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OUT OF THIN AIR: EPA'S CROSS-STATE AIR POLLUTION RULE

HEARING

BEFORE THE

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

FIRST SESSION

THURSDAY, SEPTEMBER 15, 2011

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OUT OF THIN AIR: EPA'S CROSS–STATE AIR POLLUTION RULE

THURSDAY, SEPTEMBER 15, 2011

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, DC.

The Committee met, pursuant to call, at 9:34 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Ralph Hall [Chairman of the Committee] presiding.

RALPH M. HALL, TEXAS
CHAIRMAN

EDDIE BERNICE JOHNSON, TEXAS
RANKING MEMBER

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
2321 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–6301
(202) 225–6371
www.science.house.gov

Out of Thin Air: EPA's Cross-State Air Pollution Rule

Thursday, September 15, 2011
9:30 a.m. to 12:00 p.m.
2318 Rayburn House Office Building

Witnesses:

Panel One

Dr. Bryan W. Shaw, Chairman, Texas Commission on Environmental Quality

Mr. Gregory Stella, Senior Scientist, Alpine Geophysics, LLC

Mr. Barry T. Smitherman, Commissioner, Texas Railroad Commission

Mr. Wayne E. Penrod, Executive Manager, Environmental Policy, Sunflower Electric Power Corporation

Mr. Chip Merriam, Chief Legislative & Regulatory Compliance Officer, Orlando Utilities Commission

Panel Two

The Honorable Gina McCarthy, Assistant Administrator for the Office of Air and Radiation, U.S. Environmental Protection Agency

HEARING CHARTER

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

Out of Thin Air:
EPA's Cross-State Air Pollution Rule

THURSDAY, SEPTEMBER 15, 2011
9:30 A.M.—12:00 P.M.
2318 RAYBURN HOUSE OFFICE BUILDING

Purpose

On Thursday, September 15, 2011, the House Committee on Science, Space, and technology will hold a hearing to review the scientific, procedural, and technical basis of the Environmental Protection Agency's Cross-State Air Pollution Rule, including a discussion of economic, employment and reliability impacts.

Witnesses

Panel One

- **Dr. Bryan W. Shaw**, Chairman, Texas Commission on Environmental Quality
- **Mr. Gregory Stella**, Senior Scientist, Alpine Geophysics, LLC
- **Mr. Barry T. Smitherman**, Commissioner, Texas Railroad Commission
- **Mr. Wayne E. Penrod**, Executive Manager, Environmental Policy, Sunflower Electric Power Corporation
- **Mr. Chip Merriam**, Chief Legislative & Regulatory Compliance Officer, Orlando Utilities Commission

Panel Two

- **The Honorable Gina McCarthy**, Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency

Background

The Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to promulgate National Ambient Air Quality Standards (NAAQS) for PM_2 and ozone, nd requires States to develop State Implementation Plans (SIP) that outline how each State will meet such standards. [1]

When EPA finalized new NAAQS for both PM_2 and ozone in 1997, some States found that despite their best efforts, their SIPs were inadequate for compliance. The problem resulted in part due to the contribution of pollution from upwind States. Under Section 110(a)(2)(D) of the CAA, States must include provisions in their SIPs to prevent sources within their State from significantly contributing to the ability of downwind States to attain the standards. Finding that interstate transport of sulfur dioxide (SO_2) and nitrogen oxides (NO_2) constituted a "significant contribution"[2] to downwind States' inability to attain compliance with those NAAQS, EPA issued the Clean Air Interstate Rule (CAIR) in 2005.

Clean Air Interstate Rule (CAIR)

CAIR established a regional cap-and-trade program for SO_2 and NO_2 emissions from electric generating units (EGUs) in 28 eastern States and the District of Co-

[1] NAAQS pollutants (also called criteria pollutants) are pollutants that "may reasonably be anticipated to endanger public health or welfare . . . " CAA Section 108(a)(1). EPA has identified six pollutants subject to NAAQS: ozone, particulate matter ($_2$ and $_2$), carbon monoxide, sulfur dioxide, nitrogen oxide, and lead.

[2] Significant contribution was defined by CAIR as the product of three factors: (1) the actual amount of transported pollution from upwind States that contributes to nonattainment in downwind States; (2) how often contributions over specific thresholds occur; and (3) the comparative amount of the upwind transported contribution to the total nonattainment situation to the downwind area.

lumbia. The program was composed of three emission caps: two were annual regional emission caps that address the interstate contribution of SO_2 and NO_2 to PM_2 nonattainment; the third cap was a seasonal cap to address interstate contribution of NO_2 to ozone nonattainment. See attachment A for States affected by these regional caps.

Clean Air Interstate Rule (CAIR) Caps[3]

	Phase I (2010)	Reduction from 2005 levels	Phase II (2015)	Reduction from 2005 levels
SO_2 Annual Caps	3.6 million tons	50%	2.5 million tons	65%
NOx Annual Caps	1.5 million tons	53%	1.3 million tons	61%
NOx Ozone season caps	580,000 tons		480,000 tons	

[3] 70 Federal Register 25162 (May 12, 2005)

Based on a methodology centered on reductions from EGUs and adjusted for type of fossil fuel burned, each affected State was assigned a portion of the regional cap in the form of a Statewide "emissions budget" or cap. Each covered State was then required to submit a revised SIP identifying measures it intended to implement to achieve its emissions budget. In its final rule, EPA encouraged States to adopt the most cost-effective measures to achieve their emissions budget, specifically through a cap-and-trade program. This type of program had been successful in the past, specifically with regard to the Acid Raid Program established under Title IV of the CAA, and the NO_2 SIP Call, a seasonal NO_2 cap-and-trade program that includes electric utility and other major stationary sources. The interstate trading allowed by the CAIR rule was intended to promote the reduction of emissions in the most cost-effective manner, and then selling emission allowances to those EGUs that decided the most cost-effective method of compliance was for them was buying allowances on the market.

Despite general support from stakeholders, CAIR was challenged in court by petitioners that argued the rule was not strong enough to address pollution from upwind sources. On July 11, 2008, a unanimous court decision found that EPA lacked the authority to promulgate a regional cap-and-trade rule under Section 110 of the CAA unless it could show a link between the pollution emitted in specific States and nonattainment standards or failure to maintain standards in downwind States. The court found that EPA had established a significant contribution made by power plants to pollution levels in other States as required under Section 110, but that its methodology for establishing emission budgets was unrelated to that link. Because the trading program established under CAIR assumed that the entire upwind region contributed significantly, and not that each State's sources contributed significantly to downwind States' nonattainment as defined in Section 110(a), the interstate trading aspect of the rule was considered unlawful.

Without CAIR, States would have a difficult time demonstrating that their SIPs could meet NAAQS. Therefore, the court subsequently modified its decision on December 23, 2008, stating that the CAIR rule could remain in effect until a new rule was promulgated by EPA. Although the Court did not impose a specific deadline on EPA's development of a replacement rule for CAIR, it did say that it was not granting an indefinite stay, and that petitioners may sue again if EPA did not promulgate a new rule.

Cross-State Air Pollution Rule (CSAPR)

On July 6, 2010, EPA proposed a replacement for CAIR, the Clean Air Transport Rule. The proposed transport rule left the CAIR Phase I limits in place and set new limits replacing CAIR's Phase II limits in 2012, three years earlier than the original CAIR rule. The proposed rule included the States in CAIR and added three new States—Oklahoma, Kansas, and Nebraska. The rule allowed unlimited trading of allowances within individual States, but severely limited interstate trading in order to address one of the Court's reasons for vacating the CAIR rule. In order to ensure expedited implementation of the rule, EPA proposed a Federal Implementation Plan (FIP) for each of the States, focusing solely on EGUs. States may develop their own

SIPs and choose to control other types of sources in addition to EGUs if they wish, but the federal plan will take effect until the State acts to replace it.

Exactly one year later, in July 2011, EPA finalized the transport rule, now called the Cross-State Air Pollution Rule (CSAPR). The final rule includes requirements for 28 States (see attachment B) to reduce SO_2 and NO_2 emissions that may contribute to nonattainment of the ozone or fine particulate PM_2 NAAQS for downwind States. Since the proposed rule came out in July 2010, EPA issued three Notices of Data Availability (NODAs) to address fuel cost assumptions, emission inventories, and allowance allocation methods. As a result, the final rule contains a variety of significant changes when compared to the July 2010 proposal, or CAIR.

There were several significant changes between the proposed rule and the finalized CSAPR. The final rule requires States to comply with the cap established in their emission budgets by January 1, 2012, instead of the January 1, 2014, date in the proposed rule. The final rule also included a new allowance allocation approach that bases allocations on heat input, discounting the type of coal used or the efficiency of the plant. As a result of updated modeling and analysis tools, EPA decided to change the mix of States included in the final rule. Texas was added to the annual SO_2 and NO_2 programs, while Connecticut, Delaware, the District of Columbia, Florida, Louisiana, and Massachusetts were removed. Iowa, Missouri, and Wisconsin were added to the ozone-season NO_2 program; Connecticut, Delaware, and the District of Columbia were removed.

Cross-State Air Pollution Rule (CSAPR) Caps[4]

	Phase I (2010) From CAIR	Reduction from 2005 levels	Phase II (2012)	Phase III (2014)
SO_2 Annual Caps	3.6 million tons	50%	3.4 million tons	2.1 million tons
NOx Annual Caps	1.5 million tons	53%	1.2 million tons	1.1 million tons

[4] 70 Federal Register 25162 (May 12, 2005) and 76 Federal Register 48208 (August 8, 2011)

Like the proposed rule, the final CSAPR left in place the CAIR Phase I limits and replaced the CAIR Phase II limits with new limits to take effect in 2012, three years earlier than CAIR, and also included a third Phase to take effect in 2014. The reductions envisioned under CAIR are already underway. On August 11, 2010, EPA reported that emissions of SO_2 had declined sharply in both 2008 and 2009. In 2009, SO_2 emissions from fossil-fuel power plants were 44% below 2005 levels and NO_2 emissions were 45% below 2005 levels.[5]

Key Issues—The following issues identified by experts and stakeholders continue to be the subject of ongoing debate regarding the justifications for, and impact of, the final CSAPR rule:

- Modeling vs. Measurement. EPA modeling does not reflect the significant emissions reductions made since implementation of the 2005 CAIR rule, resulting in modeling data inconsistent with real-world conditions and the potential for overestimation of States' downwind impacts. Additionally, the most recent air quality data indicate fewer nonattainment and maintenance areas than projected by EPA, thereby lessening the benefits that would be obtained under the CSAPR.
- Implementation Timeline. The CSAPR rule was finalized on July 6, 2011, and Phase II compliance is required by January 1, 2012, leaving less than six months for companies and States to act to reduce emissions. This issue was acknowledged by the Administration during interagency comment on the rule, specifically noting that "such a substantial change occurring six months prior to the effectiveness of the assurance provision leaves sources with few options

[5] EPA "2009 Acid Rain Program Emission and Compliance Data Report," August 11, 2010.

to respond in a cost-effective manner, increasing the likelihood of disrupting system reliability if it becomes necessary to achieve compliance through derates and/or idling."[6]

- Allowance Banking. The CSAPR drastically limits the use of banked allowances saved under the Acid Rain program and the NO_2 SIP Call, increasing implementation costs and compliance challenges.
- Costs and Benefits. EPA's cost-benefit analysis does not consider costs of control equipment installed for CAIR compliance, but nonetheless takes credit for emission reductions already achieved by these controls.
- Implementation Flexibility. In order to facilitate implementation of the rule, EPA has issued a FIP in place of allowing States to generate their own SIPs, contrary to the cooperative federalism outlined in the CAA.

Reliability. EPA asserts that CSAPR will not compromise electric reliability. Others have questioned this assumption. For example, the Electric Reliability Council of Texas (ERCOT) concluded that rolling brownouts would have been necessary if the rule had been in place in 2011: "ERCOT would have experienced rotating outages during days in August. Off-peak capacity reductions in the three scenarios evaluated as part of this study, when coupled with the annual maintenance outages that must be taken on other generating units and typical weather variability during these periods, also place ERCOT at increasing risk of emergency events, including rotating outages of customer load." [7]

- Impact on Electricity Rates, Jobs, and the Economy. According to an analysis conducted by NERA Economic Consulting, the combined impacts of EPA's CSAPR and proposed utility MACT rules would increase retail electricity prices by 12 percent in 2016 and reduce net employment significantly over the next eight years (with losses outweighing gains by more than 4 to 1). This finding has been reinforced by some of the largest electric generators and unions in the U.S., which indicate that CSAPR and related EPA rules will cause the retirement of numerous power plants and mining operations, as well as significant job losses.

[6] *OMB Summary of Interagency Working Comments*, Doc. EPA-HQ-OAR-2009-0491-4133 (posted to the docket on July 11, 2011).

[7] 7 http://www.ercot.com/content/news/presentations/2011/ERCOT_*CSAPR*_*Study.pdf*.

Attachment A – States Included in the 2005 Clean Air Interstate Rule

States Contributing to Downwind Nonattainment of the PM2.5 NAAQS	States Contributing to Downwind Nonattainment of the 8-hour ozone NAAQS
Alabama	Alabama
	Arkansas
	Connecticut
Delaware (proposed)	Delaware
District of Columbia	District of Columbia
Florida	Florida
Georgia	
Illinois	Illinois
Indiana	Indiana
Iowa	Iowa
Kentucky	Kentucky
Louisiana	Louisiana
Maryland	Maryland
	Massachusetts
Michigan	Michigan
Minnesota	
Mississippi	Mississippi
Missouri	Missouri
New Jersey (proposed)	New Jersey
New York	New York
North Carolina	North Carolina
Ohio	Ohio
Pennsylvania	Pennsylvania
South Carolina	South Carolina
Tennessee	Tennessee
Texas	
Virginia	Virginia
West Virginia	West Virginia
Wisconsin	Wisconsin

Attachment B – States Included in the 2011 Cross-State Air Pollution Rule

States with Requirements for Annual SO_2 Emissions	States with Requirements for Annual NOx Emissions	States with Requirements for Seasonal ozone NOx Emissions
Alabama	Alabama	Alabama
		Arkansas
		Florida
Georgia	Georgia	Georgia
Illinois	Illinois	Illinois
Indiana	Indiana	Indiana
Iowa	Iowa	Iowa (proposed)
Kansas	Kansas	Kansas
Kentucky	Kentucky	Kentucky
		Louisiana
Maryland	Maryland	Maryland
Michigan	Michigan	Michigan (proposed)
Minnesota	Minnesota	
		Mississippi
Missouri	Missouri	Missouri (proposed)
Nebraska	Nebraska	
New Jersey	New Jersey	New Jersey
New York	New York	New York
North Carolina	North Carolina	North Carolina
Ohio	Ohio	Ohio
		Oklahoma (proposed)
Pennsylvania	Pennsylvania	Pennsylvania
South Carolina	South Carolina	South Carolina
Tennessee	Tennessee	Tennessee
Texas	Texas	Texas
Virginia	Virginia	Virginia
West Virginia	West Virginia	West Virginia
Wisconsin	Wisconsin	Wisconsin (proposed)

Chairman HALL. The Committee on Science, Space, and Technology will come to order, and I say good morning to you and thank you for being so punctual and at your places. And I thank some of my staff who has urged you to stay within the limit of five minutes. We are going to relegate our questions to three minutes each because we are going to have to go vote in a little bit, and we know your time is valuable and the other witnesses' time is semi-valuable. And we want to give each of us the same length of time to talk. Thank you all. And I thank the Members.

And welcome today to our hearing that is entitled "Out of Thin Air: EPA's Cross-State Air Pollution Rule." In front of you are packets containing written testimony, biographies, and Truth-in-Testimony for everybody here, and disclosures for today's witnesses. Today's hearing includes two panels, which I will note for the record is not the typical practice of our Committee.

I will now recognize myself for five minutes for an opening statement. And I relegate myself to three minutes, but I don't know what part of this I leave out because I didn't write any of it, but I am going to read most of it.

I want to welcome everyone here today for this hearing entitled "Out of Thin Air: EPA's Cross-State Air Pollution Rule." I particularly want to thank all the witnesses on the first panel who provided their testimony on time. Despite being told more than three weeks in advance about this hearing, we had a little problem with the other testimony that is given, but maybe everybody has a reason for that, so we usually try to overlook that. But thank you for being punctual and being responsive.

A week ago, President Obama gave a speech about jobs and asked Congress to give him $450 billion in new money to spend. As we debate the merits of that proposal, I hope the Administration will recognize the single most important thing it can do for the economy that doesn't cost a dime. All it takes is for the President to assert some leadership and get the out-of-control EPA to stop its regulatory assault on American jobs.

The issue today before us is a prime example of that. The Cross-State Rule is intended to ensure upwind States do not negatively impact the air quality of their downwind neighbors, a seemingly reasonable concept. In reality, however, it serves as another monument to the activist EPA's legacy of putting bad politics ahead of good science without regard to economics. To fully state the number of problems with this rule would far exceed my five minutes or two minutes or 15 minutes it would take me, but there are a few that require mention.

First, issuing a rule forcing major installations of pollution-control equipment and expecting States to comply with it five months later is unheard of, even by EPA's previous track record and appears to be setting up States to fail. To add insult to injury, EPA added Texas and several other States to the rule at the last minute, without giving affected stakeholders the ability to review or comment on this decision. Incredibly, EPA has staked its justification for the inclusion of Texas on the basis of a single-projected impact on a county in Illinois. Just to be clear, EPA has modeled a potential effect in the single area hundreds of miles

away. This has not been actually measured; in fact, that county even is currently meeting the standard.

Furthermore, the model assumptions EPA used to estimate such linkages are hidden from the public and not subject to peer review. These black-box models allow EPA to pick and choose its input data and assumptions free from technical scrutiny. This is not how science really should be done.

Today, we will hear from witnesses from States that have been adversely affected by this rule. The concerns are the same: not enough time, EPA's abuse of modeling to justify the rule, and electrical reliability concerns that will result from the rule's implementation. Now, for my State of Texas, it is important to note that it is a clean-air success story. Through a flexible, pro-jobs, all-of-the-above energy strategy, Texas has achieved recent environmental progress that eclipses many other States in the country. Since 1995, electric utilities in Texas have reduced sulfur dioxide emissions by 26 percent, NO_2emissions by 62 percent. The Cross-State Air Pollution Rule requires Texas to reduce its SO emissions by an additional 47 percent, so by January 1, 2012.

Last week during a Congressional hearing, Assistant Administrator Gina McCarthy stated, "I don't want to create the impression that EPA is in the business of creating jobs," a little sarcastic, I think. I want to assure Mrs. McCarthy not to worry. Americans are not getting that impression from EPA. And I frankly think it is a shame for an Administration official to make a smart-aleck remark like that when people are in jeopardy of losing their jobs and having to come home and tell their family that they don't have a job and they can't provide for them. We are in a desperate time to have that kind of talk.

Just this week, Texas companies have announced that they will have to cut jobs specifically in response to this rule. EPA may not be in the business of creating jobs, but with more than nine percent unemployment, it certainly should not be in the business of destroying them either, which is what will happen if this rule goes into effect the way they have planned it.

And I now represent—recognize a very fine Ranking Member, Ms. Johnson, for five minutes for an opening statement.

[The prepared statement of Chairman Hall follows:]

PREPARED STATEMENT OF REPRESENTATIVE RALPH M. HALL, CHAIRMAN, COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

I want to welcome everyone here today for this hearing entitled Out of Thin Air: EPA's Cross-State Air Pollution Rule. I particularly want to thank all the witnesses on the first panel who provided their testimony on time. Despite being told more than three weeks in advance about this hearing, Assistant Administrator McCarthy submitted her testimony less than 24 hours in advance of this hearing and well past the Committee's deadline. This is yet another example of the Administration's disrespect to the Congress.

A week ago President Obama gave a speech about jobs and asked Congress to give him $450 billion in new money to spend. As we debate the merits of that proposal, I hope the Administration will recognize the single most important thing it can do for the economy doesn't cost a dime; all it takes is for the President to assert some leadership and get the out-of-control EPA to stop its regulatory assault on American jobs.

The issue before us today is a prime example of that. The Cross-State rule is intended to ensure upwind States do not negatively impact the air quality of their downwind neighbors, a seemingly reasonable concept. In reality, however, it serves

as another monument to the activist EPA's legacy of putting bad politics ahead of good science without regard to economics. To fully state the number of problems with this rule would far exceed my five minutes, but there are a few that require mentioning.

First, issuing a rule forcing major installations of pollution control equipment and expecting States to comply with it five months later is unheard of, even by EPA's previous track record, and appears to be setting up States to fail. To add insult to injury, EPA added Texas and several other States to the rule at the last minute, without giving affected stakeholders the ability to review or comment on this decision. Incredibly, EPA has staked its justification for the inclusion of Texas on the basis of a single projected impact on a county in Illinois. Just to be clear, EPA has modeled a potential affect in a single area hundreds of miles away—this has not been actually measured. In fact, that county is currently meeting the standard.

Furthermore, the model assumptions EPA uses to estimate such linkages are hidden from the public and not subject to peer review.

These black box models allow EPA to pick and choose its input data and assumptions free from technical scrutiny. That is not how science should be done.

Today we will hear from witnesses from States that have been adversely affected by this rule. The concerns are the same: not enough time; EPA's abuse of modeling to justify the rule; and electrical reliability concerns that will result from the rule's implementation. As for my State of Texas, it is important to note that it is a clean air success story. Through a flexible, pro-jobs, all-of-the-above energy strategy, Texas has achieved recent environmental progress that eclipses many other States in the country. Since 1995, electric utilities in Texas have reduced sulfur dioxide emissions by 26 percent and NO_2 emissions by 62 percent. The Cross-State Air Pollution Rule requires Texas to reduce its SO_2 emissions by an additional 47 percent, by January 1, 2012.

Last week during a Congressional hearing, Assistant Administrator Gina McCarthy stated, "I don't want to create the impression that EPA is in the business of creating jobs." I want to assure Ms. McCarthy not to worry—Americans are not getting that impression. I think it is a shame for an Administration official to make a smart-aleck remark like that when real people are in jeopardy of losing their jobs.

Just this week, Texas companies have announced that they will have to cut jobs, specifically in response to this rule. EPA may not be in the business of creating jobs, but with more than nine percent unemployment, it certainly should not be in the business of destroying them either, which is what will happen if this rule goes into effect the way you have planned. I now recognize Ranking Member Johnson for five minutes for an opening statement.

Ms. JOHNSON. Thank you very much, Mr. Hall, and let me apologize for being a little late. I was stuck in the 395 tunnel after the police cut it off for 30 minutes. And so I got here a lot later than I intended. I really intended to have breakfast before coming.

But let me commend you for having this hearing. The finalized Cross-State Air Pollution Rule is effectively known as "Casper." This is a very complex and contentious regulatory issue and not one that would fall within the Committee's purview. But the principle is simple and embodied in Clean Air Act's Good Neighbor Provision. Air pollution doesn't stop at the State line, just as it doesn't at city limits, and when the pollution from one State affects the air quality of another, measures should be taken to mitigate that impact. For instance, the emissions of some pollutants from my home State of Texas with its booming economy, growing population, and vibrant fossil energy sector are some of the highest in the country. You can't fence it in, so it stands to reason that the effects will be felt somewhere downwind and that we owe it to our neighbors to clean up our act. The hard part is figuring out how. This is why we have EPA and why Congress and the Republican President passed the Clean Air Act to identify threats to the environment and public health and determine the fairest and most cost-effective ways to remedy them.

However, much as we might wish for a world where big environmental issues are addressed voluntarily by industry or through the workings of the free market, or are best regulated by the individual States, we all know that it just does not work that way. Now more than ever the American people need a strong EPA to protect their rights of clean air and clean water.

I am a nurse by profession. I know the statistics of the lungs that have been affected by all of this pollution. That said, while I will always be a strong defender of EPA's charge to protect public health and the environment, I am concerned about their process for the inclusion of Texas in the final Transport Rule at this time. As indicated in the letter my colleagues and I from Texas sent to OMB, some important affected parties in Texas feel that they did not have sufficient opportunity to comment. These parties will likely have difficulty meeting the timeline of the final rule.

I am not and nor is EPA a job killer. We are simply trying to protect the lives of the people. I simply feel that stakeholders need more time to work with EPA on an economically and environmentally responsible solution, a solution that I know we can reach. We have evidence.

With so much at stake in this and other rules, EPA cannot afford to get bogged down and derailed by procedural missteps. What the public, State governments and industry stakeholders need more than anything is regulatory certainty that allows for long-term investment planning. I sincerely hope that this somewhat irregular and confusing process is not laying the groundwork for what could be a protracted battle when in the end, clean air is in everyone's best interest.

Beyond those concerns, let me take this opportunity to clarify where I stand on the broader concern about EPA. First, do not mistake my position on this single issue as standing with Governor of Texas Perry or others in the Republican Party in the misguided disingenuous war on the dedicated scientists and public servants at the EPA. So I do not join my Governor in this race to the bottom as he seeks to outcompete the rest of the country in tearing down environmental and public health protections. I stand with the people of Texas who, regardless of where they fall in the partisan divide, universally agree that they have a right to clean air and clean water, and that respiratory diseases, heart attacks, premature deaths are not part of the sacrifice that we have to make for the sake of the Texas Miracle.

Air quality-related illnesses have very real and destructive effects on the economy on the order of hundreds of billions of dollars annually, and the benefits for reducing those effects will be seen throughout our country. Second, despite the noise from the echo chamber on the right, on the whole, EPA regulations do not, do not, do not kill jobs. From catalytic converters to CFCs, scrubbers to seatbelts, for decades we have heard how almost every major environmental consumer protection act that Congress considers will decimate the American industrial base and result in irreparable economic disruption, only to see the power of American innovation quickly leave these cynics and pessimists in the dark.

In fact, there is much more evidence showing that jobs are created and the economy expands following the passage of major re-

forms. For example, the U.S. economy grew by 64 percent in the years following the passage of the Clean Air Act, and recent vehicle fuel economy and emissions standards have already resulted in the creation of 150,000 jobs. And that is some of the figures that have not just been tabulated by EPA but others as well. Yes, some types of industries will see a decline in the face of new regulations. That is very true of much of what we see. Technology, though, makes a difference.

In Texas—I am over my time, but, Mr. Hall, let me finish. In Texas, depending on how the relevant firms decide to comply, we stand to lose a number of rural jobs at lignite mines and power plants. I truly hate to see any family suffer a job loss, but I am an optimist. With the well-founded faith that ultimately these regulations act as a catalyst for the creation of new jobs in industrial sectors and that the hardworking and talented Texas workforce will be the ones to benefit in the end.

In conclusion, my position on the specific issue of Texas' inclusion in the final Transport Rule is clear. Texas needs more time to consider the full implications of the rule to submit comments to EPA and possibly to prepare for implementation. Too many jobs in our State are at stake in the short term. However, my position on the protection of public health through higher air and water quality standards and our ability to meet those standards through homegrown innovation should be equally clear and never in question. The sooner we learn that we do not have to sacrifice jobs for a cleaner environment, the sooner we will see a more robust economy and a healthier public, two things that we all look forward to.

Thank you.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF MS. EDDIE BERNICE JOHNSON,
RANKING MINORITY MEMBER,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

I want to thank Chairman Hall for holding a hearing on the recently finalized Cross-State Air Pollution Rule, affectionately known as "Casper." This is a very complex and contentious regulatory issue, and not one that would fall within the Committee's purview. But the principle is simple and embodied in the Clean Air Act's "Good Neighbor" provision. Air pollution doesn't stop at the State line, and when the pollution from one State affects the air quality in another, measures should be taken to mitigate that impact.

For instance, the emissions of some pollutants from my home State of Texas—with its booming economy, growing population, and vibrant fossil energy sector—are some of the highest in the country. You can't fence that in. So, it stands to reason that the effects will be felt somewhere downwind, and that we owe it to our neighbors to clean up our act. The hard part is figuring out how.

This is why we have an EPA, and why Congress and a Republican President passed the Clean Air Act—to identity threats to the environment and public health, and determine the fairest and most cost-effective ways to remedy them. However, as much as we might wish for a world where big environmental issues are addressed voluntarily by industry or through the workings of the free market, or are best regulated by the individual States, we all know that it just does not work that way. Now, more than ever, the American people need a strong EPA to protect their rights to clean air and water.

That said, while I will always be a strong defender of EPA's charge to protect public health and the environment, I am concerned about their process for the inclusion of Texas in the final transport rule. As indicated in the letter my colleagues from Texas and I sent to OMB, some important affected parties in Texas feel that they did not have sufficient opportunity to comment. These parties will likely have dif-

ficulty meeting the time line of the final rule. I simply feel that stakeholders need more time to work with EPA on an economically and environmentally responsible solution, a solution I know we can reach.

With so much at stake in this and other rules, EPA cannot afford to get bogged down and derailed by procedural missteps. What the public, State governments, and industry stakeholders need more than anything is regulatory certainty that allows for long-term investment planning. I sincerely hope that this somewhat irregular and confusing process has not laid the groundwork for what could be a protracted battle when, in the end, clean air is in everybody's best interest.

Beyond those concerns, let me take this opportunity to clarify where I stand on the broader concern about the EPA.

First, do not mistake my position on this single issue as standing with Texas Governor Perry or others in the Republican Party in the misguided and disingenuous war on the dedicated scientists and public servants at the EPA. I do not join my governor in his race to the bottom as he seeks to out-compete the rest of the country in tearing down environmental and public health protections.

I stand with the people of Texas who, regardless of where they fall in the partisan divide, universally agree that they have a right to clean air and water, and that respiratory diseases, heart attacks, and premature deaths are not part of the sacrifice we have to make for the sake of the "Texas Miracle." Air quality-related illnesses have very real and destructive effects on the economy—on the order of hundreds of billions of dollars annually—and the benefits for reducing those effects will be seen throughout the country.

Second, despite the noise from the echo chamber on the right, on the whole, EPA regulations DO NOT kill jobs. From catalytic converters to CFCs, scrubbers to seatbelts, for decades we have heard how almost every major environmental and consumer protection act that Congress considers will decimate the American industrial base and result in irreparable economic disruption, only to see the power of American innovation quickly leave these cynics and pessimists in the dust.

In fact, there is much more evidence showing that jobs are created and the economy expands following the passage of major reforms. For example, the U.S. economy grew by 64 percent in the years following passage of the Clean Air Act, and recent vehicle fuel economy and emissions standards have already resulted in the creation of over 150,000 jobs.

Yes, some types of industries will see a decline in the face of new regulations. In Texas, depending on how the relevant firms decide to comply, we stand to lose a number of rural jobs at lignite mines and power plants. I truly hate to see any family suffer a job loss. But, I am an optimist with a well-founded faith that ultimately these regulations act as a catalyst for the creation of new jobs and industrial sectors, and that the hardworking and talented Texas workforce will be the ones to benefit in the end.

In conclusion, my position on the specific issue of Texas' inclusion in the final transport rule (CSAPR) is clear—Texas needs more time to consider the full implications of the rule, to submit comments to EPA, and possibly to prepare for implementation. Too many jobs in my State are at stake in the short term. However, my position on the protection of public health through higher air and water quality standards, and our ability to meet those standards through home-grown innovation, should be equally clear and never in question . The sooner we learn that we do not have to sacrifice jobs for a cleaner environment, the sooner we will see a more robust economy and a healthier public, two things we should all look forward to.

Thank you.

Chairman HALL. The gentlelady yields back her time. If there are other Members who wish to submit additional opening statements, your statements will be added to the record at this point.

And at this time, I would like to introduce our first witness panel. Dr. Bryan Shaw is the Chairman of the Texas Commission on Environmental Quality and also an Associate Professor in the Biological and Agricultural Engineering Department of Texas A&M University. Prior to his current appointment, Dr. Shaw was an Associate Director of the Center of Agricultural Air Quality Engineering and Science and has served as a member of the EPA Science Advisory Board Environmental Engineering Committee.

Next, we have Gregory Stella, a Senior Scientist at Alpine Geophysics. Mr. Stella is internationally recognized as a technical au-

thority in the planning, development, evaluation, and modeling of local, national, and international emissions inventories and policy options for the projection and control of ozone and particular matter pollutants and precursors.

Our third witness is Barry T. Smitherman, a recent appointed Commissioner on the Texas Railroad Commission. He is also a member of the National Association of Regulatory Unity Commissioners, Board of Directors, and the Committee on Energy, Resources, and the Environment. In his prior role as Chairman of the Public Utility Commission of Texas, he served as an ex officio board member on the Electric Reliability Council of Texas and Vice President of the Regional State Committee for the Southwest Power Pool.

Next, we have Mr. Wayne E. Penrod, Executive Manager of Environmental Policy at the Sunflower Electric Power Corporation in Kansas. He is responsible for Sunflower's compliance with all federal and State environmental regulations, permitting, and reporting activities for Sunflower's generation facilities.

Rounding out the panel, we have Mr. Chip Merriam, Chief Legislative and Regulatory Compliance Officer of the Orlando Utilities Commission. Mr. Merriam is responsible for managing energy and water regulatory and compliance matters for the Orlando Utilities Commission and is heavily involved in the development of the State of Florida and federal legislative policy.

And as our witnesses should know, spoken testimony is limited to five minutes, after which the Members of the Committee will have three minutes each to ask a question. And we hope you can stay as close to the five minutes, but if you have to run over, we understand that. We recognize, and on both sides of the docket recognize, that you are giving up time for your preparation for being here, for your travel here, for your service here and going back to wherever you came from. So we won't be really bad on you if you go over the five minutes.

So I guess at this time I now recognize Mr.—Dr. Bryan Shaw, Chairman of the Texas Commission on Environmental Quality.

STATEMENT OF DR. BRYAN W. SHAW, CHAIRMAN, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Mr. SHAW. Thank you, Chairman Hall, Members. My name is Bryan Shaw. I am the Chairman of the Texas Commission on Environmental Quality. Also, as you pointed out, I am on leave of absence as a Professor of Agricultural Engineering at Texas A&M University, so I will try to rein in my natural desire to speak for 50 minutes at a time and try to stay under the five-minute mark.

I want to talk about this rule, the Cross-State Air Pollution Rule. Specifically, I want to talk about the concerns we have with the lack of due process that was afforded the State of Texas in this process, and not just the lack of due process also but the specific implications in this matter. Both you and Member Johnson have pointed out some of the concerns with the timing. And specifically, I want to lay out that process as it occurred.

Texas was included only in the Ozone Seasonal Requirements in the proposed rule. Those are the requirements from May to Sep-

tember. In the final rule, Texas was included not only for the ozone but also in the annual standard for PM_2 and specifically in the "Group 2" SO_2 trading component. This gives us a very short time frame, less than 3–1/2 months from today, January 2012, to comply with this regulation. The lack of adequate notice and meaningful opportunity for comment occurred because of the fact that in the proposed CATR, the Cross-State Air Transport Rule, they did not include Texas in the annual programs for NO_2 and SO_2 reductions for PM_2. In fact, EPA's own models acknowledge that Texas did not exceed the linkages that would be necessary to include us.

At rule finalization and for the very first time, Texas was included and linked to a monitor in Granite City, Illinois, and included in the Federal Implementation Plan for the 1997 PM_2 standard. Because Texas was not significantly linked in the PM_2 rule proposal, it was not possible for the State to provide meaningful comment on the technical underpinnings of a linkage to any particular one monitor among dozens of non-attainment or maintenance receptors for PM_2 covered by rule.

EPA maintains throughout its rule preamble and in response to comment that Texas had ample opportunity for comment and notice of a potential inclusion. However, Texas had not had been provided additional information on possible linkages or proposed budgets in order to provide meaningful comment. In fact, what EPA took comment on in the proposal was a questionable scenario whereby EPA posited that Texas might increase its sulfur dioxide emissions in effect because the rule was likely to make it cheaper to burn higher sulfur coal. The State of Texas and others commented on the fallacy of that approach. EPA abandoned that and instead relied on a newly-found and created linkage which first appeared in the final rule.

Interestingly, EPA informed six other States that their supplemental modeling from the time of proposal to finalization of the rule showed that additional modeling linked them for ozone to other sites that weren't included in the proposal. EPA, instead of moving forward, did not include those linkages and did not include them in the final rule. They afforded those six States supplemental notice and opportunity for comment even though three of those States—Kansas, Oklahoma, and Michigan—had been linked to other monitors which Texas was not in the initial rule. It seems to—EPA seems to understand that those other States needed an opportunity to comment on the linkages, but not Texas. EPA's insistence that Texas knew of its inclusion in this program and that it was possible that inclusion was going to occur and therefore inclusion under a wholly separate and unproposed scenario was reasonable, raises both due process concerns and equity concerns.

Texas was only provided the final emissions budget for SO_2 and NO_2 at rule finalization. EPA apparently believes the proposed emission budget is not necessary for adequate notice and comment. However, every other State included in this rule received a proposed budget—or a budget at proposal.

Now, it seems that after having had our first meeting with EPA—though I requested a meeting with the Administrator prior to the finalization of the rule—we were—we met with the Deputy Administrator just—I am going to say his name Perciasepe—EPA

seems to want to look at finding ways to minimize the unintended impacts of this rule on a case-by-case basis. More specifically, suggesting they may be able to provide additional budget allocations for emissions on a case-by-case basis. This shows clearly the EPA does not understand the competitive wholesale market-based approach that Texas has and doesn't recognize the challenges with being able to move forward and ensure that we have the reliability that is necessary to keep the lights on and keep Texans safe whenever we have adverse weather conditions that make us rely on adequate air conditioning and other power supply.

As you look at the linkage that EPA cited was a .18 micrograms per cubic meter, which is .03 micrograms per cubic meter, that is .03 millionths of a gram per cubic meter above the linkage threshold to a monitor in Granite City, Illinois. This linkage is tenuous, and yet based on this, EPA has recommended that Texas have a 47 percent reduction of their SO_2 emissions from the 2010 level.

I point out that Texas has had a great deal of success. In fact, we have reduced our SO_2 emissions by over 32 percent from 1999 to 2010. This rule does not provide adequate time for us to implement this reduction and the EPA can't undo the negative consequences of this rule simply by trying to address the errors in their data and the errors in their analysis specifically with ERCOT and regard to reliability of the Texas system. We need to have an opportunity for full vetting so that we avoid the consequences I have spoken of.

Thank you for the opportunity to present to you today, sir, and Members.

[The prepared statement of Mr. Shaw follows:]

PREPARED STATEMENT OF DR. BRYAN W. SHAW, CHAIRMAN, TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

As Chairman of the Texas Commission on Environmental Quality (TCEQ), I appreciate the opportunity to provide testimony and information to the U.S. House Committee on Science, Space, and Technology at the hearing entitled "Out of Thin Air: EPA's Cross-State Air Pollution Rule." This is a critical topic regarding the effect of the EPA's recently finalized rule on the environment, electric reliability, and commerce throughout our Nation, as well as in the State of Texas. Equally important is the precedent set by the EPA with this rule and its disregard for transparency and full public participation; its selective use of data undermining common sense and Federal Clean Air Act obligations; and its unrealistic timetables for compliance. Instead, EPA is forcing the burdens of its own flawed interstate transport rule schemes onto the shoulders of a single, vital industry in order to meet the requirements of a paper exercise having limited relation to actual air quality in America. As I have said before, a strong economy does not need to come at the cost ofthe environment, and Texas has shown that to be true.

The TCEQ regularly weighs and balances matters that affect the environment and economy. We value regulation that addresses real environmental risks while being based on sound science and compliance with State and federal statutes. In every case where Texas disagrees with the EPA's rule, it is because EPA's rule is not consistent with these principles.

Cross-State Air Pollution Rule (CSAPR)

The EPA finalized Federal Implementation Plans (FIP) on July 6, 2011, requiring 27 eastern States to reduce sulfur dioxide ($S0_2$) and nitrogen oxides (NO_2) emissions from electric generating units (EGU) to address transport obligations under the 1997 and 2006 fine particulate matter (PM_2) and 1997 ozone National Ambient Air Quality Standards (NAAQS). The FIPs require reductions during the ozone season (May through September) of NO_2 emissions that cross State lines for States under

the ozone requirements and reductions in annual $S0_2$ and NO_2 for States under the PM_2 requirements. The FIPs utilize cap and trade programs that include overall State budget emission caps with unlimited intrastate and limited interstate allowance trading. Although the rule proposal only included Texas under the ozone season requirements, the final rule not only includes Texas in the annual PM_2 programs for NO_2 and "Group 2" $S0_2$ trading (in addition to the ozone program requirements), but it requires substantial reductions to be in place beginning January 2012 [1]—just three and a half months from today.

The TCEQ has significant legal concerns regarding the lack of adequate notice and the overreach of the EPA's emission reduction requirements. These concerns have certainly been articulated by the many submitted requests for reconsideration by affected parties. However, even without the procedural legal weakness of this rule, the technical flaws merit re-examination. This rule serves as another example where the EPA inadequately rationalizes the need for a complex regulatory scheme to solve a non-existent problem.

Lack of Adequate Notice or Meaningful Opportunity to Comment

The CSAPR, or Clean Air Transport Rule (CATR) as it was originally proposed in August 2010 by the EPA, did not include Texas in the annual program for NO_2 and $S0_2$ emission reductious to address PM_2 transport. In fact, the EPA's proposed rule acknowledged that Texas power plant emissions, as modeled by the EPA, did not exceed the thresholds for inclusion in the PM_2 portion of CATR (for either the 1997 annual or the 2006 24-hour standards). At rule finalization, and for the very first time, Texas was significantly "linked" for PM_2 to a monitor in Granite City, Illinois, and included in the FIP for the 1997 annual PM_2 standard. Because Texas was not significantly linked to *any* PM_2 monitors at proposal, it was not possible for the State to provide meaningful comment on the technical underpinnings of a linkage to any potential one monitor among dozens of "nonattainment" or "maintenance" receptors for PM_2 covered by the rule.

The EPA, throughout its final rule preamble and in its response to comments, maintains that Texas had ample notice of its potential inclusion in the PM_2 program and need not have been provided additional information on possible linkages or proposed budgets in order to provide meaningful comment. At proposal, the EPA had developed a questionable scenario under which CATR would make higher sulfur coals more cost effective than lower sulfur fuels. The EPA's hypothesis regarding this cascading result of price points was that Texas' SO_2 emissions would increase and therefore cause an air quality effect exceeding the threshold. The EPA used this scenario to take comment on whether Texas should be included in the program as a "Group 2" State. In other words, the only topic on which the EPA sought comment at proposal was regarding Texas' potential inclusion in the PM_2 program. But this request for comment was specific to a hypothetical scenario involving increased SO_2 emissions, not an actual linkage to a specific monitor. No potentially significantly linked monitors were ever identified at proposal or in any subsequent notice. The TCEQ and others subsequently provided comments critical of this hypothetical scenario, which the EPA ultimately abandoned at rule finalization, relying instead on a newly created significant linkage whose first appearance was at final adoption.

Interestingly, the EPA provided six other States supplemental notice and an opportunity to comment on ozone monitor linkages that were not identified at rule proposal, though three of these States (Kansas, Oklahoma, and Michigan) had already been proposed for inclusion in the rule's ozone program based on linkages to other monitors subsequently dropped at rule finalization. Such action by EPA suggests it understands the importance of fully providing information regarding significant monitor linkages to States for review and comment prior to rule finalization. Yet, inexplicably, the EPA failed to provide Texas with similar supplemental notice on its unproposed significant PM_2 linkage. The EPA's insistence that Texas knew its inclusion in the PM_2 program was possible and therefore its inclusion under a wholly separate and unproposed scenario is reasonable raises significant due process and equity concerns. However, EPA's argument that CSAPR, as it relates to Texas, is not subject to additional notice and comment requirements is undercut by the supplemental notice it provided to other States which could have expected their inclusion in the program based on proposed information.

With this new, significant linkage, Texas was provided only a final budget for annual NO_2 and $S0_2$. This deprived Texas of any opportunity for comment on the im-

[1] The compliance period begins January 1, 2012, but reductions could take place at anytime within the year, as long as the yearly emissions total is within the required assurance level and covered by allowances.

pacts of such budgets or the calculations of "significant contribution" to Texas' new linkage monitor forming the basis of such budgets. Texas was not provided proposed annual budgets, and therefore had no indication of the EPA's interpretation of calculations for emissions reductions needed to prevent Texas' significant contribution to any hypothetical monitor. Though the EPA had assembled data regarding what it believed to be cost-effective controls at a number of price points for States (Texas included), EPA went no further for Texas—it set no cost threshold level for Texas; did no analysis to determine the effect of specific reductions downwind for Texas; and set no proposed budgets for Texas. Further, in the proposed rule preamble, the EPA notes that when setting budgets for Group 2 States (and Group 1 States in 2012, prior to their 2014 budget step-down), it chose to not use cost curves to set annual budgets. Instead EPA reviewed the actual performance that EGUs achieved in 2009. Given the limited information provided for Texas, it would have been nearly impossible for Texas to guess on a possible budget regarding its possible inclusion, and any such guess would likely have been far larger (particularly if using 2009 data) than the budget the EPA finalized for Texas. According to the EPA, a proposed budget was not necessary for adequate notice and comment. If that is true, why did every other State included in CSAPR receive a budget at proposal?

Had Texas been afforded the opportunity to comment on a linkage to the Granite City monitor and on emissions reductions necessary to prevent significant contribution to nonattainment at this monitor, it surely would have pointed out that the "nonattainment" monitor in question is situated within approximately 1/2 mile of a steel mill. The linkage monitor is, unsurprisingly, heavily influenced by local emissions. In fact, the monitor was specifically sited to monitor particulate emissions from the mill. Texas would also have commented that the monitor has measured attainment of the annual PM_2 standard since 2008 when the mill stopped operating. It is important to note that the mill has since resumed operations under the requirements of a Memorandum of Understandiug (MOU) with the TIlinois Environmental Protection Agency, and the monitor continues to show attainment. This significant information could have resulted in the EPA's modeling analysis projecting attainment for the monitor, thereby eliminating the basis for Texas and many other States' inclusion in the rule's PM_2 program. Further, EPA's proposed and final notices of attainment for the St. Louis area make no mention of possible transport issues that would affect the area's ability to stay in attainment. Finally, Texas would have provided comment regarding (1) $S0_2$ control cost assumptions and (2) the overreach of any budget (had one been provided at proposal) requiring disproportionately significant emissions reductions based upon any known contribution linkage to a monitor—known to be attaining the standard in question.

The EPA Disregards the Federal Clean Air Act and Over-Controls Emissions

Section 1l0(a)(2)(D)(i)(I) of the Federal Clean Air Act, which is the statutory basis for both the Clean Air Interstate Rule (CAIR) and CSAPR, requires States to prohibit sources within the State from emitting air pollutants in amounts that will contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any national primary or secondary ambient air quality standard. The statute does not provide the EPA authority to require States to prohibit emissions below the significant contribution threshold.

Of all States included in CSAPR for annual PM_2 linkages, Texas' linkage to a downwind receptor is among the weakest, at 0.18 micrograms per cubic meter—just 0.03 micrograms per cubic meter over the EPA's linkage threshold. Of States "linked" to any receptors in the eastern U.S. for the annual PM_2 standard, only Maryland has a smaller downwind contribution. Despite this tenuous link, the SO_2 budget Texas received at rule finalization would require a 47% reduction in 2012 in EGU emissions of 217,708 from its 2010 emissions. Considering that the monitor linking Texas is known to be currently monitoring attainment (with the influence of Texas' 2010 EGU $S0_2$ emissions at 461,662 tons), it is unreasonable and untenable that the EPA could require such significant reductions to be accomplished in less than four months.

The fact that the EPA does not believe Texas will be able to comply with its budget in a cost-effective manner calls into question the validity of the budget itself. EPA conducted a "lignite sensitivity analysis" for Texas that acknowledges the infeasibility of large-scale coal switching as a compliance strategy for many coal-fired plants in the State. The EPA's own analysis of cost-effective emission reductions projects that in 2012, under CSAPR, Texas EGUs would emit over 280,000 tons of SO_2—or 36,000 tons beyond the EPA's allotted budget for Texas. Thus, even if it were possible to operate as projected by EPA's model, the State cannot meet its

emission reduction obligation. The EPA apparently believes this to be reasonable, in that Texas could theoretically purchase allowances from its Group 2 trading partners and still be below its assurance level. A presumption that Texas *must* rely on out-of-State allowances improperly disregards rule compliance costs and makes clear the inadequacy of Texas' budget. More disturbing is the EPA's failure to consider whether such a volume of allowances would even be available among the limited Group 2 trading program. If each Group 2 State made exactly the reductions predicted by the EPA at a $500/ton cost threshold in 2012 (the threshold the EPA claims it used to determine budgets), and Texas made the reductions predicted by the lignite analysis, and all available allowances were sold only to Texas, Texas would still be short by 23,894 allowances. Failure to hold 23,894 allowances to cover emissions would result in forfeiture by the EGUs unable to secure those allowances of 47,788 additional allowances from the following year's budget. This allowance shortage could result in civil penalties totaling over $327 billion for just one control period and the potential for criminal penalties.

The EPA's own final modeling data, which does not take into account local controls from the previously mentioned steel mill's MOU, shows that the Granite City monitor would be projected to have neither attainment nor maintenance problems for the annual PM_2 standard by 2014, with or without the existence of CSAPR controls. Put differently, the EPA's own modeling makes clear that States' projected 2014 base case $S0_2$ emissions levels are adequate to ensure that no State significantly contributes to nonattainment or interferes with maintenance at the Granite City monitor. Despite this information, Texas' projected 2014 base case $S0_2$ emissions are approximately 453,000 tons, or over 200,000 tons higher than the level the EPA deems necessary to eliminate significant contribution.

Though I have focused on the lack of notice and technical flaws regarding Texas' inclusion in the PM_2 program, it is worth noting that the two monitors to which Texas is linked for ozone, and therefore required to make ozone-season NO_2 reductions for, are both monitoring attainment of the 1997 eight-hour ozone standard. The Baton Rouge area, in fact, has been proposed by the EPA for redesignation to attainment of that standard.

Economic Effects

This rule puts at risk the economic future of power generation and those dependent on affordable electricity in Texas. It also places vulnerable citizens at a significant health and safety risk. For example, elderly and low-income populations whose health and welfare are dependent on reliable energy would face significant adverse consequences resulting from such a rule. While air pollution regulation is certainly necessary to protect the health of our citizens, the elements of this regulation pertaining to Texas' SO_2 emissions are not necessary for public health protection and only result in negative consequences.

The President's Executive Order 13563, enacted January 18, 2011, calls for careful analysis of the likely consequence of regulation, including consideration of underlying science, or alternatives, of costs and benefits and of simplified, harmonized, and flexible methods for achieving regulatory goals. Because the possibility of including Texas was not adequately fleshed out as a part of the rule proposal, the EPA did not adequately assess the impacts of this rule on Texas, nor did Texas have the opportunity to comment on the possible consequences. Further, the EPA's analysis entitled "Resource Adequacy and Reliability in the IPM[2] Projections for the Transport Rule TSD"[3] was not available at rule proposal and includes significant errors regarding generation capacity within ERCOT—the largest grid operator within Texas. For example, the EPA overestimates ERCOT's generation capacity by nearly 20,000 megawatts.

If coal-fired power plants in Texas are faced with these significant emission reductions, decisions regarding the operation of these plants may result in considerable reductions in the safety margins of power operation of this State. The strong disincentives for operation of coal-fired power plants would undoubtedly result in significant cost to energy consumers including the possible shutdown of base-load units. Manufacturing and production plants also rely on affordable energy to continue or even expand operation. EPA has failed to consider this potentially devastating economic "ripple effect." Again, because the proposal did not contain any specifics on how Texas would be regulated under this scheme, we were not able to fully evaluate and provide comments on the significant effects, such as shutdowns, of this rule.

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[2] Integrated Planning Model.
[3] Technical Support Document.

More importantly, the resulting effect of increased cost of power and power shortages, such as rolling blackouts, would not only jeopardize the personal and economic health of Texas citizens but also endanger lives. Whether it is cost prohibitive to operate electricity or electricity is simply unavailable, vulnerable populations, such as the elderly and low income, will be put at risk because the EPA has pursued inappropriate regulation of $S0_2$ in Texas under the guise of PM_2 transport.

Conclusion

Texas' inclusion in the CSAPR FIP for PM_2 was based solely on a previously unidentified significant linkage to a monitor next to a functioning steel mill that has implemented an MOU with federally enforceable controls ensuring attainment of the standard in question. Texas' $S0_2$ budget for the rule is not attainable at the cost levels predicted by the EPA, but it also far exceeds the level that would be necessary, even if the monitor showed nonattainment, to eliminate Texas' significant contribution to nonattainment.

It should go without saying that the EPA has drastically overreached in its scheme to address interstate transport. The questionable technical data used to include States in the CSAPR program is wholly divorced from the equally questionable technica1 data used to determine States' required emissions reductions. Most likely, the average rational person would have no difficulty supporting the idea that States should control emissions proportionately to the level at which those emissions negatively affect other States. The EPA, however, has abandoned rational science and common sense in an attempt to squeeze as many reductions out of a single industry in as short a time as possible. EPA took this course of action at the expense of affected entities who have not had a chance to fully understand and object to the myriad flaws in the rule. EPA instead demands drastic reductions in unrealistic time frames in order to address a non-existent problem allegedly caused by Texas. The fact is, the linking monitor is fully in attainment for the standards in question. This simple fact, among a number of other EPA errors and inconsistencies, highlights and underscores the weak justification for CSAPR, and makes the utter lack of transparency and public participation afforded to Texas all the more egregious.

The EPA's practice of proposing technically flawed and inadequate rules, in combination with a lack of action where needed within the SIP process, leaves all sectors of industry in a reactive mode. How could any facility—EGUs producing power, or even those dependent upon reliable power—plan for economic growth where tomorrow's regulatory demands are in constant flux?

The energy sector is a captive recipient of the EPA's attention. Unlike other industry, the possibility of moving to a more industry-friendly regulatory environmental outside of the U.S. is not an option. These regulations have vast economic effects, not limited to the direct energy generation costs that will be felt by every energy consumer, but also through the indirect effects of higher costs associated with the cost of manufactnring goods, and regrettably, the potential for lost jobs, as all sectors struggle to absorb these costs.

Businesses need certainty to drive our economy and thrive. Businesses should be subject to reasonable and appropriately protective regulation. For citizens to be protected from harmful pollution, both Federal and State Governments need to focus their resources on real risks, instead of creating false crises that frighten the public and misuse public resources. The potential effect of this rule on power generation and electric reliability in Texas and throughout the eastern U.S. could be devastating, at a time when we can least afford such problems. Under average conditions, the potential generation loss in Texas caused by this rule will have real impacts to real people. Should Texas face another sweltering summer like this past one, there is every reason to worry about loss of life.

Chairman HALL. Thank you very much. I now recognize the second witness, Mr. Gregory Stella, Senior Scientist at Alpine Geophysics.

STATEMENT OF MR. GREGORY STELLA, SENIOR SCIENTIST, ALPINE GEOPHYSICS, LLC

Mr. STELLA. Mr. Chairman and Members of the Committee, thank you for giving me the opportunity to testify today regarding the results of two recent independent studies that my firm, Alpine Geophysics, has conducted on behalf of the Midwest Ozone Group.

These two studies utilize state-of-the-science data, methods, and models to assess the needs for the types of emission reductions contemplated by the Cross-State Air Pollution Rule. We conducted these analyses of emission reductions and air quality improvements for purposes of comparing them to EPA's findings from its modeling of the proposed Clean Air Transport Rule, now finalized as the Cross-State Air Pollution Rule. Specifically, we have identified two major areas in which our assessment differs distinctly from that conducted by EPA.

Firstly, EPA did not use the most recently available emissions inventories and air quality measurements at the time of its rulemaking, and secondly, EPA did not account for the air pollution controls and related emission reductions that have been or are being installed to satisfy the requirements of the Clean Air Interstate Rule, or CAIR.

Our first study was designed to quantify historical changes in ozone and particulate matter precursor emissions and the associated changes in air quality attributed to those emission changes during a 10-year period covering 1999 through 2009. On regional and state levels, our findings confirm that across the lower 48 States, all pollutants have typically decreased since 1999. In particular, NO_2 and SO_2 emissions from electric utility fuel combustion sources have significantly decreased as the result of the Acid Rain Program, NO_2 Budget Trading Program, and CAIR control implementation.

With respect to mobile sources, all studied pollutants except ammonia decreased over time as a result of various fuel and fleet rulemakings. Correspondingly, we computed ozone and fine particulate matter design value trends for each region in the United States for the same period of 1999 through 2009. Our results again demonstrated that average eight-hour ozone and both the average annual and 24-hour PM_2 design values have decreased across the Nation during this 10-year period. Noticeably, EPA did not rely on this more recent air quality data in the development of the Cross-State Air Pollution Rule, instead relying on older air quality monitoring data that does not reflect these improvements.

The objective of our second study was to perform technically credible photochemical modeling, including the EPA Attainment Test for three key years—2008, 2014, and 2018—in a study area that includes much of the central, midwestern, and northeastern United States. As a result of this modeling and use of the most recent emissions and observational air quality measurements and design value calculations, we found that in 2008, within our study area, air quality was much better than was assumed by EPA in the Cross-State Air Pollution Rule. With only three counties exceeding the 1997 eight-hour ozone NAAQS, all but nine counties in attainment with the annual PM_2 NAAQS and 21 counties in nonattainment with the 24-hour PM_2 NAAQS.

Additionally, our future years' simulations of 2014 and 2018 indicated that within our study area, all counties and monitors achieved eight-hour ozone attainment by 2014 and remained in attainment in 2018. Only one county, Allegheny County, Pennsylvania, affected largely by local sources, was found to remain in nonattainment of the annual PM_2 NAAQS in 2014 and 2018 and

only two counties, also ones affected by local sources, were found to remain in nonattainment of the 24-hour PM_2 NAAQS in 2014 and 2018.

From these results, we have found that the ozone objectives of the Cross-State Air Pollution Rule can be achieved no later than 2014 and that both annual and 24-hour PM_2 NAAQS can be met in 2014 in all counties within our study area except for those affected by local sources with no new controls beyond those that have been or are being constructed to satisfy the requirements of CAIR.

In summary, our studies and associated results indicate that significant ozone and particulate matter precursor emission reductions have occurred in the United States since 1999 and that air quality has improved more rapidly than has been predicted by EPA in the development of the Cross-State Air Pollution Rule. Additionally, by using no more than recent emissions and air quality concentration data, the majority of nonattainment and maintenance counties identified in EPA's Cross-State Air Pollution Rule analysis are found to be in attainment by 2009 with both the ozone and the particulate matter NAAQS objectives of the final rule.

Finally, our modeling demonstrates that the air quality objectives of the Cross-State Air Pollution Rule can be achieved in an eastern portion of the United States with no new controls beyond those being installed to satisfy EPA's original care.

I thank you for your time and this opportunity to present this information before the Committee, and I am happy to answer any questions that Members may have on this work.

[The prepared statement of Mr. Stella follows:]

PREPARED STATEMENT OF MR. GREGORY STELLA,
SENIOR SCIENTIST, ALPINE GEOPHYSICS, LLC

Mr. Chairman and Members of the Committee, thank you for giving me the opportunity to testify today regarding the results of two recent independent analyses that my firm, Alpine Geophysics, LLC, has conducted on behalf of the Midwest Ozone Group. These two studies utilized state-of-the-science data, methods, and models to provide (a) an emissions and air quality trends picture for a recent 10-year period, (b) residual ozone and particulate matter nonattainment results for a 12km modeling domain (study area) over much of the central, midwestern and northeastern United States and (c) a list of nonattainment and maintenance monitoring sites for 2012 which based on air quality observations from 2006 through 2009, were determined to already achieve attainment of the target National Ambient Air Quality Standards (NAAQS) in EPA's Proposed Transport Rule (75 FR 45210; PTR) and final Cross-State Air Pollution Rule (76 FR 48208; CSAPR).

Introduction

On August 2, 2010, the U.S. Environmental Protection Agency (EPA) issued *Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone; Proposed Rule* stating that:

- EPA is proposing to limit the interstate transport of emissions of nitrogen oxides (NOX) and sulfur dioxide (SO_2). In this action, EPA is proposing to both identify and limit emissions within 32 States in the eastern United States that affect the ability of downwind States to attain and maintain compliance with the 1997 and 2006 fine particulate matter (PM_2) national ambient air quality standards (NAAQS) and the 1997 ozone NAAQS.

In support of this proposal (and resulting final rule), EPA developed and processed base year 2005 and future-year emission inventories from multiple source categories with emissions and air quality models to determine relative contributions to

downwind nonattainment and to simulate changes in air quality as the result of control strategy implementation.

Alpine conducted two separate studies to compare with the findings of the proposed EPA rule. Specifically, we have identified two major areas in which our assessment differs markedly from that conducted by EPA. First, EPA did not use the most recently available emissions inventories and air quality measurements at the time of its rulemaking, and second, EPA did not account for the air pollution controls and related emission reductions that have been or are being installed to satisfy the requirements of the Clean Air Interstate Rule (or CAIR).

The first project was designed to quantify historical changes in ozone and particulate matter precursor emissions and the associated changes in air quality attributed to those emissions changes from a 10-year period covering 1999 through 2009. The second analysis was designed to develop a residual ozone and particulate matter nonattainment picture for a study area over much of the eastern United States utilizing more recent emissions and air quality data and an alternate "Business As Usual" future-year scenario for 2014 and 2018 (comparable to EPA's Clean Air Interstate Rule or CAIR) that were simulated by EPA in support of its proposed rules and to additionally use these more recent design value data to determine which of EPA's identified nonattainment or maintenance sites were actually already in attainment with the NAAQS, based on observations from 2006–2009.

Emissions and Air Quality Trends

The objective of our first project was to develop and present publicly available information on trends in emissions and ambient air quality in the United States over the period 1999 through 2009 in easy-to-understand visual and tabular formats. In addition to the quantitative historical summary provided, we included a qualitative assessment of meteorological influences on these trends as available for temperature and rainfall anomalies. Our metrics were developed for the United States using subregional groupings of States (Figure 1).

Figure 1. Sub-regional state groupings for emissions and air quality trends analysis.

We collected and processed publically available EPA emission inventories for years within the study period of interest (1999–2009) by pollutant and source cat-

egory to develop the trends for the analysis.[1] To improve the year-to-year quantification of emissions, we augmented the EPA data with year-specific continuous emissions monitoring (CEM) emissions (2002 through 2009) and year-specific wildfire emissions data (2005 through 2008). Categories were grouped in our study as follows:

- electric generation (EGU) coal fuel combustion;
- electric generation non-coal fuel combustion;
- industrial fuel combustion;
- other fuel combustion;
- industrial processes;
- on-road vehicles;
- non-road engines and vehicles; and
- miscellaneous (including wildfire, prescribed fire, agricultural activities, etc.).

Our findings (examples provided in Figures 2 and 3) were comparable to EPA national level published reports[2] of emissions and air quality trends and confirm that in each region analyzed, we confirmed that all pollutants have decreased since 1999 in aggregate with some demonstrated intermediate-year increases typically due to variability in year-to-year fire emissions. NO_2 and SO_2 from electric utility fuel combustion sources show a significant decrease over time as a result of the Acid Rain Program, NO_2 Budget Trading Program and CAIR control implementation. All pollutants (except ammonia) from the highway and off-highway vehicles categories show decrease over time as a result of various mobile source fuel and fleet rulemakings, including the Tier 2/Gasoline Sulfur rule and Heavy Duty Engine/Vehicle and Highway Diesel Fuel rules.

Correspondingly, we computed and summarized ozone and fine particulate matter (PM_2) design value trends for each region in the eastern United States for the same period of 1999 through 2009. These design values were calculated at both State and regional levels and for each three-year period we computed the average of design values across all monitoring sites meeting data completeness requirements. The eight-hour ozone and 24-hour and annual particulate matter design values for each overlapping three-year period started with 1999–2001 and ended with 2007–2009 and were calculated based on EPA data handling conventions. Our results found that average eight-hour ozone and both the average annual and 24-hour PM_2 design values have decreased in all five regions during the 10-year period. (Figures 4, 5 and 6).

Figure 2. Midwestern States NO_2 emission trends.

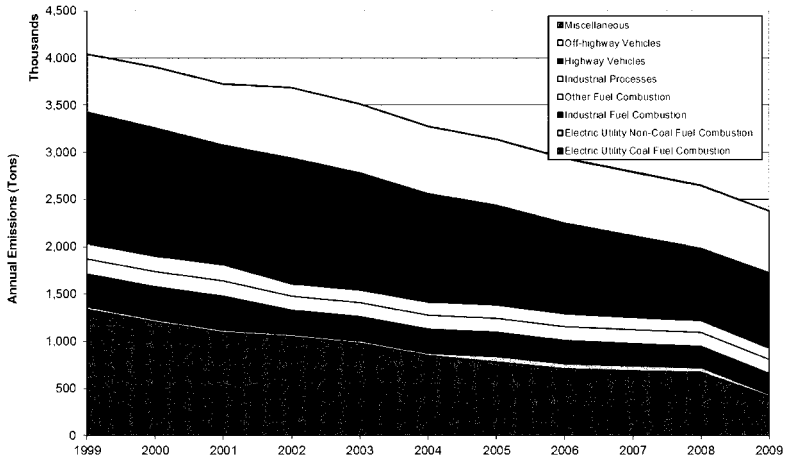


Figure 3. Northeastern states SO2 emission trends.

[1] *http://www.epa.gov/ttn/chief/eiinformation.html.*
[2] *http://www.epa.gov/airtrends/index.html.*

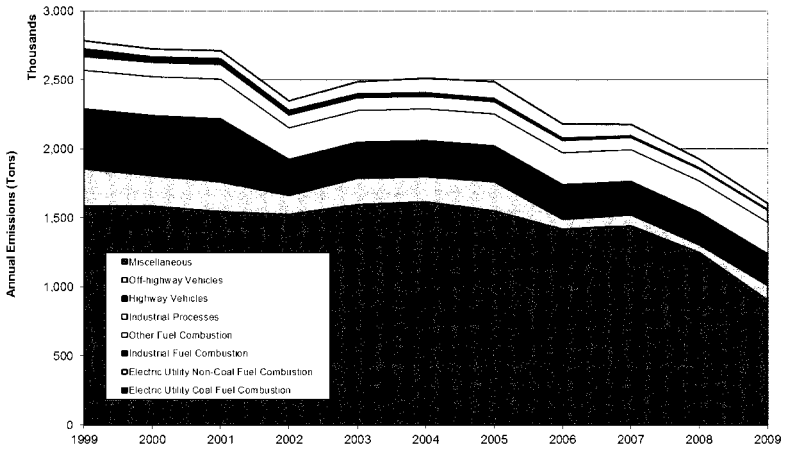

Thousands
Annual Emissions (Tons)
3,000
2,500
2,000
1,500
1,000
500
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Miscellaneous
Off-highway Vehicles
Highway Vehicles
Industrial Processes
Other Fuel Combustion
Industrial Fuel Combustion
Electric Utility Non-Coal Fuel Combustion
Electric Utility Coal Fuel Combustion

Figure 4. Regional average eight-hour ozone design value trends.

Figure 5. Regional average annual PM_2 design value trends.

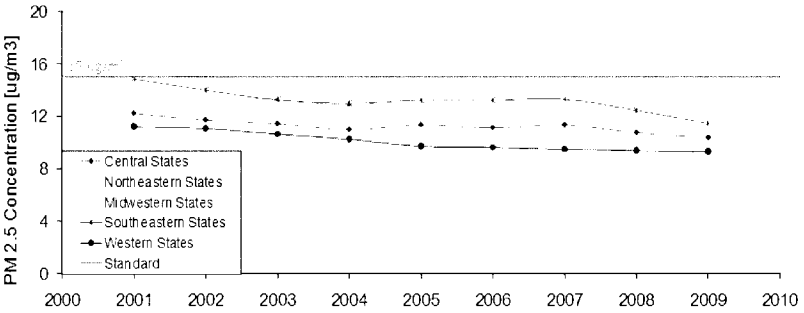
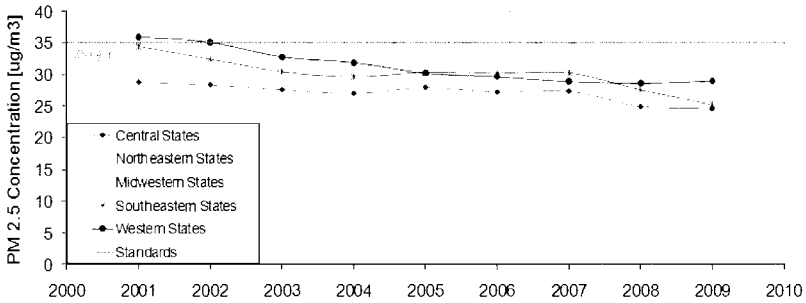


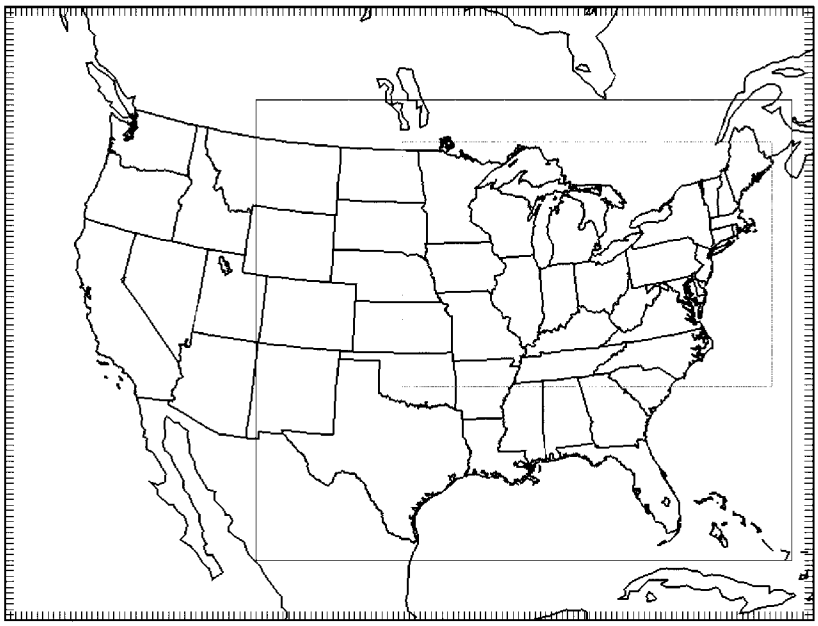
Figure 6. Regional average 24-hour PM_2 design value trends.



Ozone and Particulate Matter Attainment Modeling

The objective of our attainment modeling analysis was to perform technically credible photochemical modeling, including the EPA attainment test, for three key years: 2008, 2014, and 2018 for comparison with projections published by EPA in its rule proposals. Modeling for year 2008 served the important objective of providing a recent "typical baseline" year for the purpose of calculating relative response factors (RRFs), which tie observed design values to the air quality modeled results. Most importantly, moving to 2008 took direct advantage of recent reductions in ozone and particulate matter design values measured across the eastern State study area (Figure 7) and the controls and related emission reductions that were already occurring in response to CAIR. Results of our work clarified when the effects of "Business As Usual" (BAU) State and federal control programs would begin to significantly lower the eight-hour ozone and annual and daily PM design values at key monitors in the study area.

Figure 7. 36/12 km CAMx modeling domain. Red box represents eastern State study area.



We constructed the summer (eight-hour ozone) and annual (PM_2) 2008 base year model performance evaluation inventories and future year 2014 and 2018 inventories using the most recent EPA 2005v4 data sets as the foundation. To these foundation files we updated the base year inventories to contain (a) 2008 Clean Air Markets Division (CAMD) CEM data for EGU sources (as reported under various programs and accounting for controls installed through 2008), (b) 2008 year-specific vehicle miles traveled (run through the MOBILE6 tool to generate onroad emissions), (c) wild and prescribed fire emissions (from EPA's SMART Fire contract), and (d) biogenic emissions using a most recent version (v2.03a) of the MEGAN biogenics emissions model. All data that we used for the upgrades is and was available to and through EPA as it prepared its proposals.

The non-EGU future year inventories included all pertinent growth and control measures "on the books" up to that year as provided by EPA's PTR data distribution[3] as well as additional consent decree and local and State program data available at the time of our modeling. Additional growth and control data obtained from EPA were applied to EPA's 2005v4 to generate 2008 emissions and fill in the 2008 inventory in whole. In cases where growth and control data were not available, interpolations of EPA 2005 and 2010 inventories were used for 2008 emissions.

To determine future SO_2 and NO_2 emissions for EGUs, we utilized output from the Emission-Economic Modeling System (EEMS), which is a modeling system that has been used by individual utilities and organizations to evaluate the economic and compliance implications of environmental policies and rules. EEMS is a computer model that was developed in 1997 to perform specific emission and economic analyses of environmental policies and regulations impacting the electric utility and coal industries. In general, EEMS uses a set of decision rules to identify a combination of control options (technology versus allowances) that approximates the least cost solution for a given utility system under a specific regulatory (e.g., trading) regime.

The SO_2 and NO_2 emission forecast for this analysis ("Business As Usual") assumed compliance with the Clean Air Interstate Rule, as well as known utility agreements contained in Consent Decrees and State programs. The future regional electrical generation by fuel type and regional fuel forecasts that were incorporated into the model were from the Energy Information's Administration's Annual Energy Outlook 2009 (AEO2009)—Updated Reference Case.[4]

The modeling inventories developed for the 2008 base year and the 2014 and 2018 forecast years were prepared using the same technical methodologies as employed by EPA for the PTR and CSAPR. These inventories, founded upon the base and future year modeling analyses performed by EPA, have undergone considerable QA by the agency and thus represent some of the best information available in the central and eastern United States for this regional modeling purpose. We feel that the resulting "first principal" inventories are of sufficient technical credibility to justify their use in this regional analysis and are consistent with the inventories produced by EPA for the same purpose.

We then examined the air quality impacts of the emissions prepared for the base year 2008 simulation and examined residual nonattainment in 2014 and 2018. The air quality modeling associated with this task had three primary objectives:

- Perform 2008 baseline and 2014 and 2018 future year modeling exercises with the Comprehensive Air Quality Model with extensions (CAMx) v.5.20.1 modeling system setup at 36/12 km scale over the study area for 2008. These simulations shed light on the degree to which current controls and controls considered "Business As Usual" provide for attainment of the PTR objective NAAQS.
- Use EPA's PTR attainment results with the new information produced for 2014 and 2018 to examine the rate at which residual ozone and PM nonattainment monitors come into attainment as planned federal and local controls begin to take effect in the out-years.
- Identify those areas, if any, for which residual nonattainment of the eight-hour ozone or annual/daily PM NAAQS are simulated in the future years.

In this analysis, we used measurements of ambient ozone and PM_2 data from several State and federal monitoring networks. This includes data from over 500 ozone monitoring sites as well as over 500 Federal Reference Method (FRM) PM_2 sites in the eastern U.S. In addition, speciated PM_2 data from the Chemical Speciation Network (CSN) and IMPROVE network were used to estimate PM_2 species concentrations at each FRM site. The ambient data used in this analysis were obtained from EPA's Air Quality System (AQS).

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[3] *http://www.epa.gov/airtransport/techinfo.html.*
[4] *http://www.eia.gov/oiaf/archive/aeo09/index.html.*

The EPA modeling guidance[5] recommends using the average of the three design value periods centered on the year of the base year emissions. Since 2008 was the base emissions year for the our modeling and design values were not yet available to represent the base year using the three design value periods centered on this year (2006–2008, 2007–2009, and 2008–2010), we used an alternate approach recommended by EPA.

An alternate EPA recommended averaging technique assumes that at least five complete years of ambient data is available at each monitor. In some cases there were less than five years of available data (especially at relatively new monitoring sites). In this case, EPA recommends that data from the monitor is used if there are at least three consecutive years of data. If there are three years of data, then the baseline design value will be based on a single design value.

For ozone, we used the design value period that straddled the baseline inventory year (e.g., the 2007–2009 design value period for our 2008 baseline inventory year). For both annual and 24-hour PM_2, 2009 design value data were not yet available at the time of our analysis and so a design value period from a three-year period which at least contained our base year in its range (2006–2008) was used.

Projection of Future Design Values and Determination of Nonattainment for Ozone and Annual and 24-Hour PM_2

The EPA notes that the projection methodology for ozone and PM_2 involves using the model predictions in a relative sense to estimate the change in concentration between 2008 and each future year scenario. For a particular location, the percent change in modeled concentration (the relative response factor (RRF)) is multiplied by the corresponding observed base period ambient concentration (DVb) to estimate the future year design value for that location (DVf).

Consistent with EPA methods of calculating future year design values in the PTR with the Modeled Attainment Test Software (MATS),[6] we generated ozone and PM_2 future design values and resulting nonattainment predictions using EPA default settings in the software package and with noted differences in design value period years chosen as noted above.

Results

The Modeled Attainment Test Software (MATS) v2.3.1 was used to implement the modeled attainment tests for particulate matter (PM_2) and ozone (O_2) for the air quality simulations conducted in this analysis. An update we made to the public distribution of this model was the inclusion of final 2009 ozone design value data as published by EPA in August 2010. These data were used in the attainment tests conducted for eight-hour ozone in the modeling domain. Most recent data distributed with the noted version of the software were used in the annual and 24-hour PM_2 attainment tests.

Some of the key attainment findings of this latest study included:

- Eight-hour Ozone Attainment Demonstration: Using eight-hour ozone design values calculated from 2007–2009 observational data sets, we found that only three counties in our study area exceeded the objective 1997 eight-hour ozone NAAQS of 85 ppb in 2008. Our future year simulations of 2014 and 2018 indicated that all counties and monitors within the study area achieve eight-hour ozone attainment by 2014 and remain in attainment in 2018. From these results, we found that the ozone objectives of the proposed transport rule can be achieved with no new controls beyond BAU no later than 2014.
- Annual PM_2 Attainment Demonstration: Our modeling showed that all but nine counties in the study area were in attainment of the annual PM_2 NAAQS in 2008. From this list, only one county (Allegheny County, PA) was found to remain in nonattainment of the 15.0 $\mu g/m^3$ annual PM_2 NAAQS in 2014 (16.6 $\mu g/m^3$) and 2018 (16.2 $\mu g/m^3$). From these results, the annual PM_2 objectives of the proposed transport rule can be achieved with no new controls beyond BAU no later than 2014 with the possible exception of additional local controls at the Allegheny County, PA, location. This site has been previously documented to be heavily influenced by emissions from local sources.[7]

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[5] *http://www.epa.gov/ttn/scram/guidance/guide/final-03-pm-rh-guidance.pdf.*

[6] *http://www.epa.gov/scram001/modelingapps_mats.htm.*

[7] Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan. Attainment Demonstration for the Liberty-Clairton PM_2 Nonattainment Area. Allegheny County Health Department. February 22, 2010.

- 24-hour PM_2 Attainment Demonstration: Our modeling showed that twenty-one counties in the study area are in nonattainment of the 24-hour PM_2 NAAQS in 2008. From this list, only two counties (Allegheny County, PA, and Brooke County, WV) were found to remain in nonattainment of the 35 μg/m^3 24-hour PM2.5 NAAQS in 2014 (51.2 and 38.0 μg/m^3, respectively) and in 2018 (50.0 and 37.2 μg/m^3, respectively). From these results, the 24-hour PM_2 objectives of the proposed transport rule can be achieved with no new controls beyond BAU no later than 2014 with the possible exception of additional local controls at the Allegheny County, PA, and Brooke County, WV, locations.

Impacts of Updated Design Values on Determinations of Contributions to Nonattainment and Maintenance in the Proposed EPA Transport Rule

The EPA's Proposed Transport Rule and Cross-State Air Pollution Rule identify the link between specific upwind States and downwind ozone or PM_2 nonattainment areas based on photochemical modeling of the 2005 base year and two future years: 2012 and 2014. Model results for the base and future years are used to compute relative response factors (RRFs) equal to the ratio of predicted future year to corresponding predicted base year design values (DVs). These RRFs are then multiplied by DVs calculated from monitoring data for a base period centered on the 2005 base model year to obtain the predicted future year DV.

Two different base period DVs are calculated from observations: the average of DVs computed from measurements for periods ending 2005, 2006, and 2007 (i.e., average of the three design values for the three attainment periods 2003–2005, 2004–2006, and 2005–2007) and the maximum of these three base period DVs. RRFs and resulting predicted future year DVs were computed by EPA using the Modeled Attainment Test Software (MATS).

EPA's PTR and CSAPR identify two categories of ozone and PM_2 monitoring sites based on the predicted future year DVs determined from MATS in the above manner:

- "Nonattainment" sites are those monitoring sites for which the average of the three DVs is projected to exceed the NAAQS in 2012.
- "Maintenance" sites are those monitoring sites that are not nonattainment sites as in (1) above but the maximum of the three DVs is projected to exceed the NAAQS in 2012.

EPA used source apportionment modeling to determine which states are predicted to contribute an amount in excess of 1% of the level of the NAAQS to ozone or PM_2 at each downwind nonattainment or maintenance monitoring site defined in the above manner. Emissions from any such States are deemed to produce a "significant" contribution to either nonattainment or maintenance sites, respectively, of the ozone or PM_2 NAAQS for purposes of the rule. Thus, significant transport couples are defined by EPA based on DVs calculated from observations made during 2003–2007. However, in late 2010, EPA released DVs based on observations from two more recent periods: 2006–2008 and 2007–2009.[8] These more recent DVs reflect reductions in ozone and PM_2 precursor emissions which have occurred since 2003–2007 and thus a reduction in the number of potential nonattainment and maintenance sites as defined above.

We examined EPA's list of nonattainment and maintenance monitoring sites for 2012 as defined in the PTR to determine which of these sites were actually already in attainment of the NAAQS based on observations from 2006–2009. Sites already in attainment based on these most recent data represent locations where transport from upwind sources is not contributing to nonattainment or maintenance problems. In performing this comparison, we used DVs calculated from annual summary statistics (e.g., annual fourth highest daily maximum eight-hour average ozone concentration) for 2006–2009. In some cases, insufficient data were available from which to compute the annual summary statistic. In these cases, we used procedures for filling in missing data similar to those used by EPA for computing air quality trends[9]. This is a conservative approach within the context of this analysis as DVs

[8] Results presented here are based on EPA's final ozone and PM_2 design values for 2006–2008, final ozone design values for 2007–2009 and 13 July 2010 draft PM_2 design values for 2007–2009 *(http://epa.gov/airtrends/values.html; http://www.epa.gov/ttn/analysis/dvreview.htm)*.

[9] *http://epa.gov/airtrends/reports.html*.

based on filled-in data may suggest a monitoring site is a nonattainment or maintenance site whereas MATS does not contain a DV for the monitoring site.

Results

Total counts of nonattainment and maintenance monitoring sites based on EPA's 2012 projections in the PTR versus nonattainment and maintenance sites determined from 2006–2009 data are provided in Table 1. These results show that over 80% of the sites predicted by EPA to be in nonattainment of the ozone or PM_2 standards in 2012 are already in attainment as of 2009 based on an average of the 2006–2008 and 2007–2009 DVs. Furthermore, over 80% of the PM_2 2012 maintenance sites and 1/3 of the ozone 2012 maintenance sites are no longer maintenance sites as of 2009. These results indicate that air quality has improved more rapidly than predicted by EPA's PTR modeling.

We examined locations of monitoring sites projected by EPA to be nonattainment in 2012 which were observed to be in attainment as of 2009 based on averaging the 2006–2008 and 2007–2009 DVs. Table 2 lists all counties with such monitoring sites. Similarly, Table 3 lists all counties with monitoring sites projected by EPA to be maintenance in 2012 which were observed to be neither maintenance nor nonattainment as of 2009 based on 2006–2008 and 2007–2009 DVs.

Table 1. Counts of nonattainment and maintenance sites[10].

	Ozone	$PM_{2.5}$ (Annual)	$PM_{2.5}$ (24-Hour)
2012 Nonattainment Sites as predicted by EPA	11	32	103
2012 Maintenance Sites as predicted by EPA	15	16	44
2012 Nonattainment sites already in attainment based on 2006-2009 data	9	27	83
2012 Maintenance sites that are not maintenance or nonattainment sites based on 2006-2009 data	5	13	37

[10] As determined from list of monitoring sites included in the PTR

Table 2. Counties projected by EPA to be nonattainment in 2012 which were observed to be in attainment as of 2009 based on averaging 2006-2008 and 2007-2009 DVs.

Ozone		PM (Annual)		PM (24-Hour)	
County	*State*	*County*	*State*	*County*	*State*
E. Baton Rouge	Louisiana	Bibb	Georgia	Jefferson	Alabama
Suffolk	New York	Clayton	Georgia	New Haven	Connecticut
Brazoria	Texas	Fulton	Georgia	Cook	Illinois
Harris	Texas	Cook	Illinois	Madison	Illinois
Tarrant	Texas	Madison	Illinois	Saint Clair	Illinois
		Saint Clair	Illinois	Will	Illinois
		Clark	Indiana	Clark	Indiana
		Dubois	Indiana	Dubois	Indiana
		Marion	Indiana	Knox	Indiana
		Jefferson	Kentucky	Lake	Indiana
		Wayne	Michigan	Marion	Indiana
		Butler	Ohio	Tippecanoe	Indiana
		Cuyahoga	Ohio	Vigo	Indiana
		Hamilton	Ohio	Scott	Iowa
		Allegheny	Pennsylvania	Daviess	Kentucky
		Beaver	Pennsylvania	Baltimore (City)	Maryland
		Lancaster	Pennsylvania	Monroe	Michigan
		York	Pennsylvania	Oakland	Michigan
		Cabell	West Virginia	St. Clair	Michigan
		Kanawha	West Virginia	Washtenaw	Michigan
				Wayne	Michigan
				Saint Charles	Missouri
				St. Louis City	Missouri
				Hudson	New Jersey
				Union	New Jersey
				Bronx	New York
				New York	New York
				Butler	Ohio
				Cuyahoga	Ohio
				Franklin	Ohio
				Hamilton	Ohio
				Montgomery	Ohio
				Summit	Ohio
				Allegheny	Pennsylvania
				Beaver	Pennsylvania
				Berks	Pennsylvania
				Cambria	Pennsylvania
				Cumberland	Pennsylvania
				Dauphin	Pennsylvania
				York	Pennsylvania
				Sumner	Tennessee
				Dane	Wisconsin

Table 3. Counties projected by EPA to be maintenance in 2012 which were observed to be neither maintenance nor nonattainment as of 2009 based on 2006-2008 and 2007-2009 DVs.

Ozone		PM (Annual)		PM (24-Hour)	
County	*State*	*County*	*State*	*County*	*State*
Dallas	Texas	Cook	Illinois	Camden	New Jersey
Harris	Texas	Jefferson	Kentucky	Union	New Jersey
		Cuyahoga	Ohio	New York	New York
		Hamilton	Ohio	Cuyahoga	Ohio
		Montgomery	Ohio	Lucas	Ohio
		Stark	Ohio	Mahoning	Ohio
		Berks	Pennsylvania	Preble	Ohio
		Berkeley	West Virginia	Stark	Ohio
		Hancock	West Virginia	Summit	Ohio
		Marion	West Virginia	Trumbull	Ohio
				Allegheny	Pennsylvania
				Davidson	Tennessee
				Brown	Wisconsin
				Milwaukee	Wisconsin
				Waukesha	Wisconsin

Summary and Conclusions

Our findings confirm that in each region analyzed, all ozone and particulate matter precursor pollutants have decreased since 1999 in aggregate with some demonstrated intermediate-year variability typically due to specific year-to-year fire emissions. Additionally, our results show that average eight-hour ozone and both the average annual and 24-hour PM_2 design values have decreased in all five regions of the continental United States during the 10-year period from 1999 through 2009.

Photochemical modeling analyses, including the EPA attainment test, were conducted for three key years: 2008, 2014, and 2018. The modeling for year 2008 served the important function of providing a recent "typical baseline" year for the purpose of calculating relative response factors (RRFs). Most importantly, moving to 2008 took direct advantage of recent reductions in design values measured across the study area and the use of current emissions inventory data made available from EPA and others which include the controls and related emission reductions that were already occurring in response to CAIR. Results of this work clarify when the effects of "Business As Usual" State and federal control programs would begin to significantly lower the eight-hour ozone and annual and 24-hour PM_2 design values at key monitors in the modeling domain.

The SO_2 and NO_2 emission forecast for this analysis ("Business As Usual") assumed compliance with the Clean Air Interstate Rule, as well as utility agreements with regard to Consent Decrees and State programs. The future regional electrical generation by fuel type and regional fuel forecasts that were incorporated into the model were from the Energy Information's Administration's Annual Energy Outlook 2009 (AEO2009)—Updated Reference Case.

Using EPA attainment test software and algorithms with the output from our "Business As Usual" air quality model simulations for 2008, 2014 and 2018, we concluded that the ozone objectives of the proposed transport rule can be achieved within our study area with no new controls beyond "Business As Usual" no later than 2014.

We also concluded that the annual PM_2 objectives of the proposed transport rule can be achieved within our study area with no new controls beyond "Business As Usual" no later than 2014 with the possible exception of additional local controls at the Allegheny County, PA, location.

Additionally, we concluded that the 24-hour PM_2 objectives of the proposed transport rule can be achieved within our study area with no new controls beyond "Business As Usual" no later than 2014 with the possible exception of additional local controls at the Allegheny County, PA, and Brooke County, WV, locations.

Finally, we concluded that that over 80% of the sites predicted by EPA to be in nonattainment of the ozone or PM_2 standards in 2012 are already in attainment as of 2009 based on an average of the 2006–2008 and 2007–2009 DVs. Furthermore, over 80% of the PM_2 2012 maintenance sites and 1/3 of the ozone 2012 maintenance sites are no longer maintenance sites as of 2009. These results indicate that air quality has improved more rapidly than predicted by EPA's PTR and CSAPR modeling.

Chairman HALL. Mr. Stella, thank you very much. You stayed exactly within the five minutes.

I now recognize our third witness, Mr. Barry T. Smitherman, Commissioner of the Texas Railroad Commission.

STATEMENT OF MR. BARRY T. SMITHERMAN, COMMISSIONER, TEXAS RAILROAD COMMISSION

Mr. SMITHERMAN. Mr. Chairman, Ranking Member Johnson, Members of the Committee, the Texas Railroad Commission—which does not regulate railroads but regulates the oil, gas, and coal industry in Texas—was founded in 1891. Prior to my appointment two months ago, I was for seven years on the Public Utility Commission, the last four as Chairman. My testimony today is that the Cross-State Air Pollution Rule was promulgated using a flawed process, will jeopardize the reliability of the Texas Electric Grid, which contains three of the 10 largest cities in America and is home to the largest petrochemical industry in our Nation. It will also eliminate many high-paying jobs.

In the original version, as you have heard, the State of Texas along with three other States—Oklahoma, Arkansas, and Mississippi—was included only for seasonal ozone. As a result, neither Texas regulators, the Texas Electric Grid operator, or industry participants were given notice that more stringent regulations might be passed relating to coal-fired electric generation, and in fact, significantly, there was a map which detailed our status and the other States' status as well.

In fact, in a report dated July 21, 2011, prepared by the ERCOT technical personnel, they said, "Based on the proposed rule, an ERCOT study evaluating the expected impacts of all pending EPA regulations did not include any incremental impacts from CATR on the ERCOT system." With publication of the final version of CSAPR on July 6, our worst fears were confirmed. In fact, in a rare public press release on July 19, ERCOT leadership highlighted the surprise change the EPA made by including Texas and said, "CSAPR could cause a shortage of generation necessary to keep the lights on in Texas."

Subsequently, on September 1, ERCOT completed a detailed study of the effects of CSAPR and concluded that it would impact the reliability of the Texas electric grid by requiring between 1,200 and 6,000 megawatts of generation to not run during certain periods of the year. On several days this past summer, ERCOT experienced record demand for electricity on our grid and we were required to ask load to voluntarily curtail in order to keep the lights on. We also, Mr. Chairman, imported power from Mexico during several of these periods of time. In other words, if the plant closures that were announced this week by Luminant had been in ef-

fect this past summer, we would have been unable to keep the lights on for several days. Now, that puts lives at risk.

But in addition to doing that, approximately 1,300 megawatts of electric generation and three lignite mines to support that generation will close according to recent announcements. That kills 500 high-paying jobs in Texas and hurts the Texas economy. Approximately 3,000 Texans work directly in the lignite mining industry, which is responsible for over 1.3 billion in annual gross product.

As Dr. Shaw said, Texas has been recognized for reducing SO_2 emissions over the last 10 years, but if allowed to go forward, CSAPR would require a 47 percent reduction in Texas in less than six months. Now, Texas has been able to achieve much of our air quality improvements by increasing the amount of electricity coming from wind energy and from natural gas-fired generation. Air quality in Texas will continue to improve without the implementation of CSAPR. We have over 10,000 megawatts, more than any other State, of wind energy on our grid, and that number is likely to increase.

More significantly, new unconventional natural gas discoveries in Texas using horizontal drilling and hydraulic fracturing techniques make available vast quantities of cheap burning natural gas. When natural gas is used to make electricity, members, electricity rates are very low. In Dallas today you can purchase electricity for less than five cents a kilowatt hour. I believe that going forward as we add natural resources, generation resources in Texas to meet our growing economy where jobs are still being created, much of that will be done using clean-burning natural gas.

In short, Mr. Chairman, Texas needs time to retrofit our plants to comply with CSAPR and please not focus on killing more jobs and jeopardizing the reliability of our grid and the lives of many of our citizens. Thank you.

[The prepared statement of Mr. Smitherman follows:]

PREPARED STATEMENT OF MR. BARRY T. SMITHERMAN,
COMMISSIONER, TEXAS RAILROAD COMMISSION

My name is Barry Smitherman, and I am a Commissioner with the Texas Railroad Commission. The Railroad Commission was founded in the Texas Constitution in 1891, and we regulate the oil, gas, and lignite coal mining industries in Texas. We are recognized worldwide for our expertise in fossil fuel regulation. Prior to my serving at the Railroad Commission, I was a member for the past seven years of the Public Utility Commission of Texas—for the last four years of that tenure, I was Chairman. The PUCT regulates the electric and land line telecommunications industries in Texas. In addition, the Chairman of the PUCT is a board member of ERCOT, the Electric Reliability Council of Texas, our electric grid operator or Independent System Operator (IS0).

My testimony today is that the Cross State Air Pollution Rule (CSAPR) was promulgated using a flawed procedural process, will jeopardize the reliability of the Texas electric grid, and will eliminate many high-paying jobs nationwide. Let me address each of these in order.

The original version of CSAPR, then known as the Clean Air Transport Rule (CATR), was first published in the summer of 2010. In that version, the State of Texas, along with three other States—Oklahoma, Arkansas, and Mississippi—was included only for seasonal ozone, not for SO_2 or NO_2 reductions. As a result, neither Texas regulators, nor the Texas electric grid operator, nor industry stakeholders were given notice that more stringent regulations might be passed relating to coal fired electric generation. In fact, in a report dated July 21, 2011, and prepared by ERCOT, the potential reliability implications of a number of impending EPA regulations, including the MACT HAP rule, the 316 (B) cooling water intake rule, the coal

combustion residual ash rule, and potential future greenhouse gas regulations, were analyzed. In presenting the results of their analysis, the ERCOT technical personnel specifically stated that the CATR would not apply to Texas: "Based on the proposed rule, an ERCOT study completed on June 21, 2011, evaluating the expected impacts of the pending regulations, did not include any incremental impacts from the CATR on the ERCOT system."

As the date for the final version of what is now known as CSAPR approached, stakeholders in Texas began to hear rumors that we would now be included for SO_2 and NO_2, rather just seasonal ozone, which is what we were initially led to believe. Texas Commission on Environmental Quality Chairman, Dr. Brian Shaw, and I wrote a letter to the EPA, dated June 9, 2011, outlining our concerns with what we were hearing about the final version of the regulations (copy of that letter attached). With publication of the final version of the CSAPR on July 6, 2011, the stakeholder, regulatory, and grid operator communities' worst fears were confirmed. In fact, in a rare public press release on July 19, 2011, ERCOT leadership highlighted the surprise "gotcha" change the EPA made by singling Texas out for year-round SO_2 and both year-round and peak period NO_2, after specifically stating Texas would not be included, and sounded the alarm about the fact that CSAPR could "cause a shortage of generation necessary to keep the lights on in Texas." Subsequently, on September 1, 2011, ERCOT completed a detailed technical analysis of CSAPR (copy attached) wherein the engineers at ERCOT clearly state that CSAPR will impact the reliability of the Texas Electric Market by requiring between 1,200 and 6,000MW of generation to not run during certain periods of the year. On several days in 2011, ERCOT experienced record demand for electricity and was forced to implement procedures that resulted in load voluntarily curtailing consumption to maintain grid reliability. If the plant closures that were announced Monday as a direct result of CSAPR would have been closed this summer, ERCOT would have been forced into rolling blackouts on multiple days. Therefore, we have empirical evidence that CSAPR would force Texas into blackouts on the hottest and coldest days of the year when Texas' most vulnerable citizens need electric heating and cooling in order to survive.

In addition to putting the lives of vulnerable citizens at risk, with the announcement that Luminant will have to idle 1,300MW of electric generation and the mines to support that generation, the CSAPR rule has already killed 500 high-paying jobs and hurt the economy. According to Nobel Economics Prize nominee, Ray Perryman, approximately 3,000 Texans work directly in the lignite mining industry, which is responsible for over $1.3 billion in annual gross product, as well as almost 14,000 permanent jobs. Many of these jobs will be lost if CASPR, as presently written, is implemented within the currently anticipated timetable.

Texas has been recognized nationally for reducing SO_2 emissions by 33% over the last 10 years. If allowed to go forward, CSAPR will require a 47% decrease from current SO_2 levels in less than six months. Even the AFL-CIO said in comments to the EPA that "EPA's proposed 2012 annual SO_2 and NO_2 emissions reduction deadline is unrealistic and unnecessary," and that "the 2012 interim deadline and the deep 2014 emissions reduction requirements could trigger shutdowns that will unnecessarily eliminate jobs.' Even the AFL-CIO agrees that, while emissions reductions are a good goal, they must be done sensibly, and on a realistic timeline.

Texas was able to achieve much of our air quality improvement by increasing the amount of electricity coming from wind energy and gas-fired generation. And while it is true that four new coal-fired generation plants have commenced operation in ERCOT within the last several years, each of them will be compliant with CSAPR.

Finally, air quality in Texas will continue to improve in the future without the implementation of CASPR. We have over 10,000 MW of wind in Texas, and that number is likely to rise.

More significantly, however, new unconventional natural gas discoveries in Texas, using horizontal drilling and hydraulic fracturing techniques, make available vast quantities of cheap, clean-burning natural gas. Natural gas has less SO_2 and NO_2 than coal and no mercury or particulate matter. Natural gas also has about 40% of the CO_2 of coal.

When used to make electricity, natural gas today results in extremely low electricity rates. In Texas, for example, consumers can purchase electricity in Dallas for as low as 4.5 cents a kwh. I have no doubt that as Texas seeks to add new generation resources in order to meet the needs of our rapidly growing state, with its vibrant job-creating economy, that clean burning natural gas fired generation will be the mainstay of our expanding generation fleet. In the short run, EPA must allow Texas enough time to refit our plants to comply with the new rule, and not focus on cramming through a punitive, job-killing rule that may almost immediately jeopardize the lives of our most medically fragile citizens, and which is opposed by a

wide coalition of unions, nonprofits, scientists, engineers and regulators. In the long run, I hope this Committee and the rest of Congress looks at the bait-and-switch tactics and dubious science EPA used to pass this rule, and puts the brakes on at this agency. If these politically motivated, punitive regulations are allowed to stand in Texas today, they set the precedent for a runaway agency to do whatever they see fit tomorrow.

Thank you for the opportunity to testify.

Chairman HALL. Thank you, sir, and for giving us back almost a minute. And by the way, I had breakfast with Elizabeth Ames, gentleman, one of your commissioners this morning earlier. Who is watching the gate down there in Texas?

Mr. SMITHERMAN. Commissioner Porter, sir.

Chairman HALL. All right. That is good. Thanks. I now recognize our fourth witness, Mr. Wayne E. Penrod, Executive Manager of Environmental Policy of the Sunflower Electric Power Corporation.

STATEMENT OF MR. WAYNE E. PENROD, EXECUTIVE MANAGER,ENVIRONMENTAL POLICY, SUNFLOWER ELECTRIC POWER CORPORATION

Mr. PENROD. Thank you, Chairman Hall, Ranking Member Johnson. I appreciate the opportunity to come today to talk to you about the circumstances that we find ourselves in related to the Clean—Cross-State Air Pollution Rule, which we call "Zapper." The problems with this rule are notice; a lack of transparency as it relates to the modeling and the impacts that our sources might have; reliability, that is the ability to keep the lights on as a result of the electricity distribution that is assumed by the rule; and four, is the time it will take to comply with the rule and how we are to go about achieving compliance with it.

In the attachments to my testimony, I had a couple of slides, one of which was the 2005 CAIR States and the second was the Cross-State Air Pollution Rule States that are impacted—conspicuous by their absence in the first slide, Kansas, Nebraska, and Oklahoma, and to some degree a difference in classification for Texas and Minnesota. As late as fall—excuse me—as late as January of 2011, January this year, the last—number three—notice of date of availability published by the EPA relative to the Clean Air Transport Rule, Kansas Utilities were not looking at any required reductions in emissions. In fact, Sunflower didn't even have the opportunity to take the opportunity to file comments because we didn't expect to be impacted at all by the final rule. It was to be promulgated by EPA. That turned out not to be the case.

We are primarily a single coal-based unit that operates in the western half of Kansas, and that is our primary source of energy for our people. The whole community was going to suffer a 50 percent load-carrying capacity as the result of the passage of the Clean Air—or the Cross-State Air Pollution Rule, 50 percent. We were—suggested that we might be able to buy energy, that we might be able to fuel-switch, that we might be able to install gas capacity. All those things in six months are beyond the pale, frankly, suggestions as a way we might be able to comply with this rule.

Kansas is unique in several respects aside from being flat. There are 15 coal-based units in Kansas. Ten of them are fairly large units. Of those 10, seven of them are scrubbed. Only one large one

is not. All are equipped with some version of low-NO_2 burners or overfire air. One of the large units has selected catalytic reduction. As we look around, we don't see how those units—some of them legacy units—are going to be able to reduce their emissions of either NO_2 or SO_2 beyond the levels that are required in this CSAPR rule. In fact, one of the plants has a super-compliance opportunity. That is words in their consent order that preceded their being able to retrofit some of their old scrubbers with new ones.

So we wonder why we are included. I have heard some of the discussion earlier about receptors in other States and how those receptors cause us maybe to think about why we should be included. We have that same concern. We know that when CAIR was first proposed, Kansas was included, but by virtue of some discussions that we had with EPA and some review and evaluation of the data that they used in developing their model, we took exception to it and were able to make corrections, and Kansas was suddenly not a part of that rule. We think maybe that is really what needs to happen here. Unfortunately, we are not afforded the opportunity to communicate with them and to try to get a remodel run that might show that.

Reliability is a major concern. One of the slides in my attachment again shows a picture of the impact on reliability. Actually, a percent voltage that we expect to see at a base case in Kansas and you see a few small faded white dots. And the EPA base case is imposed on that same scale you see a lot of bright lights; those are negatives. It will be bright dark frankly in those places where those situations occur. We don't expect to escape summer operation without some major energy shortages, and it will be rather sudden and rather widespread in our part of the State. So those are the things that we see that are problems with this reliability.

I would tell you that we are unique in another respect. Sunflower has a shovel-ready project that we were able to advance two years and we are going to start installing low-NO_2 burners and overfire air on our coal-based unit beginning the first of January. Very unusual circumstance, but this is an unusual rule. And we can't wait until 2013 to figure out whether or not we can buy allowances that might cover our emissions. So we are doing that. We are going to pay a penalty. It is going to cost us probably 30 percent more to do that work than when we had originally intended to do it, which was 2013.

Also, we find that rather than being able to purchase burners made in Kansas, they are going to be imported from China. We are going to meet the schedule. We are not going to suffer the inability to meet the load with our lowest-cost, most-reliable unit that serves the people of the western half of Kansas.

I thank you for the opportunity to come today and speak with you about this.

[The prepared statement of Mr. Penrod follows:]

PREPARED STATEMENT OF MR. WAYNE E. PENROD, EXECUTIVE MANAGER, ENVIRONMENTAL POLICY, SUNFLOWER ELECTRIC POWER CORPORATION

Introduction

Sunflower Electric Power Corporation (Sunflower) appreciates the opportunity to provide testimony to this Committee on EPA's Cross-State Air Pollution Rule (CSAPR). For Kansas, CSAPR imposes very near-term requirements (in 2012 and 2014) to reduce annual emissions of nitrogen oxides (NO_2) and sulfur dioxide (SO_2). EPA also proposes to require Kansas utilities to reduce ozone-season emissions of NO_2, also in the very near term. Under this proposal, Kansas will be required to offset its ozone-season NO_2 emissions with additional allowances for the 2012 ozone season, even though the ozone season requirements are still only proposed.

CSAPR will significantly undermine the reliability of the electricity transmission and distribution system and increase the cost of providing electric energy in central and western Kansas. Preliminary modeling by the Southwest Power Pool indicates the rule may cause significant voltage reductions in central and southwest Kansas and in the north Texas panhandle, situations which could lead to electricity blackouts.[1]

Moreover, EPA's process for promulgating this rule was technically flawed. Because of changes to EPA's modeling in the middle of the rulemaking process, Kansas became subject to significant, potentially unachievable near-term emission reduction requirements with almost no advance notice. Yet the changes result from modeling that is a proprietary "black box," and we are therefore unable to understand the exact basis for the emission reduction requirements to which we have become subject.

The modeling itself is also flawed because it assumes the downwind area that is supposedly affected by Kansas' ozone-season emissions is in nonattainment. Yet actual real-world monitoring data show this area is in attainment. Moreover, the modeling does not take into account future reductions from Kansas emission sources that are either already completed or otherwise locked in and which will reduce any impacts to this area even further.

In sum, Kansas has become subject to very harsh requirements with little advance notice based on (a) use of a model to which the public does not have access and (b) for the ozone season requirements, the erroneous modeling assumption that Kansas emissions are causing a downwind county to violate EPA air quality standards.

Sunflower and Mid-Kansas

These comments are provided on behalf of Sunflower and Mid-Kansas Electric Company, LLC (Mid-Kansas). Sunflower and Mid-Kansas are not-for-profit electric generation and transmission cooperative corporations that are owned and operated by the rural electric distribution cooperatives to which they supply electricity. These distribution cooperatives, in turn, are owned by their members who are electric consumers—families, farms and other businesses. These electric consumers select their distribution cooperative board members through democratic elections, and these board members in turn appoint the board members of Sunflower and Mid-Kansas.

Sunflower is owned by members Lane-Scott Electric Cooperative, Inc., Dighton; Prairie Land Electric Cooperative, Inc., Norton; Pioneer Electric Cooperative, Inc., Ulysses; The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City; all in Kansas.

Mid-Kansas Electric Company, LLC, is a coalition of five rural electric cooperatives and one wholly owned subsidiary including Lane-Scott Electric Cooperative, Inc., Dighton; Prairie Land Electric Cooperative, Inc., Norton; Southern Pioneer Electric Company, Ulysses (a wholly owned subsidiary of Pioneer Electric Cooperative, Inc.; The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City; all in Kansas.

Together the electricity provided by Sunflower and Mid-Kansas to these distribution cooperatives, and to more than 25 municipalities within the service area meets the electricity requirements of more than 400,000 people in central and western Kansas. Because Sunflower and Mid-Kansas and their distribution cooperative members operate on a not-for-profit basis, the cost of compliance with CSAPR flows directly through to these electricity consumers.

[1] See Exhibit 1, slide 7.

As in many rural areas, these individuals tend to be older and living on fixed incomes and tend to have incomes below the federally defined poverty level. The people served at retail by the distribution cooperatives include more than 64,000 (16%) above the age of 65 and more than 48,000 (12%) whose annual household income is below the federal poverty level.

CSAPR Impact Is Immediate

The Administrator of the Environmental Protection Agency (EPA) signed the final CSAPR on July 6, 2011. [2] The rule was published in the *Federal Register* on August 8, 2011, and is effective January 1, 2012. As proposed, the rule was known as the "Clean Air Transport Rule" (CATR) (July 2010). The rule replaces the Clean Air Interstate Rule (CAIR) that was issued in 2005. CAIR was overturned in court, but remains in place until CSAPR goes into effect on January 1, 2012. The CAIR rule did not apply to Kansas, and the CSAPR rule does not provide adequate time for Kansas utilities to properly respond to its requirements.

Because CAIR requirements have effectively remained in place, the utilities covered by that rule continued pollution control projects planned in 2005 and beyond. These projects included the installation of selective catalytic reactors for reducing NO_2 emissions and scrubbers for reducing SO_2 emissions. An allowance trading program was established under CAIR for the affected States to assure that utility plants did not exceed the emissions budgets established by EPA. Many of these pollution control projects were completed in 2010—the last of them will conclude this fall.

However, several States, including Kansas, were not included in the CAIR rule, and therefore Kansas, and these other States, did not plan for nor did they install the long-term, large-scale pollution control projects that were planned and installed in the CAIR States. Kansas was included in CSAPR as proposed, but the NO_2 budgets proposed would not have required any emission reductions at any Sunflower or Mid-Kansas coal or gas-based facilities. In fact, because Sunflower was not impacted by the proposed budget for allowances, Sunflower did not even file comments on the proposed rule.

Sunflower, however, was affected by CSAPR as finalized. Under the rule, Sunflower will receive NO_2 allowances adequate to generate only about 50% of its energy requirements in 2012 (Phase I), just five months after the rule became final. [3] Project engineering, permitting, vendor selection, manufacture and delivery, and installation of projects to reduce emissions generally consume between 18 and 48 months. Recall that the industrial Midwestern and Southeastern States have been working on similar projects since 2005. The imposition of such a compliance schedule on utilities within States that had absolutely no meaningful notice of such requirements is unjustifiable.

Black Box

The heart of CSAPR is the emission budget that is established for each State. Statewide utility emissions are limited to the amount of their budgets, with the possibility that such budgets can be exceeded if, in limited situations, certain other States are able to emit less than their budgets. As noted, for Sunflower, the budgets mean that Sunflower must find a way to reduce or offset 50 percent of its otherwise forecast NO_2 emissions by the beginning of next year.

The way EPA performs its modeling, however, prevents Sunflower from fully understanding why it is that, under the proposed rule, Sunflower would have been allocated sufficient NO_2 allowances, but under the final rule those allowances have been cut in half. This is because the model EPA uses, the IPM model, is proprietary and the public, therefore, is unable to replicate the model results. Thus, although Sunflower can understand the different assumptions that EPA used in the modeling that resulted in the final rule as compared with the proposed rule, we cannot track those changes through the model to see exactly why those changed assumptions resulted in the final NO_2 budgets.

It is as if we have been given a very large invoice for payment, but are told we cannot perform an audit to determine how the amount due on the invoice was cal-

[2] 76 Fed. Reg. 48208 (August 8, 2011).

[3] The 2010 average NO_2 emission rate for Sunflower/Mid-Kansas resources was about 0.30 lb/mmBtu. The 2012 (Phase I) allowances allocated to Sunflower support an average NO_2 emission rate of about 0.16 lb/mmBtu. The 2014 (Phase II) average supported by allowances is just over 0.13 lb/mmBtu.

culated. Indeed, we are not able to know whether the changes in the Kansas budget resulted from a model glitch or unsubstantiated assumptions by EPA.

We think this is an extremely unfair and certainly not a transparent way for EPA to promulgate rules. Given the large costs for Sunflower, Mid-Kansas and Kansas as a whole, and indeed for the whole country, EPA should either make the model available or use a different, non-proprietary model. The stakes are too high for EPA to keep a key part of the rulemaking process secret.

Questionable Modeling of Impact of Kansas Emissions Outside of Kansas

The premise of CSAPR is that utility emissions are being transported to downwind States, interfering with the ability of these downwind States to attain EPA's national ambient air quality standards (NAAQS). EPA proposes that Kansas should be subject to ozone-season NO_2 requirements because EPA air quality modeling shows that Kansas emissions will cause or contribute to a Holland, Michigan (Allegan County), violation of the eight-hour ozone NAAQS. But this modeling is flawed for two reasons.

First, the assumptions EPA uses to estimate Kansas emissions throughout the rulemaking were based upon actual emissions that occurred in 2006, then in 2008, and finally in 2009, and thus they do not take into consideration the substantial emission reductions that have already been or will be achieved by 2012 and 2014 because of emission control projects already completed or in the pipeline. Additionally, the early allowance allocations, even in January 2011, did not penalize the Sunflower/Mid-Kansas generation facilities at all; clearly something has changed, and we cannot see into the "black box" to identify the changes. It seems plausible that if these recent emission reductions from Kansas sources were considered and if the model properly responded to the changes, that at a minimum the modeled impact on the Allegan County, Michigan, receptor would almost certainly be less than the 1% threshold adopted by EPA for significance. It seems plausible to us that, as with CAIR, Kansas should be out of CSAPR altogether and the regulatory program would have no effect on Kansas utilities.

Second, based on actual air quality modeling data, Allegan County is no longer failing to attain the ozone standard. In fact, the Michigan DNRE petitioned EPA on August 2, 2011, to move Allegan County to an attainment classification. The required demonstration concludes that current and future expected ozone air quality, based upon local actions, will meet both the one-hour and eight-hour ozone NAAQS. Thus, EPA's model, which concludes that Allegan County is in non-attainment, does not reflect real-world conditions.

In summary, for ozone season NO_2 emissions, Kansas is proposed to become subject to expensive new standards that may place the Kansas electric supply system at significant risk, with very little notice, in order to solve an air quality problem to which Kansas is no longer significantly contributing and that, in any event, no longer exists at the determined receptor in Michigan.

CSAPR Will Have Significant Reliability Impacts in Kansas and Elsewhere

Sunflower is a member of the Southwest Planning Pool (SPP). The SPP is a Regional Transmission Organization (RTO), mandated by the Federal Energy Regulatory Commission (FERC) to ensure reliable supplies of power, adequate transmission infrastructure, and competitive wholesale prices of electricity in an eight-State region in the middle of the United States. As a North American Electric Reliability Corporation Regional Entity, SPP oversees enforcement and development of reliability standards.

SPP engages in regular planning to ensure reliable operation of the system. The SPP transmission planning process is described in Attachment O of the SPP Open Access Transmission Tariff and utilizes three planning horizons. The Near-Term Assessment is conducted annually and generally looks at time horizon of three to five years. SPP long-range transmission planning is conducted over a three-year planning cycle with a 20-year assessment being conducted during the first half of the three-year cycle and a 10-year assessment conducted in the second half of the three-year cycle. This open and transparent planning process developed by the SPP stakeholders and approved by FERC is utilized to assure that the type of incremental changes in supply and transmission resources that utilities normally make are planned and implemented consistent with reliability requirements.

However, the requirements of CSAPR, which go into effect in 2012, are being implemented much too quickly to be adequately studied by SPP and accommodated in the SPP's normal planning process. Indeed, the SPP has only recently begun study-

ing the impacts of CSAPR on the reliable operation of the SPP system, because the rule was only recently issued.

Moreover, EPA is not proposing the type of incremental changes for 2012/2014 that would normally be a subject of short-term study by the SPP, a process with sufficient time to plan how to accommodate those incremental changes. Rather EPA is implementing a dramatic shift in operating resources that will lead to a re-dispatch of the system as compared to the current dispatch plan. In fact, the Sunflower/Mid-Kansas resources identified by EPA to be dispatched in those years include substantial operation of the Great Bend, Holcomb 1, and S3 units.

But this unit dispatch makes little sense and it is the *least* likely generation scenario that would be actually dispatched absent CSAPR. EPA allowances are only adequate to support a 50% capacity factor on Holcomb 1, while historical capacity factors are consistently above 90%. Further, natural gas prices make the Great Bend unit the last resource likely to be dispatched to meet the load. Finally, S3 is a black-start combustion turbine with the highest heat rate of any generating unit in the system; it is also the oldest unit operated for the combined Sunflower/Mid-Kansas system and would likely require substantial pre-operational maintenance if such a duty-cycle were to be reasonably expected of it. CSAPR, thus, will have a radical and unplanned effect on our system, the systems of other Kansas utilities, and indeed on the entire SPP.

Had there been time to implement these significant dispatch changes into the way the electric system operates, both in Kansas and throughout the SPP region, the SPP would have long ago been working on a dispatch model that conforms the proposed dispatch to assess the needed improvements to preserve the real-to world system reliability. Instead SPP is hurriedly assessing the reliability impacts of the CSAPR utilizing EPA's generation dispatch model. Preliminary results suggest that in the summer of 2012 there will be significant degradation of voltage levels in southwest and south central Kansas and the north Texas panhandle, and that these conditions could cause various blackout conditions to occur. At the current time, given CSAPR, the SPP computers have not been able to solve the approximately 50,000 simultaneous equations necessary to indicate that the electricity grid model remains intact. SPP engineers, though, have been able to identify several local severe voltage contingencies in Sunflower's service area.

The SPP continues to study the reliability effects of CSAPR and will have more definitive information in the near future. As previously stated, the short lead time for implementation of CSAPR does not adequately allow for planning or implementation of environmental controls or additional generating resources needed to comply with CSAPR. This puts electric generation operators, transmission owners, and reliability coordinators in a proverbial "Catch-22" situation: they can either maintain system reliability and violate EPA mandates and be subject to EPA sanctions, or they can comply with EPA mandates and risk system reliability and face NERC and FERC sanctions. Most importantly, electric customers will bear the increased costs associated with either outcome.

CSAPR Compliance Options

The reason the CSAPR requirements are so costly and, indeed, may not be achievable is the fact that EPA has overstated the ability of utilities like Sunflower and Mid-Kansas to comply with the rule on such short notice. EPA has suggested that utilities can comply with the rule by installing new control technology, by relying more on natural gas, by allowance trading, by fuel switching to natural gas and low-sulfur coal, and by purchasing electricity from others. Yet none of these options is truly available given the extremely short compliance schedule.

The timeframe for construction of emission control technologies is not adequate—Obviously, for systems that do not have pollution control projects nearing completion as a result of CAIR, there is no possibility of constructing new pollution control devices by the end of this year or even by 2014. In addition to construction times, nearly all of these projects will require the issuance of a PSD construction permit prior to commencing construction; failure to secure such a permit is a criminal offense under the PSD permit program. Sunflower has been engaged in such a process since early 2010, intending to finish the installation of a low-NO_2 burner, overfire air system in the fall of 2013. Because of pre-existing plans, we already had a PSD permit application submitted in March 2011, expected a permit issuance by spring of 2012 (about one year), and expected to issue contracts for manufacture in early summer 2012. In order to expedite the process, we issued a letter of intent so as to commence manufacture of the burner components on August 1, 2011 (a year ahead of schedule), and have rescheduled our outage for January 2012, effectively advancing the project schedule by over 18 months. But this schedule was not with-

out consequences; we expect to pay a 20 to 25% premium for the components, which will now be manufactured in China. But even if expedited, more capital-intensive projects, such as selective catalytic reactor or scrubber installations, cannot be completed in time to meet Phase II requirements.

New natural gas-based resources cannot be brought on line quickly enough—achieving reductions by bringing new resources online in such a short timeframe, unless such resources were already in process, simply cannot be done by 2012 or 2014.

Allowance trades within Kansas are inadequate for utilities—CSAPR authorizes intrastate trading of CSAPR allowances, but that will have only a limited effect for Kansas utilities. All Kansas utilities must reduce emissions significantly. It is highly unlikely that any of them can reduce so quickly and so significantly as to generate sufficient allowances to cover the emissions of other Kansas utilities. In Sunflower's situation there will not be an excess supply of allowances to trade among Kansas utilities.

The importation of up to 18% of budgeted allowances from States that have met their objectives is inadequate for Kansas—CSAPR authorizes limited interstate trading of allowances. A State can exceed its budget by up to 18% if another State with which it is authorized to trade has excess allowances. But there is good reason to believe that the trading market will not be robust, particularly by 2012 and even 2014. First, the rule is so new and its effect so little understood because of its complexity that utilities that do generate excess allowances will bank them for their own future use rather than trading them. Second, utilities will likely be particularly cautious about trading given the experience in CAIR. When CAIR was overturned in court, the value of CAIR allowances was immediately reduced to near zero. Under CSAPR, EPA is about to terminate utility accounts of both CAIR and acid rain allowances. This results in the elimination of millions of dollars in allowance values. Having seen their significant investments in CAIR allowances disappear, utilities are likely to be reluctant to jump into significant allowance trading under CSAPR. Finally, utility caution about trading will be enhanced by the significant penalty provisions that are associated with a State exceeding its emissions budget but being unable to cover that excess with allowances from other States. [4]

In sum, it is unreasonable for EPA to expect utilities to rely on trading in the early years of the rule to make up for their inability to install controls fast enough.

Fuel switching—EPA identifies that a key compliance strategy for implementing CSAPR is for utilities to switch from high-sulfur to low-sulfur coal, or from coal to natural gas. Even assuming that sufficient fuel and transportation resources exist for such a strategy to be widely effective, it does not solve the problem for Kansas utilities. Specifically for managing SO_2 reductions there are only two Kansas units that blend some relatively small amounts of local Kansas coal with low-sulfur coal; all other coal-based units already use low-sulfur PRB coal. Further, the act of switching steam units from coal to natural gas fuel to manage NO_2 results in only a trivial reduction; switching the generation dispatch from PRB coal-based steam units to gas-based steam units likewise does not accomplish any significant reduction.

Electricity purchases from other providers—EPA's suggestion that the purchase of electricity from other providers is a viable way of meeting the allowance dilemma is not realistic. Electricity markets now take the form of very short-term purchases—known as the existing "next-day market" and the soon-to-be-implemented "day-two" market—and firm power transactions that are for fixed terms of length suitable for the participants. Power purchases as a compliance strategy either will not work or will drive up the cost of electricity.

First, short-term markets rely on price signals determined by individual utilities on an ongoing basis. Like other utilities in the SPP Sunflower prices all of its resources each day into the "next-day" market. For Sunflower to sell electricity to others so that they can meet their CSAPR obligations, Sunflower would have to increase generation from its own resources, thereby increasing emissions above the EPA-determined budget which could only be satisfied by purchasing additional allowances. How then does Sunflower price the resources that it would utilize for the benefit of another's allowance shortages without transferring the same allowance shortage to itself by the same transaction? The net effect of these uncertainties will

[4] EPA, in the final CSAPR rule, determined that SO_2 allowances would be available for purchase at about $600, annual NO_2 allowances at $500, and ozone season NO_2 allowances at $1,300. First contracts for allowance trading completed just this last week have been reported at SO_2 prices of $2,600 per allowance and annual NO_2 allowances at $3,500 each. These prices reported are four to seven times higher than EPA estimated for such transactions.

likely make trading more difficult, not less, and increase the price of electricity to all who make such transactions.

Long-term transactions, on the other hand, are the responsible way to meet pool obligations when such a large part of the native load (50% in the case of Sunflower) now needs to be met with a purchased power contract. However, before any utility can expect delivery of electricity by a firm contract, it must arrange a firm transmission path, a process that requires the power pool's involvement to determine whether such a path is available for the transfer of firm electricity from one company to a neighboring company. It is already too late for Sunflower to acquire such a path in order to meet peak-season 2012 loads, and it is probably too late for the 2013 peak season.[5]

Clearly EPA's conclusion that the purchase of power from other utilities is not a clear path on which utilities can depend for complying with EPA's emission dispatch of electricity producing resources.

Conclusion

CSAPR will result in large consequences for rural Kansas electric consumers, including the undermining of the reliability of the electric system, yet the rule is based on flawed modeling. The model is a "black box," preventing utilities from understanding the significant changes in budgets that occurred from the proposed rule to the final rule. Moreover, for the ozone season NO_2 program, the modeling assumes that Kansas emissions are contributing to the inability of a single county in Michigan to attain EPA air quality standards, yet that county is already attaining those standards.

Sunflower and Mid-Kansas appreciate the opportunity to submit this testimony, and we would be glad to respond to any questions you might have.

Chairman HALL. Thank you. We now recognize our final witness for this panel, Mr. Chip Merriam, Chief Legislative and Regulatory Compliance Officer of the Orlando Utilities Commission, for five minutes. Thank you, sir.

STATEMENT OF MR. CHIP MERRIAM, CHIEF LEGISLATIVE AND REGULATORY COMPLIANCE OFFICER, ORLANDO UTILITIES COMMISSION

Mr. MERRIAM. Thank you, Chairman Hall and Ranking Member Johnson.

I represent the Orlando Utilities Commission, known as OUC, the Reliable One. We are the second-largest municipal generator of electricity in the State of Florida. We are the 16th largest in the Nation. We are able to provide service to the cities of Orlando, St. Cloud, and parts of unincorporated Orange and Osceola Counties.

One of the things that we would like to be recognized for is we are an example of one of the closest connections between regulatory decisions that are made in Washington and the ratepayers that are paying the salaries, the bills, of—for organizations such as ours.

Federal regulatory rules and implementations are burdensome and we all know that they have impacts associated with them. Our Commission and our Board is—has strived and will continue to strive to make sure that we are environmentally good stewards even though we burn coal and we burn natural gas. We also have nuclear as well as landfill gas and solar available to us.

We were prepared when the Clean Air Interstate Rule was brought forward. We worked with our trade agencies and organiza-

[5] This process can take 12 to 18 months to complete the studies, and if additional transmission needs to be constructed, this could take anywhere from three to 10 years, depending on the scope of facilities necessary.

tions; we worked with EPA in commenting. We had a 2014 deadline as the others that were covered by this rule in order to be prepared for this to move forward. On the Clean Air Transport Rule, again, we were prepared and we were actually capitalizing some of our projects such as low-NO_2 burners in order to achieve the deadline of 2014. As we move forward, the surprise for us was the immediacy of the Cross-State Air Pollution Rule. All of a sudden, now, the target date to be—achieve compliance is for us as an ozone-season-only State is May 1. Our projects are still capitalized out to 2014. Florida has approximately 11,000 tons short in their allowances to achieve compliance using the method that was set forth by the Cross-State Rule. We are going to have to achieve it by living within our own means within the State at this point in time.

OUC has got a very unique water management system. In a State that receives an average of 54 inches of rainfall a year, we have no discharge off of our site. We take all 54 inches of rain that contacts our landfill onsite, contacts our generation facility, and we actually run it through our scrubbers and evaporate that water instead of discharging it into protected waters in the State of Florida.

Additionally, we take waste water from the Orange County Waste Water Treatment Facility and we use that to cool our boilers and process, again, our electricity. We thought this was a significantly visionary approach in the '80s when we constructed the facility. What the Cross-State Rule is going to require us to do today in order to live within the means is we will have to take a portion if not all of one of our units—coal units offline during the NO_2 season for the 156 days. We will also, in order to meet our reliability requirements, have to go out on the market and buy a power purchase agreement in order to bring energy in to make sure we meet our reliability requirements. What that is going to drive which is unique to us in this rule is we are going to have to find another way to manage that water on the site. So we are looking at upwards of $40 to $50 million of additional injection wells or other means in order to deal with this rainfall that we were trying to take care of on our own.

And what also gives us some pause—and Ranking Member Johnson brought this forward—was the certainty that is required in order to meet the obligations of being a generator today. While we are sitting here talking about a Cross-State Rule, we are looking straight down the barrel of the MACT Rule, the Maximum Achievable Control Technology, the CO_2 New Source Performance Standards, additional changes to PM_2 and NAAQS, Coal Ash, and 316(b) Rules. All of these will have a significant impact as we have to modify, capitalize more projects on our site.

What we would really like and what all the members have said here is the time, same time and some of the same flexibility that was provided for in the CAIR discussions and the Transport Rule discussions. Our position is at this point we are not going to challenge the technical side of the rule if we can get the time. We are going to build the things necessary to get there. Moving back the deadline to allow us to pay out and change the capital cost would be very beneficial to our ratepayers.

In closing, I would just like to emphasize that Central Florida is still reeling today from the economic downtown that we have all been experiencing. Our unemployment is high. We have seen a significant increase of us having to deal with long-term customers making utility payment arrangements because they cannot afford to pay their current bills that are presented to them today. All these businesses have been hit particularly hard and if we have to increase our rates to manage water to make these generation changes, because we are so close to our customers, it is a direct pass-through to them. So it would be a new and a very difficult impact.

So with that, I thank you for the opportunity.

[The prepared statement of Mr. Merriam follows:]

PREPARED STATEMENT OF MR. CHIP MERRIAM, CHIEF LEGISLATIVE AND REGULATORY COMPLIANCE OFFICER, ORLANDO UTILITIES COMMISSION

Mr. Chairman, thank you for the opportunity to provide the Committee on Science, Space and Technology with some real world impacts resulting from the new Cross-State Air Pollution Rule (CSAPR) promulgated by the Environmental Protection Agency and signed by the Administrator on July 6, 2011.

First, an introduction of whom I represent.

My name is Chip Merriam; I am the Chief Legislative and Regulatory Compliance Officer with the Orlando Utilities Commission, known as OUC—The Reliable One. OUC is the second largest municipal utility in Florida and the 16th largest in the Nation, providing electric and water service to more than 313,000 metered accounts in the cities of Orlando and St. Cloud and unincorporated portions of Orange and Osceola counties.

We are privileged to serve our customers and get an opportunity daily to meet with them at our customer service center in downtown Orlando as many struggle to pay for the current cost of energy. We are an example of one of the closest connections between regulatory decisions from Washington and the direct impact on utility ratepayers. I can tell you firsthand that federal regulatory burdens are never easy, but in tough economic times, the regulatory impacts we are discussing today are devastating. Nearly 40 percent of OUC's customer base has an annual household income of less than $35,000 per year. Any time there is a fiscal impact to our bottom line, it is passed on to our ratepayers. Our customers ask us for a few but important things; namely, to keep our rates as low as possible, to make our service the most reliable, and to provide a reasonable explanation for any rate increases.

With that in mind, OUC has worked hard to diversify our fuel portfolio. With the exception of our fleet and service vehicles, we are not dependent on foreign oil. Our fuel sources include natural gas, coal, nuclear, landfill gas, and solar. This diversity allows us to dispatch our fuels in the most economical manner available.

Allow me to walk you through OUC's experience with the EPA rulemaking, beginning with the Clean Air Interstate Rule (CAIR), and discuss the changes after the District Court of Appeals ruling. I'll also discuss the changes OUC anticipated and commented on regarding the Transport Rule, as well as how CSAPR dramatically altered the game.

OUC, along with our industry partners, offered comments during the development of CAIR. While we had differences with the EPA regarding the technical basis of the Rule, it always has been OUC's mission to be a good steward of Central Florida's environment.

OUC began the capital discussion to achieve compliance with the clear understanding described in the Rule that new emission controls would have to achieve compliance by 2014. EPA had provided enough allowances, flexibility, and time such that an energy generator like OUC could appropriately plan and make major capital changes to our generation facility.

The Rule was challenged. The District Court of Appeals found parts of the Rule fatally flawed and remanded the Rule back to EPA. At that point, OUC had already committed $50 million out of a total estimated $150 million in capital projects necessary to comply with CAIR.

Understanding the basis for the Court's rulings, OUC chose to continue the design of our capital project changes while holding off on further construction until a new rule was drafted. The risk of expending the remaining $100 million while not know-

ing the goals of a new rule greatly concerned our leadership, as did the risk that we may miss the target of complete compliance. Based on this thinking, OUC purchased emission credits to ensure compliance with CAIR during this "transition period" until a new rule would be finalized by EPA.

EPA then began the process of developing a new rule to replace CAIR—the Clean Air Transport Rule (CATR). Again, the industry was watching and commenting in a manner that appeared to reflect some understanding by EPA of the industry concerns. The first emission reduction requirements identified in the Rule's "Option 0" was reasonable for Florida, and, from an OUC perspective, the implications to our budget were significantly reduced. However, the next two options provided much more restrictive emissions requirements. Option 2 (the final drafted option) provided OUC leadership with optimism that the change of direction at the time of the CAIR challenge was the correct business decision for our ratepayers. The emission credits we had purchased were enough to allow the design work to move forward during the transition. The final drafted option of the Transport Rule provided for a declining emission allowance but gave OUC enough flexibility that the budgeted capital construction process could mature and achieve full compliance by 2014 without further need for allowances.

With the vision that our decision process was appropriate and fiscally and technically sound, we were stunned when a new rule, now called the Cross-State Air Pollution Rule (CSAPR), was signed by the Administrator of EPA on July 6, 2011. The new Rule has significant impacts on Florida and some very costly changes for OUC.

The basics of the Cross-State Rule:

- Include the replacement of the CAIR, beginning January 1, 2012.
- Address the transport of sulfur dioxide (SO_2) and nitrogen oxides (NO_2) across state borders.
- Apply to electric generation units (EGUs) only.
- Include designs to eliminate "significant contribution of EGUs to downwind States" nonattainment of (or impairing ability to maintain compliance with) the National Ambient Air Quality Standards (NAAQS) for ozone and fine particulate matter (PM_2).

And this Rule is only one of a suite of overlapping EPA power sector regulations.

While the Rule provides for an allowance trading program, the allowances were greatly reduced. From the Option 0 of the Transport Rule to the allowances provided for in the Cross-State Rule, Florida's Emission Budget was reduced from 56,939 to 27,825 metric tons (see Figure 1). Put another way, emissions allowances were cut by more than half. OUC emissions also were slashed as identified in Figure 2. A more detailed graphic is depicted in Figure 3.

All of this occurred without the regulated industry providing comments and without allowing for the States to work with EPA and develop a state implementation plan. Since the CSAPR is a Federal Implementation Plan, it sidesteps the States' ability to adopt an after-the-fact state plan. Since the federal plan is the rule, a State would find it difficult to adopt a plan that is not the federal plan.

The Rule is one of many overlapping regulatory actions by the EPA that include but are not limited to:

- The Utility Maximum Achievable Control Technology Rule (MACT)
- CO2 New Source Performance Standards (NSPS) that apply to existing new and modified units. At this time, this greenhouse gas rule has unknown requirements to improve efficiency, and compliance timing is likely tied to the Utility MACT Rule.
- New, more stringent National Ambient Air Quality Standards (NAAQS) for ozone, which were just delayed by the White House, along with more stringent PM_2 NAAQS that are expected to further reduce SO_2 and NO_2 emissions.
- Coal Ash Rule.
- 316(b) Cooling Water Intake Structure Rule.

The Cross-State Rule will have significant impacts to OUC and our customers.

The emission allowances purchased prior to CSAPR expire December 31, 2011, with the new Rule taking effect January 1, 2012. Florida and OUC are in the ozone-only portion of the Rule that begins May 1, 2012, only months after the publishing of the Rule. Under this timeline, there is little opportunity for the utilities in need of capital construction development to complete construction in such short timeframes.

Because of the reduction in emission allowances and restrictions on trades, OUC will have to lower the capacity of our 450 megawatt coal Unit 1 to little more than 100 MW. Yet we still could be at risk for further reductions that could force us to take the unit offline before the end of the 156-day ozone season. We remain on the timetable, as required under CAIR and CATR, for final completion of construction prior to the start of the 2014 ozone season. This will require OUC to purchase additional generation options (through Power Purchase Agreements), since the Ozone Season coincides with our highest demand period—summer in Florida.

OUC's main energy generation site is unique. The site was designed in the early 1980s with a visionary approach. It utilized recycled water from a nearby wastewater treatment plant to be used in the cooling towers and prohibited the runoff of any stormwater from the site. With an average of 54 inches of rainfall a year, we keep all stormwater on site and convert it to steam through our scrubbers. We also utilize wastewater from Orange County, Florida, to meet our other generation needs and allow that water to evaporate over time.

An additional side effect of CSPAR on OUC is that with the loss of full operation of both of OUC's coal units, the efficient design of our site does not provide for the management of the Florida summer rains and the additional stormwater. Therefore, OUC would be required to design, permit, and construct other means to manage and store this stormwater at an additional projected cost of nearly $40 million.

With this as background, I thought a description of the impacts associated by a rule such as the Cross-State Air Pollution Rule (CSPAR) would benefit the committee. Today's discussion is not about criticizing EPA and our technical differences in the Rule; rather, it is to provide the Committee with factual impacts when such rules are developed without the necessary input from the industry that must manage under these rules. Frankly, the Commissioners who make up the governing body of OUC want to deliver the best, most affordable and reliable service to our customers while serving as great stewards of our environment.

Our position is that when the EPA can demonstrate the benefits of moving forward on air or water quality improvements, we will do our best to find a way to achieve compliance while always keeping an eye on the bottom line when it comes to electric rates. The real costs are not reflected in the economic studies provided by EPA, and there appears to be no full connection or link to the promulgation of rules within the EPA. It just is not as simple as the economic studies reflected in the rule development. Our strong suggestion would be for EPA to work with the electric generators to determine if there are common, cost-effective ways to achieve scientifically credible improvements in the utilization of coal for the generation of energy in the United States.

OUC's position is not to challenge the Rule but to demonstrate the need for more time to reach the emission requirements identified. Moving back the deadline also would provide more time to pay for the costs associated with the Rule. Utilizing the same timeframes developed in both CAIR and CATR, organizations such as OUC will be able to comply.

In closing, I would like to emphasize that Central Florida is still reeling from the economic downturn. Unemployment is high, and we have seen a significant increase in the number of long-term customers needing utility payment arrangements. Small businesses have been hit particularly hard by the recession and are still struggling to make ends meet. Increasing utility rates to pay for the CSAPR regulation could have a devastating effect on OUC customers and the Central Florida economy.

Figure 1

Florida Ozone Season NOx Budget CAIR v. Transport Rule (TR) v. CSAPR

	CAIR 2009 Phase I	CAIR 2014 Phase II	Original TR	CSAPR
NOx Ozone Season Allowances	47,912	39,926	56,939	27,825

50 percent allowance reduction from Original TR to Final CSAPR

Figure 2

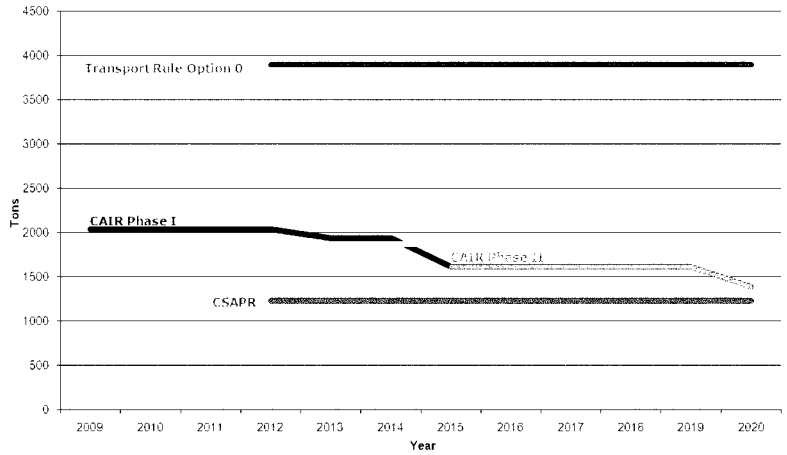
OUC Ozone Season NOx Allowance Changes During Transport Rule (TR) Development to CSAPR

	Proposed TR (July 2010)	Draft for Comment TR Option I (January 2011)	Draft for Comment TR Option II (January 2011)	Final CSAPR (July 2011)
Stanton Unit 1	2,886	923	1,190	620
Stanton Unit 2	1,006	942	1,215	607

Unit 1 Ozone Season Actual Emissions 2010 = 2,050 T
Unit 2 Ozone Season Actual Emissions 2010 = 1,102 T
Unit 2 has compliance infrastructure installed

Figure 3

Seasonal NOx Allocations for OUC by Rule



Chairman HALL. And I thank you. And I thank all of you for your testimony. And I yield myself the first three minutes.

Mr. Stella addressed some of the omissions of the scientific information used by the EPA in arriving at their decision, and I thank you for that and the Commissioner in plain language at the cost of jobs and money. I will ask Dr. Shaw, our witness on the next panel, Gina McCarthy, has claimed that the public health benefits far outweigh any cost Texas might experience, and whether or not we ought to experience them or not, I am not asking you to get into that, but what are the real costs? They have already been enumerated that each of you is going to be damaged and be hurt, but do you have anything to add to their——

Dr. SHAW. Thank you, Chairman Hall. Specifically, I don't have the full numbers of what the cost would be, because, frankly, the individual utilities are still trying to calculate what that strategy will be and what the cost associated with that will be. One thing we know that is clear is that the health benefits are questionable. And that is part of the reason we need an opportunity to be able to vet this because there are assumptions both in the data of what is being admitted——

Chairman HALL. The objection to the time as much as you are the decisions?

Mr. SHAW. Yes, sir, and partially because we need to be able to verify the basis of their decision. We found errors that make us believe that the decision is wrong, but without the opportunity for comment for—and input, it is difficult to convince EPA of that. And, moving forward, saying we will paper over it doesn't make those problems go away. And so there is a need for more time to be able to address the true cost both in the environmental benefits and as in cost to comply.

Chairman HALL. And Commissioner, you have the same problems as he does? Do you have anything in addition to your testimony?

Mr. SMITHERMAN. Mr. Chairman, I would add——

Chairman HALL. How would you answer Ms. McCarthy?

Mr. SMITHERMAN. I would say that when the lights go out in Texas, it is usually either 20 degrees or 105 degrees. And when that happens, vulnerable citizens are at risk and there is a cost associated with that.

Chairman HALL. All right. I yield back my time. The Chair recognizes Ms. Johnson for her three minutes.

Ms. JOHNSON. I am not going to be so cutting that five wouldn't hurt.

You know, I was a practicing nurse before I went into politics, and I still visit hospitals, and I would invite you to visit the Children's Hospital in Dallas or even a Parkland Emergency Room where we have the most uninsured people in the country. They go to the emergency room for sick care. Eighty-some percent of the young people that are admitted to Children's Hospital have respiratory problems, and more than that are the older people who have the same thing in Parkland Emergency Room. And you can check that out. You are welcome to visit.

I am not a person that is against business, but I do feel strongly that when we devise techniques and technologies that will protect

the health of people, they are available. They are costly sometimes, but I think that needs time. I think we can work out more win-win situations, but it must be done.

Reflect with me for a moment. I remember when we had a lot of lead in paint and a lot of lead in gasoline, and the rules came that had to change because it was damaging to health. The technologies came and now—that is gone. It is a thing of the past and people and the health of people have benefitted from it. The technologies are possible. Many companies have met them. I am not saying that you don't need time to reach and achieve these changes. My question is, especially my Texas people, what are the new technologies are you pushing? How successfully have you pushed them? And how important is the Clean Air Rule to you as rulemakers? And what would have been done without the regulations?

Mr. SHAW. Ranking Member Johnson, this is Bryan Shaw. I appreciate the opportunity to answer that question. I, too, share your concern for addressing respiratory challenges. And part of the reason——

Ms. JOHNSON. That is just part of it—you see it, but you know you got all kind of blood dyscrasias and everything else coming from a lot of this pollution.

Mr. SHAW. Sure, and the key thing is my concern with the way this rule has been developed is we are, as I like to say, chasing the wrong rabbit potentially. We have very real environmental and health concerns we need to address, but if we have bad data that leads to these regulations, and leads to where we invest both private capital and government dollars, we won't see the benefits that are projected. And that is—my concern is that EPA's data failed to present the evidence to where we know that is the proper place to invest. For example, I believe that there are likely other pollutant sources and other pollutants of concern that we need to focus on that will have very real health benefits. EPA, through the process they utilized, has not provided evidence so that we have the comfort that this is actually going to result in those benefits that you and I both want.

Mr. SMITHERMAN. Ranking Member Johnson, if I may, great question, and here is what we have done. We are employing cleaner coal technologies in Texas. The new plants that are coming online are cleaner than the old ones, no question about it. We are using more natural gas, which has none of—some—no mercury, no pollutant, less NO_2, less SO_2, 40 percent CO_2. We have more wind on the grid than any other State, 10,000 megawatts probably doubling that. We are building transmission in order to enable us to get more energy out of our existing generation fleet. So I think we are pushing the envelope on technology and it is achieving real results for us. Can we do more in the future? Of course we can. But these investments take time.

Ms. JOHNSON. Thank you.

Chairman HALL. The gentlelady's time has expired, and I have an agreement on both sides of the Chair here we have a vote, we have about eight minutes to get to that vote, and we are going to—recognize—we have time for Mr. Rohrabacher? All right. They say we have time for Mr. Rohrabacher, and I used a minute of his

three minutes so you have two minutes to go. You have got a full two minutes, Mr. Rohrabacher.

Mr. ROHRABACHER. Thank you very much, Mr. Chairman. Let me just note—and I am sorry there was a group of young people here earlier. Most of the kids in California believe that the air pollution level right now in California is so much worse than it was when I went to high school, and I ask them that every single time. The fact is it is just the opposite. We have made dramatic progress in these last 20 and 30 years in terms of health-related diseases in terms of pollutants in the air, dramatic progress. And once you try to start ignoring that and trying to frighten people, we end up wasting money by frightening people that their progress isn't being made and that money is totally evaporated which could then have been used to actually make things better. And I think that is what we are facing today in this situation, Mr. Chairman.

We have got—what we have testimony—what we are hearing is that by eliminating the flexibility and speeding up this process, we are going to waste hundreds of millions of dollars that could be used to actually buy the—make the capital investments that would cause real progress in the future. Mr. Penrod I guess we said was 30 percent more and we are going to buy foreign-manufactured goods because of this speedup. Merriam said $50 million more and Mr. Smitherman has testified that air pollution was—has been dramatically down anyway since 1999. This action by the EPA is being rushed onto us. And I might add we have another example of what that—of what this Administration accomplishes when they rush through something.

We have Solyndra—is that how you pronounce it—Solyndra, their solar plant up there in Fremont, California; we just gave them $500 million and now they are going bankrupt. Well, that is $500 million that now has evaporated from being able to create real jobs someplace else and be able to clean the air with real investments that are based on solid science rather than trying to scare people into doing things prematurely before we have got the investment and the equipment ready to do the job.

So thank you very much, Mr. Chairman, for holding this hearing, and thank you, panelists, for giving us some very valuable information.

Chairman HALL. And thank you. And I would ask Mr. Harris—are you leaving? We have only five minutes to get over there but I would give you 30 seconds if you want to—all right. Don't judge our interest and appreciation you are here, the Democrats or the Republicans because they have—they are honoring two new members over there and there are special honors for them because they are two new Republicans. But the Democrats are welcoming them, too, just like we are over there now, and so we would be over there.

We are going to dismiss this panel. You are free to go when you want to. And we—you are excused and we will move to the next panel when we get back. And we will be coming back probably five minutes after the last vote over in the House, and I expect that will be 20, 30 minutes from now, maybe 40 minutes.

Thank you so much for good testimony and thank you for your courtesy and for all the jobs. And Mr. Commissioner, go back down

there and get us some more oil and gas. Let's drill a landmark, too, just as soon as we can.

With that, we are recessed.

[Recess.]

Chairman HALL. The Committee will come to order.

At this time, I would like to introduce our second witnesses panel. The Hon. Gina McCarthy is Assistant Administrator of the Office of Air and Radiation for the U.S. Environmental Protection Agency. Prior to her confirmation, Ms. McCarthy served as a Commissioner of the Connecticut Department of Environmental Protection. She has worked at both the State and local levels on critical environmental issues and helped coordinate policies on economic growth, energy, transportation and environment.

As our witness probably knows—she is not a stranger to testifying on the Hill—the spoken testimony is limited to five minutes but because of your schedule and our appreciation for you being here, if you go a little over, well, Ms. Johnson wouldn't let me hit the gavel at all, I know, so take what time you really need and we appreciate you being here. At this time I recognize you, Ms. McCarthy.

STATEMENT OF HON. GINA MCCARTHY, ASSISTANT ADMINISTRATOR FOR THE OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. MCCARTHY. Thank you very much, Mr. Chairman. I appreciate it.

Chairman Hall, Ranking Member Johnson, Members of the Committee, I do appreciate the opportunity to be with you today.

The Cross-State Air Pollution Rule will cut power plants' emissions from States in the eastern half of the country so that local communities can meet the Act's goals to reduce both smog and soot. Now, I understand that many Members of the Committee have expressed concern about the economic impacts associated with the cross-State rule, and while Congress did not set up EPA as a job creation organization, our agency, as EPA's mission is public health and environmental protection, EPA nevertheless takes its job very seriously, to look at the economic consequences of the rules that it develops. It spends a great deal of time and resources on developing the best cost-benefit analysis we have, and we also have as an Administration begun to address the analysis associated with jobs more than any prior Administration, and we have conducted a thorough cost-benefit and economic analysis as well as a jobs analysis of the rule that is in discussion today.

So each year the cross-State rule will prevent tens of thousands of premature deaths and hundreds of thousands of aggravated asthma attacks including up to 1,700 premature deaths just in the State of Texas. Nationally, the rule will net $120 billion to $280 billion in annual benefits in 2014. Total health benefits in Texas will be between $5.8 and $14 billion annually in 2014.

EPA had to issue the cross-State rule to replace the Bush Administration's Clean Air Interstate Rule, or CAIR, which the court said in 2008 did not meet Clean Air Act requirements. In the meantime,

States' obligations to address transported emissions in the CAIR program have remained in effect. Its emissions reduction requirements will end when the cross-State rules start.

I will focus on two questions today. First, why is Texas in the cross-State rule, and secondly, can Texas comply with the program that begins in 2012.

Texas was in CAIR and is in the cross-State rule because NO_2 and SO_2 emissions from its power plant significantly contribute to air pollution problems in at least one other State. Texas emissions also contribute to fine particle pollution in 11 other States, in ozone pollution in 13 other States. But that is not surprising because Texas emitted 462,000 tons of SO_2 in 2010. In fact, Texas is the second largest emitter of the 27 states that are covered by this rule. Texas is home to three of the 11 largest power plant sources of SO_2 emissions, all of which are owned by Luminant. If the cross-state rule excluded Texas, Texas was projected to increase the pollution it would send to other states. Texas, like all other states, has a legal responsibility to address air quality problems that it contributes to downwind.

Texas had fair warning that it might be in the cross-state rule. Texas was in the CAIR annual control program as early as 2005. EPA specifically proposed to include Texas in the summertime program, and the EPA's proposal also requested comments on including Texas in the annual programs which provided sufficient legal as well as practical notice.

The State of Texas and the major Texas utilities, including Luminant, provided detailed comments on the proposal, including specifically the question of Texas's inclusion in the annual programs. Based on those comments, EPA's new projections determined that Texas SO_2 emissions would be even higher than our earlier projections confirming that Texas, like 27 other states, significantly contributed to downwind nonattainment problems. We have fully met our notice and comment obligations both legally and in practice with respect to Texas in the cross-state program.

Can Texas comply with the program in 2012? EPA understood that new SO_2 pollution control equipment would not be able to be installed before 2012. So we designed the 2012 requirement to take advantage of already existing, not new pollution control installations. NRG reportedly expects to meet the cross-State rule by increasing scrubber efficiency. It doesn't expect its compliance costs to be either material nor any plants to be shut down.

Why are we able to start the program in 2012? Well, because CSAPR is not the start of the State's obligation to reduce pollution that threatens the air quality in downwind States. That obligation to be a good neighbor was put in place by Congress when it passed the Clean Air Act. The Bush Administration defined a pathway forward for States to meet this obligation when it issued CAIR in 2005, but that rule was found not to be consistent with the Clean Air Act.

CSAPR is a replacement of CAIR that is built on a stronger both legal as well as scientific foundation. Under CAIR, States and power plants have already implemented, or plan to implement, pollution controls. CSAPR, just like CAIR, is a market-based program that gives companies compliance flexibility. It does not dictate a

specific technology or require specific unit-by-unit reduction. Texas power plants have more than one cost-effective option that they can choose under the cross-State rule. Although the program starts in 2012, power plants' first compliance obligation, their first compliance obligation is not until March 1, 2013. While the program starts in 2012, the first compliance for SO_2, which is the biggest challenge that Texas faces, is March of 2013 when they are required to turn in allowances.

So let me assure you, we do not want and we will not in any way force the lights to go out or the air conditioning to not be available within the State of Texas or anywhere else as a result of these rules.

I look forward to your questions, and again, I thank you for the opportunity to be here.

[The prepared statement of Ms. McCarthy follows:]

PREPARED STATEMENT OF MS. REGINA MCCARTHY,
ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION,
U.S. ENVIRONMENTAL PROTECTION AGENCY

Chairman Hall, Ranking Member Johnson, and Members of the Committee, I appreciate the opportunity to appear before you today to testify on the Cross-State Air Pollution Rule.

The Cross-State Air Pollution Rule

On July 6, 2011, Administrator Jackson signed the final Cross-State Air Pollution Rule (previously known as the Transport Rule). This rule cuts power plant pollution from States in the eastern half of the country that contribute to harmful smog and soot-forming pollution.

In a single year (2014), the Cross-State Air Pollution Rule is projected to produce net benefits valued at $120 billion to $280 billion and to avoid:[1]

- Up to 34,000 premature deaths;
- 15,000 heart attacks;
- 400,000 cases of aggravated asthma;
- 19,000 cases of acute bronchitis;
- 19,000 hospital and emergency room visits;
- Over 1.8 million days when people miss work or school due to respiratory illness and other diseases caused or exacerbated by air pollution.

The Cross-State Air Pollution Rule will save lives, prevent illness, and protect American communities by cutting power plant pollution that hurts air quality in downwind States. By 2014, the rule and other State and EPA actions will reduce sulfur dioxide (SO_2) emissions by 73 percent and nitrogen oxides emissions by 54 percent from 2005 levels.[2] The rule is based on the need to meet the 1997 ozone and 2006 fine particle air quality standards and implements the Clean Air Act's "good neighbor" provision to cut pollution. By reducing air pollution regionally, the rule makes it easier for communities to meet Clean Air Act goals.

The Cross-State Air Pollution Rule is achievable, cost-effective, and flexible because it uses proven market-based compliance mechanisms to keep costs low, encourages technological innovation, and allows the power sector to transition to cleaner electricity generation. The rule's market-based approach gives companies flexibility in developing compliance strategies; it does not dictate a specific technology for any particular company or power plant.

Many U.S. power plants have already invested in proven, readily available pollution technologies. This rule will provide badly needed regulatory certainty that will enable investments Just last week, a spokesperson for Exelon, one of the largest

[1] EPA final Cross-State Air Pollution Rule Table VIII.C–1 Estimated Annual Reductions in Incidences of Health Effects Based on 2014 Modeling. *http://www.epa.gov/crossstaterule/actions.html*.

[2] Id.

utilities in the United States, noted that "Electricity generators have known the rule was coming for years, and many have already made plans to comply with it, so timely implementation will level the playing field for power plants that are already controlling these emissions by requiring others to do so."[3]

The Cross-State Air Pollution Rule will improve air quality in thousands of counties throughout the eastern, central, and southern U.S.—counties that are home to over 75% of the U.S. population, including 57 million children under the age of 18. This rule will help States achieve the health-based ambient air quality standards for ozone and fine particles, more commonly called smog and soot. After full implementation of this rule, the Houston-Galveston metropolitan area is the only area affected by this rule that we project will need additional local measures to meet the 1997 ozone standards.

The Cross-State Air Pollution Rule is affordable, technologically achievable, and will dramatically improve public health.

Background

Effective technologies for controlling SO_2 and NO_2 emissions from power plants have been available for years. Many power plants have installed modern pollution control equipment to limit NO_2 and SO_2 emissions. Yet, a substantial portion of the aging coal fleet has not.[4] Although SO_2 scrubbers have been available for more than 35 years, well over a third of the coal-fired electrical utility capacity has yet to apply them .[5] Many of those units were built before the Clean Air Act was enacted in 1970.

We are not the first Administration to recognize the need to clean up power plants and to issue rules to address that need. In fact, since 1989, when President George H.W. Bush proposed the Clean Air Act Amendments of 1990, power plant clean up has been the continuous policy of the U.S. Government.

President George W. Bush recognized the need to further clean up the power sector, championing legislation such as the Clear Skies Act, and rules such as the Clean Air Interstate Rule (CAIR), to address these public health issues. Explaining the need to reduce power plant emissions, my predecessor testified to Congress that the Bush Administration plan would "dramatically reduc[e] fine particle pollution caused by SO_2 and NO_2 emissions," and noted that "Of the many air pollutants regulated by EPA, fine particle pollution is perhaps the greatest threat to public health."[6]

In 2005, the Bush Administration promulgated CAIR to limit SO_2 and NO_2 emissions from power plants in the eastern half of the country to help areas attain the ozone and fine particle standards. The U.S. Court of Appeals for the District of Columbia Circuit held that CAIR did not meet Clean Air Act requirements and remanded the rule to EPA for revision. CAIR has been in effect for almost seven years, including the past few years while EPA was developing the Cross-State Air Pollution Rule to replace it, in compliance with the Court's decision. EPA's replacement rule ends power plants' CAIR emission reduction obligations when CSAPR's reduction obligations start.

Texas and the Cross-State Air Pollution Rule

The Committee has asked me to discuss concerns raised by Texas and Texas stakeholders regarding CSAPR. Texas is affected by CSAPR in two ways: It benefits from reduced air pollution emissions from plants in Texas and other States, and its power plants must limit emissions of SO_2 and NO_2.

Pollution reductions by power plants in Texas and other States will provide significant benefit to Texans—preventing an estimated 670–1,700 premature deaths per year starting in 2014, and will assist Houston-Galveston in its effort to bring its air quality to attainment of the ozone standard. Reductions from power plants outside Texas will help reduce the emission reduction obligations that might otherwise need to be placed on Texas businesses. Under CSAPR, Texas power plants are required to limit summertime NO_2 emissions to reduce ozone, and to limit annual NO_2 and SO_2 emissions to reduce fine particle pollution. The requirements for annual emission reductions are similar to the ones that Texas power plants have faced

[3] Exelon spokesman Paul Elsberg, Argus Air Daily, Volume 18, 173, September 2011.

[4] NEEDS v.4.10 PTox Database. *http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/NEEDSv410_PTox.xlsx*.

[5] Id.

[6] Testimony of Jeffrey Holmstead, Assistant Administrator, U.S. Environmental Protection Agency, Before the Energy and Air Quality Subcommittee, Energy and Commerce Committee, U.S. House of Representatives (May 26, 2005).

since the 2005 promulgation of the Clean Air Interstate Rule, which will be replaced by CSAPR in 2012. Without CSAPR, and in the absence of CAIR, EPA projected that Texas power plants would contribute significantly to air pollution in downwind States, tribes, and local communities, in some cases forcing more costly local reductions, and in all cases unfairly imposing tremendous health costs on thousands of American families.

The claim that the inclusion of Texas in the Cross-State Air Pollution Rule is "out of thin air" is false. In July of 2010, EPA proposed to include Texas in the summertime NO_2 program and requested comment on whether to include Texas in the annual NO_2 and SO_2 program. Texas and its utilities provided comments during the rulemaking process. In particular, the Texas Council on Environmental Quality (TCEQ) provided information on high sulfur coal usage by the Texas power industry that was different than what EPA had relied on in the proposed rule. Based on this new information, EPA estimated that Texas would have higher SO_2 emissions in 2012 than what EPA had projected as part of the analysis supporting the proposed rule. With respect to including Texas in both the summertime and annual programs, we have fully met our notice-and-comment obligations under the Clean Air Act and the Administrative Procedure Act.

EPA used a two-step process to set limits on upwind States' emissions. First, EPA determined whether a State's power plant emissions were projected to contribute significantly to air quality problems in a downwind area (making it hard for a downwind area to attain or stay in attainment with ambient air quality standards). Second, EPA determined the amount of emission reductions that power plants in upwind States could make without exceeding a cost threshold. We followed both steps with Texas. The record demonstrated that Texas power plants contributed to air quality problems in downwind States, and that they could reduce their pollution at a reasonable cost. Based on the factual record, Texas power plants have a legal responsibility under the Clean Air Act to take action to address the air quality problems they create downwind.

Relying on similar analysis, the Bush administration included Texas in the CAIR annual SO_2 and NO_2 control programs promulgated in 2005. It should thus come as no surprise that EPA reached the same conclusion after updating its analysis in 2010 and 2011. In fact, EPA's modeling projects that Texas power plants would actually increase the amount of pollution they send to their downwind neighbors if the Cross State Air Pollution Rule excluded Texas.

EPA's analysis also demonstrated that Texas power plants have more than one cost-effective option to meet their obligations. EPA and the Office of Management and Budget had several meetings or calls with Texas stakeholders during the development of CSAPR. Based on their concerns, we ran an additional sensitivity analysis regarding options for Texas power plants to meet their obligations starting in 2012. EPA modeling shows that Texas can comply with the requirements of this rule without threatening electricity reliability or the continued operation of coal-burning units, including those power plants that burn lignite coal from local mining operations (mine mouth coal plants). That analysis shows that, if the state and its utilities so choose, Texas power plants can meet this rule without jeopardizing electricity system reliability or altering current use of lignite. Like other states covered by this rule, Texas has the opportunity (and is encouraged by EPA) to replace EPA's allowance allocation approach with its own preferred approach as soon as 2013, the second year of the program, by submitting its own State Implementation Plan (SIP). Texas took advantage of this opportunity under CAIR, and EPA has developed a streamlined process to expedite the application and approval of these SIPs under CSAPR.

CSAPR's emission reductions come in two phases, one starting in 2012 and deeper reduction starting in 2014 for some states.[7] In part, this was to ensure adequate time for cost-effective compliance. The 2012 requirements were designed to take advantage of existing pollution control technologies and strategies and not to require the installation of additional SO_2 control technology. The 2014 requirements, however, are expected to lead to installation of additional control technologies. For all power plants in affected states, not just Texas, the rule allows adequate time for compliance; especially since the industry has known for years that additional requirements were coming. Industry has moved rapidly to comply with past requirements. For example, they installed an average of 20 gigawatts (GW) of scrubbers

[7] Texas is a Group Two State and not subject to the lowered SO_2 budget in 2014. Their 2012/2014 budgets are the same.

each year between 2008 and 2010. They also added 150 GW of new generating capacity between 2001 and 2003.[8]

After CSAPR was finalized, a number of Texas stakeholders raised a variety of concerns related to the rule. We are taking these claims very seriously. We do not want the lights, or the air conditioning, to go out in Texas (or anywhere else) as a result of our rules. We are investigating these claims, meeting with interested stakeholders as necessary to obtain further information, and will decide whether additional action is necessary and appropriate to address reliability or other issues in Texas. Based on technical information companies have recently provided, we are initiating a process to increase the emissions "budget" for Texas by tens of thousands of additional tons, reducing the amount of emissions that the State is required to cut. The Administrator has also made clear that EPA has not ruled out any potential solution to the concerns being raised, should the flexibility and choice of compliance strategies built into the rule not prove adequate to meeting those concerns.

The Clean Air Act

The Cross-State Air Pollution Rule is a continuation of the 40-year Clean Air Act success story. For 40 years, the nation's Clean Air Act has made steady progress in reducing the threats posed by pollution and allowing us all to breathe easier. In the last year alone, programs implemented pursuant to the Clean Air Act Amendments of 1990 are estimated to have reduced premature mortality risks equivalent to saving over 160,000 lives; spared Americans more than 100,000 hospital visits; and prevented millions of cases of respiratory problems, including bronchitis and asthma.[9] They also enhanced productivity by preventing 12 million lost workdays; and kept kids healthy and in school, avoiding 3.2 million lost school days due to respiratory illness and other diseases caused or exacerbated by air pollution.[10]

However, few of the emission control standards that gave us these huge gains in public health were uncontroversial at the time they were developed and promulgated. Most major rules have been adopted amidst claims that that they would be bad for the economy and bad for employment.

Some may find it surprising that the Clean Air Act also has been a good economic investment for our country. In contrast to doomsday predictions, history has shown, again and again, that we can clean up pollution, create jobs, and grow our economy all at the same time. Over that same 40 years since the Act was passed, the Gross Domestic Product of the United States grew by more than 200 percent.[11] In fact, some economic analysis suggests that the economy is billions of dollars larger today than it would have been without the Clean Air Act.[12]

Some would have us believe that "job-killing" describes EPA's regulations. It is misleading to say that enforcement of the Clean Air Act is bad for the economy and employment. It isn't. Families should never have to choose between a job and healthy air. They are entitled to both.

Studies led by Harvard economist Dale Jorgenson in 2001 to 2002 found that implementing the Clean Air Act actually increased the size of the U.S. economy because of lower demand for health care and a healthier, more productive workforce.[13] By 2030, the Clean Air Act will have prevented 3.3 million work days lost and avoided the cost of 20,000 hospitalizations every year, based on recent EPA estimates.[14] A study that examined four regulated industries (pulp and paper, refining,

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[8] NEEDS v.4.10 PTox Database *http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/NEEDSv410_PTox.xlsx*.

[9] USEPA (2011). *The Benefits and Costs of the Clean Air Act from 1990 to 2020*. Final Report. Prepared by the USEPA Office of Air and Radiation. February 2011. Table 5–6. This study is the third in a series of studies originally mandated by Congress in the Clean Air Act Amendments of 1990. It received extensive peer review and input from the Advisory Council on Clean Air Compliance Analysis, an independent panel of distinguished economists, scientists and public health experts.

[10] Ibid.

[11] Bureau of Economic Analysis, National Economic Accounts, "Table 1.1.5. Gross Domestic Product," *http://bea.gov/national/index.htm#gdp*.

[12] Dale W. Jorgenson Associates (2002a). *An Economic Analysis of the Benefits and Costs of the Clean Air Act 1970–1990. Revised Report of Results and Findings*. Prepared for EPA. *http://yosemite.epa.gov/ee/eerm.nsf/vwAN/EE-0565-01.pdf/$file/EE-0565-01.pdf*.

[13] Jorgenson (2002a).

[14] Jorgenson (2002a).

iron and steel, and plastic) concluded that, "We find that increased environmental spending generally does not cause a significant change in employment." [15]

The EPA's updated public health safeguards under the Clean Air Act will encourage investments in labor-intensive upgrades that can put current unemployed or underemployed Americans back to work. Environmental spending creates jobs in engineering, manufacturing, construction, materials, operation and maintenance. For example, EPA vehicle emissions standards directly sparked the development and application of a huge range of automotive technologies that are now found throughout the global automobile market. The vehicle emissions control industry employs approximately 65,000 Americans with domestic annual sales of $26 billion. [16] Likewise, in 2008, the United States' environmental technologies and services industry employed 1.7 million workers generated approximately $300 billion in revenues and led to exports of $44 billion of goods and services, [17] larger than exports of sectors such as plastics and rubber products. [18] The size of the world market for environmental goods and services is comparable to the aerospace and pharmaceutical industries and presents important opportunities for U.S. industry. [19]

Jobs also come from building and installing pollution control equipment. For example, the U.S. boilermaker work force grew by approximately 35 percent, or 6,700 boilermakers, between 1999 and 2001 during the installation of controls to comply with EPA's regional nitrogen oxide reduction program. [20] Over the past seven years, the Institute for Clean Air Companies (ICAC) estimates that implementation of just one rule—the Clean Air Interstate Rule Phase 1—resulted in 200,000 jobs in the air pollution control industry. [21] Similar effects have been recognized by the electric power industry as well. In a letter to the editor in the *Wall Street Journal*, eight major utilities that will be affected by our power plant air pollution standards said, "Contrary to claims that EPA's agenda will have negative economic consequences, our companies' experience complying with air quality regulations demonstrates that regulations can yield important economic benefits, including job creation, while maintaining reliability." [22]

The Cross-State Air Pollution Rule at issue today continues the Clean Air Act's 40-year success story. Thank you for the opportunity to testify today. I look forward to your questions.

Chairman HALL. And we thank you for your testimony, and reminding Members that the Committee rules limit questioning normally to five minutes but we have an agreement with this witness. She has come before us with the understanding that she has to be away from here by noon, so we will keep our questions down to three minutes each in the interest of time and giving everyone a chance, and I think there will be more here, and don't take the absence of people in these chairs for not caring to hear from you or getting a chance to ask you questions, because we just swore in two Members over there, and I think they are still in session. We were interrupted a couple of times, but we are taking this down, and even TV in some of it, and all will have copies of your testimony

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[15] Morgenstern, R. D., W. A. Pizer, and J. S. Shih. 2002. "Jobs versus the Environment: An Industry-Level Perspective." *Journal of Environmental Economics and Management* 43(3):412–436.

[16] Manufacturers of Emissions Control Technology (http://www.meca.org/cs/root/organization_*info/who_we_are).*

[17] DOC International Trade Administration. "Environmental Technologies Industries: FY2010 Industry Assessment". *http://web.ita.doc.gov/ete/eteinfo.nsf/068f3801d047f26e85256883006ffa54/4878b7e2fc08ac6d85256883006c452c/$FILE/Full%20Environmental%20Industries%20Assessment%202010.pdf* (accessed February 8, 2011).

[18] U.S. Census Bureau, Censtats Database, International Trade Data—NAICS, *http://censtats.census.gov/naic3_6/naics3_6.shtml* (accessed September 6, 2011).

[19] Network of Heads of the European Environment Protection Agencies, 2005. "The Contribution of Good Environmental Regulation to Competitiveness." *http://www.eea.europa.eu/about-us/documents/prague_statement/prague_statement-en.pdf* (accessed February 8, 2011).

[20] International Brotherhood of Boilermakers, *Boilermaker Labor Analysis and Installation Timing*, March 2005, EPA Docket OAR–2003–0053 (docket of the Clean Air Interstate Rule).

[21] November 3, 2010, letter from David C. Foerter, Executive Director of the Institute of Clean Air Companies, to Senator Thomas R. Carper, *http://www.icac.com/files/public/ICAC_Carper_Response_110310.pdf* (accessed February 8, 2011).

[22] December 8, 2010, WSJ "We're OK With the EPA's New Air Quality Regulations."

and our questions, and I have used a minute of my three minutes now.

I just want to ask you this. Let us talk some about options. One of the major things that the others have set forth that have testified here today was the time and the effect of the time and their inability to comply with that time. It seems like to me that there ought to be some way to make some adjustment on that. I am going to ask you about options, though. You state that EPA conducted an analysis that demonstrates that Texas power plants have more than one cost-effective option to meet their obligations. Well, given the short period and the severity of the cuts, buying allowances is extremely costly—that is one of them—as evidenced by the price of $2,600 per ton we saw in the market last week. The other, fuel switching, is not that easy as most utilities purchase coal on long-term contracts including for 2012, and additional control technologies can't be built in the next five months. After these options are eliminated as too costly or unfeasible, what cost-effective solutions does EPA recommend and what are left? I only have about a minute for you.

Ms. MCCARTHY. Then I will be very quick. EPA does not specifically require any particular option to be developed or to be chosen at any particular facility. It is an entirely—it is a business decision. It is a market approach to achieving these reductions. We believe that there is equipment installed in the state already that can be maximized in terms of its efficiency. Those are scrubbers for particulate matter that actually reduce SO_2 emissions, one of the main concerns. There is also FCRs, SNCRs, low-NOx boilers that are in place that can be turned on every day all year around instead of them are currently used part of the year, part of the days during that part of the year. There are also upgrades of pollution control equipment that can be done quickly, simple pollution control additions that can be made. There is lower-sulfur coal and there is fuel switching. We believe that there are a number of options in addition to the purchasing of allowances.

Chairman HALL. Let me interrupt you there. The options you have stated are not feasible, so what else do you have to offer, if anything?

Ms. MCCARTHY. Actually, Mr. Chairman, we believe that all of those options are quite feasible and can be done to achieve the requirements by the time the first compliance period is required to be met, which for SO_2 is March of 2013. Now, I will also add that we have been petitioned to look at this issue and we are taking very seriously our obligation to look at that. If we believe that we have been incorrect as a result of those petitions and investigating those, every option is available to us.

Chairman HALL. Well, it has been testified here and those companies say that it can't be done. Why does EPA think that they know better?

Ms. MCCARTHY. Well, EPA in this particular rule identified not just the air quality reductions that needed to be made but they also identified that we did not want companies in 2012 to have to expend significant funds to comply. We are looking at a very low cost per ton, and we believe that those tonnage reductions are available by the use of existing equipment, by the use of operational changes,

fuel switching and other mechanisms that are very readily available to them today.

Chairman HALL. I thank you.

I recognize Ms. Johnson for three minutes.

Ms. JOHNSON. Thank you very much, and thank you, Ms. McCarthy, for appearing.

I don't disagree with the findings of EPA, although I know that there is some question, but what I do question is how can we assure that Texas has other options other than the closure of the lignite mines and the power plants in that time, and I want you to comment briefly too, Dr. Smitherman indicated that it was a flawed process that you used, and I want you to comment on that. Dr. Shaw indicated that you had bad data, and, you know, these were serious indictments, and what I would like to have you do is clarify those issues, and Dr. Stella indicated that if some things are assumed by the EPA, I think it is important for your credibility to be justified with how you do things and what rules you follow.

Ms. MCCARTHY. Thank you for asking those questions. Let me try to get at them very quickly.

The first thing is, do we need to close—do companies need to choose to close the lignite facilities in order to comply. The simple answer is no. This system is set up to allow a number of choices, business choices. It may be that that business has chosen to take that path forward but EPA anticipated that Texas may want to choose other options, and in the rule itself, we included information that indicated that you could maintain the same historical use of lignite coal in Texas and still achieve the reductions under the rule within the same cost constraints, which make them very inexpensive reductions, so we believe you do not need to do that, and we are sitting down with the company and the State of Texas to walk through our analysis on that.

And you asked a question about a flawed process. We believe we not only met the letter but the spirit of the law in terms of moving forward to include Texas in this annual program. They are in the CAIR program. When we proposed this rule, we were proposing to bring them in for seasonal ozone. We also took comment on whether or not we should include them in the annual program, and it was comments from the State of Texas itself in response to that solicitation of comment that told us that they knew about this, they provided us information, and on the basis of the information they provided, we redid the modeling, which clearly showed that Texas would increase its emissions if we brought in the cross-State rule—if we didn't bring in the cross-State rule and the CAIR program went away. So we feel very comfortable that we are both legally as well as in the spirit of the law done what we needed to do.

Now, the third issue is bad data. I will tell you that we strongly disagree with the data analysis or the back-of-the-envelope calculation that we heard from Mr. Shaw. We are going to walk through those issues, but we did a thorough analysis.

And the last issue is Stella and the modeling. Let me tell you that Stella had some fatal flaws in the way it modeled this rule. Let me just name two. First of all, they failed to understand that we need to look at pre-CAIR data. We needed to do modeling, not just look at current monitoring data, because the court told us that

CAIR has to go away and has to go away quickly. We had to replace it. That is what this rule does. So we had to look at the world before CAIR and make sure that we were backstopping all of those reductions and then moving forward.

Secondly, by basing it on monitoring data, they are looking at an economy that has a downturn and they are not recognizing that we want to make sure that Texas and other States have the ability to grow and we factor in that growth when we do our analysis.

Ms. JOHNSON. Thank you.

Chairman HALL. Thank you. Time has expired.

The Chair now recognizes the gentleman from Maryland, Mr. Harris, for three minutes.

Mr. HARRIS. Thank you very much, Mr. Chairman, and thank you, Ms. McCarthy, for appearing before the Committee.

I have a question. As a physician, I just am curious that the claim that this somehow saves money says that we avoid up to 34,000 premature deaths. Could you break that down to what these premature deaths are due to?

Ms. MCCARTHY. I can tell you that the analysis we do is on the basis of health data. It looks at exposure——

Mr. HARRIS. I understand. Can you just break that down? What are these deaths due to?

Chairman HALL. He is not asking you what your practice is. What did you do in this——

Ms. MCCARTHY. The deaths are due to the pollution——

Mr. HARRIS. No, no, no. What diseases? You can use specific diagnoses for me. I will understand them.

Ms. MCCARTHY. Well, I wouldn't want to presume that I could articulate them to the extent that you could understand them. We would have respiratory illnesses, heart illnesses——

Mr. HARRIS. Well, you say 15,000 heart attacks per year. If every one of those patients died, I could see that is 15,000. The estimated number of asthma deaths per year on the EPA website is 10,000 per year due to exacerbations, so that would be 25,000 if every one of those was attributed to this. How do you get up to 34,000? I mean, and I am used to science. When they say up to 34,000, there is usually a confidence interval there. You know, it is like one to 34,000 or 10 to 34,000. Why would you use something so unscientific to say up to 34,000?

Ms. MCCARTHY. The health data is all part of the record, and I would indicate to you that we are looking at health benefits——

Mr. HARRIS. Okay. Thank you. And I would appreciate.

Ms. MCCARTHY [continuing]. Across the United States.

Mr. HARRIS. Sure, I understand that, and if you could get me that information, I appreciate it. Now, is that health data due to the particulates or the ozone?

Ms. MCCARTHY. It would mostly be the particulate matter but——

Mr. HARRIS. Weren't these numbers the same numbers, though, that were floated around a week ago when the Administration suspended its ozone standards?

Ms. MCCARTHY. Clearly not, no.

Mr. HARRIS. They weren't?

Ms. MCCARTHY. No, they were not.

Mr. HARRIS. What were those figures?

Ms. MCCARTHY. I actually don't have them at the top of my head but I certainly can provide them.

Mr. HARRIS. I would appreciate that, because I recall that the deaths in the press reports from the advocates were very, very similar to that, and there is evidence, I think, that 90 percent of the health benefit claimed by the EPA under this rule are for particulates, so I am just curious about that, how many times you can count a death for a rule for its proposed benefit.

Ms. MCCARTHY. We do that——

Mr. HARRIS. Are those particulate matter, the data that supports that death and injury data, is that publicly available?

Ms. MCCARTHY. Yes.

Mr. HARRIS. Could you get that to me?

Ms. MCCARTHY. Yes, sir.

Mr. HARRIS. Thank you very much, because I would love to have it, you know, reviewed independently from the EPA.

Ms. MCCARTHY. I think I should probably clarify only because I just realized what you are indicating is that the 15,000 heart attacks that we reference are nonfatal, so that would be very different than thinking that we——

Mr. HARRIS. That is even worse because the number of people that have a heart attack who go on to die actually now under current therapy is actually quite low, so the numbers of deaths from heart attacks actually would be strikingly low as part of that 34,000, so I am just curious about that.

But anyway, my time is expired. Thank you, Mr. Chairman, and I appreciate follow-up on those two questions I asked. Thank you.

Chairman HALL. I thank the gentleman.

The gentleman from Maryland, Mr. Sarbanes, is recognized for three minutes.

Mr. SARBANES. Thank you, Mr. Chairman.

Thank you for your testimony. I want to commend you, because it sounds to me—and I don't profess to be an expert on this, but it sounds to me from your testimony and from what I have read in your written testimony that the EPA has taken a very responsible course with respect to this Cross-State Air Pollution Rule and regime that it wants to put in place to protect people's safety and health. Even with respect to the concerns that have been raised by the Texas delegation, I think that your responses have been good and straightforward and indicate that there is no sort of special mission here to get Texas, that you are trying to do your job and you understand that the downwind effects from pollution in one part of the country or one State have to be measured, have to be regulated. Otherwise we are not going to be able to make progress with respect to these air pollution issues.

I just wanted to ask you on behalf of Marylanders, I know that the Maryland Department of Environment submitted some comments speaking to concerns about the nitrogen oxide standards and the Cross-State Air Pollution Rule. I think our Secretary of Environment, Sherry Wilson, testified through those comments that, you know, that we are interested in making sure that the standard is where it needs to be because we have a lot of air that blows into Maryland that is above the levels with respect to National Ambient

Air Quality Standards for ozone. So can you speak a little bit to how the rule that you are looking at you think would benefit Marylanders who have that concern?

Ms. MCCARTHY. I certainly can. The 27 States that are incorporated in the region that is regulated under this rule encompass three-quarters of the United States population. We recognize that for many years the Clean Air Act has required States to take care of their downwind contribution, but we have failed to be able to achieve the reductions that were necessary to do that.

This rule actually does a couple of things. First, it scientifically links where there are challenges in different States to achieve—that are trying to achieve nonattainment—are in nonattainment. Let me say that again. That are out of attainment that need to get in attainment and also how they can maintain that. We know that Maryland and other states in the East have had significant challenges and met those challenges in their own States, but because of pollution from upwind States, they continually are trying to drive more reductions at higher and higher cost per ton. This rule makes the link to the upwind States scientifically but then we look at, how do we also look at where there are cost-effective reductions up there so that we can bring those reductions to the table, because we don't expect the upwind States to bring the downwind into attainment but meet their own significant contribution. So this rule will go significantly far to help Maryland and other States that have been recipients of this pollution to get into and to maintain attainment.

Chairman HALL. The gentleman's time has expired. The Chair recognizes the gentleman from Georgia, Dr. Broun, for three minutes.

Mr. BROUN. Ms. McCarthy, in the last week you said it is not EPA's job—it is not EPA's purpose of creating jobs. Ma'am, this rule of yours is going to destroy jobs and it is going to greatly harm our economy. Now, the questions I have are these. The final cross-State rule is significantly more stringent than the proposed rule. The cross-State rule requires more emissions reductions and imposes new regulations on the trading of allowances. Can you explain why the final rule was much more stringent? Do you think it is practical for power plants that have been looking at the proposed rule for almost a year now and developing compliance plans based on that rule and how without notice get a final rule which is much more stringent to be able to suddenly change those compliance plans and only have until January 1st to make those changes?

Ms. MCCARTHY. Thank you for your question. First of all, I would like to point out that the context of my statement from last week needs to be——

Mr. BROUN. Ms. McCarthy, I asked you a question. I just made a statement with that. Would you please answer my question? Because I don't have but a minute and a half left. I have got several other questions.

Ms. MCCARTHY. Okay. My statement is, we are not insensitive to jobs and I certainly am not. We do not believe——

Mr. BROUN. Please go ahead and answer my question. I would appreciate it.

Ms. MCCARTHY. I thought I was doing that. I apologize.

So we have looked at the rule. We have designed it in a way that not only can be achieved in terms of achieving the air quality reductions but very——

Mr. BROUN. You are not answering my question. Why is it more stringent than the proposed rule?

Ms. MCCARTHY. Well, because we have updated our data and it is the basis of emissions that are being emitted and it takes advantage of current technologies that are in place to continue to drive——

Mr. BROUN. How do you think the power company can when they have been planning for almost a year to put in place plans to follow this new rule?

Ms. MCCARTHY. Well, actually, many power companies have known and all of them should have known that this program has actually been in place since 2005. The courts told us we had to replace it——

Mr. BROUN. No, but you have changed the proposed rule to this new rule. Let me ask you another question. Shouldn't the public have been given an opportunity to comment on this final rule since it is so different from the original proposal?

Ms. MCCARTHY. They were given ample opportunity to comment, and it is not significantly different than the proposed rule.

Mr. BROUN. Ma'am, it is. The final cross-State rule will have significant real impacts in starting just over three months because power plants cannot install technologies to reduce emissions in such a short period of time. Plants will be restricted on how much they can run starting next year. I believe this raises costs for utility customers. Did EPA reach out to State regulators and public utility commissioners on the details of the final cross-State rule before you issued it?

Ms. MCCARTHY. We met with States as well as companies continuously through the proposal as well as prior to the final and after the final, and——

Mr. BROUN. Would you submit, please, for the record the dates and names of such contacts?

Ms. MCCARTHY. Sure.

Mr. BROUN. Thank you. My time is expired. I yield back.

Chairman HALL. The gentleman's time has expired. The Chair now recognizes the gentlelady from Maryland, Mrs. Edwards, for three minutes.

Ms. EDWARDS. Thank you, Mr. Chairman, and to the Ranking Member for the hearing, and I just want to say first, really, thank you to the Environmental Protection Agency, which is under the direction of Lisa Jackson. I think that you are all doing yeoman's work in a really difficult environment to balance the interests of business but also the public interest and protecting our health and our air quality. So I want to thank you for your leadership.

I know that Maryland has actually some of the toughest rules along the East Coast, but I think one of the challenges that we face is that we are not just a State that is an island on its own, that part of the reason that we need the EPA to take a broad look across State boundaries is because air travels across State boundaries, and so it makes entire sense that the EPA has really taken

this on to try to balance all of those interests but to ensure the public health, and so I thank you for that commitment.

Ms. McCarthy, I want to just ask you one thing. Isn't it true that the new rule is in fact less stringent than the rule that the court remanded?

Ms. MCCARTHY. It is—it actually is—it is designed with the same market flexibility. It is based on better data than we had before and it still offers a broad range of options for facilities to come into compliance either through cost-effective reductions at their own facilities or through the market and the purchase of allowances.

Ms. EDWARDS. And I note that. I know that you received testimony in the rulemaking from Constellation Energy in Maryland, which is one of our largest energy companies, and what they said is, they have already made a billion-dollar investment in making sure that they come into compliance, and they are urging the EPA, in fact, to act quickly to implement the rules, and you have heard from a number of energy companies saying exactly the same thing.

I was actually out at FedEx Field just a while ago with NRG Energy, which is installing solar panels there. They too have also said, you know, the same thing: it is time for the EPA to act so that there is clarity in the industry as to the direction that we ought to go but not to leave them in this limbo unclear of what the investments are going to make, and so I wonder if you could talk about what, if any, other options are really available to the EPA to address the part of the ruling that says, you know, there are a lot of different alternatives for the industry to take.

Ms. MCCARTHY. Well, first of all, I want to tell you that Maryland is one of the 27 states in the Cross-State Air Pollution Rule, and in that region on average, those states have reduced their SO_2 emissions since 1990 by 70 percent, so congratulations.

But what we are here to talk about is the States that may not have been as prepared. If you look at comparable timelines in the State of Texas, they are almost where they started. SO_2 reductions in Texas have been reduced from 1990 to today only by .1 percent. So we have a challenge here, and——

Chairman HALL. The gentlelady's time has expired. I now recognize the gentleman from California, Mr. Rohrabacher, for three minutes.

Mr. ROHRABACHER. Thank you very much. You were just about to suggest what the trend line was. Let me ask you, for the last 10 or 20 years, the trend line in terms of cleanliness of our air has been in what direction?

Ms. MCCARTHY. For most of the major pollutants, it is significantly reduced.

Mr. ROHRABACHER. Significantly reduced?

Ms. MCCARTHY. Yes, sir.

Mr. ROHRABACHER. And so now we find ourselves in a situation where the EPA, even though there is a trend line going dramatically in the right direction, has decided that they have to move up a deadline and what business is calling draconian. We just had five witnesses in front of us talking about that this moving up the deadline will cost hundreds of millions of dollars that otherwise wouldn't cost, so what is the crisis that makes you move up the

deadline at the cost of hundreds of millions of dollars to the American people?

Ms. MCCARTHY. The courts were telling us that EPA had to act to respond to the original vacature of CAIR and then its remand. I will say that while the trend lines nationally have gone down, there are some States that have not sufficiently looked at the ability——

Mr. ROHRABACHER. Did the court set the deadline for you?

Ms. MCCARTHY. The courts told us we had to——

Mr. ROHRABACHER. Did they set the deadline for you?

Ms. MCCARTHY. Their deadline——

Mr. ROHRABACHER. No. The answer is no.

Ms. MCCARTHY [continuing]. As soon as possible.

Mr. ROHRABACHER. Yes, so the answer is no, they did not set a deadline. Do you think the courts wanted you to waste hundreds of millions of dollars of American people's money in order to move up a deadline that could be achieved at a lot less cost within a year or two?

Ms. MCCARTHY. Our deadlines are achievable with cost-effective reductions.

Mr. ROHRABACHER. That is not what we just heard in testimony from people who probably have as much expertise on this as you do. But here we are in the aftermath of an actual case in California where $500 million was given by this Administration to a solar panel company that then went bankrupt, again evaporating hundreds of millions of taxpayer dollars yet we have an example of another company. On September 11, 2011, a letter to the Deputy Administrator at the EPA suggests that the EPA has offered to make technical adjustments that will give Texas and Luminant thousands of additional tons of pollution allowances to reduce required emissions reductions. Now, let me ask this. Is this just for this particular group or have other companies across the country been offered this technical adjustments that will allow for additional allowances?

Ms. MCCARTHY. Well, in order to ensure that the reductions could be achievable in 2012 at a low cost, we took great care to look at what kind of technologies were already in place that could achieve those reductions quickly. Luminant came to us as well as the State of Texas and identified three scrubbers within Texas that had been on a pathway to be invested in and be ready to——

Mr. ROHRABACHER. So have any other utilities across the country asked for this? Is this the only example of where people have asked for this?

Ms. MCCARTHY. No. There are about a little over a handful of adjustments we are making on the basis of technology installations that are in place and ready to be turned on. The particular concern——

Mr. ROHRABACHER. But others have——

Ms. MCCARTHY. The particular concern we have with Luminant is, they have chosen to make an announcement that they are actually closing mines associated with burning lignite when we believe they haven't thoroughly looked at all of their options or given us an opportunity to——

Mr. ROHRABACHER. But I would hope you would be as concerned about the other people who are losing hundreds of millions of dollars in jobs because——

Ms. MCCARTHY. We are open to all——

Mr. ROHRABACHER [continuing]. Of actions of the EPA and perhaps we will see who gets special favors. We know that this solar company got it in California and ended up costing the taxpayers $500 million.

Chairman HALL. The gentleman's time is about to really expire.

Ms. MCCARTHY. I just—Mr. Chairman, I just wanted to say that we are talking to a number of States. If there are technical adjustments, we are making them. There are no special favors here.

Chairman HALL. The gentleman's time has expired. The Chair now recognizes Mr. Neugebauer, the gentleman from Texas, for three minutes.

Mr. NEUGEBAUER. Thank you, Mr. Chairman.

I want to go back and kind of make sure we are correct here. The court said that CAIR could stay in place until a replacement was put in place. Is that correct?

Ms. MCCARTHY. Then they told us to do it as expeditiously as possible because CAIR was not legal.

Mr. NEUGEBAUER. Now, you didn't answer my question.

Ms. MCCARTHY. I did.

Mr. NEUGEBAUER. No, you didn't.

Ms. MCCARTHY. I said "and." You are correct, and they added other requirements for us to get it done as quickly as possible.

Mr. NEUGEBAUER. But they did say it could stay in place until a replacement could be found?

Ms. MCCARTHY. That is correct. They remanded it instead of vacating it.

Mr. NEUGEBAUER. Yes or no.

Ms. MCCARTHY. Yes.

Mr. NEUGEBAUER. Thank you. But it never said that the EPA could not take into account the gains that were made under CAIR, right? The improvements that were made under that particular——

Ms. MCCARTHY. I don't believe it took into account that particular issue. I don't know in what context we would take credit for gains or not.

Mr. NEUGEBAUER. Well, some of those companies were banking. They were making improvements and banking.

Ms. MCCARTHY. Oh, they were, but they clearly told us that we couldn't continue with the CAIR program or the use of those banked allowances.

Mr. NEUGEBAUER. The court told you you could not use banked allowances?

Ms. MCCARTHY. That is correct.

Mr. NEUGEBAUER. Are you sure about that?

Ms. MCCARTHY. Yes, we are sure.

Mr. NEUGEBAUER. So we had some legislation in place, and companies spent billions of dollars, you know, under that program making improvements, getting credits for doing that, and then we are coming out with this new rule that says you know what, all that great stuff you did in the past, we are not going to give you credit for that. Is that right?

Ms. MCCARTHY. I don't—let me explain how we did it. We actually looked at the achievements that have been made with CAIR. We looked at the air quality reductions that would be necessary to make to help with the attainment and maintenance issues in downwind States and then we looked upwind at where the inexpensive reductions could be made and then we established State budgets accordingly. That does not mean we ignored or didn't consider all of the benefits, and, in fact, over the past five years, there has been significant installation of pollution control equipment as a result of CAIR that we are taking advantage of. That is why we can move forward in 2012 with cost-effective reductions.

Mr. NEUGEBAUER. So are you using the 2005 data or the 2009 data?

Ms. MCCARTHY. We are using both current monitoring data as well as modeling data in order to establish those linkages to look at how to allocate the pollution from the upwind States and then in order to establish those budgets. So we are looking at both monitoring and modeling data, but you are absolutely right that we are looking at identifying the pollution that would be emitted without CAIR in order to establish those budgets, recognizing that those States that have been aggressive in CAIR would be able to achieve reductions, or even in some cases, already be in compliance with 2012 levels.

Mr. NEUGEBAUER. But if you are using 2005 data, you may not be using current data then.

Ms. MCCARTHY. We are actually using of combination of both current monitoring data as well as modeling data to understand what the world would have looked like without CAIR because the world will be without CAIR when the cross-State rule comes into place, then to model what those monitors would look like using both information at the monitor itself as well as our modeling data to make those adjustments. I know it is complicated, and I apologize, but I certainly can send you how we did our modeling and how we made our projections, but we feel very confident that it is the way that it needs to be done in order to actually backstop from any backsliding if CAIR goes away and the cross-State rule takes over.

Mr. NEUGEBAUER. I see my time is expired, Mr. Chairman.

Chairman HALL. The gentleman's time has expired. The gentleman from Texas, Mr. McCaul, is recognized for three minutes.

Mr. MCCAUL. Thank you, Mr. Chairman.

Ms. McCarthy, with all due respect, I believe at a time we are trying to create jobs in the Congress and the Administration, your agency is destroying jobs and causing real harm, justifying it based on possible noncompliance in the future. I believe this rule will result in higher prices for electricity. It has already shut down two plants. It is being imposed on Texas with very short warning, and Texas has been included not because of actual measurements that show problems but because of models that show hypothetical problems in the future. We heard that testimony from the previous panel.

My questions, I have two questions. One is that because Texas was not included in the initial rule, state agencies, energy companies and residents did not have the opportunity to offer their input

into the rulemaking process. I understand that Texas was included in the final rule, but why were Texans not given the opportunity afforded to others to offer their suggestions and concerns on this rule and make the necessary preparations for compliance once you decided to include us? And I will say there were six other States that were added in the final rule and they were provided a time, supplementary notice on their inclusion that allowed them time to comment, yet Texas was not treated in the same way and provided this similar type of notice, and rather we were just put on the final rule. Now, would you mind commenting to those two questions?

Ms. MCCARTHY. No, I don't mind commenting, but first of all, the cross-State rule does not shut down facilities. It is the most flexible market-based approach that we have to achieve cost-effective reductions. If EPA—if you would like, I would refer you to the *Houston Chronicle* article today that is entitled "Don't Blame EPA over Luminant Woes." You know, we are not to blame for Luminant's financial trouble. We can achieve reductions and they can achieve those reductions, we believe, without the closure of those facilities and we would like to see that happen.

Mr. MCCAUL. We like to comply, but I think you need to be reasonable and not, you know, shove us into a rule without any input from the State and not giving us time to, you know, have input the way you did six other States. That doesn't seem fair to me. As a Texan, it looks like that you are being unfair with Texas and that this Administration is playing unfair with the State of Texas.

Ms. MCCARTHY. I clearly don't want you to walk away believing that because Texas in terms of their air quality emissions and what we expect of them is the same process that we use for every State to identify their contribution and make reductions. I will tell you that we did solicit comment. It disturbs me that Texas is now claiming that they didn't have due process. We have been as transparent as we possibly could be with this rule. We solicited comment, and the fact that they actually commented should deflate that issue somewhat or that claim.

Mr. MCCAUL. If I could just close. My time is expired. Again, you have six other States, Iowa, Kansas, Michigan, Missouri, Oklahoma and Wisconsin, added in the final rule. They were provided with a supplementary notice on their inclusion. They allowed for their comment.

Ms. MCCARTHY. Because it was on the basis of new data, and the proposal didn't request comment on their inclusion so we did have to do a supplemental rule. That is not the same situation as the State of Texas.

Mr. MCCAUL. So Texas was treated differently than the six other States?

Ms. MCCARTHY. We had different data at the time that we put the proposal out. We actually solicited comment on their inclusion and they provided comment. We adjusted our model, and indeed they significantly contributed to pollution in downwind States.

Mr. MCCAUL. In closing, Mr. Chairman, I do think that if we are treated differently, there is—I understand your position, but I do think it smacks of unfairness. Thank you.

Chairman HALL. The gentleman's time has expired. We will have some insertions into the record. I think the gentlelady has a letter request. Do you want to state your request?

Ms. JOHNSON. I would like to ask for the letter that the delegation signed be submitted for the record as well as the one from Dynergy that was sent—well, to both of us.

Chairman HALL. At this time, I would like to enter into the hearing record a number of important letters and documents containing stakeholder viewpoints and technical analysis regarding the CSAPR rule. This includes several pieces of correspondence between affected utilities and EPA and an analysis by ERCOT of the rule's impact on reliability and analysis of the economic and job-killing impacts of the rule by Nera Economic Consulting as well as Standard and Poor, and these documents have all been shared in advance with the Minority and with the Majority and a complete list can be made available to members at their request.

[The information may be found in Appendix 2.]

Chairman HALL. And Ms. McCarthy, just yesterday the Chairman of the Texas House Committee on State Affairs, Byron Cook, sent you a letter requesting your appearance at a Committee hearing on the CSAPR rule on September 22nd at 10 a.m. in Austin. Chairman Cook wrote, "It is absolutely essential that this agency explain to Texas why the State was unexpectedly without opportunity for input included in this rule." Will you accommodate Chairman Cook's request to appear at the Texas committee hearing?

Ms. MCCARTHY. Mr. Hall, I will take that request under due consideration.

Chairman HALL. I appreciate it if you will.

I would like to leave the record open long enough for your callous remark that you are not in the business of creating jobs. You don't really mean that, do you?

Ms. MCCARTHY. I actually didn't put it in that context. I was actually providing——

Chairman HALL. If you want to make a statement, make it for the record and I will——

Ms. MCCARTHY. I will. Both EPA as well as I personally am very concerned not just about the environmental health but also the economic health of this State, and I recognize and EPA does its responsibility to develop rules as——

Chairman HALL. You can talk on from now on if you want to because we are on your time now.

Ms. MCCARTHY. No, sir, I just——

Chairman HALL. No, you need to be gone by 12 and it is five after 12, and we thank you——

Ms. MCCARTHY. I just didn't want you to believe that I was callous to jobs.

Chairman HALL. Well, I want to believe that. I sure do.

Ms. MCCARTHY. Please do.

Chairman HALL. And we thank you for your time here and we wish you well.

Ms. MCCARTHY. You too, Mr. Chairman. Thank you.

Chairman HALL. With the round of questions completed, I thank the witnesses from both panels for valuable testimony and the

Members for their questions. The Members of the Committee may have additional questions for any one of the witnesses. We will ask the witnesses, including Mrs. McCarthy, to respond to those in writing. The record will remain open for two weeks for additional comments from Members.

We are adjourned.

[Whereupon, at 12:07 p.m., the Committee was adjourned.]

Answers to Post-Hearing Questions

ANSWERS TO POST-HEARING QUESTIONS

Responses by Dr. Bryan W. Shaw, Chairman, Texas Commission on Environmental Quality

Questions Submitted by Chairman Ralph M. Hall

Q1a. Can you describe the historic way in which States have led the way for enviromnental progress under the Clean Air Act and other statutes?

A1a. In Texas, protection of air quality predates the Federal Clean Air Act, and State requirements are often more stringent than what is required by the federal statute. States are given primary responsibility for ensuring air quality protection under the Federal Clean Air Act, with United States Environmental Protect Agency's (EPA) role being primarily supervisory and secondary to the role of the States. States, including Texas, are responsible for developing State implementation plans (SIP), which contain the necessary control strategies for ensuring that States attain and maintain [he National Ambient Air Quality Standards (NAAQS). SIPs must also contain major and minor permitting programs and provisions for public participation. These programs are developed and managed by the States, with the exception of some States that rely on EPA to manage their Prevention of Significant Deterioration (PSD) permitting programs, the programs that permit major sources of air pollutants. Texas has been delegated authority to manage its own PSD permitting program from EPA (with the exception of greenhouse gas permits), and permits both major and minor sources of air pollutants in the State. With the exception of certain activities that produce de minimis amounts of air pollution, all stationary sources in Texas that produce air contaminants must be permitted. Texas has also developed a variety of robust rules to set limits on types of air pollution, particularly in the State's nonattainment areas, to ensure that those areas meet and attain the NAAQS by the applicable Federal Clean Air Act deadlines.

In addition to rules that are required for implementation of the NAAQS, Texas has worked to develop innovative permitting mechanisms to allow flexibility while requiring sources to control their emissions. For example, Texas has required all grandfathered major sources of air pollution to obtain air quality permits that contain federally enforceable emissions limitations. In this way, Texas went beyond what is required by the federal statute to ensure that emission sources in the state will have control requirements that can be enforced to ensure protection of the State's air quality resources. Because of innovative programs for point sources, Texas has seen 58% reduction to point source nitrogen oxides (NO_2) emissions from 2000 through 2009.

The strides that Texas has made in reducing emissions and more importantly ambient concentrations of ozone are more impressive considering Texas' population increase and position as an economic engine of the entire country. Texas now has the second largest population in the country behind California. Between April 1, 2000, and July 1, 2009, Texas population increased by more than 840,000 people, more than any other state, yet its mobile somce emissions decreased. The Federal Government has the primary responsibility to regulate mobile sources. States have very little ability to effect change in this area. The Texas Legislature, however, chose to fund one of the most aggressive, if not *the* most aggressive, programs to reduce NO_2 from mobile sources. The Texas Comnission on Environmental Quality (TCEQ) has provided over $900,000,000 in grants through its Texas Emissions Reduction Plan program to diesel equipment owners to replace old, dirtier diesel engine equipment with new, cleaner equipment. Over $150,000,000 has been provided through the Drive A Clean Machine program to repair gasoline vehicles that fail emission tests and replace old vehicles with newer, cleaner cars and trucks, Texas also has requirements for cleaner-burning fuel that are more stringent than federal fuel requirements in order to reduce NO_2 and volatile organic compounds (VOC) emissions (Texas Low Emission Diesel and Low Reid Vapor Pressure Gasoline programs).

Q1b. Is there a role for State flexibility in implementation under CSAPR? If so, what is it?

A1b. CSAPR provides limited flexibility to States to adopt abbreviated SIPs in States' efforts to address limited portions of the federal implementacion plans (FIP) prescribed by EPA in the rule. These limitations are discussed on pages 48326–48332 of the final rule preamble, and in rule provisions found at 40 C.F.R. §§ 52.38 (governing the trading rule NO_2 provisions) and 52.39 (governing the trading rule SO_2 provisions). CSAPR provides for no State authority or flexibility for the 2012 control period.

With regard to this limited flexibility afforded to States in providing EPA SIPs for the CSAPR, a major underlying issue still has not been addressed by the EPA. Section 110(a)(2)(D)(i)(I) of the FCAA obligates States to prohibit emissions that contribute significantly to nonattainment, or interfere with maintenance by, any other State with respect to the NAAQS. However, Section 110(a)(2)(D)(i)(I) is clearly a requirement for inclusion in the SIPs that States are required to submit under Section 110(a)(1). The writers of the FCAA clearly envisioned that States would be given the opportunity to implement local controls as necessary to address transport impacts to other States. While the EPA indicates that it has determined that States covered by CSAPR have not submitted SIP revisions adequate to meet the requirements of Section 110(a)(2)(D)(i)(I), the EPA does not plan to limit this approach to just the 1997 and 2006 PM_2 NAAQS and the 1997 ozone NAAQS. The EPA has indicated (75 FR 45213) that future revisions to NAAQS may necessitate revisions to CSAPR with greater reductions from the sources covered under CSAPR, or possibly from States or different source categories not included in the current rule. Based on this statement, the EPA has predetermined that no States will ever be in compliance with Section 110(a)(2)(D)(i)(I) of the FCAA. Therefore, the EPA has assumed sole responsibility and authority for Section 110(a)(2)(D)(i)(I) for the ozone and PM_2 NAAQS, including any future revisions to these standards.

Q2. In a letter from EPA to Luminant, the EPA Deputy Administrator claimed that "EPA has offered to make technical adjustments . . . that will give Texas and Luminant thousands of additional tons of pollution allowances" and that "there are alternative compliance approaches that rely on existing pollution control technology already installed." In your view, would EPA's offer of additional allowances or alternative compliance approaches be sufficient for Texas' generators to meet the 2012 and 2014 standards in a cost-effective way?

A2. The TCEQ believes that Texas should not be included in the CSAPR for fine particulate matter (PM_2). Texas was not included in the rule for PM_2 at proposal. The TCEQ has technical concerns with the EPA claim that Texas is contributing to the monitor in Granite City, Illinois. EPA also violated Texas' due process rights as well, on the grounds that neither Texas, not her citizens, were provided an opportunity to comment on CSAPR.

On October 6, 2011, the EPA proposed revisions to the CSAPR that would provide an additional 70,067 tons of SO_2 allowances to the Texas CSAPR budget and delay until 2014 the implementation of the assurance provisions limiting interstate trading. Based on TCEQ's initial review of the EPA's proposed revisions, the proposal may lessen some of the impact of the CSAPR on some Texas utilities, but it completely fails to address TCEQ's overall concerns regarding the feasibility of such substantial reductions in sulfur dioxide (SO_2) emissions in such an unprecedented short period of time. Even accounting for the additional allowances proposed for Texas' budget, recent SO_2 scrubber startups, and announced SO_2 scrubber startups for 2012, the TCEQ expects that substantial SO_2 reductions will still be needed in Texas for the 2012 control period.

Furthermore, while the 2012 control period is an annual compliance, companies must reduce their SO_2 emissions early enough in the year to avoid running out of allowance mid-year and being forced to shut down. Companies must certify compliance with CSAPR, and there are significant penalties associated with a company's actual SO_2 emissions exceeding the allowances held. Therefore, companies are unlikely to gamble compliance on SO_2 allowances becoming available at the end of the 2012 control period. The EPA's intent for delaying the assurance provisions until 2014 is to encourage trading in the initial two years of the CSAPR program. However, Texas remains limited to trading with Group Two States, which does not appear to be a viable trading market for SO_2 allowances. In effect, companies will only have a matter of months to achieve the large reductions in SO_2 emissions that the EPA is mandating with the CSAPR, leaving companies with limited options for compliance.

The TCEQ will continue reviewing the EPA's proposed revisions to CSAPR, and plans on submitting comments to the EPA on the proposed changes. However, the TCEQ does not consider the CSAPR, as finalized or with the proposed revisions to the rule, to be cost-effective or environmentally beneficial.

Responses by Mr. Gregory Stella, Senior Scientist, Alpine Geophysics, LLC

Questions Submitted by Chairman Ralph M. Hall

Q1a. You state in your testimony that "over 80 percent" of the sites predicted by EPA to be in nonattainment of the ozone or PM_2 standards in 2012 are already in attainment as of 2009. This appears to indicate major errors in EPA modeling accuracy. In your opinion, why is the EPA model wrong on 80% of attainment projections?

A1a. The issue is not that EPA's model is wrong; rather it is the fact that older data were used to develop EPA's attainment projections. The methods and models used by EPA and Alpine were consistent, however, EPA's use of an older emissions base year (2005), design value data (2003–2007), and emission projections and associated controls absent the implementation of CAIR resulted in estimates of poorer air quality in 2012 compared to Alpine's results. When we used a more current base year inventory (2008) and current design value data (2007–2009) which account for control technologies and associated emission reductions in response to current compliance with CAIR, air quality in 2009 already is observed to be below CSAPR air quality objectives.

Q1b. How can it be improved?

A1b. In my professional opinion, the use of a most current modeling platform, including emission inventories, projection factors (inclusive of already implemented control technologies), observational data and associated metrics (design values), would provide a more current picture of existing air quality and establish a more current baseline from which to develop emission projections and associated air quality predictions.

Q1c. Is it fair to say that the majority of EPA's estimates about the need for this rule are based on questionable predictions?

A1c. I do not think that it is fair to say that EPA's estimates are based on questionable predictions. Rather, I would say that the modeling upon which EPA established its estimated predictions is based on outdated data.

Q2a. In your written testimony, you state that your firm identified two critical components where EPA's underlying science for the CSAPR rule appears to be incomplete. You refer to "EPA's exclusion of the most recently available emissions inventories and air quality measurements at the time of its rulemaking and EPA's exclusion of the controls and related emission reductions that are actually occurring in response to the Clean Air Interstate Rule (or CAIR)." Could you please explain for the Committee how the exclusion of these two components would directly impact the integrity of the CSAPR rule, and the accuracy of any of its downstream regulations and requirements?

A2a. In our analysis, we observed that when the control technologies already installed as a result of current compliance with CAIR are included in the modeling platform (emissions, air pollutant concentrations, and associated projections), the air quality objectives of CSAPR are already met or are projected to be met in many areas without additional emission reductions beyond those originally identified in CAIR. As these results show current (2009) attainment of CSAPR air quality objectives in many EPA identified nonattainment or maintenance downwind areas, the need for incremental emission reductions addressing interstate transport of air pollutants to these EPA identified areas may be unnecessary.

Q3. Has the air become cleaner over the last decade? Is there any reason to expect that the large portions of the U.S. that meet National Air Quality Standards in 2009 would reverse the trend in 2014?

A3. According to both EPA published reports [1] and studies conducted by Alpine Geophysics, LLC (associated written testimony to this response) concentrations of air pollutants measured by EPA have decreased over the last decade. While there is always the possibility that changes in meteorology, technology, economic activity, or emission regulation may impact the direction of emission and air quality trends in the U.S., in my professional opinion and based on promulgated air quality regulation and long-term emission trends, I do not see a reason to expect that the large portions of the U.S. that meet National Air Quality Standards in 2009 would reverse this trend by 2014.

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[1] *http://www.epa.gov/airtrends/2010/index.html.*

Responses by Mr. Wayne E. Penrod, Executive Manager, Environmental Policy, Sunflower Electric Power Corporation

Questions Submitted by Chairman Ralph M. Hall

Q1a. In your written testimony you note that EPA's CSAPR is based on flawed modeling, and that the underlying model itself is a "black box." Could you please describe for the Committee the range of relevant information that was withheld by EPA, and how this impacted the rulemaking process overall?

A1a. Response: Information regarding IPM and EPA's use of it is found on their website at the following URL. Their description of the value the model (emphasis added) brings to their work is fairly revealing and it describes what the model enables "them" to "accomplish." *http://www.epa.gov/airmarkets/progsregs/epa-ipm/*. The excerpt below from this website addresses the question.

General Purpose of IPM Modeling

- EPA uses the Integrated Planning Model (IPM) to analyze the projected impact of environmental policies on the electric power sector in the 48 contiguous States and the District of Columbia. Developed by ICF Consulting, Inc. and used to support public and private sector clients, IPM is a multi-regional, dynamic, deterministic linear programming model of the U.S. electric power sector. It provides forecasts of least-cost capacity expansion, electricity dispatch, and emission control strategies for meeting energy demand and environmental, transmission, dispatch, and reliability constraints. IPM can be used to evaluate the cost and emissions impacts of proposed policies to limit emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_2), carbon dioxide (CO_2),and mercury (Hg) from the electric power sector. The IPM was a key analytical tool in developing the proposed Transport Rule.
- Among the factors that make IPM particularly well suited to model multi-emissions control programs are (1) its ability to capture complex interactions among the electric power, fuel, and environmental markets; (2) its detail-rich representation of emission control options encompassing a broad array of retrofit technologies along with emission reductions through fuel switching, changes in capacity mix and electricity dispatch strategies; and (3) its capability to model a variety of environmental market mechanisms, such as emissions caps, allowances, trading, and banking. IPM's ability to capture the dynamics of the allowance market and its provision of a wide range of emissions reduction options are particularly important for assessing the impact of multi-emissions environmental policies like the proposed Transport Rule.

Although the inputs to the model are highly complicated and sometimes difficult to follow, this information is generally made available by EPA to the public, as are the outputs. What is not available are the inner workings of the model and how the model processes the inputs to produce the outputs, which is why the model is called a black box. Because the model is proprietary, the public cannot itself run the model, and therefore cannot, for instance, vary the assumptions to see what the outputs will be. We are simply asked to trust that the model is accurately processing the inputs in producing the outputs. But for all we know, a change in a modeling input that produces a particular result could be the result of a glitch in the model.

The "IPM" model is a virtual electric grid upon which different dispatch scenarios can be simulated. The model has been used for several years to simulate the complex interactions that can occur when evaluating different economic policy strategies. It has been used to identify the lowest cost electricity-generating unit additions. It has also been used to evaluate utility mergers, both real and virtual. The value of the IPM "tool" is to identify the "differences," within bounds, between or among different or competing strategies; it should not be expected to yield a single dispositive answer to any question.

The inputs to the model include information and assumptions about electricity generation and transmission facilities, fuel, load forecasts, economic factors—in theory, all the information that goes into operation of the electric grid. Outputs of the model are the resulting amounts of electricity each generating unit will produce, the overall impact on electric rates, the amount of each type of generation fuel that is used, etc. In other words, the inputs to the model are all of the inputs that EPA thinks are necessary to run the U.S. power grid. However there are hundreds of significant assumptions and many simplifications that are involved in developing a model upon which to draw realistic comparisons.

One of the main problems a lack of access to the model causes when EPA uses the model is that EPA may tell the public it is considering a change in modeling inputs and ask for comment, but we have no way of knowing how the changed assumption will change the rule. This happened three times during the rulemaking process, when EPA issued "Notices of Data Availability" proposing to change modeling inputs without telling the public how doing so would change state budgets. There was no way for the public to understand how the new inputs would change the budgets, because EPA wasn't saying and because the model is proprietary and unavailable for the public to run itself. This is nowhere more significant than in the 45% allowance allocation difference in the third NODA for Sunflower's operations.

Moreover, we know that certain modeling inputs are flawed. As just one important example, one of the main criticisms that those with experience in the electric utility industry—including FERC and various RTOs—made of FERC's reliability analysis is that the IPM model assumes that power flows freely within broad geographic areas and is not subject to local bottlenecks and constraints. As an EPA Technical Support Document for the MATS rule states, "[w]ithin each model region, IPM assumes that adequate transmission capacity exists to deliver any resources located in, or transferred to, the region."[1] This assumption, however, is factually inaccurate because there are significant local transmission bottlenecks. These local reliability concerns and the failure of EPA's model to simulate them are the reason FERC's Chairman called the methodology EPA used to assess reliability "irrelevant"[2] in assessing true reliability impacts. Again, this is very evident in the recent Southwest Power Pool modeling summary analysis (attached)—very low voltages in regions served by Sunflower and other neighboring utilities.

Kansas utilities have, after the rule became final, tried to duplicate some of the EPA work. We discovered that;

- Only EPA had access to the actual input parameters to an important sub-routine within the model, and
- Information provided by EPA concerning the treatment of certain default parameters was reported erroneously.

The effect of these mistakes wasted considerable amounts of our time and resources that could have been given to trying to understand more fully what EPA did in other areas of the model. This discovery only serves to raise further questions regarding other aspects of the EPA modeling which we were unable to adequately evaluate in the available time.

It should also be identified that EPA did not even always ask for comment when it changed inputs to the model; of course, these input changes resulted in significant output differences. In the final rule, EPA justified the reduced budgets based on new input information that was never made available for comment. Significantly, this is exactly counter to the process that EPA insists that utilities use when they, for instance, propose to construct a new source. EPA insists that the air dispersion impacts of a proposed source be strictly evaluated using EPA-issued guidance and that such modeled evaluations be done on EPA-approved software. They carefully evaluate the inputs and outputs on a case-by-case basis. Whenever any issue or problem is encountered during the EPA evaluation of the source, they insist that the applicant redefine the model, correct whatever mistake was made (even if the mistake was made by the EPA or EPA contractors), resubmit the results, and then re-issue the entire process for new public comment. That same level of transparency should be expected of EPA.

Q1b. In your opinion, what is the single greatest scientific flaw or assumption in EPA's rulemaking process for CSAPR, and its compliance projections?

A1b. Clearly there are two huge flaws in the rulemaking process. The largest is the assumption that utilities can move electricity on the grid as easily as the simplistic assumption used by EPA in the model (as identified above). The Southwest Power Pool (SPP) has clearly identified that electric system reliability will be significantly impacted. In fact, SPP has identified that their much more realistic, single-purpose electric grid model *will not solve* in certain areas given the generation solution reached by the EPA model to allocate allowances. Under the circumstances we find ourselves on the horns of a dilemma—either operate as required to meet the

[1] *Resource Adequacy and Reliability in the IPM Projections for the Toxics Rule*, EPA-HQ-OAR-2009-0234-3063[1], Exhibit 12 at 1.

[2] *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*, 112th Congress (September 14, 2011) (response of Jon Wellinghoff, Chairman, FERC, to question by Rep. Rush).

load under the reliability requirements of the SPP, or operate so as to conform to the inadequate allowance structure devised by EPA. Clearly, our obligation to meet both conflicting requirements will be a most difficult, costly, and uncertain task.

EPA does not in their own modeling adhere to the standards they require of the utilities. As we know by experience, for example, whenever a new emission source that *may* impact the *visibility* in a National Park is *proposed*, additional time and modeling may be *required* by the responsible federal land manager. Since the SPP has identified serious concerns with the *reliability* of the *electric grid*, an essential element in the security of a modern society, surely this is reason enough for EPA to undertake additional, open, transparent modeling of grid reliability resulting from the rule.

Secondly, the assertion that a liquid, vibrant allowance trading market will develop in 2012 enabling utilities to comply with the rule defies logic. EPA recognizes that utilities will not be able to install all of the new control technologies in time to meet the rule by 2012 and that other compliance options are relatively limited. EPA believes, however, that an allowance market will emerge in which utilities can cover their compliance obligations by purchasing allowances.

The problem is that utilities have no reason to believe that this will be so, and every reason to believe that it won't. Because EPA cut so many State emission budgets between the proposed and final rule, we can only ask from what sources EPA believes excess allowances can be generated in so short a time period. First the allowance budget identifies several severe shortfalls; even EPA identifies that new control technology must be installed, and further asserts, illogically, that the time for deploying some of these technologies is adequate to generate allowances. We have no reason to be confident that there will be any allowances available to cover the shortfalls, particularly at a price that would make economic sense.

Moreover, the allowance trading scheme is limited under CSAPR because, for SO_2, utilities can only trade with utilities in their own State or in States in the same group. Also, a great deal of allowance value was wiped out when EPA decided that the old CAIR allowances cannot be used in CSAPR in light of the court decision in the CAIR case. With CSAPR subject to so many legal challenges, we think utilities may wish to hold onto and bank any credits they have, and utilities will be reluctant to buy allowances and risk having that value similarly wiped out if CSAPR is overturned. Thus, since we must plan conservatively, given the threat of serious penalties for non-compliance, we must assume that we cannot meet a significant part of our compliance obligations with allowances.

Because we can't rely on the availability of allowances, our only compliance option is as I outlined in my initial testimony. We have to essentially re-dispatch our system, cutting back generation at our more efficient base-load coal unit, and increasing generation at more expensive units. Moreover, as set forth in my testimony, we accelerated our acquisition of pollution control equipment, which resulted in a higher cost and our having to purchase the equipment from China rather than from a Kansas manufacturer as originally planned.

Q2. What impact would extreme weather in Kansas have on electricity generation, delivery, and reliability if CSR were to be implemented in its current form, and with its current compliance deadline?

A2. Certainly, a colder-than-expected winter or a hotter-than-expected summer would increase electricity demand and increase the risk that our generation and transmission resources are not adequate, in contingency situations, to meet the load. This is especially the case given the identified transmission constraints caused by the EPA "dispatch model." Indeed, the Southwest Power Pool told EPA in a September 20, 2011, letter, the electric system will be strained to meet CSAPR. This strain will be magnified if there is a loss of one or more significant transmission or generation facilities, either of ours or of our neighbors, occurs during a severe hot- or cold-weather event. These unexpected and isolated events will occur. They always have, and the reserve sharing arrangements of the SPP are constructed to provide shared mutual resources for those circumstances. All of those reliability management practices developed by SPP and other reliability pools are placed at greater risk of collapse in extreme weather conditions given the effects of CSAPR.

Responses by Mr. Chip Merriam, Chief Legislative & Regulatory Compliance Officer,Orlando Utilities Commission

Questions Submitted by Chairman Ralph M. Hall

Q1. Is it possible for OUC and other Florida utilities to just purchase NO_2 allowances from other CSAPR states that are able to reduce NO_2 emissions within the compliance window?

A1. From our early experience with this rule, those who have excess allowances in Florida will not be interested in releasing those allowances for two reasons: the first, for those that may have excess, the margins between expected emissions and allocated allowances are very tight, as such, OUC strongly believes that these entities will opt to bank the excess allowances rather than release them into the market with the thought that they may eventually need them, and second, those with allowances are trying to determine what the real value of these allowances might become as we all near the compliance period. Those in the CSAPR are demonstrating the same response as we have experienced within the State of Florida, making sure they have adequate allowances before those allowances are for sale and also awaiting what the real value of the allowances will be as the compliance period nears.

Q2. What impact would hurricanes or severe weather have on electricity generation, delivery, and reliability if CSAPR were to be implemented in its current form, and with its current compliance deadline?

A2. There are at least two questions within this question which are as follows:

First, electric generation usually does not have the same type of impacts as does transmission and distribution services during severe weather events. Generation is very reliable during cyclonic events, or at least that is what we thought in Florida until the hurricane season of 2005. Because of the impacts resulting from the onslaught of Hurricanes Katrina and Rita on natural gas production in the Gulf of Mexico, the supply of natural gas to the State was cut dramatically for several days. Since there are not any large-scale gas storage facilities in the State, gas fired generation was significantly curtailed and, if not for the coal units which are a part of the focus of this EPA rulemaking effort, the State might not have faired as well as it did.

Second, delivery and reliability are much different. In order to meet the demands of the CSAPR, OUC will take our Stanton Coal Unit 1 offline for all or part of three summer seasons as we modify the coal unit with the installation of Selective Catalytic Reduction to reduce the NO_2 emissions. Additionally, OUC will be forced to shift planned maintenance outages from the spring to the summer peak season in order to reduce emissions to try to comply with the Rule. This is the same time the State of Florida is most at risk for cyclonic events. In order to meet with our reliable standards, as well as demands on our generation fleet, OUC will, most likely, have to go out on the market and purchase supplemental generation from other generators. This will now place our generation requirements on the transmission system which has been impacted during past hurricane seasons.

Responses by The Honorable Gina McCarthy, Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency

Questions Submitted by Chairman Ralph M. Hall

Q1a. In your response to my question regarding available compliance options for the State of Texas, you answered that the compliance decisions are business decisions and can be done through a market approach. You stated that EPA believes there is pollution control "equipment installed in the State already that can be maximized in terms of efficiency." Please provide a list of equipment on each power plant in Texas that EPA has determined can be maximized for efficiency. Please include the current efficiency of each identified piece of equipment and the maximum efficiency EPA believes this equipment can achieve.

A1a. EPA's IPMv.4.10 computer model uses Energy Information Agency (EIA) information for SO_2 removal rates for flue-gas desulfurization. These values are reported directly to EIA by the sources themselves using form 860 (data is referred to as EIA 860). In the case of seven units in Texas, EPA made adjustments to the SO_2 removal rates based on subsequent information from Luminant on how they had interpreted the form and, in some cases, misreported information. NO_2 rates are based on 2009 data. There is a hierarchy of rules used to determine rates. The rules and all the hueristics that go along with them can be found in section 2 of the Supplemental Documentation on the CSAPR website (*http://www.gpo.gov/fdsys/pkg/FR-2011-07-11/pdf/2011-17456.pdf*).

Table 1: Texas FGD Removal Rates at Coal Units

Plant Name	Unit ID	Scrubber Efficiency, % (EPA Assumption)*	EIA 860 reported removal rate, % (2009)	EIA 860 reported flue gas entering scrubber, % (2009)	EIA 923 efficiency at annual operating factor (2008)	EIA 923 Efficiency at annual operating factor (2009)	2008 emission rate lbs/mmBtu	2009 Emission Rate lbs/mmBtu	2010 Emission Rate, lbs/mmBtu	2012 Remedy Emission Rate, lbs/mmBtu*
AES Deepwater	AAB001	90.00	90.00	100	78	80.2	0.557	0.62	0.642	0.893
Oklaunion	1	72.60	86.80	81	72.6	99.6	0.208	0.17	0.184	0.247
Limestone	LIM1	90.00	90.00	100	87	79	0.296	0.33	0.323	0.183
Limestone	LIM2	90.00	90.00	100	88	79	0.292	0.35	0.336	0.183
W A Parish	WAP8	81.70	85.00	82	81.7	82	0.145	0.11	0.133	0.106
Sandow 5	5A	95.80	95.80	100				0.15	0.092	0.098
Sandow 5	5B	95.80	95.80	100				0.11	0.089	0.098
Gibbons Creek	1	90.00	90.00	75			0.713	0.70	0.674	0.060
Martin Lake	1	65.70	95.00	95	65.7	89.7	0.918	0.81	0.787	0.412
Martin Lake	2	79.50	95.00	95	79.5	87.2	0.712	0.83	0.763	0.246
Martin Lake	3	74.80	95.00	95	74.8	85.6	0.817	0.75	0.818	0.302
Monticello	3	65.90	95.00	75	65.9	66	0.473	0.51	0.659	0.518
Fayette Power Project	1	95.90					0.611	0.59	0.643	0.060
Fayette Power Project	2	95.90					0.649	0.59	0.619	0.060
Fayette Power Project	3	90.00	90.00	94	93.4	77.9	0.141	0.10	0.105	0.060
Oak Grove	OG1	95.90	95.90	100				0.05	0.059	0.135
Oak Grove	OG2	95.90	95.90	100					0.057	0.135
San Miguel	SM-1	94.10	94.10	100	93.6	93.8	0.604	0.64	0.628	0.132
Sandow	4	76.60	92.00	83	76.6	72.6	1.010	1.10	0.993	0.521
Twin Oaks Power One	U1	91.60					0.335	0.42	0.461	0.242
Twin Oaks Power One	U2	91.60					0.354	0.40	0.442	0.242
J K Spruce	BLR1	70.00	70.00	100	95.5	93	0.157	0.04	0.047	0.174
J K Spruce	BLR2	95.00	95.00	100						0.060
Pirkey	1	85.00	85.00	90	25	25	0.131	0.24	0.113	0.432
*Reflects revisions to removal rates										

Table 2 - Texas SCR & SNCR Controls at Coal Units

Plant Name	UniqueID_Final	NOx Comb Control	NOx Post-Comb Control	Controlled NOx Policy Rate lbs/mmBtu	2008 NOx Rate, lbs/mmbtu	2009 NOx Rate, lbs/mmbtu	2010 NOx rate, lbs/mmbtu	2012 Remedy Rate, lbs/mmbtu
Oak Grove	6180_B_OG1	LNB + OFA	SCR	0.050	#N/A	0.061	0.064	0.050
Oak Grove	6180_B_OG2	LNB + OFA	SCR	0.050	#N/A	#N/A	0.066	0.050
J K Spruce	7097_B_BLR2	LNB + OFA	SCR	0.050	#N/A	#N/A	#N/A	0.050
Sandow 5	52071_B_5A		SNCR	0.080	#N/A	0.100	0.081	0.079
Sandow 5	52071_B_5B		SNCR	0.080	#N/A	0.103	0.080	0.079
Big Brown	3497_B_1	LNC2	SNCR	0.137	0.144	0.137	0.139	0.137
Monticello	6147_B_1	LNC2	SNCR	0.140	0.149	0.140	0.130	0.141
Monticello	6147_B_2	LNC2	SNCR	0.143	0.147	0.143	0.132	0.143
Big Brown	3497_B_2	LNC2	SNCR	0.147	0.146	0.147	0.144	0.147
Monticello	6147_B_3	LNBO	SNCR	0.162	0.189	0.162	0.178	0.162
#N/A = No CAMD data available								

Q1b. You also claimed that there are FCRs, SNCRs, and low NO_2 boilers already in place that "can be turned on every day all year around instead of them currently used part of the year, part of the days, during that part of the year." Please provide a list of each power plant in Texas that EPA has determined is not using its FCRs, SNCRs, and low-NO_2 boilers all day, every day, all year. Please include the current amount of time this equipment is currently being utilized and the technical analysis that EPA has conducted to determine that this equipment can and should be utilized all day, every day, all year.

A1b. EPA determined that from a technical standpoint, the State, as a whole, already has the controls in place to make the needed reductions even at current heat input levels. EPA reached this conclusion with the following process. For each unit in Texas, we calculated the lowest quarterly NO_2 rate achieved by that unit between 2005 and 2010 and applied that rate to 2010 data. If all of Texas's units had operated at their lowest quarterly NO_2 rates for the entire year (using their 2010 heat input), it would have resulted in a reduction of nearly 22,000 tons of NO_2 for 2010, which would yield an emission level substantially lower than the CSAPR state budget for annual NO_2 in Texas. We believe these data show that Texas units have substantial flexibility in controlling their NO_2 emissions and meeting their CSAPR obligations even without the installation of new NO_2 controls. In addition, utilities provided information to EPA indicating that some controls were operational for limited periods of time.

Table 3: Example of NOx Reductions Possible at Texas Sources by Operating at Already Achieved Emission Rates*

Plant Name	CAMD Database UnitID	Unit ID	Capacity (MW)	Min Quarterly NOx rate 2005-2010 (lbs/mmBtu)	2010 heat input (mmBtu)	2010 NOx Emissions (tons)	Adjusted 2010 NOx Emissions (tons). (Min quarterly rate x 2010 heat input)**	Difference (tons)
Big Brown	2423	1	575	0.12	47,304,348	3,280	2,932	348
Big Brown	2424	2	575	0.13	48,238,106	3,473	3,122	351
Coleto Creek	2826	1	632	0.14	43,496,800	3,234	2,987	247
Fayette Power Project	2827	1	598	0.09	36,580,782	1,869	1,693	176
Fayette Power Project	2828	2	598	0.09	42,265,016	2,266	1,929	337
Limestone	177	LIM2	858	0.16	63,480,696	6,413	5,056	1,357
Limestone	176	LIM1	831	0.18	67,879,618	6,721	5,949	773
Martin Lake	2804	1	750	0.15	66,009,662	5,654	4,957	697
Martin Lake	2805	2	750	0.15	54,547,955	4,596	4,164	432
Martin Lake	2806	3	750	0.14	67,799,564	5,819	4,776	1,043
Monticello	2807	1	565	0.13	40,192,358	2,608	2,601	8
Monticello	2809	3	750	0.15	56,946,054	5,081	4,183	898
Oak Grove	2830	1	800	0.06	56,207,892	1,800	1,711	89
Oak Grove	2831	2	800	0.06	26,683,327	882	842	39
Oklaunion	81	1	690	0.29	38,922,526	6,679	5,560	1,119
Pirkey	3360	1	675	0.16	46,802,856	3,752	3,700	53
W A Parish	2379	WAP6	650	0.04	45,639,410	1,154	889	265
W A Parish	2378	WAP5	645	0.04	47,829,753	1,230	905	325
W A Parish	2381	WAP8	600	0.03	39,699,437	796	667	129
W A Parish	2380	WAP7	565	0.03	36,564,428	993	639	354
Total								**9,039**

* Example pertains to 20 largest coal units in state. To complete analysis for the approximately 300 units in the state, necessary data can be obtained from CAMD Data & Maps

** Converted to tons. Calculated using unrounded NOx rates.

Q1c. Additionally, you claimed that there are upgrades of pollution control equipment that can be done quickly. Please provide EPA's analysis that identifies each power plant in Texas that has pollution control equipment eligible for quick upgrades. Please include a list of each piece of equipment in the identified power plant, what upgrades can be made, what, if any, permits are required to do these upgrades, how long the upgrades will take to install, and the cost of each upgrade.

A1c. EPA analysis indicated that sources could meet both the annual and ozone-season requirements in the rule in 2012 by running existing controls (or those already expected to come online in the near future) efficiently, making changes in dispatch (how electricity is distributed across units at a facility) including shifting generation from higher-emitting units to lower-emitting units, fuel switching, or buying allowances. Additional upgrades are possible but they are not necessary to achieve compliance.

Q1d. You stated that there is low-sulfur coal and fuel switching options. Please provide EPA's analysis in which you determined purchasing low-sulfur coal for 2012 was a cost-effective option for any plant affected by this rule. Please include EPA's complete analysis of the coal market, transportation availability concerns, and any assessment of the cost difference between the low-sulfur coal and the coal type normally burned.

A1d. The coal choices (including low-sulfur subbituminous and bituminous coals), transportation options, and the comparative cost of different coal sulfur grades that are available to electric generating units are included in EPA's modeling of the U.S. electric power sector and are comprehensively documented in Chapter 9 and related appendices of Documentation for EPA Base Case v.4.10 Using the Integrated Planning Model (available on the Web at *www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v410/Chapter9.pdf*, *www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v410/Chapter9Appendix9_3.xls*, *www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v410/Chapter9Appendix9_4Data.xls*, and *www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v410/Chapter9Appendix9_4Graphs.pdf*). The assumptions described in this documentation and used in EPA's modeling were prepared by leading industry coal experts. They are very extensive. For example, they include 85 separate coal supply curves and more than 1,200 coal transportation links.

For each coal-fired electric generating unit, the power sector model identifies the lowest-cost coal or combination of coals that can be burned by the unit and allow it to meet its generating and emission requirements. These coals include the type

normally burned as well as any low-sulfur coal options available to the unit. The coals that the model projects will be used in any given modeled year (including 2012) are reported in model run output files (also available on the Web).

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In addition to the optimal least-cost solution in Texas, we have examined options that do not involve

In addition to the optimal least-cost solution in Texas, we have examined options that do not involve switching from lignite to lower sulfur sub-bituminous coal. In this complementary analysis, EPA constrained Texas units from increasing their blending of sub-bituminous coal beyond the level each unit reported to EIA for 2010. Under these conditions, Texas is still projected to meet its SO_2 assurance level using other cost-effective emission reduction strategies, including greater dispatch from lower-emitting generators, while still maintaining 2010 lignite blending levels.

Q2. In your response to my questioning about the CSAPR timeline, you repeatedly stated that the first compliance period does not have to be met until March 2013. It is my understanding however, that the allowances that would cover emissions from January 1, 2012, to December 31, 2012, would be due to EPA in March 2013. Is this correct? Please clarify what you mean when you say the compliance period does not have to start until March 2013.

A2. On December 30, 2011, the U.S. Court of Appeals for the District of Columbia Circuit stayed the Cross-State Rule pending resolution of litigation challenging it. The Court order imposing the stay did not discuss the merits of the challenges. EPA believes the Cross-State Rule is legally sound and will continue defending it vigorously. While the stay is in effect, power plants will not have to comply with the Cross-State Rule until the stay is lifted. Pursuant to the Court's order, the Clean Air Interstate Rule (CAIR), which was to be replaced by the Cross State Rule as of January 1, 2012, is now in effect.

Q3. During the hearing, you stated that the Cross-State Air Pollution Rule was designed with the same market flexibility as the CAIR rule. It was my understanding that the market mechanism used in the CAIR rule was part of the reason the rule was vacated in the first place. Please describe the market mechanisms in both the CAIR and CSAPR rules and explain how they are the same.

A3. CSAPR maintains a trading system like CAIR, but CSAPR has greater limits on trading starting in 2014. This addresses the D.C. Circuit Court concern that CAIR did not provide adequate assurance that the required reductions would occur within each State, but did not prohibit all emissions trading. In response to the court ruling, EPA established assurance provisions to guarantee that, in each State, the emissions that significantly contribute to downwind air quality problems will be eliminated. The CSAPR assurance provisions limit the total number of allowances that each State can use for compliance by imposing a penalty on sources whose emissions cause a State to exceed its budget by more than an allowed "variability" limit. But like CAIR, the CSAPR maintains the flexibility of trading, which promotes innovative emission reduction strategies and builds on a highly successful market-based approach familiar to the power sector. Over the past 15 years, trading programs have achieved dramatic SO_2 and NO_2 emission reductions at a fraction of expected cost and with nearly perfect compliance. Similar to CAIR, the emissions reporting and tracking systems under CSAPR will support an active allowance market by providing quarterly data, the wide distribution of allowances among numerous entities, and overall recognition of the benefits of trading due to differentiated compliance costs.

Q4. In his September 11, 2011, letter to David Campbell, the EPA Deputy Administrator stated that, "EPA has offered to make technical adjustments . . . that will give Texas and Luminant thousands of additional tons of pollution allowances to reduce required emissions reductions." Can you describe the "technical adjustments" referenced in the letter?

A4. On February 7, 2012, the EPA finalized technical changes to CSAPR that will facilitate compliance by Texas power plants. In developing CSAPR, the EPA relied on information, in many cases submitted by power plant operators or accessible in public documents, about the operation of certain power plants in Texas. After we finalized the rule, EPA became aware of information updating, correcting, or completing the earlier information. This allowed the agency to identify data discrepancies and to remedy those discrepancies. Accordingly, on February 7, 2012, EPA finalized technical adjustments that result in an approximately 50,000 ton increase to Texas' SO_2 budget and small increases to both Texas' ozone season NO_2 and annual NO_2 budgets with corresponding revisions to assurance levels and new unit set-asides. In addition to the increase in the number of allowances that Texas power plants will receive, EPA finalized adjustments to increase a company's menu of compliance options by allowing sources to use an unlimited number of interstate allowances for compliance in 2012 and 2013. This was designed to provide greater assurance that the allowance trading market will continue to develop rapidly. The technical changes are substantial for Texas, although overall they maintain the exten-

sive public health benefits of CSAPR and do not change the core elements or fundamental structure of the rule.

Q4b. Are these technical adjustments and additional allowances available to any other State or utility that inquires?

A4b. EPA conducted a notice-and-comment rulemaking allowing all parties to submit relevant information, and based on additional information provided by commenters, EPA finalized adjustments affecting multiple state budgets.

Q4c. It is our understanding that the allocations will not be drawn from other States' budgets. Can you describe from where the additional allowances are to be drawn?

A4c. The technical corrections created additional allowances. They were not drawn from other States' budgets.

Q4d. Finally, can you discuss the impact that the allocation of these allowances would have on emissions budgets throughout the program?

A4d. The finalized revisions will not affect the significant air quality improvements slated to occur under CSAPR, nor will they undermine CSAPR's goal to reduce interstate transport of pollution to help downwind States in their efforts to attain and maintain the National Ambient Air Quality Standards (NAAQS). While individual State adjustments vary, overall, the budget increases are slight—about one percent—when compared to the millions of tons of pollution reductions secured by CSAPR.

Q5. The final CSAPR rule describes the costs of the rule as the "retirement of smaller or less efficient EGUs, employment shifts as workers are retrained at the same company or reemployed elsewhere in the economy, and certain relatively small permitting costs." In layman's terms, these costs are better known as plants being closed and workers being laid off. Given our Nation's struggle to create jobs, what gives the EPA the confidence to claim that workers who lose their jobs as a result of this rule will be "re-employed elsewhere in the economy"? Could you give this Committee some examples of where your agency identified job opportunities for these workers?

A5. In Appendix D to the Regulatory Impact Analysis, [1] EPA estimates the short-term job effects of the CSAPR. EPA anticipates that there will be increased jobs due to increased demand for pollution control equipment and reductions in labor demand due to retirements of generating units and changes in demand for fuels. EPA estimates a short-term increase in job-years demanded (due to new pollution controls) of 2,230 job years in 2014 due to CSAPR. A job-year is defined as the amount of work that can be completed by a full-time individual for one year. Most of these jobs are expected to last over an extended period of time, although some jobs last longer than others. For example, the production and installation of pollution control equipment due to anticipated requirements will likely increase construction demand labor, resulting in short-term employment that could last a few years. Operational jobs needed to operate the pollution control equipment are likely to be longer term. As shown in the Regulatory Impact Analysis, EPA estimates longer-term changes in employment within the electric power sector to range from 1,000 fewer jobs each year relative to baseline to 3,000 more jobs, with a best estimate of 700 additional jobs.

Utilities often seek to reassign employees that have been displaced due to a plant closure. For example, South Carolina Electric & Gas (SCE&G) recently announced a plan to retire some coal units and repower some coal units to natural gas. SCE&G "will assist affected employees in looking for other positions within the company." [2] In addition, the natural gas repowering and pollution control installations at SCE&G facilities will result in both short- and long-term employment opportunities.

Q6. The final rule states that "a stand-alone analysis of employment impacts is not included in a standard cost-benefit analysis." However, the rule also states that the need to hire labor and expertise to implement new pollution controls will generate an additional 2,250 jobs in 2014. Where does EPA believe the funds

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[1] *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*. U.S. EPA Office of Air and Radiation. June 2011. Available at: *http://www.epa.gov/airtransport/pdfs/FinalRIA.pdf*.

[2] *http://www.sceg.com/en/news-room/current-news/sceg-announces-plans-to-retire-a-portion-of-its-coal-fired-generation.htm*.

will come from to pay for this new labor and expertise, and won't these costs be passed on to consumers in the form of higher electricity prices?

A6. As shown in the RIA for the final CSAPR, the EPA estimates the annual costs of the rule to be approximately $0.8 billion in 2014. These costs include the cost of hiring additional labor to implement new pollution controls. On average, the EPA estimates that electricity rates paid by consumers may increase in the region affected by the CSAPR by 0.8 percent by 2014 due to this regulatory action. This electricity rate increase is associated with increased health and environmental benefits to society that range from $120 to $280 billion annually (in 2007 dollars) by 2014. These health and environmental benefits to society vastly outweigh the costs of implementing this rule.

Q7. In the past, you and EPA Administrator Lisa Jackson have claimed that CSAPR and related rules have included an analysis of electric reliability, as well as consultations with FERC. However, when FERC Chairman Jon Wellinghoff testified in front of Congress, he emphasized that their informal assessment "in no way should be used for planning," and that the only relevant assessments are conducted by planning authorities like ERCOT. How has ERCOT's breakdown of the massive reliability concerns—including rotating outages—been included in EPA's CSAPR decision-making?

A7. On December 30, 2011, the U.S. Court of Appeals for the District of Columbia Circuit stayed the Cross-State Rule pending resolution of litigation challenging it. The Court order imposing the stay did not discuss the merits of the challenges. EPA believes the Cross-State Rule is legally sound and will continue defending it vigorously. While the stay is in effect, power plants will not have to comply with the Cross-State Rule. Pursuant to the Court's order, the Clean Air Interstate Rule (CAIR), which was to be replaced by the Cross-State Rule as of January 1, 2012, is now in effect.

As to concerns about reliability for future years, EPA's analysis of the Cross-State Rule shows that Texas power plants can meet this rule's emission reduction obligations while maintaining a healthy annual capacity reserve margin above the planning target established by the ERCOT. EPA carefully examined the economic and electricity impacts of including Texas in the CSAPR programs for annual SO_2 and NO_2 reductions in the final rule. Our conclusions are in keeping with the past 40 years of Clean Air Act experience, which has seen our country make tremendous improvements in public health while simultaneously maintaining economic growth and ensuring reliability. We share your concern over reliability issues facing ERCOT, but we find no evidence that they would have to choose between clean air and air conditioning. Texas will be able to provide cleaner air to its residents and to downwind States under this rule while also maintaining economic growth.

EPA does not believe that the CSAPR rule will lead to a greater likelihood of blackouts next summer. Nor do we believe the CSAPR rule requires Texas plants to shut down in 2012. We have closely examined the ERCOT report in terms of the number of megawatts ERCOT expects to be offline as a result of the CSAPR rule and of ERCOT's assessment of what the impact would have been if those megawatts had not been available over the past summer. It is important to recognize, however, that *the ERCOT report made no prediction* of the likelihood of blackouts next summer, and does not revise their projection of an adequate reserve margin for 2012. Moreover, ERCOT has other options for maintaining grid reliability including bringing some of the mothballed plants back into service for next summer, which they have done, and pursuing their initiatives to expand existing programs for demand reduction. It is clear to us that there are multiple tools available to ensure adequate grid reliability while securing the clean air benefits of the CSAPR rule.

Q8. The State of South Carolina has asked the Federal Energy Regulatory Commission to convene a State-federal panel—called a section 209 panel—to resolve specific reliability problems likely to result in that State because of the new EPA power-sector rules. Federal law allows for this type of dialogue in order to order to ensure adequate planning has occurred in advance of federal policy developments. Are you aware of this? Will EPA delay the implementation of CSAPR and related rules UNTIL this dialogue is complete?

A8. FERC's response to this petition is within FERC's authority and discretion. At this point we cannot know whether FERC will respond to this petition or in what time frame. In any event there is nothing in the petition that warrants any delay in the implementation of CSAPR or related rules. Based on its analysis, EPA does not believe that these rules will have any significant adverse effect on electricity reliability. There are numerous tools that can avoid localized reliability problems,

should they arise, including both demand-side and supply-side resources that can be used. In addition, the Clean Air Act itself authorizes mechanisms that can bring sources into compliance and ensure electricity reliability. For example, under EPA's Mercury and Air Toxics Standards (MATS), the Clean Air Act provides three years for all sources to comply; a fourth year as needed to complete installation of control technologies; and a pathway for reliability-critical sources to obtain up to a fifth year if unable to complete necessary retrofits or transmission upgrades by that time.

Questions Submitted by Representative Paul Broun

Q1a–1c. At the hearing, I asked you if EPA reached out to State regulators and public utility commissioners on the details of the final cross-State rule before it was issued. I asked you to provide such information for the record. (a) Please provide the dates and names of the contacts of all the State regulators EPA met with during each stage of the rule's promulgation. (b) Please provide the dates and names of the contacts of all the Public utility commissioners EPA met with during each stage of the rule's promulgation. (c) Please provide the dates and names of the contacts of all the companies EPA met with during each stage of the rule's promulgation.

A1a–1c. As part of the development of regulations, EPA seeks to invite public comment from all interested stakeholders. State agencies are among the important constituencies that we reach out to. In developing the power plant rules, EPA reached out to PUCs on several occasions, including the following:

- In December of 2009, Gina McCarthy travelled to Dallas to give a keynote address at the winter meeting of the National Association of Regulatory Utility Commissioners, (NARUC) an association comprised of the Commissioners from utility regulatory bodies in each State. In her talk, Ms. McCarthy spoke about the upcoming power plant rules and the role that the PUCs would play in implementation.

At that meeting, Ms. McCarthy also spoke at a breakfast for interested State commissioners in more detail about these subjects.

EPA participates in the Eastern Interconnection States Planning Council (EISPC). EISPC represents the 39 states and eight Canadian Provinces located within the Eastern Interconnection electric transmission grid. EPA staff gave a presentation on August 26, 2010, entitled "EPA's Power Sector Rulemakings."

In February 2011 at a NARUC winter meeting in Washington, DC, Ms. McCarthy spoke about the rules that would become CSAPR and MATS in some detail. She talked about the role that the State Commissioners would play in implementation of the rule including encouraging energy efficiency and demand response as a part of implementation, and encouraging early planning and action on the part of the power generating companies to assure timely compliance.

Ms. McCarthy also participated on a panel discussion for an audience of State regulators at the National Electricity Forum sponsored by NARUC and DOE on the impact of environmental regulations on the electricity system.

EPA staff participated in two Webinars sponsored by NARUC for State commissioners and their staffs. The purpose was to brief them on the power plant rules and to take their questions. These were held on September 24 and October 15 of 2010.

On August 30, 2011, EPA, in conjunction with DOE, organized a Webinar for State utility commissioners, air offices and energy offices in the Southeast to discuss EPA rules for the power sector.

EPA staff also participated in a series of three meetings organized by the Bipartisan Policy Center in conjunction with NARUC and Northeast States for Coordinated Air Use Management (NESCAUM) on the power sector regulations that were under development.

EPA did receive comments from some PUCs on CSAPR and from others on MATS. NARUC submitted comments on MATS as well.

We have also heard from local governments at hearings and in the public comment process. And we have reached out to the public power providers, which include municipal power providers. This effort has been ongoing beginning with meetings that Ms. McCarthy hosted early on in her tenure at EPA.

Questions Submitted by Representative Dana Rohrabacher

Q1a. You stated during questioning about Luminant's decision to close several lignite mines that "we believe [they] haven't thoroughly looked at all of their options." Please provide the analysis EPA conducted to determine that Luminant had not thoroughly looked at all of their options.

A1a. IPM, the electricity dispatch model used by EPA for analysis of CSAPR, is a multi-regional, dynamic, deterministic linear programming model of the U.S. electric power sector that generates optimal decisions. It determines the least-cost method of meeting energy and peak demand requirements over a specified period of time.

Luminant will make business decisions regarding compliance and operation in light of the rule. However, in addition to the optimal least-cost solution for Texas, we examined options that do not involve switching from lignite to lower sulfur subbituminous coal and found that cost-effective compliance is still achievable. In this complementary analysis, EPA constrained Texas units from increasing their blending of sub-bituminous coal beyond the level each unit reported to EIA for 2010. Under these conditions, Texas is still projected to meet its 2012 SO_2 assurance level using other cost-effective emission reduction strategies, including greater dispatch from lower-emitting generators, while still maintaining 2010 lignite blending levels.

Q1b. Why does EPA believe it knows how to run a utility company better than those currently running it?

A1b. EPA has not claimed that it should serve as a substitute for utility decision-making. In fact, the opposite is true—EPA has stressed that compliance and operational decisions are left entirely to the utilities, and EPA has designed CSAPR with ample flexibility to account for a variety of compliance strategies. However, EPA does have information about utility facilities and is in a position to make observations about potential feasible compliance options. In addition to EPA, other organizations such as UBS Securities have evaluated Luminant's options and concluded that the utility could comply with CSAPR without closing its coal-fired power plants. UBS Securities says, "We reiterate our belief Texas reliability is not threatened by CSAPR as we do not believe material capacity will be retired."[3]

Q1c. Please list the names of all EPA employees who have the expertise running a utility who would be able to make the determination that Luminant had not thoroughly looked at all of their options.

A1c. See response to 1b.

Questions Submitted by Representative Randy Neugebauer

Q1. You stated at the hearing that EPA had to look at pre-CAIR data because the Court vacated the rule and EPA needed to replace it. Please identify the exact part of the CAIR ruling that stated that EPA had to base the replacement regulation with the assumption that CAIR had never taken place.

A1. The Court determined that CAIR was fatally flawed and could remain in effect only as a stopgap measure until EPA could act to replace it. Thus, unlike most other regulatory requirements, the emission limitations contained in CAIR are only temporary. Moreover, the duration of these limitations is directly tied to CSAPR. CSAPR replaces CAIR. Thus, CAIR itself will be terminated for the SO_2, annual NO_2, and ozone-season NO_2 control periods when the emission limitations established in the final CSAPR for those control periods take effect. For this reason, emission reductions made to comply with CAIR cannot be treated as if they were emission reductions achieved to comply with rules and other enforceable requirements that establish permanent emission limitations. EPA takes reductions made to comply with permanent limitations into consideration when quantifying each state's baseline emissions for the purpose of analyzing whether its emissions significantly contribute to nonattainment or interfere with maintenance in another state. However, the unique legal status of CAIR and its replacement with CSAPR distinguish the emission reductions required by CAIR from those of other regulatory requirements. Since the limitations and emission reduction requirements in CAIR are temporary and will be terminated by CSAPR, they must be excluded from CSAPR's base case analysis. EPA's analysis properly recognized that, after CAIR is terminated, the emission limitations imposed by CAIR will cease to exist.

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[3] Analysts doubt Luminant's need to shut plants; available online: *http://www.chron.com/business/energy/article/Analysts-doubt-Luminant-s-need-to-shut-plants-2175119.php*.

On December 30, 2011, the U.S. Court of Appeals for the District of Columbia Circuit stayed the Cross-State Rule pending resolution of litigation challenging it. The Court order imposing the stay did not discuss the merits of the challenges. EPA believes the Cross-State Rule is legally sound and will continue defending it vigorously. While the stay is in effect, power plants will not have to comply with the Cross-State Rule until the stay is lifted. Pursuant to the Court's order, the Clean Air Interstate Rule (CAIR), which was to be replaced by the Cross-State Rule as of January 1, 2012, is now in effect.

Q1a. Doesn't the fact that the Court stated EPA could keep CAIR in place until a replacement rule was finalized oppose the argument that the Court intended EPA to promulgate a replacement rule as if the original CAIR rule was never implemented?

A1a. See response to 1.

Q2a. In the hearing, when I was asking you about the Court's decision to remand the CAIR rule and if the Court had said you could not take into account the gains made under CAIR, you stated that you did not know "what context we would take credit for gains or not." The gains I was referring to were the gains made in reducing pollution under the CAIR rule. Did EPA take into account the significant amount of reductions in pollution attributable to CAIR compliance or not?

A2a. See response to 1.

Q2b. Did EPA start modeling runs from the current or most recent three years of monitoring data when determining what current emission levels were like and how much needed to be reduced?

A2b. EPA used monitoring data for the period 2003 through 2007 as the starting point for projecting ozone and PM_2 concentrations to 2012 and 2014. The air quality projections were based on modeling of 2005 base-year emissions and 2012 and 2014 forecast emissions. The 2012 and 2014 base-case emissions account for reductions associated with all existing enforceable State and federal emissions control programs (with the exception of CAIR), consent decrees, and known plant closures. The rationale for EPA's methodology for projecting future air quality is described in the CSAPR preamble.

Q3a. You stated that EPA is "using a combination of both current monitoring data as well as modeling data to understand what the world would have looked like without CAIR because the world will be without CAIR when the cross-state rule comes in place." Does this mean EPA assumed that every power plant that installed pollution control equipment will automatically turn it off or dismantle it so their emissions would mimic what they were before CAIR was in place?

A3a. EPA assumed that control equipment would still exist but that the statutory requirements of CAIR to reduce emissions and operate the controls would no longer be in effect.

Q3b. If this was not EPA's assumption, please provide an explanation as to why EPA believed it needed to model the emissions of these plants in the absence of CAIR, or rather, as if CAIR never existed.

A3b. See response to 1.

Q4a–4d. At the same time, you also stated that EPA "modeled what those monitors would have looked like using both information from the monitor itself as well as our modeling data to make those adjustments." (a) Does this mean that EPA used modeling data, and hypothetical data of what EPA assumed emissions would have been without CAIR based on 2005 monitoring data, and put that into a model in order to come up with a state budget? (b) Is using data that results from another model, rather than a monitoring station an acceptable, peer-reviewed practice? (c) Please provide the EPA protocols that permit the use of modeled data as an input for another model instead of the use of current, monitoring data. (d) Please provide the references in the scientific literature that peer reviews and endorses the concept of using modeled data as an input for another model rather than data obtained through monitoring.

A4a–4d. The use of meteorological and emissions models to provide inputs to air quality models is a well-established practice. EPA and States have been using models to inform and support air quality decisions for many decades. EPA uses models in the development and evaluation of regulations, and they are used by State air

pollution control agencies in the development of State Implementation Plans for attainment demonstrations. Models are needed in order to determine air quality concentrations and source contributions for future time periods as well as to determine the expected air quality impacts of particular emissions control scenarios. In addition, models are needed to assess the impacts on air quality expected from emissions control scenarios, like CSAPR.

EPA used monitored air quality during the period 2003 through 2007 coupled with air quality photochemical modeling for 2005 and 2012 to calculate eight-hour ozone concentrations and annual and 24-hour PM_2 concentrations for the CSAPR 2012 baseline. This air quality modeling, in part, relied upon inputs from emissions forecasts for electric generating units (EGUs) and onroad and nonroad mobile sources that were based on emissions models specific to each of these sectors. The air quality projections for 2012 were used to identify monitoring sites that are expected to be nonattainment and/or have maintenance problems for the ozone or particulate matter NAAQS in 2012 without the emission reductions from CAIR. Upwind States that contribute one percent or more of the NAAQS to 2012 nonattainment and/or maintenance sites were considered for State budgets as part of CSAPR. To determine the State emission budgets, EPA identified a cost threshold of $500/ton for ozone-season nitrogen oxides (NO_2) control for all States required to reduce ozone-season NO_2 emissions. EPA also identified a cost threshold of $500/ton for annual NO_2 control for all States required to reduce annual NO_2 emissions and a cost threshold of $500/ton of sulfur dioxide (SO_2) starting in 2012 for all States required to reduce SO_2 emissions and $2,300/ton for the Group 1 States starting in 2014. EPA used these cost thresholds to quantify each State's emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind. Using the Integrated Planning Model (IPMv4.10) to model EGU emissions, EPA based State emission budgets on the State level emissions that remained at the corresponding cost thresholds.

Current monitoring data alone cannot be used to determine future air quality. A key consideration in our projection methodology is the use of monitoring data to anchor the design value projections to the future. The modeling is used in a relative sense by multiplying the modeled percent change in ozone or PM_2 species concentrations by the base-year monitoring data. The protocols for this type of air quality modeling approach are described in the EPA guidance document: *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_2, and Regional Haze* (EPA, 2007 *http://www.epa.gov/ttn/scram/guidance/guide/final-03-pm-rh-guidance.pdf*). EPA and States have been using the recommended projection methodology for national rules and State ozone and PM_2 SIPs over the last decade. The following published papers further describe and evaluate methods for coupling modeling and monitoring data to project the impacts of emissions changes on air quality.

2001: Hogrefe, C. and S.T. Rao, "Demonstrating Attainment of the Air Quality Standards: Integration of Observations and Model Predictions into the Probabilistic Framework." *J. Air Waste Manag. Assoc.*, 51, 1060–10722.

2004: Sistla, G., C. Hogrefe, W. Hao, J.-Y. Ku, E. Zalewsky, R.F. Henry and K. Civerolo, "An Operational Assessment of the Application of the Relative Reduction Factors (RRF) in Demonstration of Attainment of the 8-hr Ozone National Ambient Air Quality Standard (NAAQS)." *J. Air Waste Manag. Assoc.*, 54, 950–959.

2005: Jones, J.M., C. Hogrefe, R.F. Henry, J.-Y. Ku, and G. Sistla, "An Assessment of the Sensitivity and Reliability of the Relative Reduction Factor (RRF) Approach in the Development of 8-hr Ozone Attainment Plans," *J. Air Waste Manag. Assoc.*, 55, 13–19.

2008: Hogrefe, C., K.L. Civerolo, W. Hao, J.-Y. Ku, E.E. Zalewsky, and G. Sistla, "Rethinking the Assessment of Photochemical Modeling Systems in Air Quality Planning Applications," *J. Air Waste Manag. Assoc.*, 58, 1086–1099.

2010: Yunhee Kim, J.S. Fu, T.L. Miller, "Improving ozone modeling in complex terrain at a fine resolution—Part II. Influence of schemes in MM5 on daily maximum 8-h ozone concentrations and RRFs (Relative Reduction Factors) for SIPs in the nonattainment areas," *Atmospheric Environment*, Vol. 44, Issue 17, Jun 2010, pg 2116–2124.

Questions Submitted by Representative Michael McCaul

Q1. During the hearing, I stated that I was concerned that EPA was treating Texas unfairly, a concern you essentially said was unfounded. How many States received a State budget to comment on in the proposed transport rule? Was Texas

given a State budget to comment on in the proposed transport rule? How does EPA consider its treatment of Texas to be fair when all the other States in the proposed rule did in fact, receive a State budget?

A1. EPA did explicitly request comment on the option of including Texas in the final rule. While Texas was not included in the State budget tables in the proposal, Texas sources had the same information as other sources on how EPA was designing the final rule, including how downwind receptors would be addressed, what level of emissions constitutes "significant contribution," what remedy EPA would and should be using for reducing emissions contributing significantly to poor air quality downwind, how allowances should be allocated, and all other key issues. In fact, the Agency received comments on the proposed rule and associated notices of data availability from Texas sources, regulators, and the Texas Commission on Environmental Quality (TCEQ) that are comparable to comments received from other States' agencies and sources. EPA responded to those comments by updating our data and improving our modeling, just as we did in response to comparable comments from other States and sources. The comments submitted by Texas stakeholders on EPA's emissions inventory are the basis of the final rule's approach on Texas, including the Texas State budgets included in the final CSAPR. The transparent presentation of methodologies and data for all States, including Texas, demonstrated how EPA determined State reduction requirements in the proposal. Texas and individual companies like Luminant had all the data used by EPA to calculate State budgets and they could (and did) use that information to determine what Texas' budget would have been under the proposal.

Q2. You stated that Iowa, Kansas, Michigan, Missouri, Oklahoma, and Wisconsin were provided a supplementary notice on their inclusion in the rule based on new data. Was EPA's decision to include Texas in the annual programs in the finalized rule based on new modeling information that was not included in the draft rule? If so, how come EPA does not treat the new modeling information that determined Texas' inclusion the same as the new data that is determining these other six States' inclusion?

A2. The new data that necessitated that a supplementary notice be made for Iowa, Kansas, Michigan, Missouri, Oklahoma, and Wisconsin was that the States were given no notice that their ozone-season NO_2 emissions could lead to ozone pollution contributions at, or above, the one percent contribution threshold to one of two specific receptor-monitors in either Allegan, MI, or Harford, MD. These monitors were newly identified in the air quality modeling for the final rule to have problems ″maintaining″ the NAAQS in the final. These monitors were estimated to be in attainment with the NAAQS in the air quality modeling for the proposal. In addition, for several of the States, specifically, Missouri, Iowa, and Wisconsin, they were not modeled to contribute to any receptors in the proposal that had difficulty attaining or maintaining the NAAQS. The receptors that Oklahoma, Kansas, and Michigan contributed to in the proposal were modeled to be in attainment in the final.

This contrasts with Texas, where the public was able to identify the specific receptor-monitor that Texas contributed to in both the proposed and final rules. This monitor was consistently modeled to have problems attaining and maintaining the NAAQS in both the proposal and the final rule. In both the proposal and final rule, the maximum annual PM_2 contribution from Texas to a nonattainment and/or maintenance receptor was to this monitor. In the proposal, EPA identified that under the "remedy" control scenario that emissions from Texas could lead to the contribution from Texas exceeding the threshold. In the proposal, EPA specifically took comment on whether Texas should be included in the rule. In the final rule, as a result of comments made by the public, the base case SO_2 emissions from Texas were modeled to be at levels near the level of the proposed "remedy" control scenario. Thus, it is not surprising that in the final air quality modeling that Texas' contribution is at, or above, the one percent contribution threshold to the specific receptor.

Questions Submitted by Representative Steven Palazzo

Q1. The Clean Air Act is based upon cooperative federalism, a model that involves the Federal Government setting basic air standards and the States developing specific State Implementation Plans. According to "The Plain English Guide to the Clean Air Act" from your website, "It makes sense for State and local air pollution agencies to take the lead in carrying out the Clean Air Act. They are able to develop solutions for pollution problems that require special understanding of local industries, geography, housing, and travel patterns . . . " Why

can't States develop their own State Implementation Plans for this rule for 2012?

A1. On December 30, 2011, the U.S. Court of Appeals for the District of Columbia Circuit stayed the Cross-State Rule pending resolution of litigation challenging it. While the stay is in effect, the EPA will not be implementing the Rule, and power plants will not have to comply with it until the stay is lifted. Pursuant to the Court's order, the Clean Air Interstate Rule (CAIR), which was to be replaced by the Cross-State Rule as of January 1, 2012, is now in effect. The Court order imposing the stay did not discuss the merits of the challenges. EPA believes the Cross-State Rule is legally sound and will continue defending it vigorously.

Q2. In their Regulatory Impact Analysis for this rule, EPA admits that "[i]n the short run . . . industries are able to pass on $0.7 billion (in 2007 dollars) of the Transport Rule's costs to U.S. households in the form of higher prices." They also admit that the rule will make U.S. products less competitive, in acknowledging that as "[t]he price of goods produced in the United States increase, domestic exports decline, and domestic production is replaced to a certain degree by imports." Does this Administration condone a rule that will punish the only bright spot in our economy—exports—and increases consumer costs?

A2. EPA carefully considered the economic impacts of the CSAPR in developing the rule and developed a detailed in-depth Regulatory Impact Analysis (RIA)[4] for this rulemaking outlining the benefits, costs, and economic impacts anticipated for this rule. It is necessary to look at the total picture of economic consequences expected for the rule to make an assessment of impact to consumers and the economy. In the RIA, EPA reports that the monetary estimates of public health benefits for the CSAPR range from approximately $120 to $280 billion annually while the annual costs of the rule to society are approximately $0.8 billion in 2014, indicating that this regulation is providing public health benefits that vastly outweigh its costs. Residents of the affected areas of the U.S. will benefit from decreased premature mortalities, fewer hospital admissions for cardiovascular and respiratory ailments, a drop in emergency room visits for asthma, a reduction in school and work loss days, and a variety of other health benefits, as well as improvement in visibility in the areas where people live, work and play.

The EPA's economic analysis suggests that the $0.8 billion costs of the rule will be shared by households, in the form of higher-priced electricity rates, and by producers in terms of reduced production. However, it is important to recognize that these market impacts are relatively small for this rule. For example, consumers on average will experience an increase of 0.8 percent in retail electricity prices in the region benefitting from the CSAPR in 2014. While the small projected increase in electricity prices may have some effects on the economy in terms of secondary market impacts, these impacts are expected to be minimal, given how small the price effects are. The impacts on exports in particular are expected to range from a decline of 0.001 percent (one one-thousandth of one percent) for the transportation sector to a decline of 0.009 percent (nine one-thousandths of one percent) for the nonmetallic minerals sector annually.

Questions Submitted by Representative Randy Hultgren

Q1. I understand there will not be tangible environmental benefits (separate from CAIR) from the Rule until 2014. Is that correct?

A1. On December 30, 2011, the U.S. Court of Appeals for the District of Columbia Circuit stayed the Cross-State Rule pending resolution of litigation challenging it. The Court order imposing the stay did not discuss the merits of the challenges. EPA believes the Cross-State Rule is legally sound and will continue defending it vigorously. While the stay is in effect, the EPA will not be implementing the Rule, and power plants will not have to comply with it until the stay is lifted. Pursuant to the Court's order, the Clean Air Interstate Rule (CAIR), which was to be replaced by the Cross-State Rule as of January 1, 2012, is now in effect.

Benefits of CSAPR will begin immediately upon implementation and will be realized in every year that CSAPR reduces emissions. Beyond reducing emissions from the no-CAIR baseline immediately, the rule will expedite emissions reductions as owners and operators make immediate investments to prepare for 2014 and beyond.

[4] *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*. U.S. EPA Office of Air and Radiation. June 2011. Available at: *http://www.epa.gov/airtransport/pdfs/FinalRIA.pdf*.

EPA did not estimate the benefits for years prior to 2014, but the Agency's emissions modeling for CSAPR shows greater emission reductions in 2012 than 2014 due to baseline emissions—emissions from which the rule is able to reduce—being higher in 2012 than 2014. Therefore, the health benefits in 2012 would be larger than the estimated annual benefits for 2014 of $120 to $280 billion.

Q2. Under the Rule, many companies get far more allowances between 2012–13 than they need to operate—giving them a windfall profit. How does giving windfalls to certain companies help the environment?

A2. The level of emissions is what provides environmental and human health benefits, not the allocation of allowances. Once the emissions levels are determined, the allocation of allowances is simply an accounting exercise that makes implementation possible. In other words, allowances are the currency used for trading program implementation, but their distribution has no bearing on environmental protection.

Regarding whether certain entities receive "far more allowances than they need to operate" the allocation method utilized in the rule limits the allocations allotted to any individual unit based on historic emissions. In other words, no unit receives more emission allowances than the amount that would cover their historic emissions. Due to this limitation, sources are not provided far more emission allowances than they could reasonably emit.

Q3. Some companies get far fewer allowances between 2012–13 than they need. How does that help the environment?

A3. See response to 2.

Q4. How many coal plants do you expect to shut down because of this Rule? What kind of analysis on consumer price impacts has EPA done on the Final Rule?

A4. Because of the flexibility afforded under CSAPR's market-based, allowance trading system, this rule does not force retirements nor does it require specific control strategies. Retiring a plant is a business decision made by plant owners and operators based on a range of market forces. EPA analysis indicated that sources could meet both the annual and ozone-season requirements in 2012 by running existing controls (or those expected to come online in the near future), making changes in dispatch (how electricity is distributed across units at a facility) including shifting generation from higher-emitting units to lower-emitting units, fuel switching, or buying allowances. For NO_2 requirements, EPA also projected some retrofitting of low NO_2 burners, installation of overfire air systems, and making combustion control improvements. EPA projected that approximately 4.8 GW of additional coal-fired generation may be removed from operation by 2014 with CSAPR, a small portion of the more than 300 GW of total coal capacity and 1,100 GW of installed capacity expected to be online by 2014. Units taken out of service are typically the least efficient and oldest units that are operated infrequently.

EPA used a multimarket partial equilibrium model to estimate the economic impacts of the rule to industry sectors outside the electric power industry and social costs, including electricity prices, associated with the rule. See Chapter 8 of the Regulatory Impact Analysis for more detail: *http://epa.gov/crossstaterule/pdfs/FinalRIA.pdf.*

Q5a–5b. "CSAPR is one of a number of rulemakings which power generators will simultaneously be forced to comply with between 2012 and 2016. Has EPA done an analysis of the costs of the numerous regulations; its impact on prices for electricity; and the impact of the additional natural gas which utilities will need to use to keep the lights on?" (a) If not, given the disparate impact the higher prices for electricity and natural gas and the disparate impact on those least able to absorb price increases as seniors and minorities, don't you think the Congress is entitled to know the cumulative cost, and would you recommend that the Administration support the TRAIN Act? (b) If not, please have your staff compile a cumulative analysis on the effects of those rules and share it with this Committee.

A5a–5b. For each rulemaking that the Agency undertakes that exceeds a certain cost, the EPA is required to perform a detailed cost-benefit analysis to support any particular regulatory action. This analysis includes a detailed assessment of the estimated economic impacts and benefits. A draft Regulatory Impact Assessment (RIA) is presented and available for public comment at the time a proposed rule is issued. As each rule is promulgated and finalized, we incorporate the emission reductions into the "baseline" for our analytical efforts, to the extent that it is feasible and practicable to do so. For example, the RIA for MATS incorporates the estimates

from the final CSAPR into its baseline, so that estimated impact of MATS could be viewed beyond those of the proposed CSAPR.

In particular, EPA has conducted resource adequacy analyses within the context of EPA air rules, which can be found in the RIAs and corresponding technical support documents. In the regulatory development process for the CSAPR and MATS, EPA conducted extensive analyses on the impacts that these rules would have on power generation incremental to baselines without these rules, including looking at impacts on both the regional and national levels. On a Nationwide average, as shown in the RIA for the final CSAPR, the EPA estimates that electricity prices paid by consumers may increase incrementally over the baseline by 0.8 percent by 2014 due to this regulatory action. This electricity price increase is associated with increased health benefits to society that range from $120 to $280 billion annually (in 2007 dollars) by 2014. The annual costs of the rule to society, inclusive of electricity price increases, are approximately $0.8 billion in 2014. For MATS, EPA assessed the impacts of MATS implementation incremental to a baseline that included the CSAPR. This assessment, as shown in the RIA for the final MATS, found that on a Nationwide average, electricity prices paid by consumers may increase incrementally over the baseline by three percent by 2016. This price increase is associated with increased health benefits to society ranging from $37 billion to $90 billion annually (in 2007 dollars) by 2016. The annual costs of the rule to society, inclusive of electricity price increases, are approximately $9.6 billion in 2016. These analyses indicate that these regulations will provide health benefits to society that vastly outweigh the costs of implementing these rules. Additionally, despite the minor incremental increase in electricity prices under these rules, electricity prices are estimated to be lower than 1990 levels and to stay well within normal historical fluctuations.

Questions Submitted by Representative Dan Lipinski

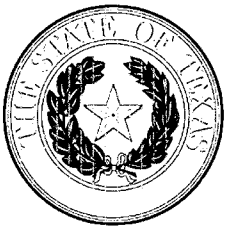
Q1. Could you quantify the percentage of the pollutants in Illinois that actually come from other States? Can you estimate how much it would costs to clean these up without looking at the out-of-State pollutants and compare that to the costs of implementing the Cross-State Air Pollution Rule?

A1. As part of the development of the Cross-State Air Pollution Rule (CSAPR), EPA quantified the contributions from SO_2 and NO_2 emissions to annual and 24-hour PM_2 at monitoring sites in Illinois that are projected, based on EPA's CSAPR modeling, to be nonattainment or have maintenance problems in the 2012 base case for either or both of these NAAQS. EPA calculated the contributions of sulfate and nitrate particles at each of these receptors from SO_2 and NO_2 emissions in Illinois as well as from SO_2 and NO_2 emissions in States upwind of Illinois, individually. The percent of the total contribution to sulfate plus nitrate that is attributable to emissions in upwind States at each projected 2012 PM_2 nonattainment and maintenance site in Illinois is provided in the following table. Additional information on these data can be found in the Air Quality Modeling Final Rule Technical Support Document (*http://www.epa.gov/crossstaterule/pdfs/AQModeling.pdf*)

State	County	Monitoring Site	Percent of Contribution to Annual Sulfate Plus Nitrate PM2.5 Coming from Upwind States*
Illinois	Madison	171191007	77%
Illinois	Cook	170310052	67%
Illinois	Cook	170311016	73%
Illinois	Cook	170312001	77%
Illinois	Cook	170313301	71%
Illinois	Cook	170316005	65%
Illinois	Madison	171191007	81%
Illinois	Madison	171190023	81%

*EPA's contribution analysis for the CSAPR was based upon contributions of sulfate and nitrate PM2.5 from SO2 and NOx emissions, respectively. EPA did not evaluate the contributions of other PM2.5 components, including organic carbon and elemental carbon, as part of the CSAPR.

The CSAPR was promulgated under the "good neighbor" provision of the Clean Air Act, which explicitly addresses emissions that are transported across State boundaries, rather than local emissions. It is important to note that the emission contributions shown in the table above could not be addressed through local controls alone and the trading provisions included in the rule incentivize the regulated community to identify the most cost-effective compliance options available. EPA's analysis of the SO_2 and NO_2 reductions required under CSAPR found that these reductions are most cost effectively obtained from the power sector relative to the costs of obtaining similar reductions from other source categories.



June 9, 2011

The Honorable Cass R. Sunstein
Administrator
Office of Information and Regulatory Affairs
Office of Management and Budget
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, N.W.
Washington, D.C. 20503

Re: Clean Air Transport Rule, Docket ID No. EPA—HQ-OAR-2009-0491

Dear Administrator Sunstein:

On behalf of the citizens of the state of Texas, we request your attention to specific issues associated with the Clean Air Transport Rule (CATR), an EPA rule now before your office for consideration that is scheduled for final approval in late July 2012. Despite significant concerns raised during the comment period, we understand that the final rule may include Texas in CATR. This inclusion would not be limited to ozone effects as proposed, but also for sulfur dioxide (SO2) emission contributions to concentrations of ambient particulate matter of less than 2.5 microns (PM2.5). This rule, if we correctly understand its final form, puts at risk the economic future of power generation and those dependent on affordable electricity in Texas. It also places vulnerable citizens at a significant health and safety risk. For example, elderly and low-income populations whose health and welfare are dependent on reliable energy would face significant adverse consequences of such a rule. While air pollution regulation is certainly necessary to protect the health of our citizens, the elements of this regulation pertaining to Texas' SO2 emissions are not necessary for public health protection, and will only result in negative consequences.

The CATR, as proposed in August 2010 by EPA, did not include Texas in the annual program for nitrogen oxides (NOx) and SO2 emission reductions. EPA's proposed rule acknowledges that Texas power plant emissions, as modeled by EPA, do not exceed the threshold for inclusion in the PM2.5 portion of CATR. Within this rule, EPA has developed a questionable scenario under which CATR would make higher sulfur coals more cost effective than lower sulfur fuels. The cascading result of this price point is that Texas' SO2 emissions would cause an air quality effect exceeding the threshold. EPA uses this scenario to take comment on whether Texas should be included in the program as a "group 2" state. EPA conjectures,

> [I]**f** . . . price effects took place and **if** the rule is finalized as proposed, sources in states not covered by the proposed rule **might** choose to use higher sulfur coals.

> Increased uses of such coals **could** thus increase SO2 emissions in those states.[1] (Emphasis added.)

Please note that in no part of this 256-page rule (or its subsequent three notices) does the EPA provide Texas with proposed emission limits, allocation budgets, or specify proposed requirements for Texas. Further, the rule does not address how Texas' inclusion would impact other states.

Procedurally, this rule satisfies neither the Administrative Procedure Act nor the President's Executive Order calling for adequate notice and participation from affected parties. We draw your attention to Executive Order 13563, "Improving Regulatory Review." In a recent speech to the New York University School of Law[2], you noted that "President Obama set out a distinctive approach to federal review" that calls for public participation. "Before rules are finalized, or even proposed, agencies are directed to 'seek the view of those who are likely to be affected including those who are likely to benefit from and those who are potentially subject to such rulemaking.'"[3]

Second, we draw your attention to the technical inadequacy of the rule. Consider that the inclusion of Texas relies first on the assumption from EPA's models that the cost of low sulfur coal will increase and the cost of high sulfur coal will decrease. The second assumption on which their argument relies is the notion that switching coal types is not only logistically possible, but also legally possible. All coal-fired power plants in Texas operate under state and federal permits that have explicit restrictions on fuel types as well as SO2 emission limits. Significant emission increases resulting from fuel switching would require permit modifications that would certainly require an assessment and authorization of additional SO2 emissions. EPA ignores or disregards the siguificant effort that would be required to obtain this type of large-scale permit modification, especially in light of the recent revision of the SO2 National Ambient Air Quality Standard (NAAQS). In the TCEQ comments on the proposed rule, the agency also identified significant mischaracterizations of the current fuel mix for at least four facilities in Texas. This type of flawed logic and inaccurate technical analysis should not be used as a basis for any rule, much less under the hypothetical scenario that EPA devises as a means to include Texas in this program.

Finally, we point to the likely unintended consequences of this regulation. As you yourself have noted, the Executive Order calls for "*careful analysis of the likely consequence of regulation,* including consideration of underlying science, or alternatives, of costs and benefits and of simplified, harmonized, and flexible methods for achieving regulatory goals."[4] Because the possibility of including Texas was not adequately fleshed out as a part of the rule proposal, EPA certainly did not adequately assess the impacts of this rule on Texas, nor did Texas have the opportunity to comment on the possible consequences.

We anticipate that the proposal would require significant SO2 emission reductions to occur in a very short time period in order to comply with the proposed effective date of January 2012. Our concerns pertain to both the timing and depth of the emission reductions. If coal-fired power plants in Texas are faced with these significant emission reductions, decisions regarding the power generation of these plants may result in considerable reductions in the safety margins of power operation of this state. Said differently, the strong disincentives for operation of coal-fired power plants would undoubtedly result in significant cost to energy consumers including the possible shutdown of base-load units. This economic "ripple effect" has certainly not been fully considered by EPA. Again, because the proposal did not contain any specifics on how Texas would be regulated under this scheme, we are not able to fully evaluate the significant effects, such as shutdowns, of this rule.

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[1] See 75 FR 45284.

[2] "Executive Order 13563: Economic Growth and Public Protection" Speech delivered at New York University School of Law, April 4, 2011, Cass R. Sunstein.

On Friday, June 3, 2011, you gave testimony at the "The Views of the Administration on Regulatory Reform: An Update" hearing, held by the U.S. House of Representative's Subcommittee on Oversight and Investigations. At this hearing you assured Texas Congressman Joe Barton that because the proposed rule "has 100 million dollars in annual cost or a significant impact on a sector area, then it counts as significant. So if you like, I will definitely look into it." We respectfully ask that you fully and carefully consider the likely consequences of this rule, and in particular the application of the PM2.5 transport portion to Texas, as promised. The resulting effect of increased cost of power and power shortages, such as rolling blackouts, would not only jeopardize the personal and economic health of Texas citizens, but also endanger lives. Whether it is cost-prohibitive to generate electricity or electricity is simply unavailable, Texas and her citizens will be placed at significant risk if EPA pursues inappropriate regulation of SO2 in Texas under the guise of PM2.5 transport.

For your convenience, we have attached our comments on the proposed rulemaking and subsequent data proposals. We appreciate your consideration on this urgent manner and are available for discussion if needed.

Sincerely,

Bryan W. Shaw

Chairman Bryan W. Shaw, Ph.D.
Texas Commission on Environmental Quality

Barry T. Smitherman

Chairman Barry T. Smitherman
Public Utility Commission of Texas

BS/sh

Enclosures

cc: The Texas Delegation

ERCOT

Impacts of the Cross-State Air Pollution Rule on the ERCOT System

September 1, 2011

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Executive Summary

ERCOT was asked by the Public Utility Commission of Texas (PUCT) in the Open Meeting on July 8, 2011, to evaluate the impacts of the Cross-State Air Pollution Rule (CSAPR) on the reliability of the ERCOT grid. The ERCOT analysis included meetings with representatives of the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency, review of the compliance strategies provided by the owners of coal-fired resources in the ERCOT region, and consolidation of these compliance strategies for purposes of evaluating system-wide impacts.

Based on the information provided by the resource owners, ERCOT developed three scenarios of potential impacts from CSAPR. The first scenario, derived directly from the compliance plans of individual resource owners, indicates that ERCOT will experience a generation capacity reduction of approximately 3,000 MW during the off-peak months of March, April, October and November, and 1,200 – 1,400 MW during the other months of the year, including the peak load months of June, July and August. Scenario 2, which incorporates the potential for increased unit maintenance outages due to repeated daily dispatch of traditionally base-load coal units, results in a generation capacity reduction of approximately 3,000 MW during the off-peak months of March and April; 1,200 – 1,400 MW during the remainder of the first nine months of the year; and approximately 5,000 MW during the fall months of October, November and possibly into December. Scenario 3 includes the impacts noted for Scenario 2, along with potential impacts from limited availability of imported low-sulfur coal. This scenario results in a generation capacity reduction of approximately 3,000 MW during the off-peak months of March and April; 1,200 – 1,400 MW during the remainder of the first nine months of the year; and approximately 6,000 MW during the fall months of October, November and possibly into December.

When the CSAPR rule was announced in July, it included Texas in compliance programs that ERCOT and its resource owners had reasonably believed would not be applied to Texas. In addition, the rule required implementation within five months – by January 2012. The implementation timeline provides ERCOT an extremely truncated period in which to assess the reliability impacts of the rule, and no realistic opportunity to take steps that could even partially mitigate the substantial losses of available operating capacity described in the scenarios examined in this report. In short, the CSAPR implementation date does not provide ERCOT and its resource owners a meaningful window for taking steps to avoid the loss of thousands of megawatts of capacity, and the attendant risks of outages for Texas power users.

If the implementation deadline for CSAPR were significantly delayed, it would expand options for maintaining system reliability. ERCOT is advancing changes in market rules – such as increasing ERCOT's ability to control the number and timing of unit outages and expanding demand response – that could help avert emergency conditions. These measures will not, however, avoid the losses in capacity due to CSAPR that increase the risk of such emergencies. As discussed in this report, those losses will, at best, present significant operating challenges for ERCOT, both in meeting ever-increasing peak demand and in managing off-peak periods in 2012 and beyond.

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Impacts of the Cross-State Air Pollution Rule on the ERCOT System

1. Introduction

ERCOT was asked by the Public Utility Commission of Texas (PUCT) in the Open Meeting on July 8, 2011, to evaluate the impacts of the Cross-State Air Pollution Rule (CSAPR) on the reliability of the ERCOT grid. The final language of the CSAPR was released by the U.S. Environmental Protection Agency (EPA) on July 6, 2011, and was published in the Federal Register on August 8, 2011.

The CSAPR is one of several environmental rules proposed by EPA that affect electric generation. The CSAPR includes three separate compliance programs: an annual SO_2 program, an annual NO_X program, and a peak season NO_X program (for emissions during the peak ozone season of May – September). In the proposed rule (then known as the Clean Air Transport Rule [CATR]), Texas was only included in the peak season NO_X program. Based on the proposed rule, an ERCOT study completed on June 21, 2011, evaluating the expected impacts of the pending regulations, did not include any incremental impacts from the CATR on the ERCOT system.

In the CSAPR rule actually adopted by the EPA, however, Texas is included in all three compliance programs - the peak season NO_X program, the annual NO_X program, and the annual SO_2 program. The implementation date for the CSAPR is January 1, 2012.

In order to accomplish this review, ERCOT undertook several activities.

- ERCOT reviewed documentation published on the EPA web-site regarding the rule.
- ERCOT met with representatives of the Texas Commission on Environmental Quality (TCEQ) and the EPA.
- ERCOT consulted with environmental experts from several of the generating entities in the ERCOT region whose facilities were likely to be affected by the CSAPR regulations. The purpose of these meetings was to ascertain the likely compliance plans for those resources owners.
- These compliance plans were aggregated so that ERCOT could evaluate the likely impacts to grid reliability.

2. Rule Description

The CSAPR is being implemented in order to address the interstate transport of sulfur dioxide (SO_2) and nitrogen oxides (NO_X). The rule is a replacement for the Clean Air Interstate Rule (CAIR), which was implemented in 2005. The CAIR was remanded to the EPA by the United States Court of Appeals for the District of

Columbia Circuit in 2008. In the CAIR program, Texas was regulated for particulate matter emissions (annual NOX and SO2 emissions).

Under CSAPR, generating units in Texas will be regulated for annual emission of SO2 and NOX, as well as emissions of NOX during the peak season (May – September). Each unit will be given a set allocation of emissions allowances. At the end of the calendar year, resource owners must turn in one allowance for each ton of emissions or be subject to penalties. Intra-state trading of allowances between resource owners is unlimited in the rule. However, interstate trading of allowances is capped – no state can have annual net imports of allowances of more than approximately 18% of the total state allocation of allowances. If this limit is exceeded, any resource owner that contributed to the excessive use of imported allowances will be subject to penalties.

Resource owners in Texas are permitted to trade SO2 allowances with resource owners in Kansas, Nebraska, Minnesota, Alabama, Georgia and South Carolina. Trading of NOX emissions will be allowed with states as depicted on the following map.

Figure 1: States Included in the Cross-State Air Pollution Rule

Resource owners who have emissions in excess of their annual allocations will have their next year's allocations reduced by one allowance for each excess ton of emissions, plus a penalty of two additional allowances for each excess ton. In addition, the Clean Air Act includes provisions for civil lawsuits in the event of non-compliance. Non-compliance penalties under the CSAPR program are substantial, and can reach up to $37,500 per violation per day. In addition to program penalties, failure to comply can subject entities to the risk of civil penalties, lawsuits by private parties, and criminal liability.

3. Compliance Options

Resource owners have several near-term compliance options to meet the emissions limits established by the CSAPR. In order to reduce SO_2 emissions, lower sulfur content fuel can be used. In the case of plants that are currently burning lignite coal, or a mix of lignite and sub-bituminous coals (such as coal from the Powder River Basin [PRB] region of northwest Wyoming), increasing the use of low sulfur western coal will reduce SO_2 emissions. Units that currently are being fueled exclusively by western sub-bituminous coals can be switched in whole or in part to ultra-low-sulfur western coals.

In the near-term, the demand for lower sulfur coal is expected to exceed the mining capacity and/or the railroad capacity necessary to deliver the coal to Texas. In addition, the use of lower sulfur coals can result in unit capacity derates due to increased heat content of the fuel. Unit modifications to resolve any such derates may require modifications to the unit's air emissions permit.

Existing SO_2 control equipment, such as wet-limestone scrubbers, can be utilized more frequently than is current practice, and in some cases the effectiveness of this equipment can be increased. This option only applies to a small subset of coal plants in ERCOT, and the use of scrubbers results in a decrease in maximum net output from the affected units of about 1 to 2 percent.

The use of dry sorbent injection is another compliance option to reduce SO_2 emissions. Dry sorbent compounds, such as sodium bicarbonate and trona, can be injected into a flue duct where they react with SO_2 (and acid gases) to form compounds that can be removed using an electrostatic precipitator (ESP) or baghouse. Resource owners exploring this option anticipate that it will provide a 25 – 30% reduction in emissions of SO_2 on units without existing SO_2 control equipment. The use of dry sorbent injection may require public notice or air permit modification.

Most of the low cost options to reduce NO_X emissions have been utilized to comply with existing air quality regulations. Further reductions will likely require high capital cost unit retrofits, including the addition of selective non-catalytic reduction (SNCR) or selective catalytic reduction (SCR) technologies. Any such unit changes would require several years for permitting, design and construction.

The remaining option for reducing SO_2 and NO_X emissions will be reducing unit output, either through dispatching units down to minimum levels during the off-peak hours and up to maximum capacity during peak afternoon hours, or through extended unit outages. Some of the traditionally base-loaded units will

experience increased maintenance outages due to this daily dispatch pattern. These same base-load units have long start-up requirements, which could make them unavailable for operation during some off-peak extreme weather events.

4. Study Methodology

In order to evaluate the potential impacts associated with implementation of the CSAPR, ERCOT met with representatives of the TCEQ and the EPA to evaluate details of the rule and its implementation. ERCOT also reviewed compliance strategies provided by the owners of coal-fired resources in the ERCOT region. ERCOT consolidated these compliance strategies for purposes of evaluating system-wide impacts.

5. CSAPR Impacts

The compliance strategies of individual resource owners were compiled and consolidated to determine the aggregate impacts on the ERCOT system. This analysis indicates that, of the three CSAPR programs, the annual SO_2 program is likely to be the most restrictive on the ERCOT system. Even though individual units may have emissions in excess of the peak season or annual NO_X limits, Texas as a whole is likely to be below the state-wide limit, indicating that resource owners can achieve compliance through trading of NO_X emissions allowances. An extended hot summer, such as the one experienced in 2011, may result in limited availability of peak season NOX emissions, and a need to obtain additional allowances from out-of-state.

In consolidating the compliance strategies from the resource owners, it became apparent that each resource owner was assuming a level of effectiveness of the various compliance options identified in Section 3. While many of these compliance plans are likely to be adequate, given the risks associated with each compliance option, it is unlikely that all of the resource owners' plans will function as designed. For example, the use of dry sorbent injection on the scale required to attain compliance at certain facilities may perform as anticipated, but its use in this context is novel and may involve unexpected complications. As a result, ERCOT has developed three compliance scenarios in order to assess the potential risks to the system based on different assumptions regarding implementation of compliance strategies.

The first scenario is derived directly from the compliance plans of individual resource owners. Based on the information that ERCOT has been given, in this scenario, the ERCOT region will experience an incremental reduction in available operating capacity of approximately 3,000 MW in the off-peak months of March, April, October and November, and an operating capacity reduction of 1,200 – 1,400 MW during the other months of the year, including the peak load months of June, July and August. Capacity reductions in the off-peak months are expected to be greater because power prices are lower during these periods, making them a more attractive time for resource owners to take extended outages to conserve allocated allowances.

The second scenario is derived from the first, but includes the additional assumption that the increased dispatching of base-load units will lead to increased maintenance outages, especially in the fall months. Over the course of the spring months it may become increasingly apparent that dispatching specific units is leading to extensive maintenance requirements. In these cases it may be cost-effective to idle these units rather than dispatch them down to minimum levels during off-peak hours. These units would likely be run through the summer peak months, but then would be idled for an extended period in the fall in order to conserve allocated allowances. Given this additional constraint, it is likely that ERCOT would experience an incremental loss of approximately 3,000 MW of capacity in the off-peak months of March and April, approximately 1,200 – 1,400 MW during the remainder of the first nine months of the year, and approximately 5,000 MW of capacity during the fall months of October, November and possibly into December.

The third scenario is derived from the second, with the added consideration of possible near-term market limitations on the availability of imported low-sulfur coals, either due to nationwide demand exceeding mine output capacity or railroad shipping capacity. In the event of such limitations, coal plant resource owners would be forced to rely on higher sulfur coals during the spring and the peak season summer months. As a result, they would be forced to further reduce unit output in the fall months, beyond what is currently included in their compliance strategy, and could be required to decommit additional capacity in October and November in order to conserve allocated allowances. As a result, given these assumptions, it is likely that ERCOT would experience an incremental loss of approximately 3,000 MW of capacity in the off-peak months of March and April, approximately 1,200 – 1,400 MW during the remainder of the first nine months of the year, and approximately 6,000 MW of capacity during the fall months of October, November and possibly into December.

6. Discussion

The scenarios analyzed in this study represent best-case (Scenario 1), and two cases with increasing impacts to system reliability. Scenarios 2 and 3 are based on the occurrence of events that are reasonably foreseeable given the circumstances facing generation resources attempting to comply with the CSAPR. Even in the best-case scenario, ERCOT is expected to experience a reduction in available operating capacity of 1,200 – 1,400 MW during the peak season of 2012 due to implementation of the CSAPR. Had this incremental reduction been in place in 2011, ERCOT would have experienced rotating outages during days in August. Off-peak capacity reductions in the three scenarios evaluated as part of this study, when coupled with the annual maintenance outages that must be taken on other generating units and typical weather variability during these periods, also place ERCOT at increasing risk of emergency events, including rotating outages of customer load.

There are numerous unresolved questions associated with the impacts of the CSAPR on the ERCOT system. It is important to note that the resource owners have had less than two months to develop compliance plans for the new rule. These plans are still preliminary and based on assumptions regarding technology

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effectiveness, fuel markets, impacts of altered unit operations on maintenance requirements, and the cost-effectiveness of modifying and operating units to comply with the CSPAR. The overall system impacts noted in this study will change if these individual compliance strategies are adjusted to take into account updated information.

The availability of SO_2 allowances for purchase by resource owners in Texas is a significant source of uncertainty at this time. A lack of allowances for purchase from out-of-state resources will likely increase the severity of the CSAPR rule. Many resource owners expressed their concern that parties that have excess allowances may, at least initially, hold on to their excess, in order to maintain flexibility and future compliance options. As noted in Section 2, given the penalties for non-compliance, resource owners are unlikely to exceed the number of allowances they have in hand, with the expectation that allowance markets will open up later in the year. It may be that some resource owners will keep their excess allowances until it becomes clear that they will not be needed, late in the year. Other resource owners may have to shut units down in the early fall in order to conserve allowances.

In addition, the information ERCOT has received indicates there will not be a liquid market throughout the year for allowances, which will make it difficult to determine the appropriate value of allowances to compensate resource owners for operations associated with reliability commitments, such as through the daily or hourly reliability unit commitment process. It may be necessary to administratively establish a value for these allowances through the market stakeholder review process.

It is also possible that the impacts of CSAPR will increase in 2013 and 2014. In those years, it is unlikely that resource owners will have any additional options for rule compliance. Increased dispatching of base-load units will likely continue to lead to extended maintenance outages, and delivered availability of low sulfur western coals is likely to remain limited. In addition to these factors, some resource owners will be placing units on extended outages to install emission control technologies, such as wet-limestone scrubbers and possibly selective catalytic or selective non-catalytic reduction equipment. These retrofit outages could further reduce the generation capacity available during off-peak months.

Due to the numerous uncertainties, ERCOT cannot confidently estimate a "worst case" scenario at this time. Combinations of particular events may result in reductions in operating capacity that exceed those identified in Scenario 3, and thus further increase the risk of increasingly frequent and unpredictable emergency conditions, including the potential for rotating outages. The best outcome ERCOT can expect occurs if Scenario 1 is realized (*i.e.,* all generation resources' current plans come to fruition), and, as discussed above, Scenario 1 appreciably increases risks for the ERCOT system, in both the on-peak and off-peak months.

7. Conclusion

When the CSAPR rule was announced in July, it included Texas in compliance programs that ERCOT and its resource owners had reasonably believed would

not be applied to Texas. In addition, the rule required implementation within five months – by January 2012. The implementation timeline provides ERCOT an extremely truncated period in which to assess the reliability impacts of the rule, and no realistic opportunity to take steps that could even partially mitigate the substantial losses of available operating capacity described in the scenarios examined in this report. In short, the CSAPR implementation date does not provide ERCOT and its resource owners a meaningful window for taking steps to avoid the loss of thousands of megawatts of capacity, and the attendant risks of outages for Texas power users.

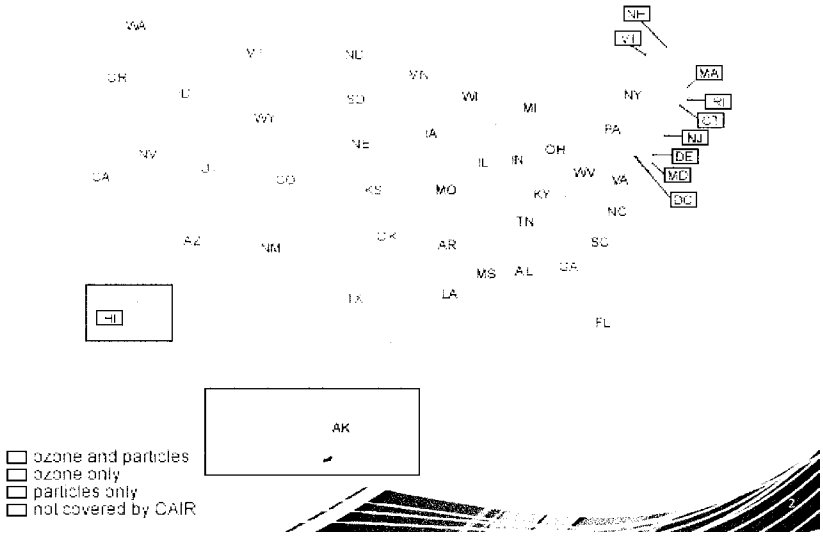
If the implementation deadline for CSAPR were significantly delayed, it would expand options for maintaining system reliability. ERCOT is advancing changes in market rules – such as increasing ERCOT's ability to control the number and timing of unit outages and expanding demand response – that could help avert emergency conditions. These measures will not, however, avoid the losses in capacity due to CSAPR that increase the risk of such emergencies. As discussed in this report, those losses will, at best, present significant operating challenges for ERCOT, both in meeting ever-increasing peak demand and in managing off-peak periods in 2012 and beyond.

Exhibit 1 - EPA CSAPR Overview

SEPTEMBER 15, 2011

SUNFLOWER ELECTRIC POWER CORPORATION

Final CAIR States – March 2005



Cross-State Air Pollution Rule States

This map includes states covered in the supplemental notice of proposed rulemaking

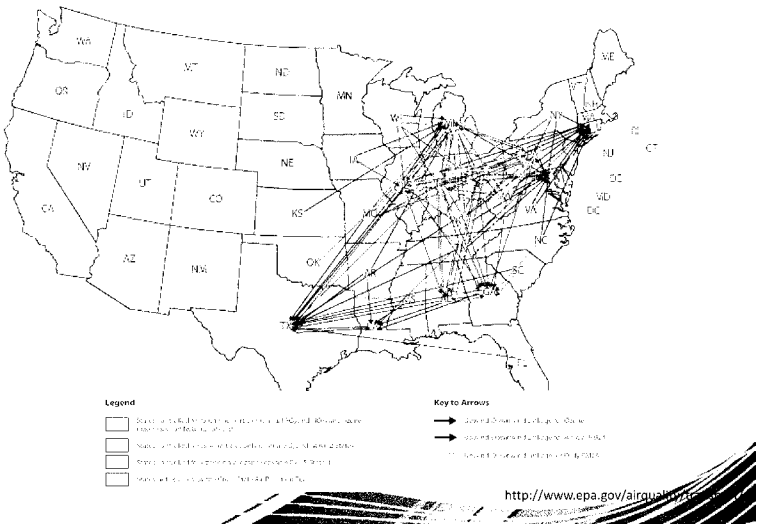
States controlled for both fine particles (annual SO_2 and NO_x) and ozone (ozone season NO_x) (21 States)

States controlled for fine particles only (annual SO_2 and NO_x) (2 States)

States controlled for ozone only (ozone season NO_x) (5 States)

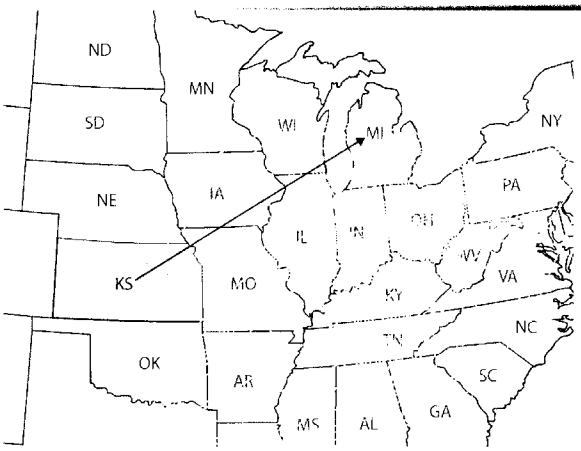
States not covered by the Cross State Air Pollution Rule

Upwind-Downwind Linkages



http://www.epa.gov/airquality/

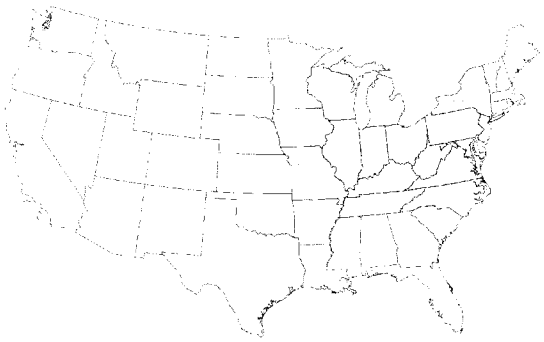
Kansas Linkages



Upwind-Downwind Linkage for Ozone

Upwind-Downwind Linkage for Daily $PM_{2.5}$

SO_2 Control Group 1 and Group 2 States

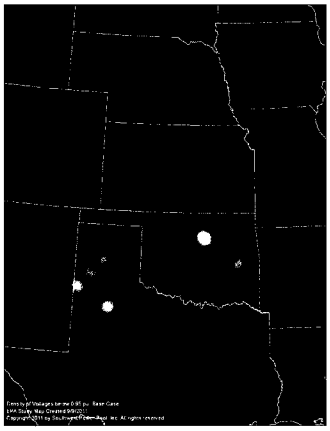


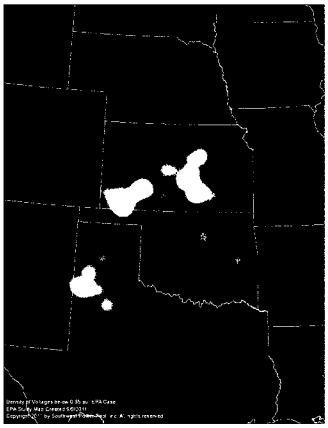
Group 1 States (16 States)
Group 2 States (7 States)
States not covered by the annual Cross-State Air Pollution Rule

The rule includes separate requirements for:

- Annual SO_2 reductions
- Phase I (2012) and Phase II (2014)
- Two Control Groups
- Group 1 – 2012 cap lower in 2014
- Group 2 – 2012 cap only

SPP - Final Report Voltages below .95 density





Congress of the United States
Washington, DC 20515

August 1, 2011

The Honorable Cass R. Sunstein
Administrator
Office of Information and Regulatory Affairs
Office of Management and Budget
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Administrator Sunstein:

Thank you for hearing our concerns regarding the Environmental Protection Agency's ("EPA") recently released "Cross-State Air Pollution Rule" ("CSAPR") and how it affects Texas.

As you requested, we are providing you with a list of some of the most obvious and prominent flaws contained in the rule as it relates to Texas, though we understand others may raise additional legal and factual infirmities. In our collective view, the errors we describe below justify a stay and reconsideration of the CSAPR $PM_{2.5}$ program for Texas so that the Texas component of the rule receives appropriate review and comment. We appreciate your careful consideration of our request.

I. Texas Stakeholders Had No Opportunity to Correct EPA's Flawed Assumptions Because EPA Provided No Reasonable Opportunity for Comment

TEXAS WAS NOT IN PROPOSED RULE: In the August 2010 proposed CSAPR, EPA reported that its modeling showed that Texas facilities do ***not*** significantly interfere with maintenance of either the annual or 24-hour $PM_{2.5}$ NAAQS in any downwind state, and therefore the EPA explicitly proposed ***not*** to include Texas in those aspects of the annual program for NOx and SO_2. Understandably, Texas and Texas market participants could not have anticipated EPA's final rule would reverse field and mandate annual emission reductions.

EPA MENTIONED ONLY A FUTURE, HYPOTHETICAL SCENARIO: EPA merely sought comment on whether to include Texas in the annual program based on a narrow and unique issue. Specifically, EPA hypothesized that implementation of the rule ***might*** cause the cost of lower-sulfur coal to rise, thus providing Texas facilities with incentives to buy and burn less expensive higher-sulfur coal, which, EPA further hypothesized, ***might*** lead to more SO_2 emissions that ***might*** lead to a downwind impact.[1]

[1] EPA made explicit that its consideration whether to include Texas was based exclusively on the hypothetical scenario it posited; after describing its theory that the adoption of the rule could affect the cost of lower-sulfur coal, EPA stated, "[*f*]*or this reason*, EPA takes comment on whether Texas should be included in the program . . . ." 75 Fed Reg. page 45, 284 Vol. 75, No. 147, Monday, August 2, 2010 (emphasis added).

EPA USED A WHOLLY DIFFERENT REASON TO INCLUDE TEXAS IN THE FINAL CSAPR: On its narrow hypothetical, EPA received ample comment that the single concern it identified was unwarranted. Understandably, then, EPA did not include Texas in its final CSAPR based on the hypothetical fuel switching EPA had suggested might occur.[2] However, EPA instead asserted that new and revised modeling—modeling that EPA had ***not*** included in its draft rule—linked Texas to projected nonattainment at a single location hundreds of miles away in Madison County, Illinois. OMB's Interagency Working Group correctly noted that this and other changes resulted in "a significantly different rule than originally proposed."[3]

TEXAS NOT GIVEN CRITICAL INFORMATION: Importantly, EPA's final rule was the ***first*** time EPA provided an annual "emissions budget" for Texas identifying the emissions limitations the rule would impose. In contrast, EPA provided a state-specific budget in its August 2010 proposed rule for every other state the agency proposed to include in CSAPR. Inexplicably, EPA deviated from long-standing and accepted practice by creating a Texas SO_2 and annual NOx budget for the first time in the final CSAPR. In fact, ***EPA has never included a state in a final rule for one of its major interstate transport programs without first providing a budget for that state in the proposed rule.*** As a consequence, EPA provided Texas and Texas market participants with absolutely no notice that EPA was developing a budget for Texas, much less notice of its terms, as the agency routinely does and did with CSAPR for every other state. Thus, affected parties in Texas had no basis or ability to comment on the Texas budgets (and therefore the emissions limitations EPA seeks to impose on Texas), as EPA chose not to reveal those critical budgets until it issued its final rule.

EPA'S FINAL RULE IS MARKEDLY DIFFERENT FROM ITS PROPOSAL: The change from proposed rule to final rule was hardly incremental. Indeed, it was transformative. For example, for SO_2 emissions, in the proposed rule, EPA stated that the 327,873 tons of annual SO_2 emissions it projected for Texas would not "significantly contribute" to a failure of attainment in any other state. In the final rule, by contrast, EPA imposed on Texas an emissions budget of 243,954 tons of SO_2 —a level substantially below the amount of emissions that the agency had already concluded did ***not*** cause a significant downwind impact that justified including Texas in the rule. Moreover, EPA's final rule asserts that Texas emissions would significantly contribute (although EPA acknowledges, based on its newly introduced modeling, that Texas would barely contribute) to "nonattainment" in just a single out-of-state locality, even though that locality is currently in attainment with the 1997 PM2.5 NAAQS. Yet EPA mandates in its final CSAPR that Texas bear more than 25 percent of the total national annual SO_2 reductions.

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[2] Indeed, EPA stated in the Agency's Response to Comments that the comments on that scenario were "no longer relevant." EPA-HQ-OAR-2009-0491-4513 Response to Comments at 562.

[3] *OMB Summary of Interagency Working Comments*, Doc. EPA-HQ-OAR-2009-0491-4133 (posted to the docket on July 11, 2011) ("modeling results used in the final rule are substantially different than those in the original August 2, 2010 Proposed Rule and subsequent notices. Six (6) States are being dropped from the proposed rule; Texas is being added; 3 States have their SO_2 Group status change; and the sheer magnitude of change to the budgets of all of the states results in a significantly different rule than originally proposed").

NOT A "LOGICAL OUTGROWTH": By any reasonable standard, the final rule is ***not*** a logical outgrowth of the proposed rule, as the law requires if the final rule varies from the proposal.[4] In its initial August 2010 rule, EPA proposed ***no*** annual SO_2 limit and ***no*** annual NOx limit for Texas, but then reversed its methodology and result, revealing for the first time in the final rule annual Texas limits for both SO_2 and NOx. It is for these reasons we maintain that EPA's actions in including Texas are inconsistent with the Clean Air Act notice requirements and are unlawful.[5]

ALL OTHER STATES ALLOWED TO COMMENT ON THE "SIGNIFICANTLY DIFFERENT RULE": When it issued its final rule last month, EPA also issued a supplemental notice seeking comment on whether it should include six other states in aspects of the program for which EPA had not originally proposed those states for inclusion. EPA refused to do the same for Texas, however, claiming to distinguish Texas on the ground that the agency had "sought comment" on including Texas when it issued the proposed rule. But, again, because the sole ground on which the agency had "sought comment" had nothing to do with the basis on which it later included Texas, no conceivable justification exists for the stark difference in treatment. Simply put, Texas is the lone state that the EPA included in the final CSAPR without first including the state in the proposal and providing an emissions budget for comment. In every other instance the EPA has issued a supplemental notice to allow for comment by affected parties. The agency's treatment of Texas is unprecedented and unjustified. At a minimum, EPA should have done the same for Texas as it did for the other similarly situated states.

II. EPA's Flawed Pollution Control and Compliance Assumptions Will Result in Unjustifiable Electric Reliability and Economic Impacts in Texas

a. EPA Wrongly Assumes Pollution Control Equipment Performance

NEW SCRUBBERS CANNOT MEET DEADLINE: CSAPR requires an unfathomable 47 percent reduction of Texas SO_2 emissions from 2010 emissions beginning on January 1, 2012.[6] As all acknowledge, it is impossible to retrofit units with new scrubbers in just six months. The only remaining option achieving such a massive reduction in less than six months is shutting down or significantly reducing output from coal-fired units, which will lead to reduced generation, job losses, and economic harm to rural Texas communities.

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[4] *Int'l Union, Mine v. Mine Safety and Health Admin.*, 407 F.3d 1250, 1260 (D.C. Cir. 2005) (a final rule that is "surprisingly distant" from the proposal is not a logical outgrowth).

[5] *See, e.g., Envt'l Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) ("something is not a logical outgrowth of nothing").

[6] EPA Clean Air Markets Division, Data and Maps, 2010; Final Transport Rule, page 235.

OTHERS QUESTIONED EPA'S COMPLIANCE ASSUMPTIONS: EPA claims that its "modeling shows that Texas has an ample range of cost-effective emission reductions options for complying with the requirements of this rule without threatening electricity reliability or the continued operation of coal-burning units, including those that burn lignite from local mining operations."[7] We do not understand how EPA reaches that conclusion. Indeed, OMB's interagency review process correctly challenged EPA's assumption, noting that by requiring emissions reductions starting in 2012, "[s]uch a substantial change occurring six month[s] prior to the effectiveness of the assurance provision leaves sources with few options to respond in a cost-effective manner, increasing the likelihood of disrupting system reliability if it becomes necessary to achieve compliance through derates and/or idling."[8]

UNREALISTIC POLLUTION CONTROL EXPECTATIONS: In addition, EPA's "remedy case" modeling wrongly assumes that certain existing units could instantly begin operating their flue gas desulfurization units ("scrubbers") at a 95 percent removal efficiency.[9] This rate is contrary to the reported actual removal efficiency at these units, which is between 70 and 80 percent. In fact, the maximum efficiency for this existing equipment is in the low-to-mid 80 percent range, well less than the average scrubbing efficiency EPA erroneously assumes.[10] Furthermore, EPA's modeling assumes the operation in 2012 of three scrubbers that do not even exist.[11]

EPA IGNORED EXISTING CAIR REDUCTIONS: EPA ignored significant and continuing progress in reducing SO_2 and NOx emissions by excluding Clean Air Interstate Rule ("CAIR") based reductions in calculating the 2012 base case.[12] CAIR and associated state programs have created substantial reductions in emissions, yet these reductions remain unrecognized in the final CSPAR.[13] For example, the exclusion of CAIR reductions in the baseline leads EPA to overestimate current national SO_2 emissions at 7 million tons per year, when actual figures for 2010 emissions are only 4.5 million ton per year.[14] This overestimation distorts EPA's calculation of downwind impacts.

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[7] *Texas and the Cross-State Air Pollution Rule*, Doc. EPA-HQ-OAR-2009-0491-4483 (posted to the docket on July 12, 2011).

[8] *OMB Summary of Interagency Working Comments*, Doc. EPA-HQ-OAR-2009-0491-4133 (posted to the docket on July 11, 2011).

[9] *NEEDS Database v. 4.10*, EPA-HQ-OAR-2009-0491-4509, Monticello 3, Martin Lake 1, 2, &3.

[10] EIA Form 963 2010.

[11] *NEEDS Database v. 4.10*, EPA-HQ-OAR-2009-0491-4509; W. A. Parish 5, J.T. Deely 1 & 2.

[12] *CSAPR* (Prepublication Version) at 72-73 (discussing calculation of baseline)

[13] *Id. See also* EPA, *Air Quality Trends*, http://www.epa.gov/airtrends/aqtrends.html#comparison (showing national emissions for common pollutants and their precursors decreasing by 111 million tons per year, or 51% from 1990 to 2009. SO_2 emissions, alone, decreased by 61% from 1990-2009, with a 40% reduction from 2005 to 2009. National NOx emissions decreased by 44% from 1990 to 2009).

[14] *See CSAPR* (Prepublication Version) at 33 (noting CAIR reductions not included).

b. CSAPR's Unachievable Compliance Requirements Will Affect Electric Reliability

EPA IGNORED CAPACITY EXPERTS: The Electric Reliability Council of Texas ("ERCOT"),[15] the independent system operator for the electric grid that serves the majority of Texas, has recently warned "that Texas could face a shortage of generation necessary to keep the lights on in Texas within a few years, if the EPA's Cross-State Rule is implemented as written." ERCOT further noted that the "initial implications are that the SO_2 requirements for Texas added at the last stage of the rule development will have a significant impact on coal generation, which provided 40 percent of the electricity consumed in ERCOT in 2010."[16]

ERRONEOUS RELIABILITY ESTIMATES: In its reliability analysis, EPA assumed that there will be 90,405 MW of capacity in ERCOT in 2014.[17] However, ERCOT forecasts only approximately 75,000 MW of generating capacity in 2014.[18] In overestimating ERCOT's generation assets, EPA makes at least two fundamental errors. First, EPA erroneously assumes that a number of generation units that are permanently or indefinitely out of service would be available. Second, EPA badly overestimates both the capacity and availability of wind generation. In truth, ERCOT counts wind generation—which, of course, is available only intermittently and as the wind blows—at only 8.7 percent capacity factor, considerably less than EPA assumes. Based on these two errors alone, EPA overestimates ERCOT's reserve margin by over 100 percent.

c. EPA Assumes Away Good-paying Texas Jobs and Assumes More Production of Unique Wyoming Coal Without Any Basis

LOST MINING JOBS UNCOUNTED: EPA's "remedy case" model assumes that a number of Texas "mouth-of-mine" units that burn primarily lignite coal can and will switch to using 100 percent "super-complaint" Powder River Basin ("PRB") coal from Wyoming.[19] However, to do so generation companies would have to abandon locally mined lignite, thus causing hundreds of hard-working Texans to lose their jobs. These are good-paying jobs, the majority of which are union jobs and serve as the economic foundation and tax base for rural Texas communities.

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[15] ERCOT is an independent system operator charged by law to ensure the reliability of electricity in Texas which manages the flow of electric power to 23 million Texas customers.

[16] ERCOT, *CEO Statement Regarding EPA Cross-State Rule*, July 19, 2011, http://www.ercot.com/news/press_releases/show/354.

[17] EPA-HQ-OAR-2009-0491-4399 page 5 and EPA-HQ-OAR-2009-0491-4455 page 6

[18] ERCOT, *Report on the Capacity, Demand, and Reserves in the ERCOT, Region May 2011* (June 9, 2011 Revision 2) page 7 *available at* http://www.ercot.com/news/presentations/. Report on the Capacity, Demand, and Reserves in the ERCOT Region May 2011 (June 9, 2011 Revision 2) page 7.

[19] EPA-HQ-OAR-2009-0491-4431.

SUPER-COMPLIANT COAL NOT AVAILABLE: EPA likewise fails to account for the fact that only two mines produce the "super-compliant" coal that the agency assumes will be used in its "remedy case" model, and all of the super-compliant PRB coal produced by those mines is already committed under contract. Nevertheless, EPA's modeling erroneously assumes that the mines will immediately begin producing at least 139 percent of the 2010 supply of "super-compliant" coal.[20]

III. EPA'S Assumptions About Downwind Effects are Fundamentally Flawed

MADISON COUNTY, ILLINOIS IN ATTAINMENT: On May 23, 2011, EPA published in the Federal Register a "final action" that determined the Saint Louis $PM_{2.5}$ nonattainment area, which includes Madison County, Illinois — the location of the receptor that EPA identifies as being "linked" to Texas's SO2 emissions — has already attained the 1997 annual $PM_{2.5}$ National Ambient Air Quality Standard.[21] OMB and EPA should not proceed with implementing a rule that is based on faulty assumptions and imposes unfairly high burdens, all in the pursuit of remediating Texas's alleged impact on a single receptor that is actually currently ***in attainment***, as determined by EPA itself.

OTHER STATES STILL CONTRIBUTING TO MADISON COUNTY'S AIR QUALITY: EPA's analysis concludes that, at worst, Texas emissions slightly exceed the triggering level for significant contribution to Madison County, Illinois. EPA identified eight other states — many geographically much closer to the receptor than Texas — that contribute significantly at that monitor (Indiana, Iowa, Kentucky, Michigan, Missouri, Ohio, Tennessee, and Wisconsin). The CSAPR emission budget levels require Texas to reduce far below EPA's determined significant contribution level, yet many of the other states that EPA has determined are significantly contributing — with considerably higher modeled current impacts on Madison County — are not required to eliminate their significant contributions and will continue to affect Madison County.[22] EPA's approach is patently unfair to Texas.

In sum, having less than a year ago concluded that Texas emissions have no significant downwind impact, and without having provided fair notice and opportunity to comment, the EPA now mandates that Texas slash its SO_2 emissions by half starting in five months, substantially reduce annual NOx emissions, risk electric reliability, lose scores of high-paying rural jobs, and bear 25 percent (two and one-half times the state's emissions) of the CSAPR

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[20] www.msha.gov, Antelope and North Antelope Mine production; EPA-HQ-OAR-2009-0491-4431.

[21] 40 CFR Part 52 [EPA-R05-OAR-2010-0034; FRL-9309-6] Fed. Reg. Vol. 76, No. 99, Monday, May 23, 2011, page 29652.

[22] *Significant Contribution and State Emissions Budgets Final Rule TSD* ("TSD") at 2 (Doc. EPA-HQ-OAR-2009-0491-4456), *available at* http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0491-4456 (posted July 11, 2011). Moreover, CSAPR requires Texas to reduce emissions far in excess of the amount that even EPA would calculate solves the Texas' contribution to Madison County. This over reduction appears at odds with EPA's legal requirement to reduce downwind emissions "in amounts which will" "contribute significantly" to nonattainment in another state. 42 U.S.C. § 7410(a)(2)(D).

national SO_2 emissions reduction burden under this rule. The EPA mandates these reductions all because the agency now predicts a slight contribution from Texas to the air quality at a single location hundreds of miles away that EPA has determined is in air-quality attainment. As a matter of process and substantive outcomes, the EPA's mandates—again imposed without fair notice or opportunity for comment—are manifestly unfair and unlawful. For these reasons, we trust that the significant flaws underlying CSAPR's application to Texas will cause you to conclude that the only fair course is to stay the effectiveness of the rule as to Texas and open a proceeding to reconsider so that affected parties may comment.

Thank you again for your careful consideration of this critically important matter. We look forward to your quick action to stay CSAPR's application to Texas so that the proposal receives the full and fair review and comment it deserves.

Sincerely,

Eddie Bernice Johnson

Ruben Hinojosa

Sheila Jackson Lee

Henry Cuellar TX-28th

Al Green

Ralph M. Hall

Joe Barton

K. Michael Conaway

Blake Farenthold

Lamar Smith

Michael T. McCaul

Ron Paul

Ken Buck

Pete R. Olson

Randy Neugebauer

Kay Granger

Luminant

David A. Campbell
Chief Executive Officer
david.campbell@luminant.com

Luminant
500 N. Akard Street
Dallas, TX 75201

T 214-875 9345
C 214-325-6865
F 214-875 9337

September 12, 2011

Mr. Robert Perciasepe
Deputy Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue
Washington, DC 20406

Dear Administrator Perciasepe:

Thank you for the letter you sent yesterday. While we appreciate the significant attention that you, Administrator Jackson, and senior staff at EPA have given to this issue in recent weeks, we are disappointed that despite this effort EPA is unwilling to take reasonable but necessary action that would realize substantial emission reductions at Luminant facilities while at the same time avoiding the loss of hundreds of jobs and the risk to reliable generation in Texas in the near term. We take seriously the invitation to continue working with EPA on these issues and commit to explore with you every possible option; however, EPA's self-imposed January 1, 2012 compliance deadline and the Agency's apparent unwillingness to grant a stay while discussions are ongoing necessitates that Luminant take all possible action to protect these jobs and necessary generation in the interim.

We recognize the efforts of the last few weeks, but are disappointed and frustrated with how EPA has treated Texas and Luminant generating facilities—both in the lack of due process afforded to Texas and its stakeholders and in the drastic and unwarranted reductions EPA has mandated on an impossibly short timetable. We find particularly frustrating EPA's failure to provide specific options that would permit us to avoid the facility shut downs and job losses we must implement in response to EPA's Cross States Air Pollution Rule despite the Agency's recognition that CSAPR includes significant mistakes and faulty assumptions directly impacting Luminant.

We should be clear about Luminant's view of events thus far. One year ago, EPA issued its proposed CSAPR. In its draft rule, EPA correctly concluded that Texas should not be included in the rule for annual emissions, as your agency's own data showed that Texas did not contribute to downwind emissions issues. A

little more than two months ago, and even though nothing had changed other than EPA's modeling methodology, EPA reversed course and included Texas in the rule. Worse, EPA decided to include the state without allowing Luminant, other stakeholders, and Texas the basic prerogative to comment on EPA's decision to include Texas in CSAPR. To this day—and despite repeated requests from my company, Texas, virtually every Texas member of Congress, both Democrat and Republican, and dozens of concerned citizens and organizations, including unions, minority and disadvantaged groups that will be disproportionately impacted by lost jobs and higher energy costs, and trade associations—EPA has failed to offer an explanation for its decision to deny us and others this most fundamental due process.

The substance of the agency's regulatory edict to Texas and Luminant is equally inexplicable. Having concluded a year ago that the data required no annual reductions from Texas generators, EPA now mandates that Texas slash its SO_2 emissions by half and greatly reduce NO_X emissions in less than five months—an unprecedented and legally impermissible compliance requirement. EPA mandates that within a few months Luminant reduce its SO_2 emissions by an astounding 64%, its annual NO_X emissions by 22%, and its seasonal NO_X emissions by 19%–amounts that EPA well knows are impossible to achieve without devastating operational changes. Remarkably, EPA imposes these requirements based on its new-found and erroneous prediction that a tiny contribution from Texas—along with 10 other states—to the air quality at a single monitor located nearly five hundred miles away in Illinois could threaten to interfere with attainment at that monitor in 2012, ignoring the agency's own finding that the monitor and the county it resides in are in attainment today and that Texas emissions are projected to decrease in 2012 even without CSAPR. EPA's rule further ignores the legal mandate that EPA tailor its required reductions to the downwind effects Texas allegedly causes, and no more. In the case of Texas, EPA readily concedes that whatever downwind impact Texas might cause is small and barely meets the statutory threshold, while at the same time the agency imposes massive reductions on the state—reductions that unavoidably result in facility shut downs and layoffs.

You also intimate in your letter that Texas has not made strides in emissions reductions. On the contrary, since 1995 Texas has reduced its NO_X emissions by over 60% and its SO_2 emissions by almost 30%. Luminant likewise has made tremendous strides, including voluntary measures to significantly reduce emissions. Indeed, today Texas's emissions rates are significantly better than the average for the nation.

Perhaps most disheartening is your unsubstantiated and repeated assertion that options exist that would permit Luminant to comply without curtailing

generation, switching away from use of native Texas lignite coal, or costing jobs. Yet EPA has failed to identify a single specific compliance option that would permit these units and mines to remain open. As we have described in detail, company officials at all levels have spent almost every available waking hour of the past few months exploring every conceivable option to comply while minimizing the threat to electric reliability in Texas and the impact on jobs—jobs we agree the nation can ill-afford to lose based on the "nation's difficult economic situation," as you describe it. Luminant surely has more incentive than any other party to maintain this generation and protect these jobs, as demonstrated by our efforts with you and the litigation course that we reluctantly must pursue. Unfortunately, however, Luminant has not identified any option to comply with CSAPR on the current timetable that does not involve substantial job losses and significant amounts of curtailed generation. Tellingly, EPA has offered none.

In fact, EPA's own data and modeling reflects the elimination of over a thousand lignite mine jobs in Texas based on the agency's assumption that Luminant would cease lignite use at its Martin Lake, Monticello, and Big Brown units. Despite our requests, you have not provided us with data on a unit-by-unit basis that does not include fuel switching at these units. Not surprisingly, then, we have been unable to replicate EPA's system-wide lignite sensitivity analysis that you imply somehow allows lignite to remain in use at current levels. Still, we stand ready and look forward to your suggestions of reductions that would allow us to avoid these actions, including your offer to share data that illustrate how Texas and Luminant can comply with CSAPR cost-effectively while keeping lignite coal use at current levels.

As for the trading markets you contend will emerge and enable Luminant to avoid facility shut downs, the reality belies the theoretical for the reasons we have described in detail. Speculating that a vast amount of surplus credits will somehow immediately appear under a regulatory scheme that is designed to prevent precisely such a scenario in any one state is a reckless strategy that risks making Texas's power shortages far worse. By design, the variability limits and assurance levels restrict the potential scope of trading as a compliance option. In effect, you urge a strategy that, if wrong, will result in the ERCOT market confronting a reduction of over 5000MW in generation by next summer, as opposed to the 1300MW Luminant's compliance plan envisions. EPA would place this entire risk on Luminant and ERCOT based on the agency's speculation that a sufficient credits market will emerge in circumstances that are unlikely, or at best uncertain, to produce one.

On an encouraging note, you indicate in your letter EPA's willingness to make "technical adjustments, based on technical information [Luminant] has

recently provided." It is true that in only a few short weeks we already have pointed out fundamental errors in the modeling data EPA has published since the rule was issued. Of course, EPA could have avoided these and other errors in the first instance had it provided notice and comment opportunity to Texas and Luminant, as it has with every other state implicated in CSAPR. That said, we appreciate your willingness to acknowledge and correct some of these issues through a reconsideration process, and we look forward to further dialogue with you to ensure the agency does not proceed with further erroneous or incomplete information and assumptions. As we have described, and among others, EPA's fundamental errors include its assumption of scrubbers in operation that are not yet installed, higher scrubber efficiencies than the equipment can achieve, and fuel delivery assumptions that go well beyond current constraints. However, until the agency undertakes the process of correcting and finalizing these and other issues in its modeling, Luminant must prepare to comply with the rule as it stands. Again, we therefore urge you to stay the rule, initiate a reconsideration proceeding, and make these adjustments as promptly as possible. You also may be assured that Luminant will continue to work with EPA to complete this process as swiftly as possible to enable the correction of faulty emissions standards.

More than perhaps any other element of the current situation, we regret that EPA has shown no flexibility on its impossibly short compliance timetable—flexibility that would enable a fighting chance to protect much-needed generation and jobs. Whatever flexibility you contend is inherent in the Clean Air Act, the agency has failed to demonstrate that flexibility to ensure Luminant and Texas generators might timely comply without layoffs and generation curtailment. And although the agency acknowledges errors in both process and modeling—errors that require agency reconsideration of CSAPR as it applies to Texas—EPA refuses to even modestly adjust the compliance timetable to correct for these errors and to avoid these job losses and threats to electric reliability in Texas by January 1. There should be no uncertainty, then: The responsibility for these potential job losses and the threat to Texas reliability rests with the EPA's Cross State Air Pollution Rule.

The last thing Luminant wants is to close facilities and let go valuable and long-standing employees— people who, with their families, are critical to the viability of the rural communities in which they make their homes. But unless EPA gives us more time and establishes more reasonable limits that reflect actual monitored conditions—authority EPA plainly possesses, if not mandated by EPA's admission of significant errors—we must comply with the rule as EPA has promulgated it. Your agency's mandate that Luminant slash its emissions by 64% in a matter of a few months forces us to reluctantly make these heart-wrenching decisions. No amount of assertions to the contrary changes the reality of the

mandates the rule imposes and that we confront.

We look forward to continued discussions in the coming days and weeks. Like you, we hope EPA is equally committed to avoiding these consequences, as your agency holds the fate of hundreds of employees and electric reliability in Texas in its hands.

Sincerely yours,

David A. Campbell

Power by Association℠

Edison Electric Institute

Thomas R. Kuhn
President

September 8, 2011

The Honorable Cass R. Sunstein
Administrator
Office of Information and Regulatory Affairs
Office of Management and Budget
1650 Pennsylvania Avenue, NW
Washington, DC 20500

RE: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48208 (Aug. 8, 2011)

Dear Administrator Sunstein:

On behalf of the Edison Electric Institute (EEI), I am writing to follow up on my previous letter to you of August 16, 2011 regarding the potential impacts of the U.S. Environmental Protection Agency's (EPA) Cross-State Air Pollution Rule (CSAPR). In that letter I highlighted the potential impacts of CSAPR's January 1, 2012 compliance deadline on grid reliability, jobs and the economy in Texas.

My previous letter noted that the January 1, 2012 implementation date provides insufficient time for Texas power generators to effect the orderly transition necessary to meet the rule's emissions reduction requirements. In fact, based on our member companies' assessment of impacts in states and markets in which they operate, CSAPR is not only of concern in Texas, but leaves many other companies and states without the ability to comply with the rule's 2012 requirements.

EEI and its member companies share EPA's objective of protecting human health and the environment, and generally support the emission reduction targets and time frames associated with the Clean Air Interstate Rule and the policy objectives of its successor, CSAPR. And, while EEI generally supports making substantial reductions by 2014, we are concerned about the potential serious consequences of the Phase I 2012 requirements set to take effect in merely four months.

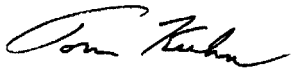
EEI includes a diverse group of energy interests across the country. As can be the case when addressing broad legislative and regulatory initiatives such as CSAPR, the interests of our members occasionally diverge on specific policy positions as the effects of regulations on

individual companies and states may differ. Nevertheless, EEI's advocacy on behalf of its members in any evolving policy environment is first and foremost designed to ensure that our industry—one that employs nearly 400,000 American workers—continues to deliver a reliable, cost-effective supply of electricity to consumers.

In closing, while EEI takes no position on the range of CSAPR's state- and company-specific impacts, I again want to emphasize that there are significant concerns within our membership regarding adverse impacts in various states and markets. Individual companies likely will be seeking opportunities to discuss their concerns with you and other Administration officials.

Thank you for allowing me to provide this additional information and supplement my prior correspondence. Please contact me if you would like to discuss this matter further.

Sincerely,



Thomas R. Kuhn

Cc: Honorable Lisa P. Jackson

Pedro J. Pizarro
President

September 13, 2011

The Honorable Ralph M. Hall
Chairman
House Committee on Science, Space & Technology
2321 Rayburn House Office Building
Washington, D.C. 20515

The Honorable Eddie Bernice Johnson
Ranking Member
House Committee on Science, Space & Technology
394 Ford House Office Building
Washington, D.C. 20515

Chairman Hall and Ranking Member Johnson:

Thank you for holding a hearing on EPA's "Cross-State Air Pollution Rule" (CSAPR). Our company, Edison Mission Group, owns and operates a fleet of competitive wind, gas and coal-fired electric generating units in thirteen states. Onr Homer City subsidiary, located in Pennsylvania, will be severely impacted by the CSAPR. While our company is supportive of the Rule's goals of emissions reduction, its final form in July 2011 made unexpected and fundamental changes to how the rule will be implemented in 2012 and 2013.

Phase I of the CSAPR was intended initially by EPA to be a transitional period that would preserve status quo emissions and give electric generators time, albeit very little, to install controls sufficient to meet the deeper Phase II reductions. What EPA implemented, however, was radically different. In the case of Pennsylvania, EPA reduced the state's budgeted allowances and accelerated a penalty scheme that penalizes generators who attempt to purchase and surrender allowances for compliance. For our Homer City subsidiary, this last minute rewriting of Phase I of the CSAPR effectively accelerates the controls required by Phase II in 2014 to January 1, 2012 (an impossible deadline to meet), and poses serious, near-term impacts to electricity consumers with, as EPA has acknowledged, no environmental benefit.

It is critical that Congress exercise its oversight authority to rigorously question the public policy merits of the CSAPR before the rule goes iuto effect and irreparable harm is done. Furthermore, we believe that Congress should suspend Phase I of CSAPR to allow generators enough time to install controls to secure compliance with Phase II.

The impact of the CSAPR on just one of our coal plants, Homer City in Pennsylvania, could be as much as $180 million in 2012-13. The reason is that Phase I of the CSAPR allocates to the Homer City plant only 22% of the allowances the plant would need to continue normal operations and the rule would impose severe penalties if the plant were to purchase and surrender allowances as a means of compliance. This allowance and penalty scheme in Phase I, which was not part of the Clean Air Transport Rule as initially proposed by EPA, punishes the power plants who lawfully chose to comply with pre-existing air regulations by purchasing allowances, while delivering windfall profits to others.

EMG's Homer City subsidiary has filed a Motion for Stay of the CSAPR with the U.S. Court of Appeals for the District of Columbia (motion is attached). Our case against the government is summarized in the attached exhibit. For purposes of this hearing, however, the Committee should understand that there is no possible way to install new pollution control technology by January 1, 2012. Thus, there is no way that Homer City can comply with Phase I (2012-13) of CSAPR except by reducing its operations or buying allowances (if available) from other generators and facing potentially massive penalties.

We understand that the Committee is also interested in how well EPA has assessed the likely effects of CSAPR on reliability and on consumer prices. EPA has not evaluated these for CSAPR in any transparent, understandable way. There is no time to construct replacement generation or non-disruptive demand side management in the next four months. There is no evidence to suggest that EPA has examined the effects on Pennsylvania and surrounding areas of the loss or potential de-rating of Homer City. However, a report by Charles River Associates on EPA's draft rule[1] estimates a $514 million impact to consumer power prices in 2012 and 2013. The final rule's allocations are even more draconian and far-reaching, so the actual impact to the consumer of the CSAPR are likely far greater than what Charles River Associates estimated in May 2011.

Whether by court order or by congressional action, stopping Phase I of the CSAPR is clearly in the public interest. The Rule will cause a steep reduction in generation output and a resulting painful spike in consumers' electricity costs, with no meaningful environmental benefits.

Thank you again for your oversight of this significant regulation. Please do not hesitate to contact me if I can be of assistance to you.

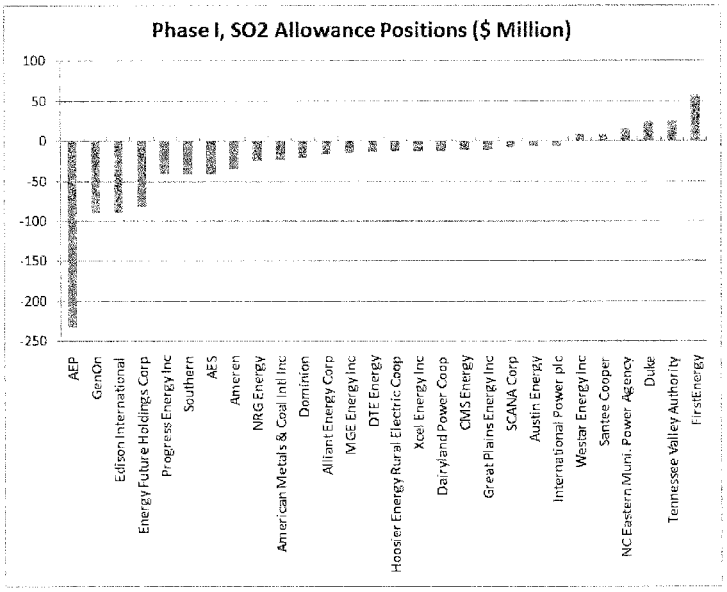
Sincerely,

Pedro J. Pizarro
President, Edison Mission Group

[1] Notice of Data Availability, January 7, 2001

ATTACHMENT A - **LEGAL DEFICIENCIES OF THE CSAPR RULE**

1. **The CSAPR is arbitrary and capricious.** The Rule allocates emissions allowances in a manner that bears no relationship to any facts found by the agency. For EME's Homer City plant, the Rule allocates only 22% of the allowances the plant would need to continue normal operations. And because (as EPA concedes) there is absolutely *nothing* Homer City can do to meet the new allocations before 2014, EME and other under-allocated entities will be forced to reduce generation, or purchase emissions allowances from their over-allocated competitors to the extent they are even available and, even then, face the risk of draconian penalties. The graph below demonstrates allowance shortfalls and windfalls (in millions of dollars) under the CSAPR annually in Phase I of the CSAPR (2012-13)[1]:



[1] Group 1 and Group 2 SO2 allowances included in graph. Only companies that are short over 10,000 allowances or are long over 10,000 allowances are shown in the graph EPA allowance price assumed: $1,000 for group 1 allowances, $600 for group 2 allowances

Caveats: Positions calculated using 2010 historical SO2 emissions and phase I allocations, does not include any expected pollution control adjustments. Plant ownership defined by only one owner, some plants have multiple owners and is not represented in the graph.

2. **The CSAPR operates in derogation of the Clean Air Act's signature structural component—the cooperative-federalism scheme**, under which EPA sets air quality standards and each State has the ability (and responsibility) to develop a plan to implement those standards within the State. A stay is warranted to prevent this *ultra vires* Rule from taking effect and imposing untold economic hardship and other grave harm across the country. This harm would occur during a period that EPA itself concedes the Rule would secure no meaningful environmental benefit. That "FIP first" approach plainly exceeds EPA's statutory authority, radically departs from EPA's past practice, and upends the careful balance Congress struck between state and federal decision-making. Instead of treating the States as "partners in the struggle against [interstate] air pollution," *General Motors Corp. v. United States*, 496 U.S. 530, 532 (1990), the Rule illegally commandeers the States into carrying out EPA's own misguided directive.

3. **The CSAPR will distort electricity markets, lower electric generation output, and effect a massive (at least $1.5 billion) wealth transfer in 2012-2013**. A study of the *draft* rule by Charles River Associates found that the CSAPR would concentrate surplus allowances in the hands of a few companies that do not need them for their own operations. These few companies would be incentivized to withhold those allowances, rather than sell them in the market. This would both increase the cost of allowances and lead to curtailment of electricity generation by those units short of allowances. **The result is in increase in consumer power prices of as much as $514 million per year in 2012 and 2013**. Since the final rule is far more draconian than the draft rule analyzed by CRA, the actual effects on consumers is likely to be far greater than captured by CRA.

4. **The CSAPR illegally imposes new penalties on past conduct -- and is therefore impermissibly retroactive in nature**. Every coal-fired plant in the nation has operated under the Acid Rain program, which gave each unit the choice to either install emission reduction technology or purchase emissions allowances from those companies with surplus allowances.

DYNEGY

Via www.regulations.gov

October 1, 2010

EPA Docket Center
EPA West (Air Docket)
Attention Docket ID No. EPA-HQ-OAR-2009-0491
Mail Code: 2822T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Comments on Proposed Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone

Dear Sir or Madam:

Dynegy Inc. (Dynegy) submits these comments on the proposed "Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone" (Transport Rule), as published at 75 Fed. Reg. 45210 (Aug. 2, 2010). Through its subsidiaries, Dynegy produces and sells electric energy, capacity and ancillary services in key U.S. Markets. Dynegy's power generation portfolio consists of approximately 12,500 megawatts of baseload, intermediate and peaking power plants fueled by a mix of natural gas, coal, and fuel oil.

As explained below, the proposed Transport Rule is flawed in several key respects, including an unjustified 2012 compliance deadline and an inappropriate allowance allocation methodology that rewards high emitters and punishes well-controlled electric generating units (EGUs). Most importantly, EPA's proposed SO_2 and NO_x allowance allocations for Dynegy EGUs are based on numerous unit-specific technical data errors and faulty assumptions that must be corrected. If not corrected, these unit-specific errors and faulty assumptions will inequitably and adversely impact Dynegy by resulting in allowance allocations that are not indicative of current emissions or the future emission control capabilities of Dynegy's EGUs.

1. EPA Should Defer the Effective Date of the Transport Rule Until 30 to 36 Months After Promulgation

As proposed, the Transport Rule would take effect in 2012, less than one year after the rule is finalized, with a second phase of SO_2 reductions to begin in 2014. These dates are

contrary to the recommendations of the Lake Michigan Air Directors Consortium that recommended any CAIR replacement rule include an initial compliance date no earlier than 2017. Dynegy believes EPA should defer implementation of the Transport Rule until 30 to 36 months after the rule is finalized for several reasons.

First, as recognized by EPA, "emissions reductions from scrubbers by 2012 or 2013 can only reasonably be achieved if that scrubber either exists today, or if it is currently under construction." 75 Fed. Reg. at 45273. Scrubbers that have already been installed and those that are currently being installed are, almost without exception, already needed to meet enforceable emission reduction requirements, including state regulatory programs and NSR consent decrees or new source performance standards. As such, those existing or under construction scrubbers will be operated, as designed, to reduce SO_2 emissions even without a Transport Rule taking effect in 2012. Similarly, the selective catalytic reduction (SCR) NO_x control systems that have already been installed and those that are currently being installed are needed to meet enforceable emission reduction requirements or performance standards. Thus, the bulk of the emission reductions and attendant health benefits expected to be achieved by the proposed Transport Rule will occur in 2012-2013 regardless of whether the rule takes effect before 2014.

Second, by EPA's own admission, if the proposed Transport Rule is finalized in mid-2011, no new scrubbers or SCRs could be built and placed into service by 2012. Without the ability to install new controls, compliance options for affected EGUs are limited to unit shutdowns and allowance purchases. Further, while EPA states "it takes approximately 27 months to build a flue gas desulfurization unit (FGD, or 'scrubber')" and "approximately 21 months to construct a selective catalytic reduction (SCR) unit", 75 Fed. Reg. at 45273, Dynegy believes that material and skilled labor shortages and outage scheduling issues would significantly lengthen those estimates if dozens of FGDs and SCRs had to be constructed in the near term. A Transport Rule with a start date of no earlier than 30 to 36 months after the rule is finalized would provide affected sources a broader range of compliance options -- including the time needed to install scrubbers and/or SCRs -- and a better chance of achieving compliance in a cost effective manner.

Third, EGUs will be subject to several other EPA (or state) emission reduction rules in the next three to five years, some of which will supersede emission reductions required by the Transport Rule and/or overlap (and potentially conflict with) the emission control strategies and technologies needed to comply with the Transport Rule. For example, this includes EPA rulemakings regarding the 24-hour $PM_{2.5}$ NAAQS, a more stringent ozone NAAQS (e.g., the second Transport Rule already envisioned by EPA), the SO_2 1-hour NAAQS, and EGU hazardous air pollutant standards. All these rules are expected to affect the same group of EGUs, the same air pollutants, and/or interrelated pollution control technologies. Rather than proceed in piecemeal regulatory fashion by creating another interim step for emissions control requirements that further complicates planning and promotes compliance inefficiencies, EPA should defer the effective date of the Transport Rule until at least 30 to 36 months after the rule is finalized and provide the opportunity for integrated emission reduction strategy planning and implementation.

Finally, proposing the Transport Rule as a Federal Implementation Plan (FIP) that would take effect in 2012 effectively undercuts the role of states under Clean Air Act Section 110(a)(1) to develop their own State Implementation Plans (SIP). EPA's position that a FIP is the only way to implement this program in order to meet the Agency's arbitrarily self-imposed January 1, 2012 starting date fails due to its circular logic. Moreover, under the Clean Air Act, the FIP process is to be employed only when a state is provided adequate notice to develop a SIP but fails to submit a SIP in a timely manner. EPA's desire to create a new program by 2012 is not an adequate reason to ignore Section 110(a)(1) and push aside state primacy under the Clean Air Act. Beginning implementation of the Transport Rule 30 to 36 months after promulgation, instead of January 1, 2012, would provide states with sufficient time to develop and submit SIPs in accordance with the division of state and federal authority under the Clean Air Act.

2. EPA Must Correct Errors in the Technical Data and Assumptions Regarding Dynegy's EGUs and Recalculate Allowance Allocations Accordingly

EPA's data tables and unit allowance allocations are based on numerous technical errors and faulty assumptions that must be corrected before the Transport Rule is finalized.

a. SO_2 Allowance Allocation Error for Dynegy's Baldwin, IL Facility

EPA's proposed allocation of SO_2 allowances is based on the Agency's assumptions regarding reductions that could be achieved by 2012. In order to achieve such SO_2 reductions from a FGD, that FGD must be constructed and placed into operation prior to 2012.

i. EPA Must Correct the SO_2 Allowance Allocations for Baldwin Unit 2 to Accurately Reflect the FGD In-Service Date

EPA has incorrectly identified the effective date for an FGD requirement at Baldwin Unit 2 as set out in the applicable NSR settlement action.[1] EPA's Base Case v.4.10, at Appendix 3-3.9, identifies "12/31/2011" as the "effective date" for SO_2 Control (install wet or dry FGD) for Baldwin Units 1 and 2 under the Illinois Power Settlement Action.[2] However, by its plain language, the Consent Decree (¶ 66) only requires an FGD to be installed and operating on Baldwin Unit 2 "by no later than ... December 31, 2012"; the Consent Decree does not require an FGD on Baldwin Unit 2 by December 31, 2011.[3] In fact, the Baldwin Unit 2 FGD will not be operable until late 2012. Given that the in-service date of the Baldwin Unit 2 FGD will not occur until late 2012 and the correct effective date of the FGD requirement (December 31, 2012), the SO_2 allowance allocations for Baldwin Unit 2 in 2012 and 2013 should be based on

[1] *United States v. Illinois Power Co. et al.*, No. 99-833-MJR, S.D. Ill., May 27, 2005 (Consent Decree) (relevant provisions included as Attachment A to this letter).

[2] USEPA Documentation for EPA Base Case v.4.10 Using the Integrated Planning Model (Aug. 2010).

[3] Specifically, ¶ 66 of the Consent Decree -- see Attachment A -- requires installation and operation of an FGD on each of the three units at Baldwin according to the following staggered scheduled: on any one of the three Baldwin units by no later than December 31, 2010, on a second Baldwin unit by December 31, 2011, and on the remaining third Baldwin unit by December 31, 2012. Baldwin Unit 2 is the last of the three Baldwin units on which an FGD will be installed.

Baldwin Unit 2's current SO_2 emission rate, rather than a fraction of the December 31, 2012 Consent Decree emission limit. By correcting the effective date of the FGD requirement on Baldwin Unit 2 and using Unit 2's current emission rate, the SO_2 allowance allocation for Unit 2 should increase from 1,319 allowances per year in 2012 and 2013 to 7,809 allowances per year.

This correction of the FGD effective date and allowance calculation for Baldwin Unit 2 is consistent with EPA's proposed allowance allocation for Dynegy's Havana Unit 6, which is also subject to the same "no later than" December 31, 2012 FGD compliance date in the Consent Decree. Because EPA adjusted allocations downward only "if the unit has additional pollution controls projected to be online by 2012" (75 Fed. Reg. at 45309), and because Baldwin Unit 2 will not have an FGD online by January 1, 2012, the allowance allocation for Baldwin Unit 2 should not have been adjusted downward. Thus, EPA must correct the allocation for Baldwin Unit 2 and Illinois state budget, which can be made without adversely impacting any other EGU.

ii. EPA Must Correct the SO_2 Allowance Allocations for Baldwin Units 1, 2 and 3 to Reflect the Correct FGD Design Removal Efficiency

EPA's proposed SO_2 allowance allocations for units operating existing scrubbers are based on reductions up to the scrubbers' "design removal efficiencies". See 75 Fed. Reg. at 45281. The design removal efficiency EPA has assumed for the Baldwin Unit 1, 2 and 3 scrubbers (i.e., 95%) is incorrect. The incorrect assumptions for the Baldwin scrubbers are found in the NEEDSv3.02_EISA.xls spreadsheet (i.e., see "Wet/Dry Scrubber" column V which indicates a Wet Scrubber, and the "Scrubber Efficiency" in column Y that indicates 95% removal efficiency). Also, these incorrect assumptions are found in the NEEDSv410.xls spreadsheet, where column W represents "Wet Scrubbers" but the column Y "Scrubber Efficiency" now lists 98% removal efficiency. If as indicated in the September 1, 2010 NODA EPA uses that IPM and NEEDSv4.10 to determine the final allocations for the Transport Rule, the NEEDSv4.10 file also needs correction.

The correct design emission rate for each of the Baldwin dry scrubbers is 0.100 lb/mmBTU SO_2. That design emission rate -- 0.100 lbs/mmBTU SO_2 (1-hour average) -- is specified in the conformed FGD project specifications, as well as in the air construction permit applications submitted by Dynegy for the dry scrubbers at Baldwin. Furthermore, the Illinois EPA-issued construction permits authorizing installation of the dry scrubbers on Baldwin Units 1, 2 and 3 are based on 0.100 lb/mmBTU SO_2. No other more stringent SO_2 emission limit applies. Indeed, Dynegy has already entered into contracts and has begun construction of all four dry scrubbers required by the Consent Decree. It is not possible to re-design these dry scrubbers at this point because it would cause Dynegy to violate the compliance deadlines of the Consent Decree.

Importantly, EPA's incorrect assumption regarding a 95 percent removal efficiency for the Baldwin scrubbers also fails to recognize a key difference between wet and dry scrubbers. Paragraph 67 of the Consent Decree (see Attachment A) expressly allows installation of either wet or dry scrubbers at Baldwin. Dynegy has elected to construct dry scrubbers, since it had

previously converted the Baldwin units to low sulfur Powder River Basin (PRB) coal. With our PRB coal having uncontrolled SO_2 emissions of 0.4 to 0.5 lbs SO_2/mmBtu, Dynegy's dry scrubbers need to achieve 75% to 80% removal efficiency to attain the Consent Decree required emission limit of 0.100 lb/mmBTU SO_2 30-day rolling average. Only if the Baldwin units were combusting high sulfur coal, which they are not, would wet scrubbers capable of 95 percent (or greater) removal efficiency have been needed. EPA must recognize in this rulemaking and in its IPM model that the design removal capability of wet and dry scrubbers are appreciably different and that dry scrubbers designed for low sulfur PRB coal do not need to attain the same high removal efficiencies as wet scrubbers.

In short, if EPA retains Phase 1 (2012-2013) of this proposed rule, the Phase 1 SO_2 allowance allocations for Baldwin Units 1 and 3 should be based on 0.100 lb/mmBTU SO_2 with Baldwin Unit 1 allocated 2,054 SO_2 allowances per year in 2012 and 2013 and Baldwin Unit 3 allocated 2,077 SO_2 allowances per year in 2012 and 2013. Baldwin Unit 2, which will not have a scrubber until 2013 (i.e., December 31, 2012), should be allocated 7,809 SO_2 allowances per year in 2012 and 2013. Likewise, the Phase 2 allocations for the Baldwin units should based on 0.100 lb/mmBTU SO_2 with Baldwin Unit 1 allocated 2,187 SO_2 allowances per year, Baldwin Unit 2 2,255 SO_2 allowances per year and Baldwin Unit 3 2,328 allowances per year.

b. <u>Non-Representative Heat Inputs at Dynegy EGUs</u>

At several of Dynegy's EGUs the four quarters of heat input data used by EPA to determine allowance allocations were not representative of normal unit operation. See EPA spreadsheet "BADetailedData.xls" in the Allocations & Rate Limits worksheet. The data are in column O "Heat Input Assumed in 2012 SO_2 Allocation", column Q "Heat Input Assumed in Annual NOx Allocation", and column R "Heat Input Assumed in Ozone Season NOx Allocation." These instances of unusually low heat inputs were largely due to extended outages associated with the installation of new baghouse systems and activated carbon injection systems (i.e., Baldwin Unit 3, Havana Unit 6, Hennepin Units 1 and 2). Economic and weather conditions during 2008 and 2009 also resulted in unit heat inputs that were significantly lower than typical.

Attachment B to this letter identifies the heat input values EPA used for the affected Dynegy units and the heat input values that Dynegy believes are more representative of normal unit operation. Attachment B also explains the reasons EPA's heat input values are not representative. Dynegy requests that EPA replace its original heat input values with the more representative heat inputs when it recalculates Dynegy's allowance allocations for these units. EPA's recalculation of Dynegy's allocations should result in 6,407 SO_2 allowances in 2012 and 2013 for Havana Unit 6; 4,752 SO_2 allowances in 2012 and 2013 for Hennepin Unit 2; 993 Annual NO_x allowances per year for Baldwin Unit 1; 379 Annual NOx allowances per year for Hennepin Unit 1; 1,279 Annual NO_x allowances per year for Hennepin Unit 2; 590 Annual NO_x allowances per year for Wood River Unit 4; and 159 ozone season NO_x allowances for Hennepin Unit 1.

c. IPM-Modeled Outcomes Do Not Reflect Actual Source Operations

IPM predicted that the vast majority of dual-fuel oil and gas units would run exclusively on natural gas. Therefore, EPA did not allocate any SO_2 allowances to dual fuel units. Apparently, IPM concluded that it was most "economical" to run these units on natural gas and failed to consider seasonal constraints on natural gas supply. Shortage of natural gas supply during winter months, especially in the Northeast, is a real concern and is one of the primary reason these units have dual-fuel capability. The reality is that many of these units burn oil during winter months and need to do so to ensure a reliable electric supply. This is specifically the case with Dynegy's Roseton Units 1 and 2 located in Newburgh, NY.

In addition, IPM projects early retirement of our Danskammer Units 1 and 2 (dual-fuel oil and gas units located in New York) by 2014, but Dynegy does not have any plans to retire these units by 2014. It is unclear why EPA has made such a unilateral decision without recognizing the continued need for these units during periods of high peak demand to support the reliable supply of electricity, a vital role they have played many times during their past history of service.

d. Other Technical Errors Involving Dynegy EGUs

EPA's data tables and allowance allocations for Dynegy units also include other technical errors. These Dynegy unit-specific errors are identified in Attachment C to this letter. EPA must correct each of these errors and recalculate the allowance allocations accordingly.

3. Allowance Allocations Should Not Disadvantage Well-controlled EGUs

EPA's proposed allowance allocation methodology would not only reward high emitters and punish well-controlled EGUs, but also encourage increased operation of higher emitting EGUs relative to well-controlled EGUs. Rather than promoting such an inequitable result and its associated adverse implications for air quality, EPA should modify its allowance allocation methodology to ensure that allocations do not disadvantage well-controlled EGUs relative to higher emitting EGUs.

a. Impact on Operating Cost

EGUs are typically dispatched based on operating cost with the least expensive units dispatched more than higher priced units. An EGU's operating cost includes the price of fuel and operating efficiency, along with several environmental factors including the cost of chemicals used to control emissions, the cost to dispose control system by-products, and the cost of emission allowances. For example, units with scrubbers incur significant expenditures for chemicals (e.g., lime or limestone) and auxiliary power, as well as significant expenses associated with byproduct disposal. In fact, the byproduct disposal for scrubbed units will increase dramatically if EPA regulates scrubber material under RCRA Subtitle C. Likewise, units with SCRs incur significant expenses associated for ammonia and catalyst replacement.

Because these well-controlled units incur significant additional expenses that are not incurred by uncontrolled units, the higher-emitting, least controlled units are, all things being equal, dispatched more.

EPA's proposed allowance allocation methodology would further encourage higher capacity factors for the least controlled and higher emitting units that do not have as many environmental costs. Specifically, EPA would allocate relatively few SO_2 and NO_x allowances to well-controlled units, but allocate relatively more SO_2 and NO_x allowances to units with higher emissions rates. Thus, these higher emitting units that do not have costs for SCRs or FGDs could enjoy a two-fold competitive advantage over well-controlled units equipped with both an SCR and FGD.

EPA's IPM model has attempted to consider these numerous economic impacts when predicting unit heat inputs. Since EPA does not have unit-specific operating costs, numerous and broad assumptions have been used in IPM. EPA's assumptions produce significantly different and often lower operating predictions than Dynegy's internal commercial business model. Rather than relying on either simulation model, Dynegy recommends EPA use representative historic unit heat input or gross electrical output to allocate emission allowances (see Dynegy Comment 3.b below).

b. <u>Alternative Allocation Methodology</u>

Instead of rewarding higher emitting EGUs through its proposed allowance allocation methodology and projected heat inputs, EPA should allocate allowances to all fossil fuel-fired EGUs based on each source's proportional share of historic total state heat input or gross electrical output. This alternative allowance allocation approach is similar to EPA's alternative methodology discussed in the preamble (75 Fed. Reg. at 45311) and would create an opportunity for well-controlled units to recover a portion of their operating costs and at the same time create an incentive for higher emitting units to lower their emissions, except that it would rely on historic operating levels instead of predicted future operations. This would effectively impose the cost of buying allowances on less controlled sources making their operational cost nearer to that of the well-controlled sources. Or in EPA's words "this alternative method for distributing allowances would have the effect of distributing the responsibility for eliminating all or part of a state's overall significant contribution and interference with maintenance to individual units", 75 Fed. Reg. at 45311, rather than focusing that responsibility on the well-controlled units. This alternative allocation method, similar in concept to EPA's Acid Rain allowance allocations, would create a level playing field for all sources by not rewarding high emitting units with extra allowances and not penalizing well-controlled units with low allocations.

c. Voluntary Early Compliance or Over-Compliance Should Not be the <u>Basis for Lower NO_x Allowance Allocations</u>

From 2005 through 2009 Dynegy voluntarily operated its SCR-controlled units well below all applicable NO_x limits. As proposed, the Transport Rule would inexplicably penalize

Dynegy for voluntarily having achieved additional NO_x reductions at its SCR units by allocating approximately 60 percent fewer annual and ozone season NO_x allowances to these units than would otherwise be allocated if Dynegy had only met its enforceable NO_x emission limits. Other EGUs that voluntarily over-controlled would be similarly penalized.

EPA's use of the lowest NO_x rates ever achieved at such voluntarily over-controlled units to determine NO_x allowance allocations would also have other negative impacts. For example, it would indirectly hinder compliance flexibility by eliminating a possible source of tradeable allowances. More specifically, it would essentially eliminate Dynegy's ability to generate any NO_x allowances it will need for compliance at its other units in Illinois, thereby limiting compliance options and increasing compliance costs. Moreover, basing Transport Rule NO_x allowance allocations on these previous voluntary over-control efforts would perpetuate the need to use disproportionately large quantities of ammonia at Dynegy's SCR-controlled units, more than 500 tons of ammonia per year for each SCR-controlled unit and much more than needed to comply with the federally enforceable NO_x limits.

In short, EPA's proposed allocation methodology is poor environmental policy in that it would punish EGUs that have installed and operated state-of-the-art pollution control systems beyond applicable requirements, while rewarding those EGUs that have lagging environmental performance. It also would create a disincentive for an affected facility to go beyond its minimum compliance requirements.

4. Dynegy Supports Interstate Trading

Dynegy, which owns and operates EGUs in several affected states, supports EPA's proposal to allow interstate allowance trading. While Dynegy would prefer unlimited interstate trading to the extent permitted by the Clean Air Act, even EPA's proposed limited interstate trading as described in its Preferred Remedy Option would improve compliance costs. Limited interstate trading would give companies such as Dynegy the flexibility to decide where to make its most cost effective emission reductions and then move allowances between its units (within the proposed variability limits) rather than purchasing allowances from other out-of-state sources.

In the event EPA does not defer the effective date of the Transport Rule until 30-36 months after promulgation, Dynegy strongly supports EPA's proposal for unlimited intrastate trading and no variability limits prior to 2014. Such compliance flexibility will be essential for effective transition to the Transport Rule program.

5. Dynegy Supports EPA's Decision Not to Auction Allowances

Although Dynegy does not support the intrastate-only trading option, in the event that EPA promulgates a final rule based on this option, EPA should not enable or endorse government-run allowance auctions. Governmental auctioning of allowances would substantially increase the cost of the Transport Rule upon regulated entities, adding to viability

concerns for many units and, thus, ultimately increasing costs to consumers and decreasing the reliability of electric supply.

Summary

Dynegy urges EPA to defer the effective date of the Transport Rule until 30-36 months after the rule is finalized, so that affected EGUs would have a broader range of compliance options to cost effectively achieve compliance, including the opportunity for integrated emission reduction strategy planning and implementation regarding other Clean Air Act rulemakings, and that the states have the ability to develop their own air quality plans through the SIP process. Dynegy also requests that EPA revise its allocation methodology so that EGU systems with emission rates lower than the state average are not forced to bear the brunt of the compliance cost while EGU systems with emission rates above the state average are rewarded for not previously installing scrubbers or SCRs. Finally, EPA must correct the erroneous technical data and assumptions, and resulting allowance allocations, for Dynegy's EGUs as identified in this letter.

Sincerely,

Ben C. Trammell, Jr.
Managing Director
Government Affairs
Dynegy Inc.

Rick Diericx
Senior Director
Environmental Compliance
Dynegy Midwest Operations

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ILLINOIS

UNITED STATES OF AMERICA Plaintiff, and THE STATE OF ILLINOIS, AMERICAN BOTTOM CONSERVANCY, HEALTH AND ENVIRONMENTAL JUSTICE – ST. LOUIS, INC., ILLINOIS STEWARDSHIP ALLIANCE, and PRAIRIE RIVERS NETWORK Plaintiff - Intervenors, v. ILLINOIS POWER COMPANY and DYNEGY MIDWEST GENERATION, INC., Defendants.	)	Civil Action No. 99-833-MJR

CONSENT DECREE

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WHEREAS, the United States of America ("the United States"), on behalf of the United States Environmental Protection Agency ("EPA") filed a Complaint against Illinois Power Company ("Illinois Power") on November 3, 1999, and Amended Complaints against Illinois Power Company and Dynegy Midwest Generation, Inc. ("DMG") on January 19, 2000, March 14, 2001, and March 7, 2003, pursuant to Sections 113(b) and 167 of the Clean Air Act (the "Act"), 42 U.S.C. §§ 7413(b) and 7477, for injunctive relief and the assessment of civil penalties for alleged violations at the Baldwin Generating Station of:

(a) the Prevention of Significant Deterioration provisions in Part C of Subchapter I of the Act, 42 U.S.C. §§ 7470-92;

(b) the federally enforceable State Implementation Plan developed by the State of Illinois (the "Illinois SIP"); and

(c) the New Source Performance Standard provisions in Part A of Subchapter I of the Act, 42 U.S.C. § 7411.

WHEREAS, EPA issued Notices of Violation with respect to such allegations to Illinois Power on November 3, 1999 and November 26, 2000;

WHEREAS, EPA provided Illinois Power, DMG, and the State of Illinois actual notice of violations pertaining to its alleged violations, in accordance with Section 113(a)(1) and (b) of the Act, 42 U.S.C. § 7413(a)(1) and (b);

WHEREAS, Illinois Power was the owner and operator of the Baldwin Facility from 1970 to October 1999. On October 1, 1999, Illinois Power transferred the Baldwin Facility to Illinova Corporation. Illinova Corporation then contributed the Baldwin Facility to Illinova

Power Marketing, Inc., after which time Illinois Power no longer owned or operated the Baldwin Facility.

WHEREAS, beginning on October 1, 1999 and continuing through the date of lodging of this Consent Decree, Illinois Power has been neither the owner nor the operator of the Baldwin Facility or of any of the Units in the DMG System which are affected by this Consent Decree;

WHEREAS, in February 2000, Illinova Corporation merged with Dynegy Holdings Inc. and became a wholly owned subsidiary of Dynegy Inc. (referred to herein as "Dynegy"). Thereafter, Illinova Power Marketing, Inc., the owner of the Baldwin Facility, changed its name to Dynegy Midwest Generation, Inc. (referred to herein as "DMG"). On September 30, 2004, Dynegy, through Illinova, sold Illinois Power to Ameren Corporation.

WHEREAS, Ameren and Illinova Corporation, a subsidiary of Dynegy, have entered into an agreement which provides for the escrow of certain funds, the release of which funds is related to the resolution of certain contingent environmental liabilities that were alleged in the above-referenced Amended Complaints against Illinois Power and DMG.

WHEREAS, Plaintiff-Intervenors – the American Bottom Conservancy, Health and Environmental Justice - St. Louis, Inc., Illinois Stewardship Alliance, the Prairie Rivers Network, and the State of Illinois – moved to intervene on September 25, 2003 and filed Complaints in Intervention. The Court granted intervention to all movants on October 23, 2003.

WHEREAS, in their Complaints, Plaintiff United States and Plaintiff Intervenors (collectively "Plaintiffs") allege, *inter alia,* that Illinois Power and DMG failed to obtain the necessary permits and install the controls necessary under the Act to reduce sulfur dioxide,

nitrogen oxides, and/or particulate matter emissions, and that such emissions can damage human health and the environment;

WHEREAS, the Plaintiffs' Complaints state claims upon which relief can be granted against Illinois Power and DMG under Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477, and 28 U.S.C. § 1355;

WHEREAS, DMG and Illinois Power have denied and continue to deny the violations alleged in the Complaints, maintain that they have been and remain in compliance with the Act and are not liable for civil penalties or injunctive relief, and DMG is agreeing to the obligations imposed by this Consent Decree solely to avoid further costs and uncertainty;

WHEREAS, DMG has installed equipment for the control of nitrogen oxides emissions at the Baldwin Facility, including Overfire Air systems on Baldwin Units 1, 2, and 3, Low NO_X Burners on Baldwin Unit 3 and Selective Catalytic Reduction ("SCR") Systems on Baldwin Units 1 and 2, resulting in a reduction in emissions of nitrogen oxides from the Baldwin Plant of approximately 65% below 1999 levels from 55,026 tons in 1999 to 19,061 tons in 2003;

WHEREAS, DMG switched from use of high sulfur coal to low sulfur Powder River Basin coal at Baldwin Units 1, 2 and 3 in 1999 and 2000, resulting in a reduction in emissions of sulfur dioxide from the Baldwin Plant of approximately 90% below 1999 levels from 245,243 tons in 1999 to 26,311 tons in 2003;

WHEREAS, the Parties anticipate that the installation and operation of pollution control equipment pursuant to this Consent Decree will achieve significant additional reductions of SO_2, NO_x, and PM emissions and thereby further improve air quality;

WHEREAS, in June of 2003, the liability stage of the litigation resulting from the United States' claims was tried to the Court and no decision has yet been rendered; and

WHEREAS, the Plaintiffs, DMG and Illinois Power have agreed, and the Court by entering this Consent Decree finds: that this Consent Decree has been negotiated in good faith and at arms length; that this settlement is fair, reasonable, in the best interest of the Parties and in the public interest, and consistent with the goals of the Act; and that entry of this Consent Decree without further litigation is the most appropriate means of resolving this matter;

NOW, THEREFORE, without any admission by the Defendants, and without adjudication of the violations alleged in the Complaints or the NOVs, it is hereby ORDERED, ADJUDGED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over this action, the subject matter herein, and the Parties consenting hereto, pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and 1367, Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477, and Section 42(e) of the Illinois Environmental Protection Act, 415 ILCS 5/42(e). Venue is proper under Section 113(b) of the Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c). Solely for the purposes of this Consent Decree and the underlying Complaints, and for no other purpose, Defendants waive all objections and defenses that they may have to the Court's jurisdiction over this action, to the Court's jurisdiction over the Defendants, and to venue in this District. Defendants shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree. Solely for purposes of the Complaints filed by the Plaintiffs in this matter and resolved by the Consent Decree, for purposes of entry and enforcement of this Consent Decree,

operates NO_x control technology, other than an SCR, that has been demonstrated to be capable of achieving and maintaining a 30-Day Rolling Average Emission Rate not greater than 0.100 lb/mmBTU NO_x and if such unit has become subject to a federally enforceable 0.100 lb/mmBTU NO_x 30-Day Rolling Average Emission Rate.

E. General NO_x Provisions

65. In determining Emission Rates for NO_x, DMG shall use CEMS in accordance with the reference methods specified in 40 C.F.R. Part 75.

V. SO_2 EMISSION REDUCTIONS AND CONTROLS

A. SO_2 Emission Limitations and Control Requirements

66. No later than the dates set forth in the Table below for each of the three Units at Baldwin and Havana Unit 6, and continuing thereafter, DMG shall not operate the specified Unit unless and until it has installed and commenced operation of, on a year-round basis, an FGD (or equivalent SO_2 control technology approved pursuant to Paragraph 68) on each such Unit, so as to achieve and maintain a 30-Day Rolling Average Emission Rate of not greater than 0.100 lb/mmBTU SO_2.

UNIT	DATE
First Baldwin Unit (i.e., any of the Baldwin Units 1, 2 or 3)	December 31, 2010
Second Baldwin Unit (i.e., either of the 2 remaining Baldwin Units)	December 31, 2011
Third Baldwin Unit (i.e., the remaining Baldwin Unit)	December 31, 2012
Havana Unit 6	December 31, 2012

67. Any FGD required to be installed under this Consent Decree may be a wet FGD or a dry FGD at DMG's option.

68. With prior written notice to the Plaintiffs and written approval from EPA (after consultation by EPA with the State of Illinois and the Citizen Plaintiffs), DMG may, in lieu of installing and operating an FGD at any of the Units specified in Paragraph 66, install and operate equivalent SO_2 control technology so long as such equivalent SO_2 control technology has been demonstrated to be capable of achieving and maintaining a 30-Day Rolling Average Emission Rate of not greater than 0.100 lb/mmBTU SO_2.

69. Beginning on the later of the date specified in Paragraph 66 or the first Operating Day of each Unit thereafter, and continuing thereafter, DMG shall operate each FGD (or equivalent SO_2 control technology approved pursuant to Paragraph 68) required by this Consent Decree at all times that the Unit it serves is in operation, provided that such operation of the FGD or equivalent technology is consistent with the technological limitations, manufacturers' specifications, and good engineering and maintenance practices for the FGD or equivalent technology. During any such period in which the FGD or equivalent technology is not operational, DMG will minimize emissions to the extent reasonably practicable.

70. No later than 30 Operating Days after entry of this Consent Decree, and continuing thereafter, DMG shall operate Hennepin Units 1 and 2 and Wood River Units 4 and 5 so as to achieve and maintain a 30-Day Rolling Average Emission Rate from each of the stacks serving such Units of not greater than 1.200 lb/mmBtu SO_2.

applicable Title V permit, or if a Decree requirement was intended to be part of a Title V Permit and did not become or remain part of such permit, then such requirement may be enforced under the terms of this Decree at any time.

XXVIII. FINAL JUDGMENT

196. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment among the Plaintiffs, DMG, and Illinois Power.

SO ORDERED, THIS 27th DAY OF MAY, 2005.

s/ Michael J. Reagan
HONORABLE MICHAEL J. REAGAN
UNITED STATES DISTRICT JUDGE

Attachment B

Non-Representative Heat Inputs for Dynegy Midwest Generation Facilities

A. *Budgets and Allocations – Detailed Unit Level Data; Allocations & Rates* worksheet.

i. Baldwin Energy Complex, Illinois (ORIS 889) Unit 1: The "Heat Input assumed in Annual NOx Allocation" (column Q) is based on the sum of heat inputs for the four quarters of CY 2008. This value (38,900,402 MMBtu) is not representative of normal operation for this unit, since the period includes six weeks of scheduled maintenance outage time during the 2nd quarter of 2008 (from April 5, 2008 through May 15, 2008) during which the unit was off-line. We believe the heat input sum from the four quarters of CY 2009 (42,376,555 MMBtu) provides a more representative basis for calculating the Annual NOx allocation for this unit.

ii. Havana Station, Illinois (ORIS 891) Unit 9. The "Heat Input Assumed in 2012 SO2 Allocation (column O) is based on the sum of heat input values from the 4th quarter of 2008 through the 3rd quarter of 2009. This value (23,418,549 MMBtu) is not representative of normal operation for this unit, since the period includes 12 weeks of scheduled outage time to construct and make provisions for additional emission controls. The unit was offline from March 20, 2009 through June 11, 2009 to place into operation a new baghouse for particulate control and a new sorbent injection system for mercury control, plus ductwork for a future dry scrubber FGD system. We believe the heat input sum from the 3rd quarter of 2009 through the 2nd quarter of 2010 (30,183,467 MMBtu) provides a more representative basis for calculating the 2012 SO_2 allocation for this unit.

iii. Hennepin Station, Illinois (ORIS 892)

a. Unit 1: The "Heat Input assumed in Annual NOx Allocation" (column Q) is based on the sum of heat inputs for the four quarters of CY 2008 (4,277,351 MMBtu). The Heat Input assumed in Ozone Season NOx Allocation" (column R) is based on total heat input for the 2008 Ozone Season (1,543,357 MMBtu). These values are not representative of normal operation for this unit, since the period includes 5 weeks of scheduled outage time to incorporate additional emission controls. The unit was offline from September 17, 2008 through October 23, 2008 to install ductwork and finish construction of a baghouse for particulate control and sorbent injection system for mercury control. We believe that the annual heat input for 2009 (5,566,820 MMBtu) and the ozone season heat input for 2009 (2,231,107 MMBtu) provide a more representative basis for calculating the Annual NOx and Ozone Season NOx allocations for this unit.

b. Unit 2: The "Heat Input Assumed in 2012 SO2 Allocation (column O) is based on the sum of heat input values from the 4th quarter of 2008 through the 3rd quarter of 2009 (14,614,026 MMBtu). The "Heat Input assumed in Annual NOx Allocation" (column Q) is based on the sum of heat inputs for the four quarters of CY 2008 (13,264,585 MMBtu). These values are not representative of normal operation for this unit, since the period includes 10 weeks of

scheduled outage time to incorporate additional emission controls. The unit was offline from September 26, 2008 through December 7, 2008 to install ductwork and finish construction of a baghouse for particulate control and sorbent injection system for mercury control. We believe that heat input sum from the 3rd quarter of 2009 through the 2nd quarter of 2010 (19,021,990 MMBtu) provides a more representative basis for calculating the 2012 SO_2 and Annual NOx allocations for this unit.

iv. Wood River Station, Illinois (ORIS 898) Unit 4. The "Heat Input assumed in Annual NOx Allocation" (column Q) is based on the sum of heat inputs for the four quarters of CY 2008. This value (6,566,433 MMBtu) is not representative of normal operation for this unit, since the period includes 9 weeks of scheduled maintenance outage time during the 4th quarter of 2008 (from September 26, 2008 through December 2, 2008) during which time the unit was off-line for a structural rebuild of its electrostatic precipitator. We believe the heat input sum from the four quarters of CY 2009 (8,662,213 MMBtu) provides a more representative basis for calculating the Annual NOx allocation for this unit.

Attachment C

Other Unit-Specific Technical Errors for Dynegy Facilities

I. **Budgets and Allocations – Detailed Unit Level Data** (Excel spreadsheet downloaded from Technical Information page on epa.gov/airquality/transport web site)

A. ***Unit Characteristics*** worksheet

i. Baldwin Energy Complex, Illinois (ORIS 889) Unit 1. The USEPA data table indicates that an FGD system is expected online in 2010-2011 (checkmark is present in Committed FGD – 2010-2011 column). This is incorrect. In fact, the FGD system on this unit will not be operable until late 2011 and the USEPA – Dynegy Consent Decree specifies the FGD system on this unit must be in operation by December 31, 2011. Thus, for the purpose of this analysis, the FGD system should not be considered online until 2012.

ii. Baldwin Energy Complex, Illinois (ORIS 889) Unit 2. The USEPA data table indicates that an FGD system is expected online in 2010-2011 (checkmark is present in Committed FGD – 2010-2011 column). This is incorrect. In fact, the FGD system on this unit will not be operable until late 2012 and the USEPA – Dynegy Consent Decree specifies the FGD system on this unit must be in operation by December 31, 2012. Thus, for the purpose of this analysis, the FGD system should not be considered online until 2013.

iii. Danskammer Power Station, New York (ORIS 2480) Units 5 and 6. Danskammer Units 5 and 6 are emergency diesel internal combustion generators rated at 2.5 MW each. They were constructed to provide black-start capability for the main units at Danskammer. They do not generate electricity to the grid. They will not be affected units under the Proposed Rule.

B. ***Adjustments*** worksheet.

i. Baldwin Energy Complex, Illinois (ORIS 889) Units 1 & 2. The USEPA data table indicates Adjustment to Reported SO_2 – 2010-2011 FGD (tons) of -6817.39 tons (for Unit 1) and -6690.7 tons (for Unit 2). As noted above, the FGD systems on these units are not required to be in operation prior to December 31, 2011 (Unit 1) and December 31, 2012 (Unit 2) and will not be operable until shortly prior to those yearend deadlines. These adjustments should be deleted.

ii. Kendall County Generation Facility, Illinois (ORIS 55131) Units CTG1, CTG 2, CTG3, CTG4, STG1, STG2, STG3, & STG4. The USEPA data table shows Adjustments to Reported Annual NOx – pre-2009 SCR (column E) of approximately -1 ton for each of these units. The table also shows Adjustments to Projected Annual NOx – Existing/Committed SCR (non-dispatchable) (column Z) of approximately -11 tons (CTGs) and approximately -8 tons (STGs). We presume these

adjustments are intended to account for year-round operation of SCR systems. However, the SCR systems on all four CTG/STG units at Kendall have been operated year-round in order to meet stringent short-term BACT emission limits on NOx since these units began operation in 2002. These adjustments are thus inappropriate and should be deleted.

C. ***Adjusted Data*** worksheet.

i. Values for Reported Annual SO_2 – Adjusted for Controls values are incorrect for Baldwin Energy Complex, Illinois Units 1 & 2, due to invalid adjustments described above.

ii. Values for Reported Annual NOx – Adjusted for Controls and Heat Input values are incorrect for Kendall County Generation Facility, Illinois all CTG/STGs, due to invalid adjustments described above.

D. ***Allocations & Rates*** worksheet.

i. Baldwin Energy Complex, Illinois (ORIS 889). Units 1 & 2: Values for 2012 SO_2 Allocation (column K) are incorrect due to invalid adjustments described above.

ii. Kendall County Generation Facility, Illinois (ORIS 55131). Values for 2012 NOx Allocations are incorrect for all CTGs/STGs, due to invalid adjustments described above.

iii. Plum Point Energy, Arkansas (ORIS 56456). The original NOx emission estimates should be revised upward to reflect a greater expected capacity factor and a slightly higher emission rate based real-time generating experience with this new plant, which commenced commercial operation in 2010. The NOx ozone season allocation of 549 allowances should be 847 allowances.

II. **Integrated Planning Model (IPM) v. 3.0 Files** – files downloaded from EPA's IPM Base Case 2006 (v 3.0) web page (on epa.gov/airmarkets/progsregs/epa-ipm web site)

A. ***ParsedFile_TR_SB_Limited_Trading.xls -- TR_SB_Limited_Trading 2012 worksheet and TR_SB_Limited_Trading 2014 worksheet***

i. Baldwin Energy Complex, Illinois (ORIS 889) Unit 1. The USEPA data table (EMF_Controls column) indicates the following emission controls exist today: Cold-side ESP + Fabric Filter + SCR + Wet Scrubber. This is incorrect. In fact, only the Cold-side ESP and SCR system currently exist on this unit. A spray dryer-absorber (dry scrubber) and Fabric Filter are planned to be in operation on this unit by December 31, 2011, as specified in the USEPA – Dynegy Consent Decree.

ii. Baldwin Energy Complex, Illinois (ORIS 889) Unit 2. The USEPA data table (EMF_Controls column) indicates the following emission controls exist today: Cold-side ESP + Fabric Filter + SCR

+ Wet Scrubber. This is incorrect. In fact, only the Cold-side ESP and SCR system currently exist on this unit. A spray dryer-absorber (dry scrubber) and Fabric Filter are planned to be in operation on this unit by December 31, 2012, as specified in the USEPA – Dynegy Consent Decree.

iii. Baldwin Energy Complex, Illinois (ORIS 889) Unit 3. The USEPA data table (EMF_Controls column) indicates the following emission controls exist today: Cold-side ESP + Fabric Filter + Wet Scrubber. This is incorrect. In fact, only the Cold-side ESP currently exists on this unit. A spray dryer-absorber (dry scrubber) and Fabric Filter are planned to be in operation on this unit by December 31, 2010, as specified in the USEPA – Dynegy Consent Decree.

iv. Vermilion Station, Illinois (ORIS 897) Unit 2. A Fabric Filter is now in operation on this unit for particulate control.

B. ***NEEDSv3.02_EISA.xls*** worksheet

i. Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, and 3. The USEPA data table (Wet/Dry Scrubber column (col. U) and EMF_Contols column (col. X)) indicates these units are equipped with Wet Scrubbers. This is incorrect. In fact, these units will eventually be equipped with spray dryer-absorber systems (dry scrubbers). The USEPA data table also indicates the scrubbers for Units 1 and 2 will be online in 2011. This is incorrect. The required operational dates for these dry scrubbers are December 31, 2011 (Unit 1) and December 31, 2012 (Unit 2) and they will not be operable until shortly before those yearend deadlines.

ii. Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2 and 3. The USEPA data table (Scrubber Efficiency, column AI) indicates 95% control efficiency for the FGD scrubber systems on these units. This is incorrect. In fact, the dry scrubber systems that will be installed on these units are designed to achieve an emission rate of 0.100 lb SO_2/MMBtu when firing low-sulfur subbituminous coal.

iii. Danskammer Station, New York (ORIS 2480) Units 1 and 2. The USEPA data table column Q (and column AH in v4.10) identify percentage of sulfur-in-oil limits for these units rather than the pounds of SO_2 per million Btu limit. USEPA should convert these sulfur-in-oil limits to pounds of SO_2 per million Btu limits using a USEPA's Acid Rain National Allowance Data Base conversion factor of 1.07. The resulting sulfur dioxide limits for Units 1 and 2 should be 1.07 pounds SO_2 per million Btu. This value should replace the sulfur-in-oil limits currently displayed in the NEEDS spreadsheets.

iv. Roseton Station, New York (ORIS 8006) Units 1 and 2. The USEPA data table column Q (and column AH in v4.10) identify percentage of sulfur-in-oil limits for these units rather than the pounds of SO_2 per million Btu limit. USEPA should convert these sulfur-in-oil limits to pounds of SO_2 per million Btu limits using a USEPA's Acid Rain National Allowance Data Base conversion factor of 1.07. The resulting maximum sulfur dioxide limits for Units 1 and 2 should be 1.61

pounds SO_2 per million Btu and the annual limit should be 1.39 SO_2 per million Btu. These values should replace the sulfur-in-oil limits currently displayed in the NEEDS spreadsheets.

v. Danskammer Station, New York (ORIS 2480) Units 1 and 2. The USEPA data table (column T in v3.02 and column Z in v4.10) should indicate that both Unit 1 and 2 employ Low Excess and Combustion Air Modification. The current database incorrectly indicates no combustion controls for Danskammer Units 1 and 2.

vi. The Modeled Fuels for Danskammer Units 3 and 4 (column AJ in v3.02 and in column V in v4.10) incorrectly identifies only bituminous coal. Danskammer Units 3 and 4 are capable of firing natural gas for unit startup and cofiring natural gas in conjunction with bituminous coal. Natural gas should be added to the Modeled Fuels of Danskammer Units 3 and 4.

vii. Danskammer Station, New York (ORIS 2480) Units 1 and 2. Danskammer Units 1 and 2 employ Low Excess and Combustion Air Modification; Units 3 and 4 employ Low NOx Concentric Firing System II Technology. The NOx emission rate values associated with these existing combustion controls (based on the most recent 5-year btu-weighted, annual emission rates and displayed in columns Y through AB in v3.02 and columns AI through AL in v4.10) are 0.246 lb NOx/MMbtu for Unit 1, 0.263 lb NOx/MMbtu for Unit 2, 0.238 lb NOx/MMbtu for Unit 3 and 0.295 lb NOx/MMbtu for Unit 4. See attached Table A for the data used to determine these 5-year averages.

viii. Roseton Station, New York (ORIS 8006) Units 1 and 2. Roseton Units 1 and 2 employ Flue Gas Re-circulation to the Windbox. The NOx emission rate values associated with these existing combustion controls (based on the most recent 5-year btu-weighted, annual emission rates and displayed in columns Y through AB in v3.02 and columns AI through AL in v4.10) are 0.212 lb NOx/MMbtu for Unit 1, and 0.206 lb NOx/MMbtu for Unit 2. See attached Table A for the data used to determine these 5-year averages.

ix. The Emission Modification Factors for Mercury at Danskammer Units 3 and 4 (displayed in columns X and AC through AH in v3.02 and columns AM through AS in v4.10) should indicate only Cold-Side Electrostatic Precipitators. Neither Danskammer Unit 3 nor 4 has any Mercury control technology and no post-combustion controls of any kind.

C. ***Modeling Documentation: EPA's IPM Base case 2006 (v 3.0); Section 3, Power System Operation Assumptions; Appendix 3-3, page 6***. Regarding Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, and 3, several of the effective dates for FGD systems and baghouses noted in the USEPA data table are incorrect.

i. The USEPA - Dynegy Consent Decree specifies that the FGD system for Unit 2 (the "Third Baldwin Unit") commence operation no later than December 31, 2012, and the FGD system for Unit 3 (the "First Baldwin Unit") commence operation no later than December 31, 2010.

ii. The USEPA - Dynegy Consent Decree specifies that the baghouse for Unit 1 (the "Second Baldwin Unit") commence operation no later than December 31, 2011, and the baghouse for Unit 2 (the "Third Baldwin Unit") commence operation no later than December 31, 2012.

III. **Integrated Planning Model (IPM) Files: EPA's IPM Base Case v. 4.10** – files downloaded from the EPA Clean Air Markets Division web page.

A. ***Modeling Documentation for EPA's IPM Base Case v. 4.10 – Chapter 3, Power System Operation Assumptions. Appendix 3-3, New Source Review (NSR) Settlements in EPA Base Case 4.10, pages 8 & 9, listing for Illinois Power.*** Regarding Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, & 3, several of the effective dates for FGD systems and baghouses noted in the EPA data table are incorrect.

i. The USEPA - Dynegy Consent Decree specifies that the FGD system for Unit 1 (the "Second Baldwin Unit) commence operation no later than December 31, 2011, the FGD system for Unit 2 (the "Third Baldwin Unit") commence operation no later than December 31, 2012, and the FGD system for Unit 3 (the "First Baldwin Unit") commence operation no later than December 31, 2010. These FGD systems will not be operable until shortly before those respective yearend deadlines.

ii. The USEPA - Dynegy Consent Decree specifies that the baghouse for Unit 1 (the "Second Baldwin Unit") commence operation no later than December 31, 2011, and the baghouse for Unit 2 (the "Third Baldwin Unit") commence operation no later than December 31, 2012.

B. ***NEEDS v. 4.10 Files – NEEDSv410.xls worksheet***

i. Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, and 3. The USEPA data table (Wet/Dry Scrubber column, col. W) indicates these units are currently equipped with Wet Scrubbers. This is incorrect. In fact, these units will eventually be equipped with spray dryer-absorber systems (dry scrubbers). The data table also indicates (col. X) the scrubbers will be online in year 2011. This is also incorrect. The required operational dates for these dry scrubbers are December 31, 2011 (Unit 1), December 31, 2012 (Unit 2), and December 31, 2010 (Unit 3) and the dry scrubbers will not be operable until shortly before those respective yearend deadlines. The data table also indicates (col. Y) the dry scrubbers have a removal efficiency of 98%. This is incorrect. In fact, the dry scrubbers that will be installed on these units have been designed to achieve an SO_2 emission rate of 0.1 lb/MMBtu. Entries in the "Hg EMF Inputs" column (col. AM) also include these errors regarding existing emission control devices.

ii. Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, and 3. The USEPA data table (PM Control column, col. AD) indicates these units are currently equipped with Cold-Side ESPs and baghouses. This is incorrect. In fact, these units are currently equipped with ESPs and will eventually be equipped with baghouses. The required operational dates for these baghouses

are December 31, 2011 (Unit 1), December 31, 2012 (Unit 2), and December 31, 2010 (Unit 3). Entries in the "Hg EMF Inputs" column (col. AM) also include these errors regarding existing emission control devices.

iii. Baldwin Energy Complex, Illinois (ORIS 889) Units 1 and 2. The USEPA data table (cols. AI and AK) indicates that the uncontrolled NOx rate for these units with post-combustion controls (SCR) shut off is 0.0723 lb NOx/MMBtu. This is incorrect. Based on CEMS data reported to USEPA's Clean Air Markets Division prior to the installation of the SCR systems, the NOx rate for these units without their SCR systems in operation is 0.61 lb NOx/MMbtu.

iv. Havana Station, Illinois (ORIS 891) Unit 9. The USEPA data table (cols. AI and AK) indicates that the uncontrolled NOx rate for this unit with post-combustion controls (SCR) shut off is 0.0547 lb NOx/MMBtu. This is incorrect. Based on CEMS data reported to USEPA's Clean Air Markets Division prior to the installation of the SCR system, the NOx rate for this unit without its SCR system in operation is 0.25 lb NOx/MMbtu.

v. Hennepin Station, Illinois (ORIS 892) Unit 1. Regarding the data in the "NOx Combustion Controls" column (col. Z) – this unit is equipped with Low NOx burners and an Overfire Air System.

vi. Danskammer Station, New York (ORIS 2480) Units 1 and 2. The USEPA data table column AH in v4.10 identifies the percentage of sulfur-in-oil limits for these units rather than the pounds of SO_2 per million Btu limit. USEPA should convert these sulfur-in-oil limits to pounds of SO_2 per million Btu limits using a USEPA's Acid Rain National Allowance Data Base conversion factor of 1.07. The resulting sulfur dioxide limits for Units 1 and 2 should be 1.07 pounds SO_2 per million Btu. This value should replace the sulfur-in-oil limits currently displayed in the NEEDS spreadsheets.

vii. Roseton Station, New York (ORIS 8006) Units 1 and 2. The USEPA data table column AH in v4.10 identifies the percentage of sulfur-in-oil limits for these units rather than the pounds of SO_2 per million Btu limit. USEPA should convert these sulfur-in-oil limits to pounds of SO_2 per million Btu limits using a USEPA's Acid Rain National Allowance Data Base conversion factor of 1.07. The resulting maximum sulfur dioxide limits for Units 1 and 2 should be 1.61 pounds SO_2 per million Btu and the annual limit should be 1.39 SO_2 per million Btu. These values should replace the sulfur-in-oil limits currently displayed in the NEEDS spreadsheets.

viii. Danskammer Station, New York (ORIS 2480) Units 1 and 2. The USEPA data table column Z in v4.10 should indicate that both Unit 1 and 2 employ Low Excess and Combustion Air Modification. The current database incorrectly indicates no combustion controls for Danskammer Units 1 and 2.

ix. The Modeled Fuels for Danskammer Units 3 and 4 in column V in v4.10 incorrectly identifies only bituminous coal. Danskammer Units 3 and 4 are capable of firing natural gas for unit

startup and cofiring natural gas in conjunction with bituminous coal. Natural gas should be added to the Modeled Fuels of Danskammer Units 3 and 4.

C. ***ParsedFile_TR Base Case_2012.xls and ParsedFile_TR_SB_Limited_Trading_2014.xls***

i. Baldwin Energy Complex, Illinois (ORIS 889) Units 1, 2, and 3. As noted in the comments above regarding the NEEDS v.4.10 worksheet, the data in the Hg EMF Inputs column (col. O) and Post Combustion Controls column (col. AH) is incorrect for these units. By 2012, dry scrubbers systems will be installed only on Units 1 and 3, and by 2014, dry scrubbers will be installed on all three units.

ii. In both the TR_SB_Limited_Trading 2012 and 2014 Tabs/sheets, the primary fuel for Danskammer (ORIS 2480) Units 1 and 2 in column L are incorrectly identified as "Natural Gas." The primary fuel data in column L should indicate "Oil" for both units.

iii. In both the TR_SB_Limited_Trading 2012 and 2014 Tabs/sheets, the primary fuel for Roseton (ORIS 8006) Units 1 and 2 in column L are incorrectly identified as "Natural Gas." The primary fuel data in column L should indicate "Oil" for both units.

iv. In both the TR_SB_Limited_Trading 2012 and 2014 Tabs/sheets, there are no NOx controls listed in column P for Danskammer (ORIS 2480) Units 1 and 2; this in incorrect. Consistent with our NEEDS comments regarding these units, column P should indicate that Danskammer Units 1 and 2 employ Low Excess and Combustion Air Modification to control NOx.

Table A – Danskammer (ORIS 2480) and Roseton (ORIS 8006) 5-Year Btu-Weighted Annual Emission Rates

Danskammer		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
D1	2005	189.2	378400	1622867	0.233168	378400	
	2006	18.6	37200	147152	0.2528	37200	
	2007	65.4	130800	452253	0.289219	130800	5-Year Btu-Weighted NOx Rate
	2008	7.5	15000	57979	0.258714	15000	
	2009	27.1	54200	221334	0.244879	54200	
	Sum			2501585		615600	**0.246083983**

		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
D2	2005	107.9	215800	756000	0.28545	215800	
	2006	18.9	37800	144523	0.26155	37800	
	2007	50.7	101400	408032	0.24851	101400	5-Year Btu-Weighted NOx Rate
	2008	11.2	22400	100496	0.222894	22400	
	2009	15.6	31200	142577	0.218829	31200	
	Sum			1551628		408600	**0.263336315**

		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
D3	2005	1097.7	2195400	8360963	0.262577	2195400	
	2006	819.6	1639200	6710242	0.244283	1639200	
	2007	1184.6	2369200	10190495	0.232491	2369200	5-Year Btu-Weighted NOx Rate
	2008	1127.8	2255600	10107480	0.223161	2255600	
	2009	917.4	1834800	7936342	0.23119	1834800	
	Sum			43305522		10294200	**0.237711024**

		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
D4	2005	1903.6	3807200	13315924	0.285913	3807200	
	2006	2444.2	4888400	16191954	0.301903	4888400	
	2007	2522	5044000	15949677	0.316245	5044000	5-Year Btu-Weighted NOx Rate
	2008	2404.2	4808400	16401970	0.29316	4808400	
	2009	1707.4	3414800	12576757	0.271517	3414800	

	Sum			74436282		21962800	**0.295055038**

Roseton		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
R1	2005	1904.1	3808200	17520768	0.217353	3808200	
	2006	244.2	488400	2407118	0.202898	488400	
	2007	440.6	881200	4055159	0.217303	881200	5-Year Btu-Weighted NOx Rate
	2008	142.1	284200	1516634	0.187389	284200	
	2009	210.7	421400	2233028	0.188712	421400	
	Sum			27732707		5883400	**0.212146618**

		Tons	Lbs	mmbtu	NOx Rate	Col E x Col F	
R2	2005	2029.1	4058200	18453787	0.219912	4058200	
	2006	234.2	468400	2413631	0.194064	468400	
	2007	736.4	1472800	7237118	0.203506	1472800	5-Year Btu-Weighted NOx Rate
	2008	269.1	538200	3264311	0.164874	538200	
	2009	210.3	420600	2343983	0.179438	420600	
	Sum			33712830		6958200	**0.2063962**

September 12, 2011

Hon. Ralph Hall, Chairman
Hon. Eddie Bernice Johnson, Ranking Member
Committee on Science, Space and Technology
U.S. House of Representatives
2321 Rayburn House Office Building
Washington, D.C. 20515-6301

Re: EPA's Cross-State Air Pollution Rule

Dear Chairman Hall and Ranking Member Johnson:

We understand that the House Science Committee will be holding a hearing on the Cross-State Air Pollution Rule (CSAPR), an EPA Clean Air Act rule focusing on interstate air emissions from electric generating units, on Sept. 15, 2011. We offer the following remarks for the record in order to make clear the position of Dynegy Inc. on CSAPR. While we would note that the rule can be improved through technical corrections, we are supportive of the rule.

As a Texas company writing to Members of the Texas Delegation to Congress, we fully understand the perception that the rule works some unfairness on certain business interests within our state. However, we want you to know that this is not a uniformly-held position; rather, it is a reflection of particular investment decisions. Having made different decisions (particularly with respect to our Illinois facilities), we have made substantial capital investments in state-of-the-art air pollution control devices. Any efforts to delay or derail CSAPR would undermine the reasonable, investment-backed expectations of Dynegy.

Houston-based Dynegy provides wholesale power, capacity and ancillary services to utilities, cooperatives, municipalities and other energy companies in six states in our key U.S. regions of the Midwest, the Northeast and the West Coast. Dynegy's power generation portfolio consists of approximately 11,600 megawatts of baseload, intermediate and peaking power plants fueled by a mix of coal, fuel oil and natural gas. Our geographic, dispatch and fuel diversity contribute to a portfolio that is well-positioned to capitalize on regional differences in power prices and weather-driven demand to the benefit of consumers and businesses.

The orderly and predictable implementation of CSAPR actually removes business uncertainty in the electric power sector that was created when the federal courts invalidated the forerunner to CSAPR known as the Clean Air Interstate Rule. Like other capital-intensive industries, the power sector thrives and creates jobs in situations of certainty. In our case, CSAPR allows competitive markets to confer deserved economic returns on our investments in clean energy technology - investments made as a result of corporate policy, the operation of applicable law in the states in which we operate, and additional federal requirements. Dynegy's 3000 megawatts of generating assets in Illinois, enough to power roughly three million homes, are mostly coal-fired, base and intermediate-load facilities. These coal-fired operations employ about 700 individuals and we have an additional 300 employees at our Houston office. Our capital investment in clean air technologies at these coal facilities totals about one billion dollars since EPA finalized CAIR in March 2005.

Of course, it goes without saying that control of interstate air pollution serves important public policy objectives, including protection of human health and the environment as well as the preservation of opportunities for economic development in downwind communities.

Thank you for this opportunity to make our position known. The bottom line is that those corporations that have invested in effective air pollution control devices were counting on a stable regulatory environment. While no one suggests that CSAPR is perfect, its continued progress towards implementation is important for that stability.

Very truly yours,

Robert C. Flexon

IBEW
INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

SEVENTH DISTRICT

EDWIN D. HILL
International President

SALVATORE (SAM) CHILIA
International Secretary-Treasurer

JONATHAN GARDNER
International Vice President, Seventh District

320 Westway Place, Suite 531 • Arlington, TX 76018 • Phone 817-557-1611 • Fax 817-557-4801 • Email: ivpd_07@ibew.org

June 16, 2011

Ms Gina McCarthy
Assistant Administrator, Office of Air and Regulation
U. S. Environmental Protection Agency
Ariel Rios Building
Mail Code 6101A
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Dear Administrator McCarthy,

I am writing regarding the possible inclusion of the state of Texas in the sulfur dioxide (SO_2) program under the U.S. Environmental Protection Agency's (EPA) Clear Air Transport Rule (CATR).

The International Brotherhood of Electrical Workers (IBEW) represents approximately 23, 000 workers employed throughout the state of Texas. It has come to our attention the EPA is considering the inclusion of the state of Texas in the SO_2 program, although such inclusion has not been officially proposed and stakeholders have not been given an opportunity to comment on this contemplated action.

The IBEW strongly opposes this action on the grounds that there has never been a comment period for an SO_2 state reduction budget for Texas, nor has the EPA issued any guidance on potential SO_2 control measures for Texas.

The EPA's CATR proposal in August 2010 did not include Texas in the annual program for nitrogen oxides (NOx) and SO_2 emission reductions. Nowhere in the 256 page rule or in 3 subsequent notices does the EPA propose emission limits, allocation budgets, or specify proposed requirements for Texas.

The IBEW is very concerned that the impact of including Texas in the final CATR for SO_2 would result in significant increases in electricity rates, temporary or even permanent shutdown of existing coal-fired power plants, reduced capacity reserves and enormous job losses. This action would directly jeopardize the jobs of approximately 1,500 IBEW members working at six different power plants across the state of Texas.

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS
SEVENTH DISTRICT

The EPA's final rule must include the transparent process which permits public review and comments for all stakeholders by providing all necessary information the process requires especially considering the probable negative impact on jobs, electricity rates and electric reliability.

The shutdown of coal-fired units without any meaningful benefit to the environment is not justified and the IBEW"s position is that Texas should not be included in the final CATR for the SO_2 program.

Thank you for our consideration of the important issues raised in this letter.

Respectfully yours,

Jonathan Gardner
International Vice President

News Release
FOR IMMEDIATE RELEASE

Luminant

Luminant Announces Facility Closures, Job Reductions in Response to EPA Rule

Company Forced to Take Difficult Steps; Files Suit to Protect Jobs, Reliability

DALLAS – September 12, 2011 – In employee meetings today across its Texas operations, Luminant leadership announced the need to close facilities to comply with the Environmental Protection Agency's Cross-State Air Pollution Rule, which will cause the loss of approximately 500 jobs.

The rule, which the EPA released earlier this summer, requires Texas power generators to make dramatic reductions in emissions beginning January 1, 2012. While Luminant is making preparations to meet the rule's compliance deadline, this morning it also filed a legal challenge in an effort to protect facilities and employees, and to minimize the harm this rule will cause to electric reliability in Texas.

To meet the rule's unrealistic deadline and requirements, Luminant reluctantly must take the difficult steps of idling two generating units and ceasing mining Texas lignite at three mines. Luminant will also implement several other actions to reduce emissions, including making substantial investments in its facilities.

Luminant supports continued efforts to improve air quality across the state and nation. Since 2005, for example, Luminant has achieved a 21 percent reduction in SO_2 emissions, while at the same time increasing generation by 13 percent.

CEO Statement

"As always, Luminant is committed to complying fully with EPA regulations. We have spent the last two months identifying all possible options to meet the requirements of this new rule, and we are launching a significant investment program to reduce emissions across our facilities," said David Campbell, Luminant's chief executive officer. "However, meeting this unrealistic deadline also forces us to take steps that will idle facilities and result in the loss of jobs," said Campbell.

"We have hundreds of employees who have spent their entire professional careers at Luminant and its predecessor companies," added Campbell. "At every step of this process, we have tried to minimize these impacts, and it truly saddens me that we are being compelled to take the actions we've announced today. We have filed suit to try to avoid these consequences."

Legal Basis and Support
The company's legal action is part of a broader effort, supported by a large and bipartisan contingent of political and community leaders, to achieve these goals without harming critically important Texas jobs and electric reliability.

Luminant, like several other affected companies and governmental entities, believes the rule's mandates for Texas are unlawful. A year ago, the EPA's proposed rule did not include Texas in the annual SO_2 and NO_x reductions programs. Now, one year later, the CSAPR imposes a 47 percent SO_2 reduction and substantial NOx reductions by Texas sources beginning in January 2012. And notably, the rule requires a 64 percent reduction of SO_2 emissions to Luminant's fossil fuel generating units.

Luminant's suit in the United States Court of Appeals for the District of Columbia Circuit seeks to invalidate the CSAPR as to Texas. Further, to try to stop the adverse effects on Luminant, its employees, and its customers in advance of the compliance deadline, Luminant will seek a judicial stay of this rule because of the immediate and irreparable harm that it will inflict.

Operational Response Plan
To ensure compliance in this extremely compressed time frame, production and operational changes will have to be made at two of the company's large power plant and mining complexes. Under the Electric Reliability Council of Texas's protocol, these decisions must be communicated to the Council by October 3 so they can adequately prepare for 2012.

At the Monticello Power Plant and supporting Thermo and Winfield mines in Northeast Texas, the following steps will be necessary:

- Monticello Units 1 and 2 will be idled. These units have a capacity of approximately 1,200 megawatts.
- Monticello Unit 3 will cease using Texas lignite for fuel and begin to operate on 100 percent Powder River Basin coal.
- Thermo and Winfield mines will cease mining Texas lignite with the idling of Monticello units 1 and 2 and the fuel switching at Monticello Unit 3, but Luminant will continue reclamation activities at these sites.

At Big Brown Power Plant and its supporting mine in Freestone County, the following steps will be necessary:

- Big Brown units 1 and 2 will cease using Texas lignite for fuel and begin to operate on 100 percent Powder River Basin coal.
- The Big Brown/Turlington Mine will cease mining Texas lignite, but Luminant will continue reclamation activities there.

In addition to these job losses at Luminant, the closures will mean that the counties and communities around the company's affected operations will see decreased tax contributions, indirect employment, support of local small businesses and other economic activity.

Investment Program
At Monticello Unit 3 and two of Luminant's other coal generating facilities, the Martin Lake Power Plant in Rusk County and the Sandow 4 Power Plant in Milam County, the company will

immediately begin a substantial investment program to upgrade the capabilities of existing environmental control equipment, install new environmental control equipment and implement programs to reduce emissions.

The company expects to invest approximately $280 million by the end of 2012 and estimates that it will spend more than $1.5 billion before the end of the decade in environmental control equipment to comply with regulatory requirements. Unfortunately, the rule's 2012 deadline will not allow for the permitting, construction and installation of new equipment in time to avoid the announced closures.

These investments in environmental control equipment represent the latest in a series of significant investments across Energy Future Holdings, parent company to Luminant, and its subsidiaries. Since 2007, EFH companies have invested over $11 billion in the state's infrastructure and created 1,500 net new jobs with about 675 of those at Luminant.

The emissions reduction installations Luminant has underway across its fleet follow a series of voluntary actions the company has taken to reduce emissions - actions that have already produced positive results.

Federal Legal Action Outlined

Luminant submitted to the EPA a request for reconsideration and stay of the new rule on August 5, on which the agency has not acted. This morning, the company filed a petition with the U.S. Court of Appeals for the District of Columbia Circuit asking the court to invalidate CSAPR as to Texas. As part of its action, Luminant also plans to ask the court to stay the applicability of the EPA rule. In its request for a stay, the company will demonstrate that:

- Without fair notice and the opportunity to provide comment, the EPA has mandated that Texas slash its SO_2 emissions by half and greatly reduce NOx emissions in less than five months — a compliance timetable that is impossible to meet without facility closures and job cuts.
- The standard time frame for permitting, constructing, and installing new emission controls is several years, yet the rule allowed less than six months.
- The state would bear 25 percent of the SO_2 reduction burden imposed under this rule, which is more than twice the state's contribution to the total SO_2 emissions of all states included in the rule. Before these mandates go into effect, current SO_2 emissions rates for the state's power generation plants are already lower than the average of the other states included in the rule.
- Having less than a year ago concluded that Texas SO_2 emissions have no significant downwind effects, the EPA is now mandating these CSAPR reductions because the agency predicts, through its modeling, a small contribution from Texas to the air quality at a single monitor 500 miles away in Madison County, Illinois — a location EPA itself has concluded is in air-quality attainment based on actual air sample monitoring. In effect, the rule improperly elevates the EPA's hypothetical modeling over actual monitored conditions.
- Similarly, the rule imposes severe NOx emission reductions on Luminant, based on modeling that conflicts with actual monitored conditions.
- These requirements will seriously jeopardize the ability of the state's electric grid to supply power to Texas businesses and consumers and cause the loss of hundreds of jobs with corresponding effects on local communities whose economies depend on Luminant's facilities.

About Luminant

Luminant, a subsidiary of Energy Future Holdings Corp., is a competitive power generation business, including mining, wholesale marketing and trading, and development operations. Luminant has more than 15,400 megawatts of generation in Texas, including 2,300 MW fueled by nuclear power and 8,000 MW fueled by coal. The company is also the largest purchaser of wind-generated electricity in Texas and fifth largest in the United States. EFH is a Dallas-based energy holding company that has a portfolio of competitive and regulated energy subsidiaries, primarily in Texas. Visit www.luminant.com or www.energyfutureholdings.com for additional information.

Related Fact Sheet for September 12, 2011 News Release

Luminant

- Largest power generator in Texas.
- Approximately 4,400 employees throughout the state.
- 2,580 are employed across the company's coal plant and mining operations.
- Created about 675 net new jobs since the beginning of 2008.

Big Brown Power Plant

Location: Freestone County, Texas
Power Plant and Mine Employees: 332
Operating Capacity: Two units with approximately 1,200 megawatts
Supporting Mine: Big Brown/Turlington
2010 Tax Contribution: $8.6 million

Monticello Power Plant

Location: Titus, Camp, Hopkins and Franklin County, Texas
Power Plant and Mine Employees: 473
Operating Capacity: Three units with 1,880 megawatts
Supporting Mines: Thermo, Winfield
2010 Tax Contribution: $17.4 million

Capacity Reduction

The idling of Monticello Units 1 and 2 and the derates that result from switching to 100 percent Powder River Basin coal at Monticello 3 and Big Brown units 1 and 2 will reduce Luminant's generating capacity by approximately 1,300 megawatts – about 9 percent of the company's total.

* * *

Luminant Responds to Recent EPA Statements about Texas, Luminant and CSAPR

Background: EPA Deputy Administrator Bob Perciasepe sent a letter to Luminant CEO David Campbell on September 11, 2011, and EPA Assistant Administrator for Air and Radiation Gina McCarthy put out a statement on September 12, 2011, in response to Luminant's announcement that meeting the CSAPR deadline of January 1, 2012, will require idling two generation units and closing three mines.

Summary of Luminant's position: CSAPR's quick deadline for achieving major emissions reductions rules out any easy alternatives. It is impossible to comply with CSAPR under the rule's timeline without impacting facilities and jobs. While we are committed to continuing conversations with the EPA about potential adjustments to the rule, we are obligated to notify ERCOT, employees, suppliers, and others of those plans well before we implement them. If EPA changes the rule, as we hope and as we've asked, we will welcome the opportunity to alter our implementation plan, allowing us to keep facilities open and all employees on the job.

EPA Letter: *"While making the business decision to close these mines may be one of several cost-effective ways to comply with this rule we do not believe it is the only path forward, particularly given the nation's difficult economic situation."*

- If there were another viable path forward, Luminant would take it. Closing these mines is hardly "cost effective" for Luminant - it hurts the company, our employees, the plant communities, and our bottom line. Despite our requests, EPA has not provided any specific, actionable compliance alternatives that do not require generation curtailment and job losses.
- Over the past few months Luminant has explored all conceivable options for compliance that would minimize electric reliability and job impacts, and we cannot identify any options to comply with CSAPR on its current timetable without significant job loss and curtailed generation.
- It is not a "business decision" to close these facilities; on the contrary, Luminant has every business reason to keep these plants running. We will continue to ask the EPA to provide us with any compliance plans it believes Luminant has not considered and that would prevent these closures.

EPA Letter: *"We will share with you data that illustrate how Texas and Luminant can comply with CSAPR cost-effectively while keeping levels of lignite coal use near current levels, thus avoiding the need to idle plants or shut down mines in response to the requirements of the rule."*

- We are very eager to receive this information. EPA has not yet laid out any specific alternatives that do not involve job losses and facility closures. Luminant is anxious to examine EPA's suggestions of reductions that would allow us to avoid these actions, including the offer to share data that illustrate how Texas and Luminant can comply with CSAPR cost-effectively while keeping lignite coal use at current levels. To this point, EPA has not provided actionable information on a unit-by-unit basis that does not include fuel switching. Instead, by using an assumption that Luminant would cease lignite use at its Martin Lake, Monticello and Big Brown units, EPA's own modeling and data would result in the elimination of more than a thousand lignite mine jobs in Texas.

EPA Letter: *"In the course of our discussions, EPA has offered to make technical adjustments, based on technical information you have recently provided, that will give Texas and Luminant thousands of additional tons of pollution allowances to reduce required emission reductions."*

- We acknowledge and appreciate EPA's willingness to make adjustments where there are technical errors to the modeling. These conversations, and adjustments, are necessary as Luminant and other Texas parties were not able to comment on these technical issues before the rule was finalized, because the proposed rule issued last summer included no budgets – these are the kinds of errors that occur when a proper notice and comment period is not used. However, until EPA actually makes adjustments, Luminant must prepare to comply with the rule as it stands.

***EPA Letter**: "[Luminant's] SO_2 emissions contribute significantly to air pollution and health threats in downwind states, and Texas is required under the Clean Air Act to ensure reductions."*

- The EPA bases its inclusion of Texas in the final rule on a prediction of a very small contribution from Texas generators to a single air quality monitor - only one - in an Illinois town 500 miles away. This is a location that EPA itself has concluded is in air-quality attainment based on actual monitored results. EPA readily concedes that whatever downwind impact Texas might cause is small and barely meets the statutory threshold. In the proposed rule issued in 2010, EPA stated that annual SO_2 emissions the agency projected for Texas would not "significantly contribute" to a failure of attainment in any other state.

***EPA Letter**: "Our analysis indicates that additional reductions can be achieved by relying more on already-installed pollution controls. I ask that your staff examine these alternative compliance options thoroughly before making the business decision to idle these facilities and close the mines – and lay off the workers – that supply the lignite coal they use."*

- We have, over and over again. CSAPR's mandates leave no alternative to steps that include switching fuel and idling plants. Many media reports have repeated the claim that affected Texas units can comply simply by running scrubbers 100 percent. This is wrong. At our five legacy units with scrubbers (Monticello 3, Martin Lake 1-3 and Sandow 4), maximum emissions reductions at full load are actually in the 80 to 85 percent removal range. Our legacy unit scrubbers were not designed to achieve 90 percent to 97 percent removal efficiency. To do so is simply not possible without costly and significant equipment upgrades that take years to complete. The only way to immediately achieve significant reductions on scrubbed units by the compliance deadline is by curtailing unit operating levels at the plants, which will further diminish available capacity and threaten reliability.

***EPA Letter**: "Additionally, there are alternative compliance options that rely on ... the powerful market-based mechanisms in the CSAPR that would not require you to idle any facility or shut down these mines."*

- The availability of credits is highly uncertain. In the near term, there will be far more demand than there is supply for emissions credits. Early trading in the market reinforces this – there is very little market liquidity and market prices are more than four to five times higher than EPA's predicted levels. This is to be expected in 2012 and 2013, since generators will not be physically able to install new environmental control equipment before then.
  - Betting on a trading market is as risky as it sounds; if the company bets on credits being available and the credits aren't there, the consequences are even more severe on facilities and reliability, since even more facilities will have to curtail operations. Also, by design, CSAPR sets limits on the use of trading as a compliance option.
  - Finally, even if an allowance market develops, under the rule, Texas generators will only be able to purchase credits from six other states. The total amount available for purchase is currently well below the volume of required reductions. And even if generators are able to purchase the maximum number of allowances under the program's availability limit for Texas, it would not cover the emissions reductions needed to comply with the rule.

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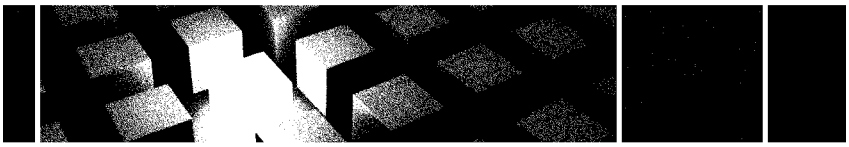

Proposed CATR + MACT

Prepared for:
American Coalition for Clean Coal Electricity

Draft
May 2011

Insight in Economics™

Outline

NERA

- Glossary
- Executive Summary
- Methodology
- Assumptions and Uncertainties
- Energy Market Impacts
- Economic Impacts

Glossary

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- Present value (PV) of costs
  - **Present value**, also known as **present discounted value**, is the value on a given date of a future cost or series of future costs, discounted to reflect the time value of money and other factors such as investment risk. Present value calculations are widely used in business and economics to provide a means to compare costs at different times on a meaningful "like to like" basis
- Annualized value (AV) of costs
  - **Annualized value**, also known as **annualized net present value**, is calculated from a given present value as the average annual value in each future year taking into account the discount rate and the number of years over which costs are calculated. Annualized value calculations are widely used in business and economics to compare costs at different times on a meaningful "like to like" basis, particularly when two cost streams have different lifetimes.
- 2010 dollars
  - Constant value of money based on price levels in 2010
  - Costs or prices reported in 2010 dollars for future years control for inflation between 2010 and future years, so any changes reflect real changes in market conditions
- Henry Hub
  - Henry Hub is the pricing point for natural gas used by the New York Mercantile Exchange (NYMEX) and widely used in the industry. It is a point on the natural gas pipeline system in Louisiana.

Summary of Key Results

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- Evaluated impacts of EPA's Clean Air Transport Rule (CATR) and Utility Maximum Achievable Control Technology (MACT) proposals
- Coal unit retirements would increase by about 48 GW
- Electricity sector costs would increase by $184 billion (present value over 2011-2030 in 2010$) or $17.8 billion per year
  - Includes coal unit compliance costs (including $72 billion in overnight capital costs), fuel price impacts, and costs of replacement energy and capacity
- Coal-fired generation in 2016 would decrease by about 13% and electricity sector coal demand in 2016 would decrease by about 10%
- Natural gas-fired generation in 2016 would increase by about 26% and Henry Hub natural gas prices 2016 would increase by about 17%
  - Increased natural gas prices would increase natural gas expenditures by residential, commercial, and industrial sectors by $85 billion (present value over 2011-2030 in 2010$) or $8.2 billion per year
- Average U.S. retail electricity prices in 2016 would increase by about 12%, with regional increases as much as about 24%
- Net employment in the U.S. would be reduced by more than 1.4 million job-years over the 2013-2020 period, with sector losses outnumbering sector gains by more than 4 to 1.

Comparison of EPA and NERA Modeling of CATR and MACT

NERA

	EPA		NERA
Proposed Regulations	CATR	MACT	CATR+MACT
Source of Technologies	EPA	EPA	Electricity companies
Source of Control Cost	EPA	EPA	EPA
Model	IPM	IPM	NEMS
Coal Units			
Retirements by 2015 (GW)	1.2	9.9	47.9
Annual Costs (billion 2010$)	NA	$8.4	$14.2
Present Value of Costs (billion 2010$)	NA	$77-$86	$118
Electricity Sector			
Annual Costs (billion 2007$)	$2.8	$10.9	Not relevant
Annual Costs (billion 2010$)	$3.0	$11.4	$17.8
Present Value of Costs (billion 2010$)	$27-$35	$97-$133	$184

IPM = ICF Integrated Planning Model
NEMS = EIA National Energy Modeling System
NA = Not available

Electricity system costs reflect all generation and transmission costs.

Dollar conversions use the GDP deflator.

EPA CATR projections relate to the preferred policy alternative (state budgets with limited interstate trading).

NERA coal unit retirements and costs reflect medians from Monte Carlo uncertainty analysis ranges developed by NERA for all coal units.

EPA provides annual costs (including annualized capital costs) only for selected years (2012, 2015, 2020, and 2025 for CATR and 2015, 2020, and 2030 for MACT). EPA annual costs in the table relate to 2015. All present values are calculated between 2011 and 2030 as of 2011. Calculation of EPA PV costs include the assumption that costs begin in 2011 at the earliest available annual value. NERA annual costs are annualized costs derived from present values. EPA PV cost ranges reflect discount rates between 11.3% (EPA's capital charge rate) and 6.15% (EPA's discount rate for non-capital costs). NERA annual and PV costs for coal units reflect discount rates of 7% for public units and 11.8% for merchant units. NERA annual and PV costs for the electricity sector reflect a discount rate of 7%.

Energy Market Impacts Summary for 2016

NERA

2016 CATR+MACT Impacts

	Coal Retirements	Coal-Fired Generation	Elec Sector Coal Demand	Gas-Fired Generation	Elec Sector Gas Demand	Gas Price at Henry Hub	Avg Retail Elec Price
	(GW)	(million MWh)	(million tons)	(million MWh)	(trillion cu ft)	(2010$/MMBtu)	(2010$/MWh)
	2016 Projections						
Reference (No CAIR or State Hg)	5.0	1,910	1,018	603	5.9	$4.50	$87.13
CATR+MACT	52.7	1,658	918	760	7.0	$5.28	$97.18
	Change from 2016 Reference Projections						
CATR+MACT	+47.8	-253	-100	+157	+1.1	+$0.78	+$10.05
	% Change from 2016 Reference Projections						
CATR+MACT	+958%	-13.2%	-9.8%	+26.0%	+18.5%	+17.3%	+11.5%

Notes: Summary results are provided for 2016 rather than 2015 to show the full potential effect on electricity prices.
Electricity price impacts reflect levelized capital costs for environmental controls and new capacity.

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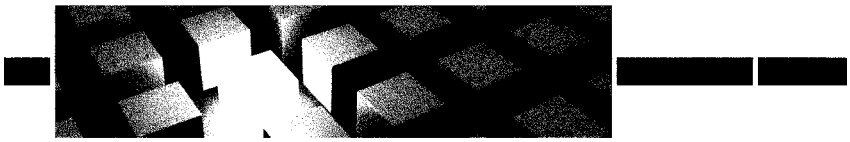

Methodology

Overview of Modeling Methodology
(Note: Simplification of inputs and outputs)

NERA

- CATR+MACT environmental control requirements
- EPA environmental control cost assumptions
- EIA fuel price projections
- EIA electricity price projections

Note: Inputs with significant uncertainty have ranges for Monte Carlo analysis

NERA Retirement Model

- Coal unit retirements due to CATR+MACT
- CATR+MACT environmental control technologies/costs

Note: Retirements are based on higher costs than natural gas replacement capacity in 50% or more of Monte Carlo simulations

- Coal unit retirements due to CATR+MACT
- CATR+MACT environmental control requirements/costs
- EIA *Annual Energy Outlook 2011* assumptions

EIA National Energy Modeling System (NEMS)

- Environmental control costs
- Replacement generation units
- Coal and gas production, consumption, and prices
- Electricity production, consumption, and prices

- Environmental control costs
- Replacement generation costs
- Electricity expenditures
- Coal and gas expenditures
- Consumer income effects

REMI Economic Impacts Model

- Employment
- Gross state product
- Disposable income
- Sector impacts
- Occupation group impacts

Overview of Rationale for Models

NERA

- NERA Retirement Model
  - Monte Carlo formulation allows for inclusion of uncertainty in key parameters (e.g., fuel prices) and development of ranges of costs and retirements
- NEMS
  - State-of-the-art model of the energy system
  - Used extensively by EIA and others
  - Not proprietary with NERA in-house modeling capability
- REMI
  - State-of-the-art regional economic model
  - Ability to model impacts in individual states as well as U.S.
  - Used extensively by government agencies and others
  - Not proprietary with NERA in-house modeling capability

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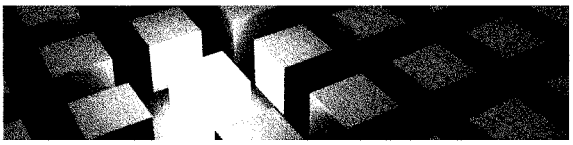

Assumptions and Uncertainties

Control Cost and Penalty Assumptions from EPA and EIA

NERA

	500 MW		300 MW		100 MW	
	EPA	EIA	EPA	EIA	EPA	EIA
Wet Scrubber						
Capital (2010$/kW)	$538	$485	$622	$580	$850	$762
Fixed O&M (2010$/kW-year)	$8.35	$24.99	$11.20	$24.99	$24.40	$24.99
Variable O&M (2010$/MWh)	$2.11	$0.44	$2.11	$0.44	$2.11	$0.44
Capacity Penalty	-1.84%	-5.00%	-1.84%	-5.00%	-1.84%	-5.00%
Heat Rate Penalty	1.87%	5.26%	1.87%	5.26%	1.87%	5.26%
Dry Scrubber						
Capital	$460		$532		$727	
FOM	$6.76		$8.86		$17.71	
VOM	$2.70		$2.70		$2.70	
Capacity Penalty	-1.45%		-1.45%		-1.45%	
Heat Rate Penalty	1.47%		1.47%		1.47%	
SCR						
Capital (2010$/kW)	$201	$165	$217	$184	$268	$225
Fixed O&M (2010$/kW-year)	$0.73	$1.66	$0.83	$1.88	$2.60	$2.25
Variable O&M (2010$/MWh)	$1.38	$0.34	$1.38	$0.34	$1.38	$0.34
Capacity Penalty	-0.58%	0.00%	-0.58%	0.00%	-0.58%	0.00%
Heat Rate Penalty	0.59%	0.00%	0.59%	0.00%	0.59%	0.00%
ACI						
Capital (2010$/kW)	$8	$6	$12	$6	$30	$6
Fixed O&M (2010$/kW-year)	$0.03	$1.71	$0.05	$1.71	$0.12	$1.71
Variable O&M (2010$/MWh)	$0.60	$0.00	$0.56	$0.00	$0.52	$0.00
Capacity Penalty	-0.06%	0.00%	-0.06%	0.00%	-0.06%	0.00%
Heat Rate Penalty	0.06%	0.00%	0.06%	0.00%	0.06%	0.00%
Fabric Filter						
Capital (2010$/kW)	$170	$78	$187	$78	$230	$78
Fixed O&M (2010$/kW-year)	$0.73	$5.97	$0.83	$5.97	$0.94	$5.97
Variable O&M (2010$/MWh)	$0.16	$0.00	$0.16	$0.00	$0.16	$0.00
Capacity Penalty	-0.60%	0.00%	-0.60%	0.00%	-0.60%	0.00%
Heat Rate Penalty	0.60%	0.00%	0.60%	0.00%	0.60%	0.00%
DSI						
Capital (2010$/kW)	$43		$61		$134	
Fixed O&M (2010$/kW-year)	$0.61		$0.94		$2.39	
Variable O&M (2010$/MWh)	$7.70		$7.70		$7.70	
Capacity Penalty	-0.79%		-0.79%		-0.79%	
Heat Rate Penalty	0.79%		0.79%		0.79%	

Notes: Heat rate of 11,000 Btu/kWh is assumed. EIA does not model dry scrubber retrofits.

Assumptions used for Annualization Period

NERA

- Coal unit lifetime assumptions for annualizing the overnight capital costs of control technologies depend on unit age in 2015:
  - Less than 45 years old: 20 years (NEMS baseline assumption)
  - 45 to 54 years old: 15 years
  - 55 years or older: 10 years

Reference Energy Market Conditions: Coal, Natural Gas, and Electricity Prices

NERA

EIA Coal, Natural Gas, and Electricity Prices

	2015	2020	2025	2030	2035
Coal					
Minemouth (2010$/ton)	$33.04	$34.23	$35.11	$35.30	$35.60
Delivered to Elec Sector (2010$/MMBtu)	$2.19	$2.23	$2.31	$2.35	$2.42
Natural Gas					
Henry Hub (2010$/MMBtu)	$4.46	$4.88	$6.05	$6.57	$7.26
Delivered to Elec Sector (2010$/MMBtu)	$4.41	$4.77	$5.82	$6.35	$7.00
Electricity					
Wholesale (2010$/MWh)	$48.35	$49.89	$54.66	$57.05	$59.97
Retail (2010$/MWh)	$87.04	$85.83	$88.47	$89.35	$91.81

Note: Projections reflect EIA's *Annual Energy Outlook 2011: Early Release* (December 2010). Projections are similar in the final version.

Reference Energy Market Conditions: Costs for New Capacity

NERA

EIA Overnight Capital Costs for New Capacity (2010$/kW)

Supercritical Pulverized Coal	$2,805
Natural Gas Combined Cycle	$987
Nuclear	$5,283
Wind	$2,402
Solar Thermal	$4,663
Solar Photovoltaic	$4,672

Note: Projections reflect EIA's *Annual Energy Outlook 2011* (same projections in early release and final version).

Input Assumptions for NERA Retirement Model

NERA

		Expected Value			Uncertainty Range (Lognormal Distributions with Fat Right Tails)		
	Units	Value	Notes	Source	Standard Deviation	95% Confidence Interval	Source
Control Capital Costs							
Scrubber	2010$/kW	$538	Varies by unit (value for 500 MW)	EPA	15% ($80.70 for illustrative 500 MW)	$403 - $718	NEMS environmental control cost model documentation
SCR	2010$/kW	$201	Varies by unit (value for 500 MW)	EPA	15% ($30.15 for illustrative 500 MW)	$151 - $268	NEMS environmental control cost model documentation
ACI	2010$/kW	$8	Same for all units	EPA	15% ($1.20 for all units)	$6 - $11	NEMS environmental control cost model documentation
Fabric Filter	2010$/kW	$170	Same for all units	EPA	15% ($25.50 for all units)	$127 - $227	NEMS environmental control cost model documentation
Discount Rates							
Public	Rate	0.07	Capital costs annualized over 10-20 years depending on unit age	EIA NEMS	0.005	0.06 - 0.08	Historical variation (www.snl.com)
Private	Rate	0.1183	Capital costs annualized over 10-20 years depending on unit age	EIA NEMS	0.005	0.109 - 0.129	Historical variation (www.snl.com)
Prices							
Coal (delivered to electricity sector)	2010$/MMBtu	$2.19	2015 U.S. Avg. (inputs are regional)	EIA NEMS	$0.37 (2015 U.S. Avg.)	$1.58 - $3.03	Historical variation (Bloomberg)
Natural Gas Price (delivered to electricity sector)	2010$/MMBtu	$4.90	2015 U.S. Avg. (inputs are regional)	EIA NEMS	$1.30 (2015 U.S. Avg.)	$2.71 - $7.56	Historical variation (Bloomberg)
Electricity Price (wholesale)	2010$/MWh	$48.35	2015 U.S. Avg. (inputs are regional)	EIA NEMS	$2.60 (2015 U.S. Avg.)	$43.52 - $53.71	Historical variation in gas price and relationship between gas and elec prices (Bloomberg)

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Energy Market Impacts

Context for Coal Units

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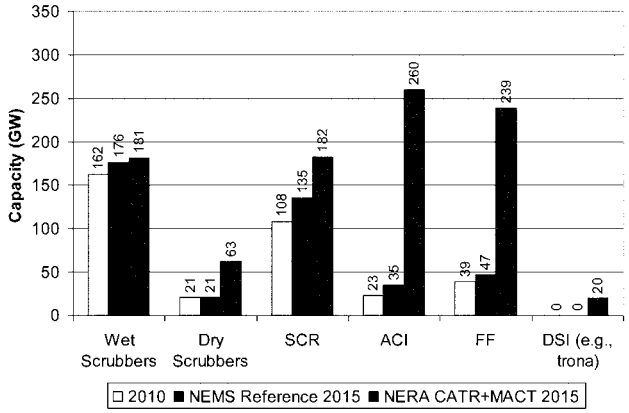
Overview of U.S. Coal Units (> 25 MW) in 2010

	Count	Capacity	Generation
All Coal (> 25 MW)	1196 units	318 GW	1875 TWh
Unscrubbed	721 units	136 GW	739 TWh
	60%	43%	39%
Unscrubbed & > 40 years	566 units	74 GW	358 TWh
	47%	23%	19%
Unscrubbed & > 40 years & HR > 10	454 units	47 GW	221 TWh
	38%	15%	12%

Note: CATR and MACT would exempt coal units smaller than 25 MW. There are 193 coal units smaller than 25 MW in the U.S. and their total capacity is 2.8 GW (EPA, MACT RIA, March 2010, p. 7-3).

CATR + MACT Control Retrofits (Net of Retirements)



Comparison of EPA and NERA Modeling of CATR and MACT

NERA

	EPA		NERA
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Source of Technologies	EPA	EPA	Electricity companies
Source of Control Cost	EPA	EPA	EPA
Model	IPM	IPM	NEMS
Coal Units			
Retirements by 2015 (GW)	1.2	9.9	47.9
Annual Costs (billion 2010$)	NA	$8.4	$14.2
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EPA CATR projections relate to the preferred policy alternative (state budgets with limited interstate trading).

NERA coal unit retirements and costs reflect medians from Monte Carlo uncertainty analysis ranges developed by NERA for all coal units.

EPA provides annual costs (including annualized capital costs) only for selected years (2012, 2015, 2020, and 2025 for CATR and 2015, 2020, and 2030 for MACT). EPA annual costs in the table relate to 2015. All present values are calculated between 2011 and 2030 as of 2011. Calculation of EPA PV costs include the assumption that costs begin in 2011 at the earliest available annual value. NERA annual costs are annualized costs derived from present values. EPA PV cost ranges reflect discount rates between 11.3% (EPA's capital charge rate) and 6.15% (EPA's discount rate for non-capital costs). NERA annual and PV costs for coal units reflect discount rates of 7% for public units and 11.8% for merchant units. NERA annual and PV costs for the electricity sector reflect a discount rate of 7%.

Energy Market Impacts Summary for 2016

NERA

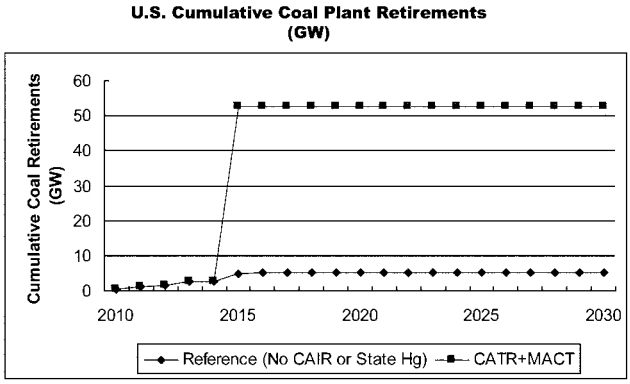
2016 CATR+MACT Impacts

	Coal Retirements	Coal-Fired Generation	Elec Sector Coal Demand	Gas-Fired Generation	Elec Sector Gas Demand	Gas Price at Henry Hub	Avg Retail Elec Price
	(GW)	(million MWh)	(million tons)	(million MWh)	(trillion cu ft)	(2010$/MMBtu)	(2010$/MWh)
	2016 Projections						
Reference (No CAIR or State Hg)	5.0	1,910	1,018	603	5.9	$4.50	$87.13
CATR+MACT	52.7	1,658	918	760	7.0	$5.28	$97.18
	Change from 2016 Reference Projections						
CATR+MACT	+47.8	-253	-100	+157	+1.1	+$0.78	+$10.05
	% Change from 2016 Reference Projections						
CATR+MACT	+958%	-13.2%	-9.8%	+26.0%	+18.5%	+17.3%	+11.5%

Notes: Summary results are provided for 2016 rather than 2015 to show the full potential effect on electricity prices.
Electricity price impacts reflect levelized capital costs for environmental controls and new capacity.

U.S. Cumulative Coal Plant Retirements

NERA

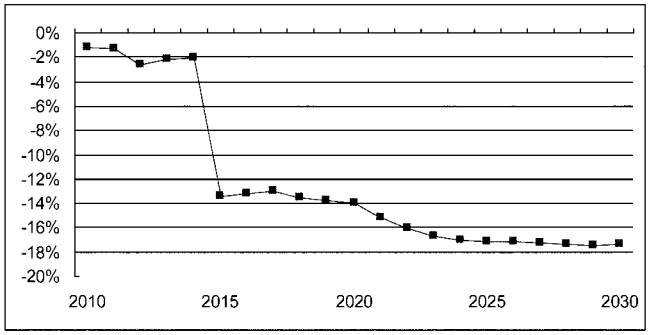


Note: Retirements are cumulative from 2010

U.S. Coal-Fired Generation

NERA

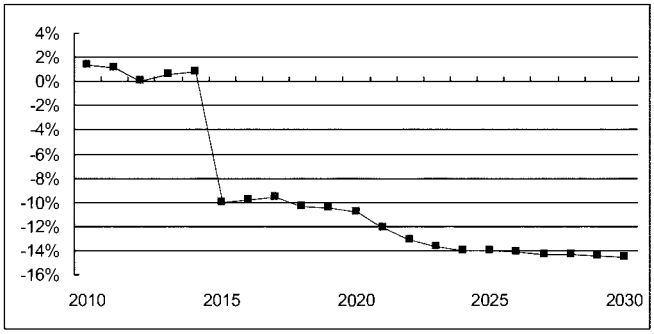
Percentage Change in U.S. Coal-Fired Generation



U.S. Electricity Sector Coal Demand

NERA

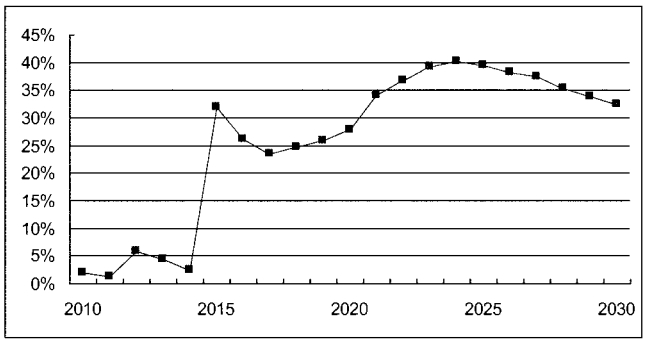
Percentage Change in U.S. Electricity Sector Coal Demand



U.S. Gas-Fired Generation

NERA

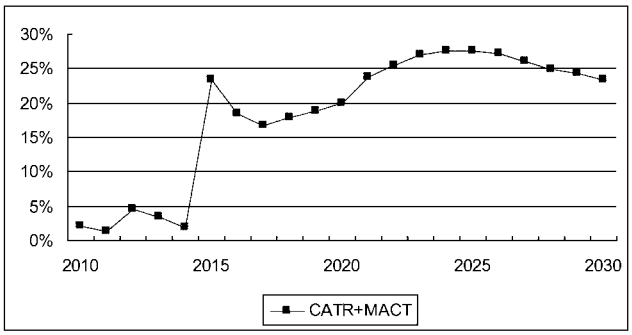
Percentage Change in U.S. Gas-Fired Generation



U.S. Electricity Sector Gas Demand

NERA

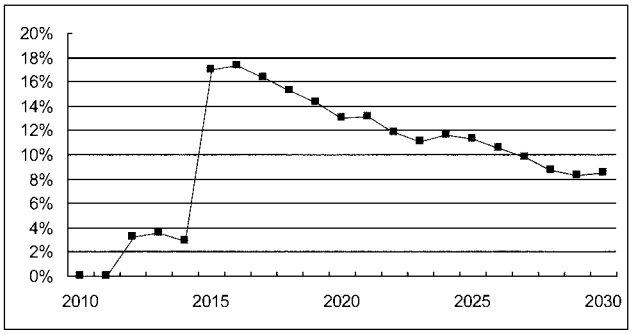
Percentage Change in U.S. Electricity Sector Gas Demand



Henry Hub Natural Gas Price

NERA

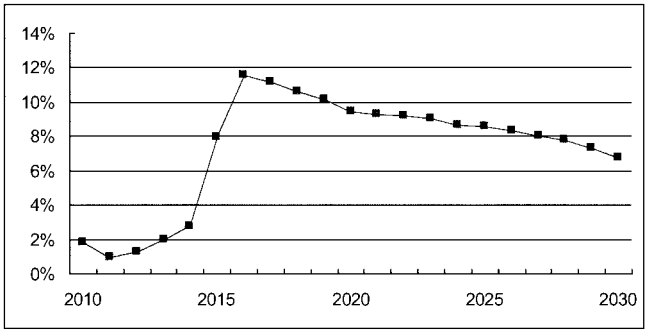
Percentage Change in Henry Hub Natural Gas Price



U.S. Average Retail Electricity Prices

NERA

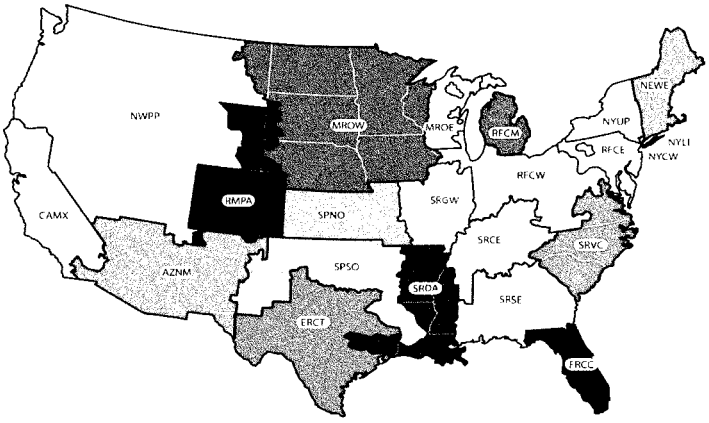
Percentage Change in U.S. Average Retail Electricity Price



Note: Electricity price impacts reflect levelized capital costs for environmental controls and new capacity.

Electricity Regions in NEMS (AEO 2011)

NERA



Source: EIA

Regional Retail Electricity Prices

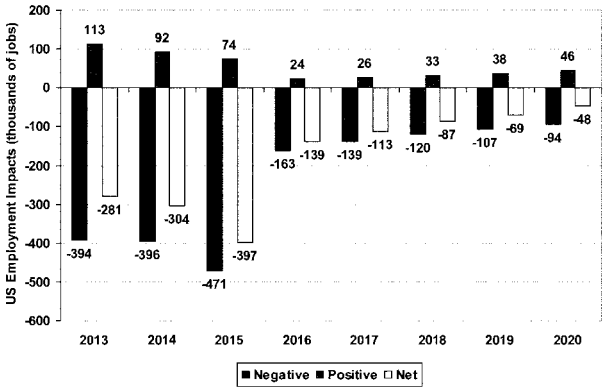
NERA

Percentage Change in Average Retail Electricity Prices

		2016	2020	2025
	US Average	+11.5%	+9.5%	+8.5%
NEWE	New England	+7.5%	+7.7%	+5.4%
NYCW	NYC	+5.5%	+5.0%	+7.6%
NYLI	NY Long Island	+6.5%	+4.8%	+6.6%
NYUP	NY Upstate	+8.0%	+6.4%	+8.1%
RFCE	Mid-Atlantic	+17.1%	+9.9%	+7.8%
SRVC	VA & Carolinas	+12.7%	+9.9%	+8.2%
SRSE	Southeast	+14.5%	+9.4%	+9.8%
FRCC	Florida	+8.8%	+8.9%	+8.5%
RFCM	Lower MI	+20.5%	+17.7%	+13.4%
RFCW	OH, IN, & WV	+12.9%	+12.1%	+11.9%
SRCE	KY & TN	+23.5%	+17.8%	+13.3%
MROE	WI & Upper MI	+21.7%	+17.3%	+12.6%
MROW	Upper Midwest	+17.6%	+14.1%	+10.2%
SRGW	South IL & East MO	+23.1%	+18.8%	+16.3%
SPNO	KS & West MO	+12.8%	+12.0%	+14.6%
SRDA	AR, LA, & West MS	+9.0%	+8.0%	+7.5%
SPSO	Oklahoma	+15.8%	+12.8%	+10.9%
ERCT	Texas	+12.1%	+9.4%	+9.5%
RMPA	CO & East WY	+6.1%	+7.3%	+8.8%
NWPP	Northwest	+2.0%	+4.0%	+7.9%
AZNM	AZ & NM	+6.1%	+5.2%	+3.6%
CAMX	California	+1.8%	+1.9%	+0.8%

Economic Impacts: U.S. Employment 2013-2020

NERA



U.S. Total 2013-2020:

Negative: -1.88 million

Positive: 0.45 million

Net: -1.44 million

Note: Negative employment impacts are the sums of employment impacts in sectors with net losses. Positive employment impacts are the sums of employment impacts in sectors with net gains.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 11 2011

DEPUTY ADMINISTRATOR

Mr. David Campbell
CEO
Luminant Headquarters
Lincoln Plaza
500 North Akard
Dallas, Texas 75201

Dear Mr. Campbell:

For the past two weeks you, Administrator Jackson and I have discussed Luminant's strategy to comply with the Cross-State Air Pollution Rule (CSAPR), building on conversations our staffs have had for months. In the course of those conversations we have discussed a variety of scenarios, consistent with the flexibilities inherent in the Clean Air Act and the CSAPR. We continue to believe there are options to explore that would bring your company into compliance with this rule – a rule that EPA was under court order to finalize and that will have significant public health benefits in Texas and numerous downwind states.

Unfortunately, I understand from our most recent discussions that you intend to announce that you will idle lignite coal-fired units at one of your facilities in Texas because you believe it is the only means by which you can achieve pollution reductions required under the rule. We also understand you will announce your intention to shut down two mines that supply the lignite coal to this and other units. While making the business decision to close these mines may be one of several cost-effective ways to comply with this rule we do not believe it is the only path forward, particularly given the nation's difficult economic situation.

Administrator Jackson and I have made ourselves personally available over the past weeks, as have other members of EPA's senior leadership, to work together to determine a course forward that enables the company to comply with the law and avert these potential impacts on production or jobs. The Administrator, our senior team and I will continue to make Luminant's situation a priority. Given the opportunity that still remains to work through a number of options we feel are available to you, we trust you will continue those discussions before making any final decisions that may result in the unnecessary loss of jobs for your workers.

In the course of our discussions, EPA has offered to make technical adjustments, based on technical information you have recently provided, that will give Texas and Luminant thousands of additional tons of pollution allowances to reduce required emission reductions. Additionally, there are alternative compliance approaches that rely on existing pollution control technology already installed at your facilities and on the powerful market-based mechanisms in the CSAPR that would not require you to

idle any facility or shut down these mines. We stand ready to continue working with you to ensure that you have explored all the available options to achieve the necessary pollution reductions under the Clean Air Act without having to idle or shut down these operations and put these jobs at risk.

Luminant faces a notable environmental challenge: its facilities emit high levels of Sulfur Dioxide (SO2) that represent close to half of Texas' total power sector emissions. These emissions contribute significantly to air pollution and health threats in downwind states, and Texas is required under the Clean Air Act to ensure reductions.

Cost-effective reductions are possible without disruptions in operations. Other states have made remarkable strides in reducing harmful SO2 emissions that cause asthma attacks and other illnesses. Over the past 20 years SO2 emissions from the power sector in the rest of the country have been reduced by as much as 70 percent, even while they remain at high levels in Texas. Texas is the second largest emitter of SO2 among the states covered by this rule, with Luminant's Big Brown, Monticello, and Martin Lake representing nearly half of the state's 2010 power sector emissions. In this scenario we see a wide variety of possible approaches to reducing this pollution.

That is why we have worked with you to explore several opportunities for cost-effective pollution reductions. We want to continue to do so. We will share with you data that illustrate how Texas and Luminant can comply with CSAPR cost-effectively while keeping levels of lignite coal use near current levels, thus avoiding the need to idle plants or shut down mines in response to the requirements of the rule. Our analysis indicates that additional reductions can be achieved by relying more on already-installed pollution controls. I ask that your staff examine these alternative compliance options thoroughly before making the business decision to idle these facilities and close the mines – and lay off the workers – that supply the lignite coal they use.

Administrator Jackson and I have made clear our commitment to working through compliance issues each time we have met with you over the past weeks. We have already utilized some of the flexibilities in the Clean Air Act and the CSAPR in response to updated technical information you have provided. The Administrator also made clear that she has not ruled out any potential solution to the concerns you have raised, should the flexibility and choice of compliance strategies built into CSAPR not prove adequate to meeting those concerns.

In its 40-year history, there have been no instances in which the Clean Air Act has contributed to electric grid reliability problems. The successful history of this law demonstrates that we can reduce harmful air pollution while ensuring the reliable delivery of electricity to our families and businesses. The flexibilities of the Clean Air Act are evident in the alternative compliance approaches we are presenting to you, and have presented to you – approaches that would yield reductions in pollutants and protect the health of Americans in Texas and downwind states without impacting electric reliability in Texas.

We are committed to working with you throughout this process. It is important that Luminant demonstrate equal commitment going forward over the coming days.

Sincerely,

Bob Perciasepe

Bob Perciasepe

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September 12, 2011

Why Casper, The EPA's Cross-State Air Pollution Rule, Is Spooking the Electricity Sector

Primary Credit Analyst:
Aneesh Prabhu, New York (1) 212-438-1295; aneesh_prabhu@standardandpoors.com

Secondary Contact:
Richard W Cortright, Jr., New York (1) 212-438-7666; richard_cortright@standardandpoors.com

Research Contributor:
Dhaval Shah, CRISIL Global Analytical Center, an S&P affiliate, Mumbai

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Why Casper, The EPA's Cross-State Air Pollution Rule, Is Spooking the Electricity Sector

On July 7, the U.S. Environmental Protection Agency (EPA) issued the Cross-State Air Pollution Rule (CSAPR, or "Casper"), which will affect about 27 states starting Jan. 1, 2012. The EPA drafted the rule because in July 2008, the U.S. Court of Appeals for the D.C. Circuit overturned the Clean Air Interstate Rule (CAIR)--a trading program designed to lower sulfur dioxide (SO2) and nitrogen oxide (NOx) emissions. Casper is the final form of the interim Clean Air Transport Rule (CATR), a draft agreement the EPA proposed in July 2010 to replace the CAIR rule.

Not only does Casper set tougher limits on SO2 and NOx than the CATR regulation, it also changes the allocation of the emissions cuts across the states. Overall, the EPA projects that by 2014, Casper and other state and federal actions will reduce power plant emissions of SO2 by 73% and of NOx by 54% from 2005 levels. In comparison, cuts under CAIR were 57% for SO2 and 61% for NOx from 2003 levels, with a target date of 2015.

Overview

- The U.S. Environmental Protection Agency's Cross-State Air Pollution Rule (CSAPR, or "Casper"), which takes effect January 1, sets tougher limits on sulfur dioxide and nitrogen dioxide emissions.
- If implemented in its current form, this rule is likely to hurt the credit quality of some unregulated power supply companies.
- However, Casper could have a favorable impact on unregulated power supply companies with cleaner generation.

While Casper is already facing legal challenges, if it's implemented in its current form, it will likely hurt the credit quality of some unregulated power supply companies. Because unregulated power generators do not have cost recovery mechanisms and must rely on market pricing to recover environmental capital expenditures, they are more at risk from the new rule than integrated regulated utilities. However, for unregulated companies with relatively clean generation fleets, such as Exelon Generation Co., PSEG Power, and Calpine Corp., the credit impact will likely be favorable because marginal costs for dirtier fleets will rise, and that will likely be mirrored in energy prices, to the benefit of cleaner fleets.

How Clean-Air Standards Have Evolved

Title I of the Clean Air Act requires the EPA to issue clean air standards, referred to as national ambient air quality standards (NAAQS), for each substance that causes or contributes to air pollution and endangers public health or welfare. Of particular importance to Casper is the requirement that states limit the effects of their emissions that drift downwind and can contribute significantly to pollution in other states.

Pursuant to that mandate, the EPA in 2005 issued CAIR, placing limits on SO2 and NOx emissions for each of 28 states (and the District of Columbia) where the EPA determined emissions hampered other states' efforts to meet environmental standards for one or both pollutants. However, the U.S. Court of Appeals for the D.C. Circuit remanded the rule after finding several legal and technical flaws, such as the EPA's targeting regional emissions

rather than addressing them state by state, and an absence of measures guaranteeing that upwind states would reduce their emissions. The Court directed that CAIR could remain in place while the EPA worked on a replacement rule. In July 2010, the EPA proposed CATR, which differed from CAIR in several ways, among them, establishing more stringent requirements and adding three states to the rule's scope.

The Changes Casper Brings

On July 7, the EPA issued Casper, which adopts many of the requirements proposed in CATR, requiring a large number of states in the eastern half of the U.S. to cut power plant emissions that contribute to ground-level ozone and fine particle pollution across state lines. However, under the final rule, the EPA abandoned CAIR's regional approach to cutting emissions and set an emission budget for each state based on the amount each contributes to pollution in downwind states.

Table 1

States Included In The Cross-State Air Pollution Rule (CSAPR)

	Emission reduction required			
State	**Ozone-season* NOx**	**Annual SO2 and NOx**	**Seasonal SO2 and NOx**	**SO2 group¶**
Alabama	X	X	X	2
Arkansas	X			
Florida	X			
Georgia	X	X	X	2
Illinois	X	X	X	1
Indiana	X	X	X	1
Iowa§	X	X	X	1
Kansas§	X		X	2
Kentucky	X	X	X	1
Louisiana	X			
Maryland	X	X	X	1
Michigan§	X	X	X	1
Minnesota	X		X	2
Mississippi	X			
Missouri§	X	X	X	1
Nebraska	X		X	2
New Jersey	X		X	1
New York	X	X	X	1
North Carolina	X	X	X	1
Ohio	X	X	X	1
Oklahoma§	X			
Pennsylvania	X	X	X	1
South Carolina	X	X		2
Tennessee	X	X	X	1
Texas	X	X		2
Virginia	X		X	1
West Virginia	X	X	X	1

Table 1

States Included In The Cross-State Air Pollution Rule (CSAPR) (cont.)

Wisconsin§	X	X	X

*May through September. ¶The final CSAPR divides the states required to reduce SO2 into two groups. Both groups must reduce their SO2 emissions beginning in 2012. Group 1 states must make significant additional reductions in SO2 emissions by 2014 in order to eliminate their significant contribution to air quality problems in downwind areas. §These states would be covered under the Environmental Protection Agency's proposed supplement to CSAPR. Source: The Environmental Protection Agency, " States that are included in the Cross-State Air Pollution Rule (CSAPR)," <http://www.epa.gov/airtransport/stateinfo.html#states> (Sept. 9, 2011)

Based on updated emissions inventories, the EPA dropped Connecticut, Delaware, and Massachusetts from Casper altogether, because the agency concluded these states did not significantly interfere with the maintenance of NAAQ: in other states. Similarly, the EPA excluded Florida and Louisiana from SO2 constraints under Casper. The rule still requires 21 states to cut both SO2 and NOx emissions. The EPA has also submitted a supplemental proposal requiring six additional states--Iowa, Kansas, Michigan, Missouri, Oklahoma, and Wisconsin--to make ozone-season (May through September) NOx reductions. Finalizing the supplemental proposal, which the EPA expects by October 31, will bring the total number of states under Casper's SO2 limits to 23 and the number under its ozone-season NOx limits to 26.

The rule does allow states some flexibility in how they will meet the new requirements. Each state may follow a federal implementation plan or develop its own plan under which it can choose what types of emissions sources to control.

States fall into two groups with different reduction targets for SO2. Group 1 states have emission reductions requirements that will take effect in two phases and will have reduction targets for 2012 and 2014, while Group 2 has only a 2012 cap. Group 1 states face a smaller reduction in SO2 emissions in 2012 relative to observed coal-fired emissions in 2010 (16% lower) than Group 2 states (23% lower), but must achieve a higher reduction by 2014 (55%).

Each state covered under Casper is subject to state-specific emission limits and may not trade emission credits unless the state is below its emission cap for SO2 and NOx emissions. The EPA has also created assurance provisions allowing predetermined one-year variability limits, defined as 18% of annual SO2 and NOx state emissions budgets and 21% for ozone-season NOx state budgets. As long as their emissions are within these variability limits, states will not face penalties.

Under the Casper cap-and-trade methodology, an allowance must back each ton of emissions. For almost all coal plants, the new allowances are less than their 2010 emissions; these plants will either have to buy allowances in 2014 or pay penalties. In addition, non-compliance penalties are stiffer under Casper. Should a generator exceed its emission cap, it must forfeit one allowance (one ton of emissions) as an offset and two additional allowances as a penalty for each ton of emissions in excess of the amount of allowances held. Companies may not apply banked or carryover allowances from CAIR to Casper, and must still meet CAIR requirements through year-end 2011.

Casper differs from other trading programs in one major way: There are no state-specific limits on SO2 emissions, unlike the current acid rain program. However, states have effective limits on the amount of allowances they can import without penalty. We also understand that members of each respective group can trade SO2 allowances only within the same group. The result of the rulemaking is the creation of four new emissions-trading markets with trading allowances that fall into four discrete trading categories: Group 1 SO2 allowances, Group 2 SO2 allowances, annual NOx allowances, and ozone-season NOx allowances. Because of variability in states' costs of abatement, there will likely be price differentials between the allowance markets for Group 1 and Group 2.

The EPA estimates that once Casper goes into effect, prices for SO2 allowances from 2012 to 2014 could reach about $1,000-$1,100 per ton for Group 1 and about $600-$700 per ton for Group 2. Because Group 1 has higher emissions cuts, market participants expect much higher prices for that group's allowances. On August 31, ICAP United, a division of ICAP Energy LLC, executed the first emissions trade under Casper, for 100 tons of Group 1 SO2 allowances at $2,600 per ton. The transaction was cleared through the Intercontinental Exchange Inc. This and other early trades are likely not representative of eventual prices because it will take time for the market to develop depth, but if SO2 allowance prices end up as high as ICAP's initial trade, they could meaningfully alter the way generation units are dispatched in most power markets because costs for coal-fired units will increase meaningfully.

Credit Implications For the Industry Are Likely To Be Significant

We believe the new regulations could affect the credit quality of companies in the electric power industry for several reasons.

The proposed cuts are greater than the industry anticipated

Overall, Casper mandates a 20% total reduction of SO2 emissions in 2012 from observed emissions in 2010, and a nearly 50% reduction by 2014. This contrasts markedly with the reductions of 5% and 20%, respectively, that CATR proposed. Those facing the biggest cuts are, among unregulated companies, Edison International Co. and GenOn Energy Inc., and American Electric Power Co. Inc. (AEP) and Progress Energy among the regulated companies. While the tighter limits are broadly negative for all generators, some companies will have an easier regulatory burden than they had under the draft CATR. For instance, because the new rule excludes Massachusetts and Rhode Island, it won't apply to Dominion Resources Inc.'s coal-fired Brayton Point unit and Manchester Street plant. Both are part of Dominion's unregulated fleet.

The emissions credits under Casper are meaningfully lower than those proposed under CATR

New Jersey's allocation, for example, will be 50% fewer SO2 emission credits under Casper in 2012 than under the CATR proposal. Similarly, Ohio, Pennsylvania, and Maryland will receive 31%, 26%, and 22% fewer credits, respectively, for 2012 than under CATR.

The EPA has established a tight timeline

Compliance requirements begin Jan. 1, 2012, for SO2 and annual NOx reductions, and May 1, 2012, for ozone-season NOx reductions. A second phase of SO2 reductions begins Jan. 1, 2014. However, only about 30 gigawatts (GW) of the 143 GW of unscrubbed coal-fired power capacity (or about 22%) is currently under development or construction (see table 2).

Table 2

U.S. Coal-Fired Generation Capacity Under Scrubber Development

(Megawatts)

Independent system operator (ISO)	Announced	Advanced development	Construction begun	Total
California ISO	88	--	--	88
Electric Reliability Council of Texas	1,860	--	606	2,466
Midwest ISO	6,836	1,730	3,526	12,093
ISO New England	--	--	1,067	1,067
New York ISO	1,028	--	--	1,028
PJM Interconnection	5,570	824	3,249	9,643

Table 2

U.S. Coal-Fired Generation Capacity Under Scrubber Development (cont.)

Southwest Power Pool	3,398	373	--	3,771
Total	18,782	2,927	8,448	30,156

Source: SNL Energy.

We believe a few factors may favor the decision to retire coal capacity rather than retrofit it. While the EPA maintains that a three-year compliance schedule is sufficient for units to install dry or wet scrubber technology, some utilities have asserted that the EPA underestimates that time frame. In its comments filed on August 4, AEP argued that engineering and constructing a scrubber system can take up to 52 months. AEP cited its most recent experience with retrofits on 6,200 megawatts (MW) of coal units (Mountaineer, Amos, Mitchell Cardinal, and Conesville units), which took 40 to 52 months. Duke Energy expressed similar concerns and has also argued that industry demand for fabric filters can outstrip supply. Dominion Resources has pointed out that to meet the EPA's projected demand dry sorbent injection (one kind of scrubbing), sodium sorbent production would have to increase at least 10 times.

There have been several announced coal plant retirements (see tables 3 and 4). The majority of these are slated to occur in the Mid-Atlantic and the Southeast. However, these retirements came in response not to Casper but to the utility maximum achievable control technology (MACT) rule, another EPA mandate, pertaining to acid gases and mercury, which was proposed in March and will be finalized in November.

Table 3

Scheduled U.S. Coal-Fired Electric Capacity Retirements Through 2020

(Megawatts)

Independent system operator (ISO)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
California ISO	--	--	--	560	--	330	--	--	--	--	890
Electric Reliability Council of Texas	--	--	--	--	--	--	--	875	--	1,662	2,537
ISO New England	274	--	--	150	--	--	--	--	--	--	424
Midwest ISO	283	--	293	--	447	282	60	84	263	--	1,712
New York ISO	190	--	--	--	--	--	--	--	--	--	190
PJM Interconnection	1,011	991	165	4,772	--	--	--	--	--	--	6,939
Southwest Power Pool	--	--	--	528	--	--	--	92	--	--	620
Non-ISO	782	1,198	1,955	921	1,292	961	1,434	--	--	1,273	9,816
Total	2,540	2,189	2,413	6,931	1,739	1,573	1,494	1,051	263	2,935	23,128

Source: SNL Energy

Table 4

U.S. Companies With The Highest Coal-Fired Capacity Retirements Through 2015

		Retiring coal-fired capacity (megawatts)					
Company	Number of units	2011*	2012	2013	2014	2015	Total
American Electric Power	25	450	165	--	5,223	--	5,838
Duke Energy	22	113	477	--	372	1,060	2,022
Progress Energy	11	177	--	1,033	323	--	1,533
Tennessee Valley Authority	11	127	356	226	226	582	1,517
Southern Co.	4	259	258	591	-	--	1,108

Table 4

U.S. Companies With The Highest Coal-Fired Capacity Retirements Through 2015 (cont.)							
Dominion Resources	6	165	515	--	227	--	906
Pinnacle West Capital Corp.	3	--	--	--	560	--	560
Dynegy¶	4	163	--	293	--	--	456
Exelon Corp.¶	1	--	311	--	--	--	311
Xcel Energy	3	106	107	44	--	--	257
Total	90	1,560	2,189	2,187	6,931	1,642	14,508

*As of June 10, 2011. ¶Unregulated generation. Source: SNL Energy.

The tight timeline, particularly while the MACT requirements are still in draft form (the finalized rule is due November 2011), means that generators will likely have to respond to SO2 and NOx requirements without having full details of how other hazardous gases and particulate matter emissions standards will evolve. Unit-by-unit or facility-by-facility control requirements under MACT rules may simply eliminate any flexibility in achieving Casper goals. Consequently, more retirement announcements will likely result from the combined impact of Casper and MACT.

The industry consensus for projected coal unit retirements from the combined impact of MACT and Casper is about 50 GW. The Federal Energy Regulatory Commission recently released an informal assessment estimating that about 81 GW of existing coal generation could face retirement because of new environmental restrictions. Similarly, a North American Electric Reliability Corporation study predicted that the EPA rules could result in 33 GW to 70 GW of U.S. power capacity retirements by 2015.

It is somewhat difficult to separate the individual impact of the MACT, Casper, and expected water intake rules on coal plant retirements. (One recent study suggests that marine life protection requirements for power plants and industrial facilities could result in the early retirement of about 42 GW of generating capacity nationally, although some of these would be units that use fuels other than coal) However, we believe that as much as 20 GW to 25 GW of capacity on top of the approximately 25 GW of capacity already announced may be retired, particularly because there have been no significant retirements in the unregulated sector in the past 12 months, while regulated utilities have announced large retirements (see table 4). It is likely that the unregulated generators are awaiting final regulations before deciding between retrofits and retirements. With about 60 GW of U.S. coal capacity having relatively inefficient unit heat rates (exceeding 11,000 Btu per kilowatt-hour), and with low natural gas prices making combined-cycle gas turbine generation relatively inexpensive, we could still see significant mothballing based purely on economics, even without additional environmental spending.

Generators Will Respond To Casper In Different Ways

There are several possible strategies for reducing SO2 and NOx emissions from coal-fired power plants: Plant owners can use lower-sulfur coal in their boilers, run higher-emission plants less often, retire plants without emissions controls, or "scrubbers," to reduce SO2 and selective catalytic reduction units to reduce NOx.

The initial strategy among coal-fired generation companies appears to be to increase their use of scrubbers and to adjust their coal blends to include a greater mix of lower-sulfur Powder River Basin (PRB) coal. Buckeye Power Inc., an Ohio cooperative, recently indicated that even with 95% SO2 removal through scrubbers, its Cardinal power plant (jointly owned with American Electric Power Co. Inc.) may have to burn lower-sulfur coal to comply with

Casper.

However, increasing PRB doesn't appear to be a panacea. As large as it is now, the PRB-coal-producing region cannot expand operations fast enough to meet new demand, in our view. Much of the PRB coal averages about 0.8 pounds of SO2 per million Btus (mmBtu), but the tight limits under Casper may either require the use of sorbents in addition to this coal, or coal from super-low-sulfur coal fields, at 0.5 to 0.6 pounds of SO2 per mmBtu. So far, the two main sources of coal this low in sulfur are Cloud Peak Energy Inc.'s Antelope mine and Peabody Energy Corp.'s North Antelope Rochelle operation (both of which are in Wyoming).

From a practical standpoint, coal-fired plants should be able to achieve the reductions Casper requires mainly through the installation of control devices such as scrubbers. We think that will represent a huge task to accomplish by 2014 because a significant portion of the U.S. fleet is still unscrubbed (see table 5 and chart).

Table 5

U.S. Scrubbed Coal-Fired Capacity

(Megawatts unless otherwise stated)

Independent System Operator (ISO)	Scrubbed capacity	Unscrubbed capacity	Total ISO capacity	Percent scrubbed
California ISO	1,415	294	1,709	83%
Electric Reliability Council of Texas	12,175	6,642	18,817	65%
ISO New England	677	2,115	2,792	24%
Midwest ISO	36,742	42,400	79,142	46%
New York ISO	1,086	1,727	2,813	39%
PJM Interconnection	38,695	29,743	68,437	57%
Southwest Power Pool	9,715	16,273	25,988	37%
Non-ISO	77,949	44,534	122,483	64%
Total	178,454	143,727	322,181	55%

Source: SNL Energy

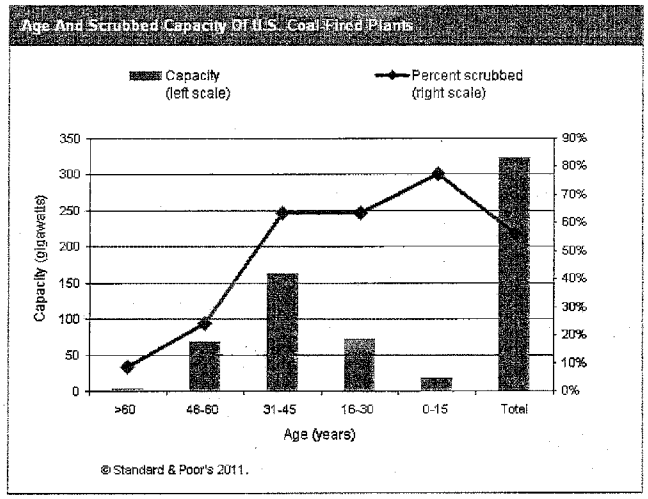

Table 6

Selected Companies' Announced Strategies For Complying With Environmental Regulations

Company	Strategy
Edison Mission Energy (EME)	EME has announced that it will scrub Units 1 and 2 at Homer City by 2014 and could address the cost with $600 mil.-$700 mil. raised through lease financing.
Luminant	Luminant owns 5 lignite-coal-fired plants totaling 8,017 MW, including the recently constructed Oak Grove and Sandow units, which are fully emissions-controlled. However, about 2,400 MW are uncontrolled and will require $1.0 bil.-$1.5 bil. of spending. Lignite units provided nearly 55,000 GWh (53%) of Luminant's generation in 2010.
NRG Energy Inc.	NRG's major exposure to Casper is from the Big Cajun and W.A. Parish units. For Big Cajun, the company has a contract that covers environmental costs. W.A. Parish will have a 25,000-emissions-allowance shortfall in 2014.
GenOn Energy Inc.	80% of GenOn's exposure is from 4 units, totaling about 2,000 MW. The company will likely retire some of these units rather than retrofit them.
American Electric Power Co. Inc. (AEP)	AEP will retire nearly 6,000 MW of coal-fired generation and upgrade or install environmental controls on an additional 10,100 MW of generation. AEP also plans to convert 1,070 MW of coal generation into 932 MW of natural-gas-fired capacity at a cost they estimate at about $6 bil.-$8 bil. AEP has spent about $7.2 bil. in environmental upgrades since 1990. While it will retire a number of smaller plants, some larger ones, such as the 1,078-MW Big Sandy unit, are also slated for retirement. Most retirements will occur in 2014.
Dominion Resources Inc.	Dominion will shut down the Stateline coal-fired unit and Salem Harbor units by 2014. The company still expects to spend about $2 bil. on Virginia Electric to comply with mercury rules. However, it has largely completed environmental spending at its major units, Brayton Point (unregulated) and Chesterfield.
Duke Energy Corp.	Duke has already invested $5 bil. over the past decade to install SO2 and NOx control equipment to comply with state and federal environmental requirements. Still, the company plans to retire almost 2,500 MW of its existing coal fleet, such as the 862-MW W.C. Beckjord station in Ohio, by 2015 to comply with the new EPA rules.
Progress Energy Inc.	In North Carolina, Progress has spent $1.2 bil. on about 3,500 MW of coal-fired capacity to reduce SO2 and NOx. It has also announced that it will retire 11 non-emissions-controlled units totaling 1,500 MW and replace some with gas-fired capacity. In Florida, Progress has spent $1.2 bil. on Crystal River (1,200 MW) but still has 2,000 MW of uncontrolled generation.

Table 6

Selected Companies' Announced Strategies For Complying With Environmental Regulations (cont.)	
Southern Co.	Southern says the new rules place about 40% of its 26,200 MW of coal-fired capacity at risk for retirement or conversion to natural gas facilities. The company estimates that it could retire about 4,000 MW and would have to install emission-reduction equipment on about 12,000 MW of coal-fired generation. Subsidiary Georgia Power will retire about 600 MW of capacity at the Harlee Branch and Mitchell coal-fired plants.
Tennessee Valley Authority (TVA)	TVA will retire 18 units aggregating 2,700 MW of its 17,000-MW coal-fired fleet starting in 2012.

MW -- Megawatts. GWh -- Gigawatt-hours. Casper -- Cross-State Air Pollution Rule (CSAPR).

The Credit Impact On Market Participants

Companies with some of the larger shortfalls in allowances are regulated entities (e.g., AEP, Ameren Energy, Duke Energy, and Tennessee Valley Authority). Generally, we assume that regulated utilities recover most costs associated with environmental mandates through state regulatory proceedings. However, our stable view of the industry could change if compliance spending becomes so high that state regulatory bodies are unwilling to pass on those costs to ratepayers (see "U.S. Regulated Electric Utilities: Stable Industry Outlook Supports Ratings" published July 14, 2011, on RatingsDirect on the Global Credit Portal). Unregulated power generators, on the other hand, do not have cost recovery mechanisms for environmental capital expenditures and must rely on market pricing to recover their incremental costs. Market pricing that does not increase sufficiently will hurt the gross margins of dirtier coal fleets.

Most diversified energy companies have investment-grade ratings. These companies' gross margins will be relatively less affected by Casper than those of other companies for one or more of the following reasons: their fleets comprise a diverse mix of assets such as nuclear and combined-cycle gas units, resulting in a relatively cleaner generation fleet (e.g., Constellation Energy, Exelon Corp., and PSEG Inc.); or because they also own regulated generation, for which cost recovery is more certain (Ameren Energy and PPL Corp.); or they have already installed environmental controls on a majority of their assets (PPL Corp., PSEG Inc.).

For instance, since 2005, PPL has invested about $1.6 billion in environmental upgrades at their coal-fired plants in Pennsylvania and Montana, including $1.3 billion for scrubbers at the Keystone, Montour, and Brunner Island plants. In contrast, we believe that FirstEnergy Generation and Ameren Generation will be short of Group 1 state SO2 allowance credits in 2014. In response to this shortage, FirstEnergy may be able to partly offset a decline in margins if PJM wholesale energy and capacity prices rise, while Ameren may choose to retire some of its coal capacity instead of retrofitting it.

We believe that the unregulated companies most at risk are Edison Mission Energy (EME), GenOn Energy, and Luminant Generation, which we estimate will be short 140,000, 125,000, and 75,000 allowances in 2014, respectively. Most of EME's exposure is at its Homer City units, where only one of its three units is scrubbed. Under Casper, the unscrubbed units are allowed 25,797 tons in 2012 and 2013--or only about 20% of their 2010 emissions, which measured 112,951 tons. Until 2014, when the units are slated for scrubber installation, EME will have to manage the shortfall by buying allowances and limiting generation. Still, Homer City may end up paying penalties either for violating its allocated allowances or for failing to deliver the capacity it initially offered in the PJM capacity auction.

Similarly, almost 80% of GenOn's exposure comes from four plants: Avon Lake, Niles, Portland, and Shawville. The company has indicated its intention to retire plants that do not meet Casper requirements, such as the 482-MW

Potomac Generating station in Alexandria, Va. Luminant owns about 2,370 MW of unscrubbed lignite capacity at its Big Brown and Monticello units. At about $500 per kilowatt, we estimate the cost of scrubbing these units at about $1.0 billion to $1.5 billion. It is unclear whether the company will consider using dry sorbent injection instead, but if it does, we expect variable costs to increase by about $7 per megawatt-hour (MWh). Given the company's already weak financial position, after the EPA released Casper July 7, pricing on parent Energy Future Holding's term loan maturing in 2014 had dropped 2.5 points by July 11, 1011.

Casper Could Create Volatility

We believe the capacity and energy markets will feel an impact from Casper. The amount of generation that did not clear the auction almost doubled in the latest reliability pricing mechanism (RPM) auction in the PJM region compared with last year's auction, increasing to nearly 9,100 MW from 4,670 MW. Such a high amount of uncleared generation indicates that generators are still bidding units into the auction and trying to sell their capacity to pay for retrofitting rather than retiring them. Given that about 17,000 MW of capacity in the region does not meet the new EPA control requirements, the amount of capacity actually that the 2014-2015 RPM auction actually retired--about 1,550 MW--is modest, which suggests that, so far, unregulated generators have leaned toward retrofits rather than retirements to meet EPA requirements.

However, the RPM auction was conducted in May, so it's likely that only MACT's regulatory requirements, and not Casper's, were factored in. Capital costs of installing generic control equipment will be significant (see table 7). Costs for sites that have space constraints will likely be higher. According to PJM, as much as 37% of its total capacity could need at least two retrofits to comply with Casper. And the short schedule for implementation will add to cost pressures not only for environmental equipment but also for labor.

Table 7

EPA And Energy Infrastructure Administration (EIA) Capital Cost Estimates For Pollution Control Equipment

($ per kilowatt in 2010 dollars)

Plant capacity	500 MW		300 MW		100 MW	
Source of estimate	EPA	EIA	EPA	EIA	EPA	EIA
Wet scrubber	538	485	622	580	850	762
Dry scrubber	460	N/A	532	N/A	727	N/A
Selective catalytic reduction	201	165	217	184	268	225
Activated carbon injection	8	6	12	6	30	6
Dry sorbent injection	43	N/A	61	N/A	134	N/A
Fabric filters	170	78	187	78	230	78

N/A -- Not applicable. Source: NERA Consulting

We expect the 2015-2016 RPM capacity auction to capture the market's response to Casper, factoring into the bids the capital costs associated with the regulation. Higher capacity prices will help all unregulated generators but especially companies in the PJM, such as GenOn Energy, that benefit more from increases in capacity prices than increases in energy prices.

Casper's impact on the energy market is more apparent than its impact on the capacity market. Already, since July 7, forward power prices have risen in the PJM and Electric Reliability Council of Texas (ERCOT) regions in response to Casper (see table 8). Prices in the western PJM region have risen about $2.25 per MWh compared with

forward prices observed in June.

Table 8

ERCOT North Around-The-Clock Power Prices

($ per megawatt-hour)

Auction year	June 30, 2011	July 25, 2011	Difference
2012	38.27	39.90	1.63
2013	41.23	43.40	2.17
2014	44.59	46.89	2.30

ERCOT – Electric Reliability Council of Texas.

We believe that higher forward wholesale power prices reflect the higher marginal costs that result when factoring in prices for emissions allowances into the cost structure of coal-fired generation (see table 9). The impact on generators will depend on the type of coal used, the eventual price of the allowances, and the time coal generation is on the margin in the market.

Table 9

Standard & Poor's Estimated Marginal Cost Impact Of SO2 Allowance Prices On U.S. Coal-Fired Generation

Coal type/region	Central Appalachian	Northern Appalachian	Illinois Basin	Rockies	Powder River Basin
Average Btu content of coal (Btu per pound) (A)	12,500	13,000	11,800	11,700	8,800
Btu per million Btu (mmBtu) (B)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Pounds per ton of coal (C)	2,000	2,000	2,000	2,000	2,000
mmBtu per ton of coal (D) = (A x C) ÷ (B)	25.0	26.0	23.6	23.4	17.6
Pounds of SO2 per mmBTU of coal (E)	1.2	2.7	5.0	1.0	0.8
Pounds of SO2 per ton of coal (F) = (D x E)	30.0	69.4	118.0	23.4	14.1
Tons of SO2 per ton of coal burn (G) = (F ÷ C)	0.015	0.035	0.059	0.012	0.007
Heat rate of coal unit (mmBTu per MWh) (H)	10	10	10	10	10
Price impact of a $100 change in SO2 allowance price ($ per ton of coal burn) (I) = (100 x G)	1.50	3.47	5.90	1.17	0.70
MWh produced per ton of coal (J) = (D ÷ H)	2.5	2.6	2.36	2.34	1.76
Price impact of a $100 change in SO2 allowance price ($ per MWh) (K) = (I ÷ J)	0.60	1.34	2.50	0.50	0.40
Illustration of price impact					
Price impact of a $1,000 SO2 allowance price* ($ per MWh) (K x 10)	6.00	13.35	25.00	5.00	4.00

*This is the Environmental Protection Agency's projected price for Group 1 allowances. MWh – Megawatt-hour.

The net result of Casper is an increase in operating costs of companies that run coal–fired generation. We expect wholesale power prices to increase to reflect this marginal increase in costs, and relatively efficient coal units may be able to pass on their higher generation costs in market prices. This may mean that only generators that operate "dirtier" fleets will feel the impact. To illustrate, if we assume that SO2 allowance prices rise to $1,000 per ton and that Central Appalachian coal is on the margin about 55% of hours in the PJM, then ATC prices should rise by about $3.30 per MWh (0.55 x 6). (See the formula in table 8.) If the $2,600-per-ton allowance price set in the initial Group 1 auction on the Intercontinental Exchange were to hold, wholesale power prices in the PJM could increase by about $8.50 per MWh (0.6 x 0.55 x 26). Until the Casper allowance market develops greater depth and liquidity in trading, we expect to see greater volatility in prices not only for SO2 allowances and wholesale power but also for

natural gas.

To Boo Or Not To Boo

Not surprisingly, the response to Casper from the electric industry has been mixed. In filing comments on behalf of a consortium comprising Calpine, Consolidated Edison, Constellation, PSEG, and others, the Clean Energy Group stated that the rule provides the electric sector the certainty needed to move forward with capital investments in the clean energy sector.

While coal-fired generators and grid operators are not opposed to emission reductions, they do object to the short timeline for implementing Casper. In an August 26 report on expected coal plant retirements in its region, PJM said that concerns about electricity reliability may arise in regions where coal plants are being retired to meet the new regulations. Some utilities and electric utility regulators in Texas have also warned of reliability issues. They have asked the EPA to reconsider certain aspects of Casper and postpone the date the rules take effect. Grid operators have stressed that they receive little notice of a generator unit's intent to retire, ranging from as little as 90 days for companies in ERCOT to 26 weeks for companies in the Midwest Independent Transmission System Operator region. In the event that a retirement might threaten the system's reliability, the grid operators say they lack the authority to stop the unit from retiring and must turn to other solutions.

Another battle involving Texas concerns its late inclusion under Casper. Texas's argument against Casper rests on whether the EPA provided the state sufficient notice to comply with the SO2 reduction requirements. The EPA added Texas to Group 2 of the SO2 program even though it proposed no formal state emissions budget. While under CATR, Texas was subject only to ozone-season NOx provisions, and MACT essentially gave lignite-coal-fired plants a free pass on SO2 reductions, Casper overrides these limitations. The deadline for appeals against Casper is October 7.

Regulated utilities have announced the most retirements. Thus far, the unregulated generation sector has leaned toward retrofits rather than retirements, but the combination of utility MACT rules and Casper may change that. The final form of the rules and the eventual implementation timeline will be key factors in determining their credit impact.

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SPP Southwest Power Pool

HELPING OUR MEMBERS WORK TOGETHER
TO KEEP THE LIGHTS ON... TODAY AND IN THE FUTURE

VIA ELECTRONIC MAIL AND FIRST CLASS MAIL

September 20, 2011

Administrator Lisa P. Jackson
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 1101A
Washington, DC 20460

Re: SPP's Review of the EPA's IPM Analysis of the Cross-State Air Pollution Rule, Docket ID No. EPA-HQ-OAR-2009-0491

Dear Ms. Jackson:

Southwest Power Pool, Inc. (SPP), in its capacity as a Federal Energy Regulatory Commission (FERC) approved Regional Transmission Organization (RTO) and a Regional Entity, is concerned that the Environmental Protection Agency (EPA) finalized the Cross-State Air Pollution Rule (CSAPR) without adequately assessing the reliability impacts of the CSAPR on the SPP region. SPP originally expressed concern with the reliability impacts of proposed regulations[1] in its July 19, 2011 comment letter to the EPA.

As required by the Energy Policy Act of 2005, FERC has approved mandatory and enforceable reliability standards promulgated by NERC with which the industry must comply. These standards were developed through a well vetted industry process identifying key requirements to ensure the bulk electric system meets an adequate level of reliability. Failure to comply with these standards can affect the ability of the power grid to operate reliably as well subject SPP and its members to financial penalties. These standards require that SPP's Transmission Planners ensure that transmission lines are not overloaded and that voltage is maintained within certain prescribed limits in the event of the failure of a single element in the system. Additionally, the standards require that Transmission Operators operate in real-time within certain limits. In order to meet the demands of the system there needs to be an adequate balance of generation and transmission availability both in the short and long term. The timing of the CSAPR regulations does not provide the SPP region with enough time to ensure that adequate balance.

Our reliability modeling[2] indicates that the CSAPR Integrated Planning Model 4.1 (IPM) results, as depicted by the EPA, are likely to cause SPP to be out of compliance with the applicable NERC standards as early as 2012. SPP's planning models identified 5.4 GW from the 48 generation units identified by the EPA with zero fuel burn in 2012 that would have been dispatched during the 2012

[1] On July 19, 2011, Nicholas A. Brown, SPP President and CEO, submitted comments to the EPA in Docket ID Nos. EPA-HQ-OW-2008-0667, EPA-HQ-OAR-2009-0234, and EPA-HQ-OAR-2011-0044, additionally providing SPP's preliminary assessment of the potential reliability impacts of proposed EPA regulations impacting generation in the SPP footprint.

[2] SPP removed all generation units in its models that consumed zero fuel in the EPA models. No other SPP model adjustments were made.

Summer Peak conditions. Our analysis revealed 220 overloads in excess of the required, 100% of emergency ratings under contingencies, and 1047 circumstances at various locations on the transmission system where voltage was below the prescribed lower limit of 90% of nominal rating. The statistics in this analysis must be viewed as being indicative, not definitive, results and are probably very conservative compared to what would be experienced in the real world should the modeled system conditions exist. An even clearer representation of reliability violations can be found by applying higher operability limits of 120% to the overloads. There were 16 such overloads on the system. Using a similar out of normal range there were 93 circumstances where voltage dropped below 85% of nominal. These "clear-cut" examples of standards violations represent the well founded concerns regarding the timeline with which the CSAPR would be instituted.

Additionally, 30 contingency scenarios did not solve, which is indicative of extreme system constraints, including the potential of cascading blackouts similar to what occurred in 2003 or which could require the shedding of firm load (that is, localized rolling black-outs initiated by utilities within the SPP region) to avoid more widespread and uncontrolled blackouts and to remain in compliance with reliability standards. Some of the contingencies could be resolved with other short-term transmission and/or resource solutions, but several could not. In those cases, SPP would be in clear violation of mandatory reliability standards and subject to penalty from FERC. However, SPP cannot be compliant with NERC's planning standards without placing its generation owners in violation of EPA standards when the unutilized units in the IPM are unavailable to SPP. Further exacerbating this situation, SPP's analysis also revealed that generation production from "small units"[3] increased from 13 to 57 units deployed. Some of these units are likely subject to the reciprocating internal combustion engines (RICE) regulations, which were not evaluated as part of this reliability study. If we look beyond the summer peak hour studied, the unavailability of approximately 11 GWs[4] of total capacity from the EPA model in SPP's footprint would likely result in additional localized reliability issues.

The result of SPP's reliability assessment of the EPA's CSAPR IPM generation dispatch indicates serious, negative implications to the reliable operation of the electric grid 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 within SPP. These regulations further compound the reliability impacts addressed by SPP in its July 19, 2011 comment letter, which focused on the MACT regulations to be enacted in 2014/15. The time period between finalization of the CSAPR and its effective date is too short to allow SPP and its members/registered entities to appreciate the effects of the rule and to take actions to ensure reliability.

SPP supports a more flexible approach to meeting the emission requirements under the CSAPR, as stated in a joint letter from the New York Independent System Operator, Midwest Independent System Operator, PJM Regional Transmission Organization, the Electric Reliability Council of Texas, and SPP to the EPA in August. The EPA must provide time to allow the industry to plan an approach to comply with its rules in a reliable and reasonable fashion. As it stands now, SPP and its members may be placed in the untenable position of deciding which agency's rules to violate, FERC or EPA. Putting an

[3] "Small units" denotes those units generating 25 megawatts or less per unit.

[4] Although the EPA model had additional units and capacity with zero fuel burn in 2012 (10.7 - 10.9 GW in total depending on the source of the Pmax), many of these units which were not dispatched in our 2012summer model will be needed during off-peak load periods to accommodate outages and to maintain system reliability.

industry with critical infrastructure in the position of choosing which agency's rules to violate is bad public policy. SPP suggests that the EPA delay CSAPR's effective date at least a year to allow for investigating, planning, and developing solutions to assist our members in maintaining grid reliability and compliance with both its current regulatory bodies and all of the EPA regulations that impact the electric industry.

Your prompt attention to this matter is greatly appreciated. Please do not hesitate to contact me if you have any questions or would like to discuss this matter further.

Respectfully submitted,

Nicholas A. Brown
President & CEO
Southwest Power Pool, Inc.
(501) 614-3213 • Fax: (501) 664-9553 • nbrown@spp.org

John Meyer
Chairman and Trustee
Southwest Power Pool Regional Entity

David Christiano
Trustee
Southwest Power Pool Regional Entity

Gerry Burrows
Trustee
Southwest Power Pool Regional Entity

cc: SPP Board of Directors
SPP Regional State Committee
SPP Strategic Planning Committee
State Regulators in Arkansas, Kansas, Louisiana, Missouri, Mississippi, Nebraska, New Mexico, Oklahoma, and Texas

Congressional Delegations of Arkansas, Kansas, Louisiana, Missouri, Mississippi, Nebraska, New Mexico, Oklahoma, and Texas
Governors of Arkansas, Kansas, Louisiana, Missouri, Mississippi, Nebraska, New Mexico, Oklahoma, and Texas
North American Electric Reliability Corporation
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