMMARY OF ARGUMENT

CSAPR will stress the nation's electric power grid beyond its breaking point. Using a model that EPA admits does not accurately simulate operation of the grid, EPA predicts no material impact. But alarmed by the sharp power sector emission reductions required by the rule within a very short timeframe, entities that operate and are responsible for the reliability of affected portions of the grid conclude that there will be "serious, negative implications to the reliable operation of the electric grid . . . raising the possibility of rolling blackouts or cascading outages that would likely have significant impacts on human health, public safety and commercial activity" with an "increasing risk of emergency events, including rotating outages . . . ."<sup>2</sup>

The flaws in EPA's reliability analysis are compounded by EPA's failure to analyze the impacts of CSAPR cumulatively with other power sector regulations EPA has recently promulgated or is in the process of promulgating, regulations that EPA says are part of its effort to "transform" that sector. These other regulations will eliminate compliance options that EPA relies on to conclude that meeting CSAPR's emissions reductions will not imperil the grid. And EPA further fails to consider the

<sup>&</sup>lt;sup>2</sup> Citations provided below.

effect of a less reliable grid on public health and welfare, when identifying the social costs resulting from CSAPR.

EPA's failure to consider the adverse costs of diminished grid reliability goes to the heart of the rationale on which CSAPR is based. EPA contends that CSAPR represents a cost-effective way of eliminating the power sector's "significant contribution" to the inability of certain states to attain and maintain air quality standards. But, as EPA admits, a program that undermines the reliability of the power grid is not "cost-effective."

Finally, the emissions allocation methodology set forth in CSAPR is contrary to the Clean Air Act ("CAA") because it usurps authority allocated to states and is arbitrary and capricious.<sup>3</sup>

# **ARGUMENT**

I. EPA's Conclusion that the CSAPR Emission Reductions Are Cost-Effective Is Arbitrary and Capricious Because EPA Has Not Shown that the Nation's Electric Grid Post-CSAPR Can Continue to Operate Reliably.

In CSAPR, EPA identified "cost-effective" emission reductions from certain upwind states that it determined "contribute significantly" to the inability of certain downwind states to meet National Ambient Air Quality Standards ("NAAQS").<sup>4</sup> 76

<sup>&</sup>lt;sup>3</sup> Amici do not join this last argument of the brief.

<sup>&</sup>lt;sup>4</sup> Intervenor-Amici endorse Industry/Labor Petitioners' contention that EPA has misapplied cost-effectiveness under CAA §110(a)(2)(D)(i)(I) to force some states to

Fed. Reg. at 48,246-65. Industry/Labor Petitioners' Brief ("ILPBr.") at 8-11. In determining that CSAPR will cost-effectively eliminate these upwind states' "significant contributions," EPA relied heavily on the Integrated Planning Model ("IPM") to simulate operation of the electric power grid. 76 Fed. Reg. at 48,225 and 48,248-52; ILPBr. at 49-52. Based on the IPM, EPA determined that electric generating units ("EGUs") can, within the highly expedited CSAPR compliance time frames, comply with the rule by taking "cost-effective" actions without impairing the reliable operation of the grid. *Id.* 

Whether the grid will operate reliably under CSAPR is critical to EPA's costeffectiveness claims, because the CSAPR-mandated emission reductions cannot be "cost-effective" if they cause the grid to fail, as EPA recognizes. Transport Rule Primary Response to Comments, June 2011, EPA-HQ-OAR-2009-0491-4513 ("RTC") at 1526 (EPA formulated CSAPR's "cost-effective EGU emission reductions subject to regional limitations of the transmission grid as it exists today, and its projections are fully compatible with the power sector's ability to comply with

reduce emissions beyond the point at which their contribution to downwind nonattainment or maintenance concerns becomes insignificant, as opposed to applying cost-effectiveness to mitigate the degree of reduction required above the "significant contribution" threshold. Intervenor-Amici offer this brief in further support of Industry/Labor and State Petitioners' arguments that EPA's CSAPR "significant contribution" and "interference" methodologies are unlawful and arbitrary, and that its compliance deadlines are unreasonable. Because this brief supports Industry/Labor Petitioners' arguments, Intervenor includes no additional justification as to its standing.

the rule's emission reductions while successfully operating the grid"). (JA02064). And if the grid will not operate reliably despite the IPM's prediction that it will, then EPA's reliance on IPM is misplaced.

The record shows that IPM is not up to the task. *First*, entities with actual responsibility for and expertise in the reliable operation of the grid have concluded that CSAPR will imperil grid reliability. *Second*, IPM demonstrably is not a proper tool for assessing grid reliability and was never intended for that purpose. *Third*, numerous examples demonstrate the failure of IPM to reflect actual grid operational conditions.

# A. EPA's Conclusions Regarding Grid Reliability Conflict with the Conclusions of Organizations Charged with Maintaining Grid Reliability.

Entities responsible for operating the grid have refuted EPA's IPM-based conclusion that the post-CSAPR grid will operate reliably. For example, the Electric Reliability Council of Texas ("ERCOT") concluded that, had CSAPR been in effect during August 2011, rotating blackouts would have occurred, and that the threat of future blackouts, which would compromise critical services and endanger lives in both the summer and winter, would persist in 2012 and beyond. *See*ERCOT, *Impacts of the Cross State Air Pollution Rule on the ERCOT System*, September 1, 2011 ("ERCOT CSAPR Study") at 5.<sup>5</sup> (JA03639). ERCOT predicted that if 2012 weather conditions

<sup>&</sup>lt;sup>5</sup> ERCOT is the Independent System Operator ("ISO") for most of the Texas grid and manages the flow of electric power to 23 million Texas customers – representing 85 percent of the state's electric load. ERCOT has been designated as the responsible

are, as anticipated, similar to 2011 conditions, CSAPR will "place ERCOT at increasing risk of emergency events, including rotating outages of customer load." *Id.* 

ERCOT is not alone. The Southwest Power Pool ("SPP")<sup>6</sup> likewise determined CSAPR's implementation will cause numerous serious violations of electric reliability standards, with "*serious, negative implications to the reliable operation of the electric gid in the SPP region* raising the possibility of rolling blackouts or cascading outages that would likely have significant impacts on human health, public safety and commercial activity." SPP September 20, 2011 letter to EPA ("SPP letter") (emphasis added).<sup>7</sup> (JA03615).

Because EPA is not a grid reliability regulator, this Court owes no deference to EPA's grid-reliability conclusions. *See A.L. Pharma, Inc. v. Shalala,* 62 F.3d 1484, 1490

entity under 16 USC §8240 for ensuring the reliability of the ERCOT grid. The CSAPR Study is an exhibit to the State of Texas Motion for Partial Stay of Final Rule in this docket and may also be found at <u>http://www.ercot.com/news/presentations</u>/2011/index.

<sup>6</sup> The SPP is the Regional Transmission Organization approved by the Federal Energy Regulatory Commission ("FERC") to plan and operate the regional transmission system and wholesale electric market in all or part of 8 southwestern states. It is also responsible under 16 USC §8240 for maintaining grid reliability in the SPP region. The SPP letter was attached to State of Kansas Motion for Stay of Final Rule in this docket and may also be found at <u>http://spp.org/publications/EPA%20Cross</u>% 20State%20Reliability%20Rule-Final-09202011.pdf.

<sup>7</sup> Considering CSAPR cumulatively with other EPA power sector regulations, the Midwest Independent Transmission System Operator ("MISO"), the FERC-approved ISO for a 12-state region and the Province of Manitoba, shared in its sister-entity conclusions about peril to grid reliability. *Sæ*Argument II below.

(D.C. Cir. 1995) (deference owed to an agency's technical determinations "within its area of expertise"). FERC has exclusive jurisdiction over grid reliability issues, including transmission constraints, 16 U.S.C. §8240, and such issues thus fall outside of EPA's delegated authority and expertise. *E.g., Adams Fruit Ca, Inc. v. Barrett,* 494 U.S. 638, 650 (1990) ("[A]n agency may not bootstrap into an area in which it has no jurisdiction."). EPA's conclusion that the IPM accurately projects CSAPR's impact on grid reliability therefore must fall in the face of the convincing contrary evidence from those with actual responsibility for maintaining the grid. *Chem. Mfis. Ass'n v. EPA*, 28 F.3d 1259, 1265 (D.C. Cir. 1994) ("The more inflexibly the agency intends to apply the model, however, the more searchingly will the court review the agency's response when an affected party presents specific detailed evidence of a poor fit between the agency's model and that party's reality.").

#### **B. EPA Never Performed a True Grid Reliability Analysis.**

The divergence in opinion between EPA and the grid reliability agencies is easily explained. IPM simulated a grid that does not exist – one in which power flows freely within broad geographic regions unimpeded by bottlenecks or overriding local reliability considerations. IPM, which defines reliability to "include[] *the ability to deliver the resources to the loads* so the overall power grid remains stable," nevertheless "*assumes* that adequate transmission capacity exists to deliver any resources located in, or transferred to, the region." *Resource Adequacy and Reliability in the IPM Projections for the Transport Rule TSD* (June 2011) ("IPM TSD") at 2 (emphasis added). (JA02919). Moreover, IPM does not ensure that designated "must run" generating units, which are needed to preserve local grid reliability, in fact keep running. *Documentation Supplement for EPA Base Case v. 4.10\_ FTransport–Updates for Final Transport Rule* (June 2011) ("IPM Documentation") at 52. (JA02820). Given these limiting assumptions, IPM grid simulations are not true reliability analyses. They provide a much simpler "resource adequacy" analysis,<sup>8</sup> examining only whether the total amount of electric capacity that will be forced to retire within broad regions will cause capacity levels to fall below regional reserve requirements. IPM TSD Appendices A1-A3.<sup>9</sup> (JA02922-25).

But a generation reserve analysis does not simulate the actual grid. In the real world, system dispatch is subject to localized constraints that impede the flow of

<sup>&</sup>lt;sup>8</sup> As EPA states, "IPM is specifically designed to ensure generation resource adequacy." IPM TSD at 2. (JA02919).

<sup>&</sup>lt;sup>9</sup> On February 7, 2012 EPA unofficially finalized two sets of minor adjustments to CSAPR, some of which increase allowance allocations to certain states to account for certain reliability must-run units. *Revisions to Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone* (not yet in Federal Register) ("Error Corrections Rule"), *available at* <u>http://epa.gov/</u> airtransport/actions.html. But these ad hoc after-the-fact adjustments do not substitute for a true grid reliability analysis accounting for *all* meaningful local operational conditions. As promulgated, CSAPR relied on a demonstrably inappropriate reliability analysis and therefore cannot stand. The belated Error Corrections Rule contains no new reliability analysis and foreclosed any inquiry into basic methodological issues. *Id* at 8. It cannot be used to rationalize, even on a post hoc basis, the flaws inherent in CSAPR. Indeed, EPA's rushed and limited post hoc attempt to address certain reliability must-run units is a clear concession of the obvious methodological shortcomings of IPM in assessing grid reliability.

electricity across broad regions, including intraregional transmission constraints, particularly around metropolitan areas, that create "load pockets" with limited access to remote resources and requirements to run local generation units to maintain voltage levels and to assure "black start" capability (to bring generation on line quickly in the event of a system emergency). I/LPBr. at 48-49. Organizations with actual grid responsibility, such as ERCOT and SPP, modeled CSAPR's impacts based on their expertise addressing local reliability requirements; their studies offer a more realistic and accurate picture than the oversimplified IPM.

As the FERC Chairman informed Congress in hearings on whether EPA was coordinating its grid reliability analyses with FERC, regional resource adequacy studies of the type EPA performed through the IPM, which don't take into account local reliability bottlenecks, are "irrelevant" in assessing the impact of EPA regulations on grid reliability.<sup>10</sup> And FERC Commissioner Spitzer stated:

[A]s my colleagues have all pointed out, location matters in electricity, and substantial excess capacity in Nevada may not help with the folks in Arizona, where I come from if three coal plants that have issues disappear from the grid.

<sup>&</sup>lt;sup>10</sup> The American Energy Initiative Impacts of the Environmental Protection Agency's New and Proposed Power Sector Regulations on Electric Reliability, Before the Subcomm. on Energy and Power of the H. Comm. on Energy and Commerce, 112<sup>th</sup> Congress (September 14, 2011) (response of FERC Chairman Wellinghoff to question by Rep. Rush) ("Electric Reliability Hearing"). The hearing transcript is available on Lexis and for convenience is included in the Joint Appendix. (JA03557).

*Id.* (response of Commissioner Spitzer to question by Rep. Rush.)

FERC Commissioner Moeller made the same point in his testimony, referring to older, less-controlled coal plants that are most likely to be forced to retire because of EPA's regulations and that tend to be located within or near metropolitan areas:

But here is my concern from a reliability perspective. Smaller plants are typically dirtier and older, but there are advantages in the system to smaller plants. They ramp up and down faster, they might be in locations where the voltage support is key. And I can go through a variety of other examples ... where they are located can make a lot of difference. And that's why I think we need to dig down deeper into the impacts here, because ... there will be a disproportionate number of smaller; older; dirtier plants affected. But their role in the overall electric grid needs to be better analyzed.

Id. (response to question by Rep. Rush (emphasis added)).

EPA's use of a generation resource adequacy model to determine whether the post-CSAPR transmission grid will operate reliably is arbitrary and capricious. *Sierra Club v. Costle*, 657 F.2d 298, 333 (D.C. Cir. 1981), *rev'd on other grounds*, 463 U.S. 680 (1983) (A model may not be used for purposes that "exceed the bounds of its usefulness."). And this is no small matter because "local" grid reliability impacts can have cascading effects over a broad region. For instance, in September 2011, a mistake by a single utility maintenance worker in Yuma, Arizona left millions throughout the Southwest and Mexico without power, many for days.<sup>11</sup>

<sup>&</sup>lt;sup>11</sup> Sæhttp://www.reuters.com/article/2011/09/09/us-outage-californiaidUSTRE7880FW20110909.

Moreover, EPA failed to "provide a complete analytic defense of its model (and) respond to each objection with a reasoned presentation." *Sierra Club*, 657 F.2d at 333. When confronted with the fact that the model fails to simulate the actual grid, and specifically that it shuts down reliability must-run units, EPA merely said that the model was incapable of doing otherwise because EPA did not have good information on what units must keep running for reliability and to what extent. IPM Documentation at 52.<sup>12</sup> (JA02820). But the inability of the model to simulate the real-world grid – and EPA's admission that the model cannot account for which generating units must stay in operation to keep the lights on – is precisely the reason EPA should not have relied on it to assess grid reliability.

EPA further defended IPM's inability to account for localized constraints on generation and transmission by saying that "there is no technical basis for defining the period over which the 'must run' designation would last," which, according to EPA, "is a particularly important issue in view of the long modeling time horizon (2012 to 2050)." *Id.* But this ignores the need to consider severe near-term reliability impacts that are most important under CSAPR's expedited compliance deadlines; EPA's admission that the model is unsuited to assess near-term reliability arbitrarily ignores the immediate reliability impacts of CSAPR. SPP Letter at 2 ("The time period between finalization of the CSAPR and its effective date is too short to allow SPP and

<sup>&</sup>lt;sup>12</sup> See n.8 supra as to treatment of must-run units in EPA's Error Corrections Rule.

its members/registered entities to appreciate the effects of the rule and to take actions to ensure reliability."). (JA03615). *See also* ERCOT CSAPR Study at 7. (JA03641).

EPA's other rationales for failing to undertake a realistic analysis of CSAPR's grid reliability impacts are equally unavailing. EPA recognizes that IPM does not address local reliability issues but then baldly asserts that such issues are "well within the capability of utilities and regional organizations to manage effectively," RTC, at 1498, 1515 (JA02057, JA02074). But, as noted, both ERCOT and the SPP contest that claim. EPA also refers to "sufficient provisions in the rule for flexible coordination with regional entities and among utilities to permit these local issues to be resolved in the normal course of business," RTC at 1517 (JA02076), but fails to identify the referenced rule provisions. EPA also asserts, in a point disputed by ERCOT, ERCOT, *Report on the Capacity, Denand, and Reserves in the ERCOT Region*, May 2011 (June 9, 2011 Revision 2), available at

http://www.ercot.com/news/presentations/2011/index ("ERCOT Report") at 6, (JA03480), that the availability of allowances will cure reliability problems, RTC at 1498, 1515, (JA02057, JA02074), again without providing any analysis of why this is so.

Even if this Court owed EPA deference as to its grid reliability predictions, that "expertise cannot be used as a cloak" for EPA's "fiat judgments" here. *Tennessee Gas Pipeline Ca. v. FERC*, 926 F.2d 1206, 1211 (D.C. Cir. 1991). Courts "do not defer to [an] agency's conclusory or unsupported suppositions." *NetCoalition v. SEC*, 615 F.3d

525, 539 (D.C. Cir. 2010), *quoting McDonnell Douglas Corp. v. U.S. Dep't of the Air Force*, 375 F.3d 1182, 1187 (D.C. Cir. 2004). In the absence of any reasoned explanation to justify EPA's confidence that the real-world grid can accommodate the near-term impacts of CSAPR, the rule must fall.

# C. Other Examples Demonstrate the Failure of the IPM to Reflect Actual Grid Operational Conditions.

The Industry Labor Petitioners' Brief, ILPBr at 47-52, demonstrated in detail the failings of the IPM to accurately simulate actual grid operating conditions. Two more examples, one from the SPP region and one from the ERCOT region, illustrate the IPM failings.

The situation in Kansas was a significant part of the SPP's grid reliability concerns, with the SPP predicting the likelihood of blackouts or brownouts in that state. EPA's proffered compliance strategies for Kansas are built on the expectation that state utilities can replace retiring or reduced generation by making significant purchases of imported electricity or by purchasing significant amounts of allowances. But there will not be sufficient allowances or imported power for all the utilities to acquire. Declaration of Don L. Gray for Kansas City, Kansas Board of Public Utilities, Kansas Utilities' Motion for Stay of Final Rule as Applied to Kansas ("Gray Declaration"), ¶8. (JA03711).

The CSAPR 2012 allowances for the Kansas City Board of Public Utilities ("BPU") covers only about 35% of the electricity needed by that utility. *Id.*, ¶12.

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(JA03711-12). Absent this Court's stay, all BPU's 2012 CSAPR allowances would have been used up around May 10, 2012, leaving BPU with insufficient resources to meet electric demand.<sup>13</sup> Even if purchased power were available to make up the 65% generation deficit BPU faces (a conclusion EPA never tried to prove) and could be transmitted (another conclusion EPA never tried to prove), it would be cost prohibitive because costs will escalate dramatically in response to the constraints imposed by CSAPR. *Id.*, ¶15. (JA03714).

Moreover, if BPU generates the electricity required for its customers, it would exceed the CSAPR emissions limits and, by itself, cause Kansas to exceed EPA's variability limit, which would then subject it and other Kansas utilities to the automatic 2 for 1 allowance forfeitures and potential civil penalties for violating CSAPR requirements. *Id.*, ¶9. (JA03711). And with a proposed civil penalty of \$13.7 million per ton and BPU needing to generate thousands of tons of excess emissions to serve its load, the resulting penalties under CSAPR would be in the billions *(eg,* 9690 tons excess amounts to \$132.8 billion in penalties). *Id.* (JA03711).

<sup>&</sup>lt;sup>13</sup> As an indication of the extent to which EPA overestimated the ability of utilities to comply with CSAPR using purchased allowances, if all state allowance budgets are added together for NOx and SO<sub>2</sub> and compared to the number of total allowances utilities would have needed to cover 2010 *actual* emissions, there is a significant deficit of allowances nationwide. *See* http://www.epa.gov/airlranSpoJ1/pdfs/TR 07061 I WEB.pdf and <u>http://camddataandmaps.epa</u>. gov/gdm/index.cfm?fuseaction= iss.isshome).

EPA's errors as to how the grid actually operates were particularly egregious in Texas' ERCOT region. At the core of EPA's Texas-based errors were the conflicts between EPA and ERCOT regarding ERCOT's generation capacity and corresponding reserve margin. Prior to identifying how much generation might be adversely impacted by CSAPR, ERCOT estimated a total expected maximum generation capacity of 75,967 MW by 2014. ERCOT, Report on the Capacity, Demand, and Reserves in the ERCOT Region, May 2011 (June 9, 2011 Revision 2) ("ERCOT Report") at 7, (JA03481). In contrast, EPA's base-case 2014 prediction was that the ERCOT region will have a generation capacity of 90,405 MW – a discrepancy of 14,438 MW. IPM TSD at 6. (JA02923) As a result, EPA calculated a base-case reserve margin of 25.6% in 2014, while ERCOT predicted a reserve margin of 11.1% by 2014 – far below the 13.75% ERCOT requires to ensure stable and reliable grid operation. ERCOT Report at 7 (JA03481); IPM TSD at 7 (JA02924).

ERCOT's reports as of the EPA's issuance of the CSAPR Final Rule and continued analysis by ERCOT since that time indicate the cause of EPA's 14.5% overstatement of available capacity in ERCOT. ERCOT has identified that EPA overestimated the amount of available wind generation sources and the ability for retired and mothballed units to be reactivated, and the ability of lignite-burning units to switch to lower sulfur Power River Basin ("PRB" coal). Declaration of Warren P. Lasher for the State of Texas, Texas Motion for Stay (Sept. 21, 2011) ("ERCOT

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Decl.") ¶¶ 27 and 42. (JA03626 and JA03630); ERCOT CSAPR Study at 3. (JA03637).

Wind power is variable, and in order to build certainty into planning data, ERCOT has developed a capacity factor of 8.7% for its wind generation sources. ERCOT Report at 4. In other words, ERCOT relies on only 822 MW of the 9,452 MW installed wind power to be available for planning purposes due to the inherent variability of the resource. *Id.* at 7, 20. In stark contrast to this system reality, EPA appears to assume a constant wind pattern and full, or close to full, generation from the 9,452 MW of installed wind generation. Given the realities of wind power variability and the conflict with ERCOT's detailed wind and planning analyses, EPA's incorporation of any amount of capacity greater than 822 MW of installed wind capacity into its reliability modeling is arbitrary and capricious.

Further contributing to EPA's 14.5% overestimation of generation capacity in ERCOT, EPA's reliability analysis appears to have assumed that thousands of megawatts worth of Texas' retired units and mothballed units would be available to replace lost coal capacity or meet rising demand. ERCOT does not plan on retired units becoming available, and they are not tracked or calculated as part of ERCOT's Capacity, Demand, and Reserves Report. *Id* Many of these mothballed units cannot simply be "turned on" and be available for generation. As part of analysis conducted subsequent to the promulgation of the final rule, ERCOT discovered that over 8,428 MW of generation had been erroneously included in EPA's capacity projections

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(5,784 MW that had been retired and over 2,644 MW of mothballed units). ERCOT Decl. ¶¶ 25-27. (JA03624-26). Ultimately, ERCOT concluded that "[t]he inclusion BY [sic] EPA of the full nameplate capacity of wind generation, along with retired and mothballed generation capacity...creates an unrealistically high generation reserve margin compared to expected peak loads and significantly masks the reliability implications of a potential reduction of available generation due to the CSAPR rule." *Id*, ¶ 27. Again, these are methodological errors in EPA's IPM model that overstated what would be available in the ERCOT market before factoring in the significant system impact of the CSAPR on units within ERCOT. Therefore, regardless of what EPA alleges it has done or is considering doing to minimize the number of megawatts that might be rendered unavailable due to CSAPR,<sup>14</sup> the errors in EPA's underlying model and the resulting 14.5% overestimation of capacity reserve margins in ERCOT are methodological errors that render the rule arbitrary and capricious.

## II. EPA's Failure to Evaluate the Cumulative Effects of the Rule Renders Its Grid Reliability Analysis Arbitrary and Capricious.

EPA describes CSAPR as one of a "series of regulatory actions," including regulation of greenhouse gas emissions, hazardous air pollutant emissions, combustion byproducts, water intake structures, regional haze, and many others, that EPA is undertaking as part of a "comprehensive strategy" to implement EPA's

<sup>&</sup>lt;sup>14</sup> For the same reasons set forth in footnote 8 *infra*, EPA's Error Corrections Rule does not eliminate the methodological flaws as to the ERCOT region.

"priority" goal of "transform[ing]" the power sector.<sup>15</sup> Yet despite recognizing that utilities will require "integrated compliance strategies" to meet all of these rules, 76 Fed. Reg. 24,976, 25,057 (May 3, 2011), EPA refused to analyze the impact of CSAPR on grid reliability cumulatively with its other regulations. RTC at 221-67.

That failure contrasts with EPA's assessment of the effects of the fine particulate matter pollution that EPA seeks to avoid with CSAPR cumulatively along with other fine particulate matter in the atmosphere. CSAPR Regulatory Impact Analysis ("RIA") at 195-97. (JA03189-91). And it contrasts with mandates of both EPA and the Council on Environmental Quality ("CEQ") that environmental analyses, such as environmental impact statements, should include cumulative analysis of related actions so as to consider the true impact of the series of related actions of which it is a part. EPA, *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (May 1999) at 10; 35 Fed. Reg. 7390, 7391 (1970) (CEQ regulations). So too with CSAPR grid reliability. Indeed, based on this same reasoning, Executive Order No. 12866 specifically requires agencies, "to the extent practicable," to analyze "the costs of cumulative regulations." Exec. Order No. 12866, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

<sup>&</sup>lt;sup>15</sup> Proposed CSAPR, 75 Fed. Reg. 45,210, 45,227 (Aug. 2, 2010), listing EPA's other planned power sector regulations and describing them as part of a single overall program. *See also* EPA-HQ-OAR-2009-0491-2658, at 4-5, listing other EPA power sector rules. (JA00645-46).

The need for cumulative analysis is particularly important here because the options that EPA believes are available to make CSAPR compliance cost-effective, in fact, are not available given the requirements of other rules. For example, EPA's key CSAPR compliance option of switching from high-sulfur to low-sulfur coal, a strategy that EPA thinks utilities can undertake quickly to meet EPA's expedited compliance deadlines, 76 Fed. Reg. at 48,283, leads to EPA's conclusion that low-sulfur coal usage in the United States will increase. CSAPR RIA at 265, Table 7-15 (increases in western low-sulfur coal). (JA03199). Yet EPA's RIA for the Mercury and Air Toxics Standards rule,<sup>16</sup> with which EGUs will have to comply simultaneously with CSAPR, shows a reduction in low-sulfur coal usage and an increase in high-sulfur coal usage, presumably as utilities are forced to install sulfur dioxide removal equipment and thus can use lower cost high-sulfur coal. RIA for the Final Mercury and Air Toxics Standards, Dec. 2011, at 3-21, Table 3-10 (reduction in western low-sulfur coal and increase in Interior high-sulfur coal). (JA04067). EPA cannot have it both ways.

More fundamentally, EPA's analysis of CSAPR in a vacuum inaccurately measures the amount of generation that will be retired due to EPA's regulations and what will remain to provide for cost-effective compliance with CSAPR. EPA estimated that only 4.8 GW of electric generation will retire as a result of CSAPR. 76 Fed. Reg. at 48,346. But the North American Electric Reliability Corporation

<sup>&</sup>lt;sup>16</sup> Issued December 21, 2011 but not yet in Federal Register.

("NERC"), the entity chartered by FERC to preserve the reliability of the nation's overall grid under 16 U.S.C. § 8240, examined four of EPA's regulations together and concluded that 36-59 GW would likely retire or be lost through reduced generation. NERC, *2011 Long Term Reliability Assessment*, November 2011, at 117.<sup>17</sup> NERC concluded that "environmental regulations are shown to be the number one risk to reliability over the next 1 to 5 years." *Id* at 75. And MISO recently concluded, based on a review of four EPA rules, that "[r]eliability in the Midwest will be severely challenged through implementation of the proposed rules," with 13-22 GW of capacity likely to retire just in the MISO region.<sup>18</sup> Within the last two weeks, just one Midwestern utility announced the retirement of more than 3 GW of generation as a result of EPA's rules.<sup>19</sup>

EPA's analysis of cost-effective control options for CSAPR compliance without considering utility strategies for compliance with EPA's other rules renders its analysis chimerical. In the real world, a utility must consider all of EPA's rules together. FERC Commissioner LaFleur described why cumulative analysis is needed:

<sup>18</sup> EPA Impact Analysis, Impacts from the EPA Regulations on MISO (October 2011), at 5, 27, available at <u>https://www.midwestiso.org/Library/Repository/</u>Study/MISO%20EPA%20Impact%20Analysis.pdf; Comments of the Midwest Independent Transmission System Operator, Inc., FERC Docket No. AD12-1000 (Nov. 22, 2011) (emphasis supplied).

<sup>19</sup> See <u>http://www.snl.com/InteractiveX/article.aspx?ID</u> = 14171024&KPLT=4.

<sup>&</sup>lt;sup>17</sup> Available at <u>http://www.nerc.com/files/2011LTRA\_Final.pdf</u>.

For some time now, we have been hearing about the EPA's proposed air and water regulations and their potential to affect our energy supply. *Although not all of these regulations are final, I believe it is important to consider them as a package when assessing their potential effect on reliability.* This is because the owner of a power plant will appropriately consider all of its EPA compliance obligations, among other factors, in determining whether it is economically feasible to retrofit or repower a unit, or whether it makes economic sense to retire the unit.<sup>20</sup>

Or, as FERC Chairman Wellinghoff stated regarding why FERC staff had advised EPA to consider its regulations cumulatively, "*Commission staff took this position because the effects to system reliability are based on the cumulative impact of all the proposed* 

# regulatory factors."21

Agency action is arbitrary and capricious if it fails to consider each "important aspect of the problem." *Motor Vehide Mfrs. Ass'n. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). EPA failed to meet this basic test of reasoned decision making by promulgating a rule that relies on the availability of cost-effective resources without considering whether those resources will continue to be available given the Agency's own related rulemaking activity.

<sup>20</sup> The LaFleur testimony is available at

<sup>21</sup> A vailable at

http://energycommerce.house.gov/hearings/hearingdetail.aspx?NewsID=8896.

http://republicans.energycommerce.house.gov/Media/file/Hearings/Energy/091411 /WellinghoffAnswers.pdf. (emphasis supplied.)

# III. EPA Failed to Consider the Health and Welfare Disbenefits of an Unreliable Power Grid and Other Important Factors.

EPA claims CSAPR will cost-effectively improve public health and welfare. But EPA ignored the obvious fact that an unreliable grid will both render the rule not cost-effective and imperil public health and welfare.

CSAPR's grid reliability impacts have fundamental ramifications not only for the generating units regulated by CSAPR, but for those communities, industries, cities, hospitals and schools relying on safe and reliable electricity. Blackouts are public health and welfare hazards, with increased crime and traffic accidents, loss of air conditioning on hot days (when blackouts are most likely to occur), and interruptions in service to vital public health and emergency facilities. Even a short disruption in the grid can lead to spoiled vaccines, increased crime, and polluted drinking water, among other problems.<sup>22</sup>

The costs of blackouts can be tremendous: the August 14-16, 2003 Northeast Blackout, with more than 50 million people affected, cost \$6 to \$10 billion,<sup>23</sup> while a 13-hour power outage on September 8th and 9th, 2011 affecting 2 million customers in San Diego cost \$97 to \$118 million. The annual national costs of power

<sup>&</sup>lt;sup>22</sup> 121 Pub. Health Rep'ts 36 (Jan/Feb 2006; Center for Disease Control and Prevention, What You Need to Know When the Power Goes Out Unexpectedly (available at <u>http://www.bt.cdc.gov/disasters/poweroutage/needtoknow.asp</u>).

<sup>&</sup>lt;sup>23</sup> ICF, *The Economic Cost of the Blackout: An Issue Paper on the Northeastern Blackout,* August 14, 2003. 2004, ICF Consulting: Fairfax, VA.

interruptions are about \$80 billion, with a range of \$30 to \$130 billion.<sup>24</sup> The resulting adverse health and welfare effects fall disproportionately on the poor and elderly living on fixed income, which are least able to bear them.

EPA also failed to consider the effect of an unreliable grid on the safety and cost-effectiveness of the nation's manufacturing sector. Many energy-intensive manufacturing facilities in the chemicals, steel, aluminum, pulp and paper, and glass industries use processes that operate around-the-clock. There are literally thousands of these process units throughout the United States. A significant number of manufacturing facilities are located in states that are supplied by coal-fired power plants affected by the rule, because coal-fired power plants are usually the low-cost provider of electricity.

These processes run at very high temperatures and/or pressure. Sudden outages present a safety issue for facility employees and sometimes the surrounding community. They also create significant economic issues. If the electricity goes out, the molten steel, aluminum or glass begins to immediately cool and the process cannot be restarted to remove the product from the production process. The manufacturing equipment can be partially or permanently damaged, resulting in cost in the tens of millions of dollars for smaller facilities and possibly up to a hundred

<sup>&</sup>lt;sup>24</sup> Understanding the Cost of Power Interruptions to U.S. Electricity Consumers, Lawrence Berkeley National Laboratory, LBNL-55718 (September 2004) at xii, available at <u>http://eetd.lbl.gov/ea/ems/reports/58164.pdf</u>.

million dollars for large integrated facilities like chemical plants. Partially damaged facilities can be out of production for months. Permanently damaged equipment can easily take more than a year to replace. The costs of lost production and unfilled customer orders may even bankrupt smaller companies.

EPA also failed to consider CSAPR's impacts on local governments such as Putnam County, Georgia. EPA considered the impact of complying with the rule only on the 51 local governments and municipalities that themselves operate power plants, CSAPR RIA at 306 (JA03200), but ignored the impact on local governments in CSAPR states for the numerous EGUs, like the ones in Putnam County, that would be forced to scale back operations, substantially reducing local taxes. Thus, emissions from EGUs in these counties were considered by EPA but not the dramatic loss of tax base and employment in these small, often rural communities. For these effects, EPA provides only the following statement:

In estimating the net benefits of regulation, the appropriate cost measure is "social costs." Social costs represent the welfare costs of the rule to society. *These costs do not consider transfer payments (such as taxes) that are simply redistributions of wealth.* 

76 Fed. Reg. at 48,313 (emphasis added). EPA's dismissive statement that local tax declines are "simply redistributions of wealth" misrepresents the significant impact in these communities.

EPA further failed to fully consider and recommend that the states implement pollution prevention projects and methods (including end-use energy efficiency) that would reduce the overall cost of CSAPR compliance as well as enhance grid reliability, consistent with the Pollution Prevention Act of 1990. Public Law 101–508, as amended by P.L. 107–377, December 31, 2002. EPA also failed to consider the unique difficulty cogeneration units will have in complying with CSAPR and therefore whether CSAPR truly represents a cost-effective strategy for those units. Cliffs Natural Resources Comments, EPA-HQ-OAR-2009-0491-3957 at 2, 4-5 (JA01477, JA01479-80)).

In sum, EPA erred by failing to failing to consider all relevant factors and to compare the benefits of the rule, whatever they may be,<sup>25</sup> against the real costs created by the rule to determine cost-effectiveness.

# IV. CSAPR Usurps State Authority and is Arbitrary and Capricious Because It Dramatically Changes Course from Prior Cap and Trade Programs Without Giving Previously-Compliant Plants Enough Time to Install Emission Controls.

As noted in the Industry/Labor Petitioners' Brief, ILPBr at 56, CSAPR inequitably burdens many companies for doing exactly what Congress and EPA have asked them to do for more than 20 years. Current cap-and-trade programs have been designed to achieve emission reduction goals at the lowest cost to consumers by

<sup>&</sup>lt;sup>25</sup> EPA's failure to consider the disbenefits of CSAPR-created reliability problems stands in stark contrast with the Agency's conclusions about CSAPR's benefits. For example, EPA grossly overstates the health and welfare benefits of PM-2.5 reductions claiming CSAPR will reduce 13,000 to 34,000 premature deaths. CSAPR RIA at 3. (JA03187). Yet 99% of those avoided premature deaths occur in areas attaining the PM-2.5 NAAQS. *Sæ*Docket No. 1346908 in instant docket, Jansen Affidavit at ¶ 29 note 9.

providing flexibility in compliance options, primarily by allowing companies the time to either install controls or purchase allowances. This has ensured that costly controls are installed at plants that are the most cost-effective to control. As EPA has recognized, this system involves some companies installing controls where it is costeffective to do so and other companies not installing controls and instead purchasing allowances from those that did. By purchasing allowances, a company not only chooses an acceptable option, but one that Congress and EPA have promoted for more than 20 years as a way to achieve environmental goals at the lowest cost.

CSAPR creates another cap-and-trade program, but unlike all prior rules that established compliance deadlines 3-5 years in the future, CSAPR does not give companies time to install new emission controls. So how does EPA plan to achieve very substantial emission reductions almost immediately? In large part, simply by "shifting" power generation "to lower-emitting units," 76 Fed. Reg. at 48,280, and "increased dispatch of lower-emitting generation." *Id* at 48,252. Until companies have had time to install new emission controls in response to CSAPR, this is EPA's primary strategy for reducing emissions. EPA has exacerbated this problem by immediately imposing FIPs that assign a specific number of allowances to all power plants covered by CSAPR. As discussed above, EPA set State budgets for 2012 based on a model that ignores the realities of the electric grid. Then, without allowing States any opportunity to decide how to meet their 2012 budgets, EPA unilaterally allocated each State's budget to individual sources according to an entirely different methodology. *Id.* at 48,288-89.

As explained more fully in the State Petitioners' brief, EPA's FIP-first approach is a radical departure from precedent that violates the cooperative federalism scheme of the CAA. EPA is tasked with setting the standards that each State must achieve, 42 U.S.C. § 7409, but the statute reserves for the States the opportunity to determine how best to achieve those standards. *Id.* § 7407(a). Under this cooperative federalism framework, "EPA determines the ends – the standards of air quality – but Congress has given the states the initiative and a broad responsibility regarding [the] means to achieve those ends through [SIPs] . . . ." *Virginia v. EPA*, 108 F.3d 1397, 1408 (D.C. Cir. 1997) (quotation omitted). In CSAPR, EPA has simply ignored the balance struck by Congress.

EPA's immediate FIP not only usurps the authority that Congress reserved for the States, but also inequitably burdens many companies for their compliance with prior rules. It favors certain sources and leaves other sources with significantly fewer allowances than they need for normal operations and with insufficient time to install additional pollution controls. EPA received comments arguing that this approach inequitably provides some sources with excess allowances. *See generally* 76 Fed. Reg. at 48,285-86. Other commenters took different positions. *See generally id.* at 48286-87. Yet, rather than recognizing that States needed the flexibility to determine the best allocation method for the sources in each State—a role reserved to the States by the

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CAA—EPA simply imposed a one-size-fits-all allocation in its FIP and imposed a five month, instead of 3-5 year, compliance timeline.

EPA's failure to acknowledge and explain its departure from its prior emission control programs itself renders the rule arbitrary. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 129 S.Ct. 1800, 1811 (2009) (change in policy is arbitrary if "prior policy has engendered serious reliance interests" and agency fails to take those interests into account). The fact that EPA made this dramatic shift virtually overnight leaving insufficient time for previously-compliant units to cost-effectively achieve compliance exposes CSAPR as the definition of arbitrary and capricious rulemaking.

# **CONCLUSION**

For the foregoing reasons, Intervenor and Amici respectfully request that the Court should grant the Petitions for Review and vacate the rule.

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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 6800 words exclusive of the certificate required by Circuit Rule 28(a)(1), table of contents, table of authorities, glossary, signature lines, and certificates of service and compliance. The undersigned used Microsoft Word 2007 to compute the count.

<u>/s/ Douglas A. Henderson</u> Douglas A. Henderson

## **CERTIFICATE OF SERVICE**

I hereby certify that on this 16th day of March, 2012, I electronically filed the foregoing Final Brief of Intervenor and Amici for 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.

I further certify that nine (9) paper copies of the Brief of Intervenor and Amici of Petitioner will be hand-delivered to the Clerk of the Court.

I further certify that I have caused a true and correct copy of the foregoing to be sent by U.S. first-class mail to the following:

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