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The Overturning of EPA's "Clean Air Interstate Rule": Consequences and Opportunities

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THE OVERTURNING OF EPA'S "CLEAN AIR INTERSTATE RULE": CONSEQUENCES AND OPPORTUNITIES

I. INTRODUCTION

EPA's "Clean Air Interstate Rule," or CAIR, represented an important first step forward to reduce dangerous levels of SO₂ and NO_x emissions from power plants, and to reduce the devastating public health and environmental toll caused by these emissions.

NRDC and other public health and environmental groups, accordingly, had intervened on EPA's behalf in litigation in the United States Court of Appeals for the D.C. Circuit, defending CAIR against industry challenges that sought to weaken CAIR, reduce its scope and effectiveness, and disrupt its implementation.

The July 11th decision by the D.C. Circuit vacating CAIR in its entirety was a significant setback to the public health and environmental gains embodied in CAIR, and the crucial need to reduce dangerous emissions from power plants in the eastern half of the country.

But the court's decision also represents an opportunity to get it right where CAIR did not -- to take not just the first step but the necessary steps to eliminate dangerous levels of power plant emissions and deliver healthy air to all Americans.

My testimony will focus on the following topics:

- **Background:** Brief background on how EPA arrived at CAIR, and lessons we can learn from that history. As discussed below, CAIR was fundamentally the product of a political and policy agenda whose roots lay in the Administration's unsuccessful attempt to persuade Congress to adopt its "Clear Skies" legislation, S.131 (2005), during the period from 2003 to 2005. In turn, the demise of CAIR in court may be linked directly to that political and policy agenda, which the court found to be at odds with the existing Clean Air Act in multiple respects. Finally, that political agenda remains embodied in several EPA rules and proposed rules that rely upon the continuing implementation of CAIR to weaken or avoid other Clean Air Act mandates. Those actions were not supportable or lawful at the time that EPA adopted them; but they are indefensible as a matter of law, policy and responsible governance now that CAIR has been vacated and they must be reversed.
- **Public Health Toll and Cleanup Imperatives:** Next, I discuss the public health imperative of achieving deep reductions in power plant SO₂, NO_x and associated particulate matter (PM) emissions. I will examine the public health gains accomplished by CAIR, and will compare those with the additional public health gains that may be secured by surpassing CAIR's reductions. I also present startling data compiled by EPA that depict the incidences of premature mortality and morbidity that would have been avoided prior to CAIR's vacatur. I also discuss how many of these harms still can be

avoided, depending upon whether installed and planned pollution control equipment is operated.

- **Cost-Effective Pollution Controls:** Next, I examine the continuing status of coal-fired power plants as the source of the most cost-effective emissions reductions to attain health-based air quality standards in State Implementation Plans (SIPs). I will explore the costs of pollution control measures examined by state officials in the east and midwest, providing powerful evidence that additional emissions reductions from the power sector beyond levels achieved under CAIR provide more cost-effective emissions reduction opportunities than those available from other industrial sectors and mobile sources.
- **The Court's Decision:** Without attempting a comprehensive summary of the court's complex 60-page decision, I will focus instead on the court's understanding of how EPA arrived at CAIR; certain shortcomings in CAIR perceived by the court; a discussion of EPA's basis for believing CAIR was lawful; and how EPA must comply with the Clean Air Act in light of the court's decision.
- **Next Steps:** I discuss briefly parallel paths that we should pursue at the state, EPA and Congressional level to achieve deep and timely reductions in power plant emissions in order to protect air quality and public health.

II. BACKGROUND

The President ran for office on a campaign pledge to develop strong legislation reducing emissions of SO₂, NO_x, mercury and CO₂ from power plants. After abandoning the CO₂ element of that campaign promise in early 2001, the Administration developed a strong "straw" proposal covering the other three pollutants in 2001. Following outcries from certain elements of the utility sector and the industry's trade association, the Administration abandoned the EPA straw proposal and ending up introducing its Clear Skies legislation in February 2003. The eventual bill introduced before this Committee, the "Clear Skies Act of 2005", S.131, failed to be reported out of Committee following an unsuccessful vote in March 2005.

It is worth revisiting here briefly why declining to advance the Administration's Clear Skies legislation to the Senate floor was the right thing to do in 2005 and would be the right thing to do were that bill re-introduced in Congress today.

As I noted in my testimony before this Committee in February 2005, the Clear Skies legislation delayed by a decade or more the day when millions of Americans would have air quality that meets public health standards. Current law requires delivery of clean air by 2009 for smog and 2010 for soot pollution. The Administration's bill allowed those deadlines to be pushed back to 2022 – and it undermined the tools available to states and EPA to achieve even that lax deadline.

Despite claims by some of the bill's supporters at the time that Clear Skies would cut power plant pollution 70 percent by 2018, EPA and the Energy Department told us plainly that

the legislation would not achieve actual pollution reductions of 70 percent until some time after 2025. It was no accident that the Clear Skies legislation pushed smog and soot NAAQS attainment deadlines back to as late as 2022, since the bill was designed to grant relief from the greater strictures of the current statute while conferring a two decade-long compliance period upon utility companies alone.

With the long-overdue strengthening of the public health standards for PM_{2.5} in 2006 and ozone in 2008, we know now with greater urgency what we already knew in 2005: allowing power plants to produce air pollution at excessive and unhealthy levels for as long as two decades – before reaching a 70% reduction target that still would remain unprotective -- imposes tremendous harms upon the American people. Each year, soot and smog from power plant emissions cause more than 24,000 premature deaths, 38,200 non-fatal heart attacks, hundreds of thousands of asthma attacks, and millions of days of lost work.¹ Measured against implementation of the stronger straw proposal developed by the Bush Administration itself in 2001, the Administration’s Clear Skies bill of 2005, from its enactment through 2020, would have been responsible for more than 100,000 additional early deaths, more than two million additional asthma attacks, and more than fifteen million additional lost work days.

Even with the setback to CAIR represented by the court’s July 11th decisions, we can and must achieve greater than 70% reductions in SO₂ and NO_x emissions from power plants well before 2025. Legislation now before the Senate, such as the Chairman’s “Clean Air Planning Act,” would accomplish that responsibility. And as discussed elsewhere in this testimony, regional state compacts and individual states are pursuing pollution reductions from power plants that collectively could surpass 70 percent control levels in time to meet required SIP attainment demonstration by the middle of the next decade. Finally, the court’s ruling in the CAIR litigation makes quite clear that compliance dates as late as 2015, much less 2025, are unacceptable for purposes of satisfying the legal rights of downwind states to seek “immediate relief” from upwind transported pollution under Clean Air Act section 126.

A. The Administration’s “Clear Skies” Straitjacket Agenda.

Following this Committee’s vote in March 2005 that failed to report the Clear Skies legislation to the Senate floor, the Administration set about to carry out the central features of its Clear Skies legislation -- for good and for ill – through a series of EPA regulations under the current Clean Air Act. On the productive side, the EPA’s Administrator Johnson signed the Clean Air Interstate Rule the very next day after the Senate Committee vote on the Clear Skies bill – making clear how intertwined the two efforts were.

CAIR, of course, established emissions caps for SO₂ and NO_x emissions from power plants, corresponding roughly to the reductions achieved from power plants in the eastern U.S. under the Clear Skies bill. CAIR also accelerated the phase II compliance deadline and caps for SO₂ and NO_x under Clear Skies from 2018 to 2015.

¹ Clear the Air, “Dirty Air, Dirty Power: Mortality and Health Damage Due to Air Pollution From Power Plants” (June 2004), available at <http://www.cleartheair.org/dirtypower/docs/dirtyAir.pdf>.

However, EPA has since that time simultaneously carried out a systematically destructive agenda to manipulate, constrain and weaken Clean Air Act requirements to ensure that the law would not demand greater and earlier emissions reductions from power plants than the administration was prepared to impose in CAIR and, before that, Clear Skies. For the past five years, EPA has placed the Clean Air Act on the proverbial Procrustean bed from Greek mythology – cutting off statutory authorities that went too far for the liking of the Administration and the utility industry, while stretching other statutory provisions on the rack of tortured legal interpretations, all to ensure that the current Clean Air Act conformed to the Clear Skies political agenda that the Administration had been unable to persuade Congress to adopt.

The more apt metaphor for the Administration’s Clear Skies political agenda, however, may be that of a straitjacket. This is because the Clean Air Act contains ample legal authority to demand deeper, faster and more effective emissions reductions from power plants than the Administration was willing to impose. Thus, the Administration needed to, and has repeatedly, placed the Clean Air Act and EPA in a policy and legal straitjacket to ensure that the agency – and states, as it turned out – would not impose greater obligations upon the utility sector through regulatory authorities than the Administration had been willing to impose in the Clear Skies legislation. And lest we forget that the Clear Skies legislation contained numerous statutory exemptions and repeals, the EPA regulatory history that has unfolded from 2005 to the present serves as a reminder, since the agency has pursued the bill’s cornerstone rollbacks with a merciless determination. I address these below.

In my testimony before the full Committee in February, I described a speech that the power industry’s top air pollution lobbyist in Washington delivered to a coal industry group in April 2001. Unbeknownst to him, his talk was being transcribed, and later would be posted online.²

The power lobbyist told his coal industry audience that EPA had been planning to use the agency’s existing authority under the Clean Air Act to require large and prompt reductions in air pollution from coal-burning power plants. However, he told them, the lobbyist and his allies in the White House had a plan: the Administration would introduce legislation creating a weaker, slower program – one that would allow coal plants to emit more pollution for much longer than EPA had been planning to require under the Clean Air Act. The lobbyist promised that the weaker, slower cleanup requirements in the new legislation would be something “that we can all live with and that someone else can’t undo.”

The legislation that the power lobbyist proudly described in April 2001 was introduced in 2003 as the Administration’s “Clear Skies” proposal. And the Clear Skies straitjacket agenda that EPA has carried out and promises to carry out until the Administration’s last days, continues to reflect that understanding reached between the White House and utility industry lobbyists in the very first months of the Administration’s first term.

² I attached the transcript to my February 2, 2005 testimony but do not do so here.

As we confront the end of eight years in which the Administration devoted its priorities to what the utility industry desired or could "live with," we are left with little good, and must all live with the aftermath of the Administration's grim bargain.

* * * * *

I examine next most of the key elements of the Administration's Clear Skies straitjacket agenda, whereby EPA manipulated its authorities and responsibilities under the Clean Air Act to ensure that power plants would not be subject to deeper, faster or more effective emissions reductions than the Administration proposed in its Clear Skies legislation and later adopted in CAIR.

B. Protections Against Transported Air Pollution That Harms Downwind States.

The Clear Skies straitjacket constrained the right of downwind states, victimized by transported pollution from upwind states, to obtain relief from EPA. This political agenda led EPA to deny the petition by the state of North Carolina asking EPA to take more effective and timely measures than CAIR contained. EPA thereby failed to provide North Carolina sufficient protection from upwind states' emissions that contributed to North Carolina's nonattainment in 2010, and interfered with the maintenance of attainment in the state.

Section 126 of the existing Clean Air Act permits downwind states to petition EPA to address upwind states' power plant emissions, and grants the agency the authority to regulate those emissions. The Administration's Clear Skies proposal would have completely overhauled section 126's interstate pollution remedies for downwind states, adding an insurmountable legal test and further restricting state remedies and EPA authorities by prohibiting additional emissions reductions from power plants and other industrial units covered by the bill until 2015.³

Confronted with the inability to adopt its preferred legislative restrictions on states' rights and constraints on additional reductions from power plants, the administration resorted to its Clear Skies straitjacket regulatory agenda. Pointing to CAIR, EPA proceeded to prohibit additional emissions reductions from power plants covered by CAIR until 2015, denying North Carolina's section 126 petition. Notwithstanding that 2015 was inconsistent with nonattainment deadlines faced by North Carolina in 2010,⁴ and CAIR did not adequately restrict sources in upwind states from contributing significantly to nonattainment or interference with maintenance of attainment in North Carolina, EPA denied the state's 126 petition.

The court found CAIR's failings in this regard unlawful. And while North Carolina's separate lawsuit over EPA's denial of its petition has been on hold pending the CAIR lawsuit, it is safe to say under the court's reasoning that the court also will find EPA's denial to be unlawful. The court should remand EPA's decision to the agency to undertake actions requiring the upwind pollution sources despoiling the air quality of North Carolina and other states to

³ S. 131 § 3(a)(3) (adding Clean Air Act § 110(q)).

⁴ Indeed, 2015 is unrelated to any legal or logical milestone flowing from the statute, its transport provisions or downwind states' attainment rights.

undertake stronger and faster reductions than CAIR required. One significant strand of the straitjacket agenda unravels.

C. Protections Against Toxic Air Pollution From Power Plants.

The Clear Skies straitjacket constrained and violated EPA's legal obligation to comply with the statute's air toxics provisions, requiring "Maximum Achievable Control Technology" (MACT) covering all hazardous air pollutants, including mercury, from power plants.

The Administration's Clear Skies legislative proposal repealed the Clean Air Act's MACT protections covering all hazardous air pollutants from power plants; established a two-phase cap-and-trade program for mercury emissions; and exempted from Clear Skies' mercury cap all coal-fired electric generating units that emit 50 pounds-per-year or less of mercury⁵ -- which amounted to exempting an astonishing 52 percent of the country's coal-fired units from the mercury cap.⁶

Finally, for hazardous pollutants other than mercury, the bill left only the authority to set "residual risk" standards through a complex risk-based process, but the earliest that those regulations were permitted to take effect was 2018 -- a full 10 years after the MACT compliance deadline of the current Clean Air Act. The bill repealed the Clean Air Act's "residual risk" protections entirely for mercury without regard to any health risks that remained under the bill's weaker mercury caps.⁷

EPA's own analyses of the Administration's bill at the time acknowledged mercury pollution increases above today's levels from "specific sources in some states," due to the trading features of the bill and the bill's repeal of the statute's MACT standards.⁸

Six days after the bill failed to pass out of this Committee, EPA signed its "Clean Air Mercury Rule" (CAMR) and a companion rule "delisting" power plant's from the statute's MACT protections. See 70 Fed. Reg. 15,994 (Mar. 29, 2005) (publication date for the delisting rule) & 70 Fed. Reg. 28,606 (May 18, 2005) (publication date for CAMR).

EPA's 2005 mercury rules repealed the MACT protections covering all hazardous air pollutants from power plants; established a two-phase cap-and-trade program for mercury emissions; and repealed the statute's residual risk protections for all hazardous air pollutants. In other words, these EPA rules effectively carried out the legislative proposal that the Administration could not get enacted in Congress, and did so under the guise of authority purportedly available under existing law.

⁵ S. 131 § 471(2)(C).

⁶ 582 of the 1121 coal-fired units that were active in 1999 in this country (that is, 52 percent) emitted less than 50 pounds-per-year of mercury.

⁷ S. 131 Sec. 3(a)(5)(A) (amending Clean Air Act § 112(c)(1)).

⁸ See EPA, "Technical Support Package for Clear Skies," Section B: Human Health and Environmental Benefits, at 44.

On February 8, 2008, the D.C. Circuit vacated EPA's delisting rule and CAMR, after finding the delisting rule to violate the plain language of the Clean Air Act. The court concluded that CAMR's trading approach was thereby invalid since the statute requires regulation of power plants under CAA section 112's MACT protections. The court even ridiculed EPA's attempt to evade the plain statutory language, finding that EPA's "explanation deploys the logic of the Queen of Hearts, substituting EPA's desires for the plain text" of the Clean Air Act. The court could just have well said that EPA was attempting to substitute its Clear Skies agenda for the plain text of the current statute. This ruling marked another instance of key pieces of the Clear Skies straitjacket unraveling.

D. The Right of States to Better Protect Their Citizens Against Toxic Air Pollution.

The Clear Skies straitjacket also constrained states' authority to deviate from EPA's CAMR, when states wished to achieving deeper mercury reductions by adopting more stringent mercury plans than EPA's model trading rule. EPA officials took the extraordinary step of testifying against legislation by the Commonwealth of Pennsylvania to adopt more protective mercury control measures, eschewing EPA's trading approach, to better protect Pennsylvania and neighboring citizens against this dangerous neurotoxin. To their credit, Pennsylvania officials rejected EPA's pressure.

EPA emails uncovered through a Freedom of Information Act request have revealed that agency officials engaged in a campaign to pressure states into participating in CAMR's mercury trading program, threatening to disapprove state programs that adopted more stringent mercury safeguards, for example, through state prohibitions on mercury allowance sales or state decisions to allocate fewer mercury allowances to in-state utilities than provided for under CAMR. At the same time, EPA and Justice Department attorneys were representing to the D.C. Circuit in the CAMR lawsuit that states "have the option of implementing more stringent [mercury] emission reduction requirements under CAMR" and that a State that "chooses to submit a plan to EPA that allocates relatively fewer allowances, and therefore results in lower mercury emissions than is required by CAMR, is not a basis for disapproval of the plan by EPA."⁹

In an EPA response to a Senator Leahy inquiry about this contradiction, EPA explained that states participating in the trading program were required to adopt certain "core provisions" of CAMR, intended to "ensure the program was environmentally- and cost-effective." (emphasis added). This confirmed suspicions that environmental stringency and protectiveness were not the only considerations relevant to EPA's approval of states' mercury control plans, and squarely contradicted EPA's representations to the court. The Clean Air Act guarantees states the authority to adopt more stringent cleanup programs, and that is in no way mitigated, altered or affected by EPA's altogether different policy interest in making programs more "cost-effective" – presumably for industry. In his capacity as Chairman of the Senate Judiciary Committee, Senator Leahy has recently requested that the Government Accountability Office investigate these discrepancies and representations made by the Administration to the D.C. Circuit and

⁹ Response Brief of Respondent U.S. EPA, No. 05-1097 and consolidated cases (D.C. Cir.), at 151, n.62.

Congress. This will shine a spotlight on yet another aspect of the Administration's Clear Skies straitjacket agenda.

E. Visibility Protections in National Parks and Other Class I Areas.

The Clear Skies straitjacket constrained EPA's obligation and authority to prevent and remedy the impairment of visibility in Class I federal areas such as national parks. Under section 169A (b)(2)(A) of the Act, States must require installation of "Best Available Retrofit Technology" (BART) on all major stationary sources built between 1962 and 1977 from 26 identified source categories, including power plants, that contribute to haze over national parks. The statute requires BART review when any such source emits any air pollutant that may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area.

The Administration's Clear Skies bill also would have repealed the current Clean Air Act's BART protections.¹⁰ The bill exempted all opt-in units and all power plants – the primary contributor to park haze – from the BART requirement.¹¹ In so doing, the bill let off the hook those intransigent companies that have not yet installed the best available retrofit technology on their plants.

In July 2005, shortly after the failure of the Clear Skies bill, EPA issued a rule declaring that any "State that opts to participate in the Clean Air Interstate Rule cap-and-trade program . . . need not require affected BART-eligible EGU's to install, operate, and maintain BART." 40 C.F.R. § 51.308(e)(4); *see also* 70 Fed. Reg. 39104, 39137 (July 6, 2005) (substituting CAIR for the requirement that certain power plants install BART if they cause or contribute visibility impairment in national parks and other scenic areas). Once again, having failed to enact Clear Skies, the Administration adopted Clear Skies' repeal of BART through a rulemaking under the current Act.

EPA's rule was later upheld by the D.C. Circuit following a challenge by environmental organizations, despite the failure of CAIR to impose any pollution control measures on power plant units that otherwise would have been required to install Best Available Retrofit Technology. *See Utility Air Regulatory Group v. EPA*, 471 F.3d 1333, 1339 (D.C. Cir. 2006).

In light of the vacatur of CAIR, however, EPA's substitution of CAIR for BART is not remotely defensible under either EPA's logic or the court's ruling. Accordingly, NRDC intends to petition EPA for rulemaking to repeal the rule that allowed affected power plants to avoid installing, operating, and maintaining BART based upon the now-invalidated CAIR.

F. Reasonably Available Control Technology.

The Clear Skies straitjacket constrained and contravened EPA's obligation and authority to mandate Reasonably Available Control Technology (RACT) for power plants in all

¹⁰ 42 U.S.C. § 7491(b)(2)(A).

¹¹ S. 131 §§ 407(K), 483(a).

nonattainment areas. The Clean Air Act requires that each nonattainment area SIP “provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology.” 42 U.S.C. § 7502(c)(1).

EPA has issued two implementation rules for its 1997 ozone and PM_{2.5} NAAQS, in which EPA allows sources participating in its NO_x SIP Call rule and CAIR to avoid installing any pollution controls at all (much less “RACT” controls), and to actually increase emissions within a nonattainment area by purchasing and banking allowances from sources a thousand miles downwind. Because the Act’s express terms bar supplanting source-specific RACT in specific nonattainment areas with these interstate trading schemes that rely on allowance purchases rather than emissions reductions, NRDC and Earthjustice have pending lawsuits against these rules in the D.C. Circuit. In addition, because these RACT waivers for uncontrolled (or poorly controlled) sources are now not even defensible under EPA’s own logic in light of the vacatur of CAIR, NRDC intends to petition EPA for rulemaking to repeal these waivers in the PM_{2.5} and ozone implementation rules.

G. New Source Review.

EPA is further carrying out its Clear Skies straitjacket agenda by threatening adoption of an irresponsible rulemaking that effectively would exempt all existing power plants from the Clean Air Act’s new source review (NSR) and Prevention of Significant Deterioration (PSD) programs. See 72 Fed. Reg. 26,202 (May 8, 2007); 70 Fed. Reg. 61,081 (October 20, 2005).

True to form, these proposals constrain and contravene the Act’s preconstruction permitting for “modifications” at all of the nation’s existing power plants, relieving utility companies of the need to employ pollution control measures even when plants become dirtier by hundreds, thousands or even tens of thousands of tons per year. Incredibly, EPA’s rule would adopt this grossly weaker and dirtier approach by embracing the losing legal position of a utility company defendant, Duke Energy, in an enforcement case that EPA won in a unanimous Supreme Court decision, *Environmental Defense v. Duke Energy*, 127 S. Ct. 1423 (U.S. 2007). And yes, that would be the same Duke Energy that just persuaded the court to vacate CAIR’s SO₂ program.

But it gets even more perverse. In its NSR proposals, EPA relied almost exclusively on the presence of CAIR as the justification for the effective elimination of the NSR safeguards for existing power plants (see, e.g., 72 Fed. Reg. at 26,208) -- even though CAIR did not apply in half the country, CAIR left two-thirds of power plant lacking modern pollution controls for SO₂ or NO_x as late as 2020, and CAIR did not achieve its intended emissions reductions until the mid-2020’s. Looking at just one example, EPA’s own enforcement officials concluded that the proposed NSR rule would allow a power plant from an actual case study to increase SO₂ emissions by over 13,000 tons per year when such an increase under current law would demand

modern pollution controls.¹² Accordingly, EPA's NSR proposals were indefensible even when CAIR was in place and had no business being finalized.

With CAIR now vacated, however, under EPA's own logic there is not even the remotest policy or legal justification for finalizing this enormous NSR loophole. Yet even after the decision striking down CAIR there are indications that the Administration is still planning to do so, in one final fit of reckless irresponsibility.

This parting gift to the utility industry would conform to the bargain struck between the Administration and elements of the utility industry as far back as the spring of 2001, when the Administration's energy task force first unleashed the attacks on the NSR protections that threaten to continue until the very end. And this intention would conform once again to the Administration's Clear Skies straitjacket agenda: the Administration's Clear Skies legislation proposed to create a loophole from NSR and PSD for existing power plants that is nearly identical to the regulatory exemption proposed by EPA in 2005 and 2007: adoption of a "maximum hourly emissions" increase test, rooted in historic achievable emissions rates.¹³ Having failed to adopt that loophole into law legislatively, the Administration appears committed to adopting it through illegal regulations even as EPA's own feeble rationale, the presence of CAIR, has now disappeared.

III. THE PUBLIC HEALTH IMPERATIVE OF CONTROLLING POWER PLANT AIR POLLUTION

It is both appropriate and fair to condemn a political agenda that twists the Clean Air Act and suppresses necessary, feasible reductions based upon a failed legislative proposal, reflected in Clear Skies, while at the same time praising EPA and the Administration for pursuing very significant SO₂ and NO_x emissions reductions from power plants, reflected in CAIR.

¹² See <http://www.nrdc.org/media/docs/051013a.pdf> (attachment to August 25, 2005 EPA Office of Enforcement and Compliance Assurance memorandum commenting on "Draft New Source Review Clean Air Interstate Rule"). Even the EPA title of the draft rulemaking under discussion in 2005 reveals that the agency recognized this rulemaking to be part and parcel of CAIR.

¹³ See S.131 (2005), Sec. 483(d)(3) (defining "modification" for NSR and PSD purposes to cover only changes that "increases the maximum hourly emissions of any pollutant regulated under this Act above the maximum hourly emissions achievable at that unit during the five years prior to the change").

EPA has estimated the annual health and welfare benefits and costs of CAIR thusly:

Annual Health and Welfare Benefits and Costs of CAIR¹⁴		
Health-Related Incidences Avoided (PM _{2.5} , Ozone)	2010	2015
Premature deaths avoided	13,000	17,000
Non-fatal heart attacks avoided	17,000	22,000
Hospital admissions/ER visits avoided	19,000	27,000
Work loss days	1.4 million	1.7 million
School absence days	180,000	510,000
Monetary Value of Total Health Benefits (Billion 1999\$)	\$62.6-\$73.3	\$86.3-\$101
Monetary Value of Visibility Improvements	> \$1 billion	Almost \$2 billion
Annual Costs of CAIR Implementation (Billion 1999\$)	\$2.36	\$3.57

EPA also has prepared a very useful state-by-state estimation of the PM_{2.5}-related benefits of CAIR, which I attach to my testimony. These state-specific spreadsheets detail avoided incidences of premature mortality, avoided morbidity, and assign monetary values to the identified health benefits.

EPA’s valuation of the health benefits of avoided morbidity in these spreadsheets encompasses health conditions such as chronic and acute bronchitis, acute myocardial infarction, asthma exacerbation, and respiratory and cardiovascular symptoms. The avoided incidences of mortality and morbidity, and their associated monetized value of these benefits, are detailed in state-specific spreadsheets covering 28 states plus the District of Columbia. All of these detailed spreadsheets are attached.

The following information is drawn from an EPA document and series of spreadsheets entitled “CAIR Estimated Monetary Value of Reductions in Incidences of PM_{2.5} Related Health Effects in 2015.” EPA’s spreadsheet summaries, in turn, were drawn from the Regulatory Impact Analysis accompanying CAIR.

The incidences of premature mortality and morbidity avoided under CAIR in 2010 and 2015 are staggering, and demonstrate the public health imperative of immediate actions to restore those health benefits. But in many respects the data provide even greater urgency to reduce emissions more sharply and more quickly than CAIR accomplished, since the health benefits – and benefits-to-cost rationale – are so overwhelming.

¹⁴ EPA notes that “the annual health and welfare benefits and costs shown for 2010 and 2015 were taken from the Clean Air Interstate Rule Regulatory Impact Analysis (RIA) published in March of 2005 (<http://www.epa.gov/cair/pdfs/finaltech08.pdf>).” See also EPA, July 24th Congressional Staff Briefing on Clean Air Interstate Rule.

The EPA data also confirm total PM_{2.5}-related health benefits that would have been delivered under CAIR in excess of \$70 billion annually beginning in 2010, and totaling nearly \$100 billion annually by 2015. Again, these monetized health benefits data provide urgent reason to reduce emissions more sharply and more quickly than CAIR accomplished, since these total health-based values are so enormous. And while we harbor fundamental concerns with expressing human deaths and adverse health effects in monetary terms, we present these figures solely based upon EPA's estimation of premature mortality and morbidity avoided by CAIR and the agency's estimation of the associated monetized benefits, all based upon EPA methodologies.

2010				
Valuation of Health Benefits (1999\$)				
State	Incidences of Premature Adult Mortality Avoided	Premature Adult Mortality Avoided	Morbidity Avoided	Total Health-Based Value
CAIR Region				
Alabama	280	\$1,500,000,000	\$90,600,000	\$1,590,000,000
Arkansas	110	\$567,000,000	\$32,900,000	\$602,000,000
Connecticut	170	\$910,000,000	\$68,300,000	\$980,000,000
Delaware	91	\$481,000,000	\$32,800,000	\$515,000,000
District of Columbia	64	\$339,000,000	\$25,300,000	\$366,000,000
Florida	460	\$2,460,000,000	\$152,000,000	\$2,620,000,000
Georgia	420	\$2,240,000,000	\$167,000,000	\$2,420,000,000
Illinois	500	\$2,640,000,000	\$192,000,000	\$2,840,000,000
Indiana	440	\$2,310,000,000	\$165,000,000	\$2,490,000,000
Iowa	64	\$342,000,000	\$23,900,000	\$366,000,000
Kentucky	380	\$2,020,000,000	\$128,000,000	\$2,160,000,000
Louisiana	150	\$771,000,000	\$48,000,000	\$821,000,000
Maryland	640	\$3,390,000,000	\$242,000,000	\$3,640,000,000
Massachusetts	230	\$1,200,000,000	\$91,900,000	\$1,290,000,000
Michigan	500	\$2,650,000,000	\$197,000,000	\$2,860,000,000
Minnesota	58	\$306,000,000	\$25,500,000	\$333,000,000
Mississippi	130	\$665,000,000	\$39,400,000	\$707,000,000
Missouri	200	\$1,070,000,000	\$71,000,000	\$1,150,000,000
New Jersey	670	\$3,530,000,000	\$261,000,000	\$3,800,000,000
New York	1,200	\$6,380,000,000	\$487,000,000	\$6,880,000,000
North Carolina	610	\$3,220,000,000	\$216,000,000	\$3,450,000,000
Ohio	1,200	\$6,390,000,000	\$435,000,000	\$6,840,000,000
Pennsylvania	1,700	\$8,860,000,000	\$577,000,000	\$9,500,000,000
South Carolina	280	\$1,490,000,000	\$95,000,000	\$1,590,000,000
Tennessee	410	\$2,180,000,000	\$136,000,000	\$2,320,000,000
Texas	380	\$2,020,000,000	\$158,000,000	\$2,190,000,000
Virginia	690	\$3,670,000,000	\$268,000,000	\$3,950,000,000

West Virginia	290	\$1,520,000,000	\$85,200,000	\$1,600,000,000
Wisconsin	120	\$660,000,000	\$50,000,000	\$712,000,000
Non-CAIR Region				
Arizona	5	\$28,400,000	\$2,080,000	\$30,600,000
California	6	\$29,300,000	\$2,420,000	\$31,800,000
Colorado	2	\$9,800,000	\$824,000	\$10,600,000
Idaho	0	\$339,000	\$30,200	\$370,000
Kansas	42	\$221,000,000	\$15,900,000	\$238,000,000
Maine	34	\$181,000,000	\$13,000,000	\$194,000,000
Montana	0	\$1,010,000	\$58,900	\$1,070,000
Nebraska	18	\$95,000,000	\$7,030,000	\$102,000,000
Nevada	0	\$1,180,000	\$80,900	\$1,270,000
New Hampshire	39	\$206,000,000	\$16,300,000	\$223,000,000
New Mexico	3	\$13,700,000	\$976,000	\$14,800,000
North Dakota	3	\$16,700,000	\$1,140,000	\$17,800,000
Oklahoma	73	\$387,000,000	\$23,400,000	\$412,000,000
Oregon	0	\$1,320,000	\$74,200	\$1,390,000
Rhode Island	43	\$226,000,000	\$16,700,000	\$243,000,000
South Dakota	5	\$28,900,000	\$2,130,000	\$31,100,000
Utah	0	\$1,040,000	\$104,000	\$1,150,000
Vermont	23	\$123,000,000	\$9,360,000	\$132,000,000
Washington	0	\$1,250,000	\$54,800	\$1,310,000
Wyoming	0	\$898,000	\$64,500	\$960,000
National Total	13,000	\$67,400,000,000	\$4,670,000,000	\$72,000,000,000

The following EPA notes accompanied the preceding and subsequent table:

- * PM_{2.5} related health benefits are presented from state level BenMAP results used in the development of the Clean Air Interstate Rule Regulatory Impact Analysis (RIA) published in March of 2005 (<http://www.epa.gov/cair/pdfs/finaltech08.pdf>).
- * The health benefits presented are a result of improvements in ambient PM_{2.5} concentration and do not include health benefits from decreases in ground-level ozone concentrations or welfare benefits from increased visibility or reductions in acid rain.
- * National totals may not precisely sum to those in the RIA because of the difference between national and state-level aggregation within BenMAP.
- * Valuation of premature adult mortality at 7% discount does not match the RIA due to an error in the discount rate used in the RIA.
- * The health effect incidence and valuation functions used in this analysis are the state of the science methods used in March of 2005. EPA has updated several key assumptions used in calculating health impacts since this time.
- * Valuation of acute myocardial infarction incidences avoided uses a 3% discount rate.
- * Valuation of premature adult mortality avoided uses a 3% discount rate.

2015

States	Valuation of Health Benefits (1999\$)			
	Incidences of Premature Adult Mortality Avoided	Premature Adult Mortality Avoided	Morbidity Avoided	Total Health- Based Value
CAIR Region				
Alabama	430	\$2,380,000,000	\$135,000,000	\$2,520,000,000
Arkansas	140	\$775,000,000	\$43,100,000	\$820,000,000
Connecticut	210	\$1,170,000,000	\$84,300,000	\$1,260,000,000
Delaware	120	\$645,000,000	\$42,100,000	\$689,000,000
District of Columbia	80	\$444,000,000	\$30,900,000	\$476,000,000
Florida	760	\$4,220,000,000	\$246,000,000	\$4,470,000,000
Georgia	700	\$3,880,000,000	\$272,000,000	\$4,160,000,000
Illinois	620	\$3,430,000,000	\$239,000,000	\$3,680,000,000
Indiana	530	\$2,920,000,000	\$199,000,000	\$3,130,000,000
Iowa	83	\$460,000,000	\$31,200,000	\$492,000,000
Kentucky	500	\$2,760,000,000	\$165,000,000	\$2,930,000,000
Louisiana	210	\$1,170,000,000	\$68,700,000	\$1,240,000,000
Maryland	810	\$4,530,000,000	\$304,000,000	\$4,850,000,000
Massachusetts	270	\$1,530,000,000	\$112,000,000	\$1,640,000,000
Michigan	620	\$3,430,000,000	\$243,000,000	\$3,680,000,000
Minnesota	72	\$400,000,000	\$32,200,000	\$433,000,000
Mississippi	180	\$1,010,000,000	\$56,900,000	\$1,070,000,000
Missouri	260	\$1,470,000,000	\$94,500,000	\$1,570,000,000
New Jersey	830	\$4,600,000,000	\$324,000,000	\$4,940,000,000
New York	1,500	\$8,080,000,000	\$590,000,000	\$8,680,000,000
North Carolina	860	\$4,780,000,000	\$301,000,000	\$5,100,000,000
Ohio	1,500	\$8,080,000,000	\$527,000,000	\$8,630,000,000
Pennsylvania	2,100	\$11,400,000,000	\$712,000,000	\$12,100,000,000
South Carolina	440	\$2,470,000,000	\$146,000,000	\$2,620,000,000
Tennessee	590	\$3,260,000,000	\$192,000,000	\$3,470,000,000
Texas	650	\$3,620,000,000	\$269,000,000	\$3,910,000,000
Virginia	900	\$4,990,000,000	\$340,000,000	\$5,350,000,000
West Virginia	350	\$1,960,000,000	\$103,000,000	\$2,070,000,000
Wisconsin	160	\$894,000,000	\$65,300,000	\$960,000,000
Non-CAIR Region				
Arizona	10	\$52,800,000	\$3,570,000	\$56,500,000
California	9	\$51,400,000	\$3,970,000	\$55,500,000
Colorado	3	\$15,200,000	\$1,220,000	\$16,500,000
Idaho	0	\$153,000	\$11,300	\$165,000
Kansas	54	\$299,000,000	\$20,900,000	\$321,000,000
Maine	42	\$235,000,000	\$16,100,000	\$251,000,000

Montana	0	\$1,360,000	\$81,700	\$1,440,000
Nebraska	22	\$123,000,000	\$8,890,000	\$133,000,000
Nevada	1	\$4,630,000	\$303,000	\$4,950,000
New Hampshire	49	\$271,000,000	\$20,600,000	\$292,000,000
New Mexico	4	\$22,200,000	\$1,470,000	\$23,800,000
North Dakota	3	\$13,700,000	\$902,000	\$14,600,000
Oklahoma	110	\$596,000,000	\$34,400,000	\$632,000,000
Oregon	0	\$58,200	\$4,370	\$62,700
Rhode Island	52	\$288,000,000	\$20,500,000	\$308,000,000
South Dakota	6	\$33,200,000	\$2,410,000	\$35,700,000
Utah	0	\$2,420,000	\$210,000	\$2,640,000
Vermont	29	\$164,000,000	\$11,800,000	\$176,000,000
Washington	0	\$704,000	\$65,000	\$771,000
Wyoming	0	\$1,060,000	\$67,000	\$1,130,000
National Total	17,000	\$93,000,000,000	\$6,120,000,000	\$99,000,000,000

The shocking data presented above should lead us to contemplate the sheer scale of additional incidences of avoided mortality and morbidity and the greater monetized health benefits that would result from achieving much deeper and still highly cost-effective emissions reductions from power plants.

We can do better, we can save more lives, and we can do so cost-effectively. We know that these already-impressive benefits would have been achieved under CAIR by mandating power plant emissions reductions at costs that are one-half to one-fifth to one-tenth the cost-per-ton of SO₂, NO_x and VOC reductions that states are currently requiring or considering for other industrial source sectors and mobile sources. See section V below. That is, our regulatory systems are demanding fewer reductions at greater costs from other industrial sectors and mobile sources than we could achieve in far greater amounts at far lower costs from power plants.

Accordingly, Congress should call upon EPA to analyze the additional incidences of premature mortality and morbidity that could be avoided, as well as the associated health, welfare and environmental benefits, by achieving: (1) varying levels of greater emissions reductions than required under both phases of CAIR; (2) by earlier dates than provided for under CAIR; and (3) by achieving those reductions at costs more in line with the costs per ton of pollution control contemplated for power plants, other industrial sectors and mobile sources in SIPs and discussions undertaken by regional state compacts such as the Ozone Transport Commission (OTC) and Lake Michigan Air Directors Consortium (LADCO). Finally, Congress should ask EPA to evaluate the overall social benefits and costs of these various emission reductions scenarios, in order to compare the benefits and costs of controlling power plants versus other industrial sectors and mobile sources.

EPA should be able to perform most of these analyses based upon the Regulatory Impact Analysis for CAIR; the agency's Integrated Planning Model; other analysis performed by EPA to date; and the important ongoing leadership of states and state organizations. It will be invaluable

to have these analyses as Congress, EPA, states and the country address the consequences and opportunities presented by the court's ruling and the need to sharply reduce the terrible toll of power plant air pollution.

IV. EPA ESTIMATION OF CURRENT AND ANNOUNCED POLLUTION CONTROL INSTALLATIONS UNDER CAIR AND OTHER REGULATIONS

Following the vacatur of CAIR, EPA surveyed known information about current and announced pollution control devices for existing power plants resulting from plans to comply with CAIR and other air pollution regulations. The agency then prepared a "preliminary draft estimate" of these control technologies, which I summarize below and attach to this testimony.

The results of EPA's findings are encouraging in one key respect: the vast majority of scrubbers and selective catalytic reduction (SCR) technology, intended to comply with CAIR's SO₂ and NO_x requirements, respectively, had already been installed by 2007 or earlier. This welcome news provides the foundation for immediately taking actions at the state and federal level to require already-installed control devices to be operated, in order to provide essential protections for air quality, public health and the environment.

Moreover, EPA's data show still significant numbers of pollution control devices underway for online operation in 2008 and planned for online operation in 2009. In total, these data suggest that virtually all the pollution control devices that EPA has reason to believe would be installed to comply with CAIR (and other unidentified regulations), would be installed by 2011 or sooner, notwithstanding CAIR's phase II cap taking effect in 2015.

Together, these estimations suggest that there are immediate, effective steps that states, especially, but also EPA can take to ensure that these necessary pollution control devices will be installed and operated to reduce harmful SO₂, NO_x and PM emissions. Importantly, EPA's data identify the specific power plants that already have installed the control devices, and the dates by which they were online or are expected to go online. This information furnishes Congress, EPA, state officials, the media and the public with the information to guarantee that all necessary measures will be taken to ensure operation of these installed and planned pollution controls, in order to reduce dangerous emissions in specific local and downwind communities.

EPA Summary of Estimated Online Availability for Scrubbers and SCR

	SO ₂ Scrubbers		NO _x SCR	
	# of Units	Capacity (MW)	# of Units	Capacity (MW)
2007 or Earlier	296	117,083	199	101,902
2008	45	20,849	12	4,127
2009	44	21,832	25	12,680
2010	58	19,025	7	2,625
2011	20	10,210	6	3,845
2012	0	0	1	310
2013	0	0	1	166

It is important to include here in full the accompanying notations provided by EPA, in order to understand the caveats and assumptions associated with these estimations:

The attached list is based on preliminary draft estimates of current and announced control technology installation as a result of implementing CAIR and other existing air quality regulations. The lists reflect all of the controls EPA is aware of and will be updated as more information becomes available. The data included in the list are based on an updating of data in the [Integrated Planning Model] by the leading power sector companies affected by CAIR, a review of trade press announcements of technology installation, and discussions with States. While some control technology installations may have been omitted, or some announced installations may be cancelled, [EPA’s Clean Air Markets Division] believes these lists provide an accurate picture of control technology installation currently and projected for the near future as of July 10, 2008 before the CAIR Court Decision.

Notably, future operation of the equipment once installed has not be considered here or fully evaluated by EPA, and must be also considered in the context of the recent Court Decision and the large reductions in allowance prices that has occurred for SO₂ and NO_x. EPA is planning to have the information in the list included in the next version of the Integrated Planning Model (IPM) and the [National Electric Energy Data System (NEEDS)] database in the last half of 2008. It will provide the foundation for future power sector modeling and analysis.

FGD and SCR Online Year Summary for Draft NEEDS v4.0, attached.

MSB Energy Associates performed an analysis of these EPA scrubber and SCR installations for the Clean Air Task Force, which has graciously granted me permission to include that analysis in this testimony:

	Number of Units-----					Capacity (MW)-----				
	# of Units	Capacity (MW)	Fraction of Base Case in 2010	Fraction of CAIR in 2010	Fraction of CAIR in 2015	Fraction of Total Coal	Fraction of Base Case in 2010	Fraction of CAIR in 2010	Fraction of CAIR in 2015	Fraction of Total Coal
EPA Draft NEEDS v4.0 Spreadsheet										
Scrubbers Through 2007	296	117,080	97%	80%	59%	26%	108%	83%	64%	39%
SCR Through 2007	199	101,902	82%	69%	51%	17%	94%	82%	68%	34%
Scrubbers Through 2013 (Actual & Projected)	463	188,999			93%	40%			104%	64%
SCR Through 2013 (Actual & Projected)	251	125,655			64%	22%			84%	42%
EPA CAIR Analysis (2004)										
Base Case/2010 (Projected)	# of Units	Capacity (MW)	% of Total # of Units	% of Total Capacity (MW)						
Coal Units	1,234	303,076								
Scrubbers	305	108,536	25%		36%					
SCR	242	108,274	20%		36%					
CAIR/2010 (Projected)										
Coal Units	1,159	297,136								
Scrubbers	370	141,886	32%		48%					
SCR	290	123,558	25%		42%					
CAIR/2015 (Projected)										
Coal Units	1,159	296,445								
Scrubbers	498	182,313	43%		61%					
SCR	391	149,588	34%		50%					

Source: MSB Energy Associates and Clean Air Task Force (July 2008).

There are a number of very striking pictures and conclusions presented by this data. Focusing first on EPA's original analysis of CAIR from 2004:

- In the base case scenario in 2010, that is without implementation of CAIR, only 20-25% of electric generating units (EGUs) nationwide – representing 36% of total capacity -- would be equipped with basic SO₂ controls in the form of scrubbers, or NO_x controls in the form of SCR. This is an arresting indictment of the poorly-controlled and uncontrolled state of power plants in the country today and until 2010.
- Taking the intended implementation of CAIR into account in 2010, the percentage of total EGUs equipped with scrubbers only increases 7% (from 25% to 32%), and the percentage of total EGUs equipped with SCR only increases 5% (from 20% to 25%). Despite the real accomplishments of CAIR by 2010, then, there is a relatively paltry increase in actual installed pollution controls, in percentage terms. These percentages correspond to 65 additional scrubbers and 48 additional SCR, out of a projected 1,159 total EGUs by 2010. These scrubbers and SCR would cover 48% and 42% of total capacity, respectively, indicating that relatively larger units are being controlled, a welcome sign.
- Looking out to CAIR's planned implementation in 2015, 43% of total EGUs would have been equipped with scrubbers, covering 61% of total capacity; and 34% of total EGUs would have been equipped with SCR, covering 50% of total capacity. While this represents clear and significant progress beyond the base case in 2010, it is still startling and inexcusable that 60% of the nation's power plant units, covering 40-50% of the country's electricity capacity, are projected to lack modern pollution controls in 2015, 25 years after passage of the Clean Air Act Amendments of 1990.

Turning to the MSB Energy Associates analysis arising out of EPA's estimation of scrubbers and SCR believed to have been installed as of 2007:

- The vast majority of scrubbers (97%) and SCR (82%) that EPA projected to be online by 2010 under its base case, without implementation of CAIR, had already been installed by 2007.
- Of the controls that EPA projected to be operating by 2010 in order to comply with CAIR, 80% of scrubbers and 69% of SCR had already been installed by 2007. (Recall from the preceding discussion how few these numbers of additional controls actually are in terms of total controlled units.) These 2007 scrubber and SCR installations still constitute 59% and 51%, respectively, of the total control measures that EPA projected to be installed by 2015 in order to comply with CAIR's phase II cap.

If EPA's information is correct, it suggests that despite the court's vacatur of CAIR, sufficiently large numbers of pollution control devices already had been installed by 2007 to meet over two-thirds of the pollution controls projected under CAIR by 2010, and over half the pollution controls projected under CAIR by 2015. As discussed earlier, this picture provides the

basis for immediate steps at the state and federal level to require already-installed control devices to be operated in order to safeguard air quality and public health.

It is essential for these installed pollution controls to be operated in order to protect the public.

There is anecdotal evidence that some utilities that installed scrubbers, for example, in order to comply with CAIR's SO₂ provisions simultaneously switched to dirtier (high-sulfur) coal, presumably for reasons of cost. Following the vacatur of CAIR, on one hand there is the possibility that these units will have pre-existing SO₂ emissions limits that will make it necessary to operate the scrubbers while burning the dirtier coal, in order to meet these emissions limits.

On the other hand, some or many of these units may lack sufficient pre-existing SO₂ emission limits; this presents the alarming prospect that these units could continue to burn the dirtier coal, cease operation of the scrubbers, and emit at even higher levels than before CAIR's vacatur, by purchasing SO₂ allowances that are now rock bottom-priced as a result of the court's decision.¹⁵ Thus, as a result of CAIR's vacatur, scrubber operational decisions by utility companies, and the impact on the SO₂ allowance market, we very well could see power plants in some communities actually increasing their SO₂ emissions.

What this illustrates is that without CAIR, there are not sufficient legal mandates in place at the state or federal level today to require already-installed scrubbers or SCR to be turned on in 2009 or 2010. A prominent utility industry attorney, Jeff Holmstead, who also happened to be the architect of CAIR as EPA's Assistant Administrator for Air and Radiation from 2000 until 2005, has even gone so far as to suggest that utility companies may have a fiduciary responsibility to their stockholders to cease construction of planned pollution control devices.¹⁶ Mr. Holmstead suggested that the court's decision would result in work stoppages on pollution control projects at dozens of power plants; suspension of some unknown number of projects; and even the idling of already-installed controls due to the absence of any obligation to operate those controls.

¹⁵ SO₂ allowance spot prices are selling for approximately \$100 per ton today on the Chicago Climate Futures Exchange, after selling for approximately \$300 per ton the day before the court's decision. See http://www.ccfex.com/mktdata_ccfe/futuresSummary.jsf?symbol=sfi. Interestingly, the SO₂ spot prices plummeted from approximately \$350 per ton to approximately \$200 per ton, shortly after the March 25th oral argument before the court. This is consistent with the impression left on me and other observers in the court room that portions of CAIR, especially its SO₂ trading program, were in serious jeopardy after the oral argument. The oral argument and SO₂ market response should also belie the claims of some observers to have been completely surprised by the July 11th ruling. Notably, the NO_x allowances market response was not the same in March, and allowance prices actually rose the following month. NO_x allowance prices then plummeted from over \$5,000 per ton to \$1,000 per ton the day of the court's ruling. *Id.*

¹⁶ "Huge mess' in wake of CAIR's collapse," *Greenwire*, by Daniel Cusick and Darren Samuelsohn (July 14, 2008).

We can and must prevent this harmful outcome. Government officials must ensure that utilities that already have installed scrubbers and SCR or planned to do so will actually operate those pollution control devices now. States should immediately undertake rulemakings and revise their SIPs to declare that installed and planned pollution controls constitute “Reasonably Available Control Technology” (RACT) for power plants in nonattainment areas and the Ozone Transport Region, and that sources must operate these controls. At the very least, this would avoid the irrational and indefensible prospect of sources shutting down control they already have installed or planned to install.

State air quality officials in affected attainment areas in the CAIR region also should require that installed or planned control equipment be mandated in SIPs in anticipation of required attainment demonstrations for the 2006 PM_{2.5} NAAQS and the 2008 ozone NAAQS. It will not be a persuasive argument to the public in these communities that an unfortunate setback in court, which has been widely decried, justifies the abandonment of pollution control devices that already have been installed or planned in order to protect local and downwind communities. The urgent need for such protections did not evaporate with the court’s decision, and neither should the demonstrated willingness of utility companies to make those protective investments, nor the will of air quality regulators to safeguard public health.

V. COMPARATIVE POLLUTION CONTROL OPPORTUNITIES AND THEIR COST-EFFECTIVENESS

Due to the Administration’s Clear Skies straitjacket agenda, and the political refusal to require greater emissions reductions from power plants than had been reflected in Clear Skies, EPA worked backwards from Clear Skies to designate the phase I and phase II cap levels for SO₂ and NO_x under CAIR. This carried the necessary consequence of establishing and locking in the costs of annual SO₂ and NO_x reductions that EPA was willing to impose on power plants pursuant to those cap levels. These annual costs, and the underlying costs per ton of SO₂ and NO_x reductions that comprise those annual costs, bear no relationship to the Clean Air Act’s legal obligations or authorities, nor the demonstrated attainment needs or timelines of downwind states, nor even to sound policy or economics. Accordingly, it is unsurprising that the court found EPA’s “significant contribution” approach rooted in these arbitrary costs to be unlawful.¹⁷

¹⁷ Slip opinion at 34-37. In addition to the revealing first footnote of the court’s decision discussed in section VI below, the court’s decision is replete with indications that the judges understood the arbitrariness of the costs per ton of pollution controlled under CAIR: “Though unclear, [EPA’s SO₂ caps] appear to represent what EPA thought would be ‘a cost-effective and equitable governmental approach to attainment with the NAAQS for [PM_{2.5}]’” (*id.* at 36); “EPA’s notions of what is an ‘equitable governmental approach to attainment’ is not among the objectives of section 110(a)(2)(D)(i)(I)” (*id.*); “Having chosen these equitable caps for the CAIR region, EPA then ‘ascertained the costs of these reductions and . . . determine[d] that they should be considered highly cost effective.’ *Id.* at 25,176.” (*id.*); EPA “simply verified sources could meet the SO₂ caps with controls EPA dubbed “highly cost-effective”” (*id.*); & “EPA can’t just pick a cost for a region, and deem ‘significant’ any emissions that sources can eliminate more cheaply. Such an approach would not necessarily achieve something measurable

It is highly instructive for purposes of future, responsible policy development to see the low costs per ton of SO₂ and NO_x controlled under CAIR, and to compare and contrast those costs to the much higher costs that EPA and state regulators are imposing upon other industrial sectors and mobile sources – in no small part because the Administration refused to require more cost-effective reductions from the power sector:

EPA’s ESTIMATED COSTS PER TONS OF SO₂ CONTROLLED UNDER CAIR, CAP LEVELS BEGINNING IN 2010 AND 2015¹⁸

Type of cost effectiveness	<u>2010</u>	<u>2015</u>
Average Cost—Main Case	\$500	\$700
Marginal Cost—Main Case	\$700	\$1,000

ESTIMATED COSTS PER TON OF ANNUAL NOX CONTROLLED UNDER CAIR¹⁹

Type of cost effectiveness	<u>2009</u>	<u>2015</u>
Average Cost—Main Case	\$500	\$700
Marginal Cost—Main Case	\$1,300	\$1,600

These costs per ton of air pollution controlled under CAIR stand in stark contrast to actual and candidate control measures – for power plants, other industrial sectors, and mobile sources -- that EPA, state and local air quality officials are pursuing in order to deliver clean air to the public:

- \$800-\$3,000 per ton of SO₂ reductions and \$700 - \$2,100 per ton of NO_x reductions from power plants being considered by LADCO;²⁰

toward the goal of prohibiting sources ‘within the State’ from contributing significantly to downwind nonattainment.” *Id.* at 37.

In these passages, of course, “equitable” is EPA code for the pollution control costs that the Administration was willing and unwilling to impose on the utility sector.

¹⁸ See 70 Fed. Reg. at 25,202. These costs are reflected in 1999\$ per ton. I have omitted the lengthy EPA footnote explaining the methodology and data used to arrive at these estimates.

¹⁹ See 70 Fed. Reg. at 25,209. These costs also are reflected in 1999\$ per ton, and I have again omitted the lengthy EPA footnote explaining the methodology and data used to arrive at these estimates.

²⁰ Final Report: Identification and Evaluation of Candidate Control Measures (June 2006), at 7, Table 3 (2006 LADCO Report).

<http://www.ladco.org/reports/rpo/Regional%20Air%20Quality/MACTEC%20Final%20Phase%20II%20Report.pdf>. LADCO is the Midwest regional planning organization comprised of air quality officials from the States of Illinois, Indiana, Michigan, Ohio and Wisconsin.

- \$1,622 - \$5,219 per ton of SO₂ reductions and \$536 - \$4,293 per ton of NO_x reductions from ICI Boilers;²¹
- \$2,211 - \$6,917 per ton of SO₂ reductions and \$1,500 - \$2,000 per ton of NO_x reductions from Portland Cement Plants;²²
- \$17,630 - \$21,084 per ton of NO_x reductions from Asphalt Production Plants;²³
- \$2,000 - \$4,000 per ton of NO_x reductions from Glass and Fiberglass Manufacturing Plants;²⁴
- \$13,300 - \$36,260 per ton of volatile organic compound (VOC) reductions from Gasoline Dispensing Facilities;²⁵
- \$600 - \$18,000 per ton of NO_x reductions, with an average annual cost of \$5,000 per ton, for ICI Boilers;²⁶
- \$1,000 - \$2,500 per ton of NO_x reductions from Cement Kilns;²⁷
- \$1,254 - \$5,300 per ton of NO_x reductions from Glass Furnaces;²⁸

EPA's Regulatory Impact Analyses (RIA) for the 2008 ozone NAAQS and the 2006 PM_{2.5} NAAQS detail extensive pollution control measures for non power plant industrial sources and mobile sources, where the costs per ton of SO₂ and NO_x reduced are significantly higher – by orders of magnitude and greater -- than control costs per ton of power plant emissions under CAIR.²⁹ This information is too extensive to summarize here but it echoes and confirms the state data excerpted above and bears review.

Finally, the OTC has developed an extensive control strategy aimed at achieving emissions reductions from the power sector that are deeper and timelier than those achieved under CAIR. It is called, appropriately, CAIR Plus. While I have not summarized the OTC's important work in this testimony, CAIR Plus further reflects costs per ton of emissions reduction that are cheaper than costs identified above, while achieving significant additional reductions beyond those achieved under CAIR in the relevant states.

²¹ 2006 LADCO Report, at 7, Table 3.

²² *Id.*

²³ *Id.* at 9, Table 3.

²⁴ *Id.*

²⁵ *Id.* Because NO_x and VOCs are both precursors to ozone formation, it is worthwhile to consider and compare their relative control cost-effectiveness in designing ozone control strategies.

²⁶ Ozone Transport Commission Control Measures Documentation for 2006 OTC Resolution 06-02, http://www.ct.gov/dep/lib/dep/air/regulations/proposed_and_reports/pm25/appendix_4b.pdf.

²⁷ *Id.*

²⁸ *Id.*

²⁹ See 2008 Ozone NAAQS Regulatory Impact Analysis, Appendix 5a: Additional Cost Information, <http://www.epa.gov/ttnecas1/regdata/RIAs/5a-ozoneriachapter5appendixA.pdf>; 2006 PM_{2.5} NAAQS Regulatory Impact Analysis, Appendix E: Non-EGU Point and Area Source Control Measure Summary, <http://www.epa.gov/ttnecas1/regdata/RIAs/Appendix%20E--Controls%20List.pdf>.

The information above complements the court's finding that EPA acted arbitrarily in setting the control costs and emissions caps under CAIR, because these data confirm the irrationality of allowing power plants to avoid incrementally higher costs for controlling the same ton of pollution, where those costs still would be far lower than control costs borne by local businesses in other industries. This is especially true since power plants are the biggest contributors to our air quality problems and can be controlled more cost-effectively than these local businesses.

The current Administration has managed to avoid answering for the wasteful, economically irrational and fundamentally unfair political choice that lies at the heart of its entire air pollution agenda for the electric power industry. The next administration and Congress now have the opportunity to confront those facts and concerns honestly and fairly, in order to solve the country's air quality problems in the most effective way possible.

VI. THE COURT'S DECISION

I will not summarize the court's decision here, but EPA has done so in a briefing for Congressional staff on July 24th that should be added to the record. I would like to briefly touch upon aspects of the court's decision, however, to highlight the court's understanding of CAIR's resemblance to Clear Skies, as well as certain shortcomings in CAIR perceived by the court that may be linked directly to Clear Skies. I also will examine EPA's basis for believing CAIR was lawful in light of D.C. Circuit precedent. Then I conclude with some thoughts on how EPA must comply with the Clean Air Act following the court's decision.

Midway through the opinion, the court repeats the statutory obligation under Clean Air Act section 110(a)(2)(D)(i)(I) requiring states to "include 'adequate provisions' in their SIPs, prohibiting emissions 'within the State from . . . contribut[ing] significantly' to downwind nonattainment." Slip opinion, No. 05-1244 (D.C. Cir.) (July 11, 2008), at 35-36. The court then puzzles over the fundamental question of how EPA arrived at CAIR's SO₂ emissions reduction levels -- corresponding to the phase I and phase II caps -- that supposedly dealt with those significant contributions from upwind states:

Apart from the arbitrary Title IV baseline, EPA has insufficiently explained how it arrived at the 50% and 65% reduction figures. Though unclear, these numbers appear to represent what EPA thought would be "a cost-effective and equitable governmental approach to attainment with the NAAQS for [PM_{2.5}]." CAIR, 70 Fed. Reg. at 25,199 (quoting Proposed CAIR, 69 Fed. Reg. 4566, 4612 (Jan. 30, 2004)).

Slip opinion at 36.

Immediately after this sentence, the court drops a footnote that contains surely the most insightful, revealing, yet understated use of the word "coincidentally" in a decision by the D.C. Circuit. In this footnote, the court stumbles upon an awareness of the Administration's Clear Skies straitjacket agenda, realizing that CAIR's SO₂ caps were plucked not from thin air but from Clear Skies:

EPA briefly summarized a series of analyses and dialogues with various stakeholder groups in which the participants considered “regional and national strategies to reduce interstate transport of SO₂ and NO_x.” *See* CAIR, 70 Fed. Reg. at 25,199. The most recent of these, EPA’s analysis in support of the proposed Clear Skies Act, considered nationwide SO₂ caps of, coincidentally, “50 percent and 67 percent from . . . title IV cap levels.” *Id.*

Slip opinion at 36 n.1 (emphasis added).

The court signals an impressive understanding here of a dirty little secret that Clean Air Act practitioners have known for the past five years: the Administration worked backwards from its Clear Skies legislative proposal to institute the emissions caps and design features of CAIR, rather than working forward from the Clean Air Act to achieve the emissions reductions necessary to address transported pollution at the levels and according to the schedules consistent with Clean Air Act obligations to downwind states. The emissions cap levels are only one of the more obvious elements of that agenda disconnected from the current statute. It is important to recognize, however, that this backward-driven Clear Skies agenda is pervasive throughout the Administration’s air pollution agenda, as discussed in section II of this testimony.

In fairness to EPA, the agency and many other parties, including NRDC, shared at least one common belief that supported CAIR’s lawfulness: that there was an intersection between the Administration’s Clear Skies agenda and authority conferred by the current Clean Air Act. In other words, that the Clean Air Act had ample authority to allow EPA to achieve emissions reductions on the scale of those achieved in CAIR, drawing upon the statute’s interstate transport provisions.

I want to stress that this is still the case today, despite the court’s opinion: the Act continues to contain ample authority to address power plant emissions, air pollution transported from upwind states, and downwind states’ attainment needs. Indeed, the court goes out of its way to emphasize this point: “downwind states retain their statutory right to petition for immediate relief from unlawful interstate pollution under section 126, 42 U.S.C. § 7426.” Slip opinion at 60. The problem with CAIR was not a problem with the statute; it was a problem with the policy (and political) choices made by EPA in carrying out the statute.

It is now the case, however, that the statute’s authorities are bounded and directed in ways different than we had imagined before the court’s decision. The Clean Air Act can and must be used to achieve even greater emissions reductions from power plants than achieved in CAIR, but various approaches employed in CAIR may not be used henceforth.

In further fairness to EPA, there were solid grounds for believing that regional trading programs under Title I of the statute had been validated by the D.C. Circuit in the landmark 2000 decision, *Michigan v. EPA*, which upheld EPA’s NO_x SIP Call regional NO_x trading program. 213 F.3d 663 (D.C. Cir. 2000). The CAIR court distinguished the *Michigan* decision by arguing that no party had directly challenged the very concept of a regional trading program in that earlier case. Slip opinion at 17 (“In *Michigan* we never passed on the lawfulness of the NO_x SIP Call’s trading program. *Id.* at 676 (‘Of course we are able to assume the existence of EPA’s

allowance trading program only because no one has challenged its adoption.”)) (citing *Michigan*).

While perhaps true in a strict sense, the *Michigan* court did implicitly if not explicitly validate regional pollution trading programs under Title I by upholding key design elements of EPA’s regional, ozone-season NO_x trading program. While it is certainly possible to square the letter of the *Michigan* and CAIR rulings with one another, many Clean Air Act practitioners will find the spirit and logic of the two decisions to be in tension if not active conflict.

To conclude this discussion with fairness to the court too, the judges did express the view that regional trading programs still could be permissible under the statute’s Title I transport provisions: “It is possible that after rebuilding, a somewhat similar CAIR may emerge; after all, EPA already promulgated the apparently similar NO_x SIP Call eight years ago.” Slip opinion at 59. There remains the anxiety, however, that such a possibility may be half-hearted, and the court’s lack of explanation or further guidance does not ease that anxiety.

At any rate, it is evident that such a trading program or programs would look quite different from CAIR and possibly even the NO_x SIP Call. The challenge mounted by the utility industry SO₂ Petitioners, led by Duke Energy, appears to have struck a fatal or near-fatal blow to the future possibility of SO₂ regional trading programs that demand deep and timely SO₂ reductions beyond the provisions of Title IV’s acid rain program. Any SO₂ program needing to protect public health would need to do that at the very least. Accordingly, the court’s decision is most deserving of criticism for upholding the SO₂ Petitioners’ challenges, and there is evidence that even Duke Energy now regrets its litigation strategy urging the court to vacate CAIR’s SO₂ rules.³⁰

Similarly, both SO₂ and NO_x regional trading programs would be more circumscribed than before the court’s ruling – allowing intra-state and inter-state trading only to the extent that each individual state’s significant contribution to downwind nonattainment (and interference with maintenance of attainment) is abated, but not to the extent that such significant contribution persists. The court found that unacceptable situation to persist in the case of CAIR, leading the judges to uphold North Carolina’s challenge to the rule.

And while that legal framework and outcome plainly constrain the flexibility of an open-ended regional trading program, it is hard to say that this part of the court’s ruling is wrong. CAIR was allowing individual, neighboring states to contribute significantly to the air pollution plight of downwind states like North Carolina, without abating the emissions from those neighboring states adequately or in a sufficiently timely fashion. This leads to a final important point: the court’s decision in this regard is more environmentally protective than CAIR, and

³⁰ “Decisions Shut Door on Bush Clean-Air Steps,” Felicity Barringer, *New York Times* (July 12, 2008) (Duke Energy spokesman declaring that “It was not the intent of Duke Energy’s participation in this litigation to overturn E.P.A.’s Clean Air Interstate Rule.”) The SO₂ Petitioners’ legal brief, authored by counsel for Duke Energy, urged the court to vacate CAIR’s SO₂ rules. See Joint Brief of SO₂ Petitioners, No. 05-1244 (D.C.Cir.) (March 5, 2007), at 34.

ensures that the Clean Air Act must more effectively address pollution transport from upwind states to victimized downwind communities.

VII. NEXT STEPS

It is still too soon to identify exactly what the best or eventual steps will be to ensure the deep and timely reductions in power plant emissions necessary to protect public health and air quality. However, we have known for a long time that such reductions are essential. We know that the reductions must significantly surpass the reductions and timelines established in CAIR. And we know that these necessary reductions are feasible, more cost-effective than controls on other emitting sectors, and yield benefits vastly outweighing their costs.

Finally, it is clear that we can and must proceed on parallel paths to achieve these objectives at the state, EPA and Congressional level. We may not know yet which path(s) will first or best protect the health of the American people against dangerous power plant emissions, but there can be no doubt that this must be the goal.

A. EPA and State Actions.

Before EPA takes the necessary steps forward to sharply cut power plant pollution in the aftermath of the CAIR ruling, EPA must immediately stop lurching backwards. Above all, EPA must terminate the disastrous NSR rulemaking proposals that effectively would exempt all power plants in the country from any need to adopt modern pollution controls when they significantly increase emissions by hundreds or even many thousands of tons per year.

With the overturning of CAIR, under EPA's own logic there is no justification for adopting this harmful and illegal exemption, and EPA should abandon it forthwith. Congress should pose these questions to EPA: is EPA planning to adopt the NSR rulemaking proposed in October 2005 and May 2007 by the end of the Administration? If so, what are the possible justifications for doing so as a matter of policy, law, air quality and public health, following the vacatur of CAIR? Has EPA analyzed comprehensively the impacts on air quality, public health, state attainment needs and the environment that would result from adopting this regulation without CAIR in place?

In order to stop the agency from proceeding backwards further, it will be necessary for EPA promptly to re-open and repeal every regulation in which the agency has relied upon the presence of CAIR, in whole or in part, in pretending to carry out or satisfy other statutory obligations. As discussed in section II above, this includes the substitution of CAIR for RACT in the PM_{2.5} and ozone implementation rules; the substitution of CAIR for BART in the so-called Clean Air Visibility Rule; and any other rules in which EPA has similarly relied upon CAIR. Congress should request a full accounting from EPA of such reliance in agency rulemakings and initiatives.

Looking ahead to the progressive steps needed by EPA to deeply reduce power plant emissions, the following steps should be taken expeditiously:

- EPA should work with state and local officials, and their national and regional organizations, to help implement immediate measures under state laws, then under their SIPs, to impose all installed and planned CAIR controls as RACT, or SIP attainment strategies in preparation for upcoming attainment demonstrations. EPA is well-equipped to provide invaluable technical support and expertise to the states, and the agency can prioritize SIP reviews and approvals to fast-track these desperately needed public health protections.
- EPA should immediately undertake the technical analysis and modeling to identify each upwind state's significant contribution to nonattainment and interference with maintenance in downwind states, drawing upon the extensive work already performed under CAIR and guided by the court's opinion dictating how such contributions must be evaluated. The court's decision makes clear that EPA has the obligation and the authority to do so under the Clean Air Act. And the CAIR rulemaking already has established the factual foundation for EPA to carry out such authority expeditiously through its Federal Implementation Plan and SIP Call powers.
- EPA should assist Congress in developing potential legislative solutions to power plant emissions, by furnishing the types of technical analyses discussed in this testimony – the comparative public health gains, cost-effectiveness, and benefits and costs of controlling power plant emissions versus other emitting activities. Even if legislation proves infeasible in this Congress, it remains the case that the next Congress, the next administration, and the public would benefit immeasurably from having the results of EPA's technical expertise and experience.

Reiterating state actions that should be taken to manage the negative consequences of the court's ruling: states should promptly require that pollution controls installed and planned for CAIR compliance constitute RACT for power plants in nonattainment areas and the Ozone Transport Region, and that sources must operate these controls. State officials in affected attainment areas in the CAIR region also should require that installed or planned control equipment be mandated in SIPs in anticipation of required attainment demonstrations for the 2006 PM_{2.5} NAAQS and the 2008 ozone NAAQS.

NRDC looks forward to working with EPA, states and other stakeholders to tackle these challenges and help deliver healthy air to the American people.

B. Congressional Actions

As discussed in section III above, Congress can and should take certain immediate steps to address and manage the adverse consequences of the court's ruling. Congress should immediately ask EPA to analyze the avoided mortality and morbidity incidences that will be lost if some or all of the pollution control devices planned under CAIR are not installed or operated. Congress also should ask EPA to analyze and publicly report all the health benefits of achieving greater and earlier emissions reductions from power plants than achieved under CAIR, as well as the comparative cost-effectiveness of those reductions compared to other costs borne by other regulated entities. This analysis should include benefit-to-cost comparisons.

In addition, NRDC supports immediate legislative enactment of SO₂, NO_x and mercury limits at least as stringent as those contained in the Chairman's Clean Air Planning Act, and in other bills such as Senator Alexander's and Senator Sanders' power plant legislation. These emissions reductions rightly surpass the reductions under CAIR, and are vital to public health protection in the United States. As discussed above, literally thousands of lives depend on our achieving these reductions as soon as possible.

NRDC also commends the Chairman and Senators Alexander and Sanders for recognizing the need for steep reductions of CO₂ emissions from the electric power sector, which is the largest single emitting sector in the U.S. economy. There are a number of ways to achieve this result, including our preferred approach, which would be immediate enactment of comprehensive, national limits on global warming pollution, including provisions addressing the power plant sector through a cap and trade program, and potentially including complementary measures such as the New Source Performance Standard and low carbon generation obligation contained in Senator Sanders' power plant legislation.

NRDC believes that any power plant legislation must contain CO₂ reduction requirements for the power sector sufficient for the United States to meet science-based reduction targets for the entire U.S. economy, and to ensure that the overall integrity of the emissions cap is paramount. Accordingly, special attention must be paid to any provisions related to offsets and other cost containment devices that could affect the total amount of reductions that will actually be achieved.

We look forward to working with Chairman Carper, Chairwoman Boxer and the other members of this Committee to put needed limits on global warming pollution from all sources, including power plants, and we applaud the groundbreaking work of Senator Carper and others on this Committee to help achieve that critical outcome as soon as possible.