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August 3, 2007

By E-Mail Transmission

Dear Mike:

I am writing on behalf of the Center for Energy & Economic Development, Inc., (CEED) regarding the Draft Final Technical Memorandum furnished to MRPO by EC/R, "Reasonable Progress for Class I Areas in the Northern Midwest – Factor Analysis" (July 18, 2007). Please post an electronic copy of these comments on the MRPO website.

CEED is a national membership organization representing major U.S. railroads, coal producers, electric generators and numerous other industrial firms. CEED members have direct and substantial interests in the production and transportation of coal, and in coal-based electric generation throughout the Midwest. CEED has contributed several comments and studies to the MRPO regional haze planning process, and has participated in the MRPO/LADCO stakeholder processes.

Summary of Comments

CEED is concerned about the policy implications of the EC/R draft final report, assessing the costs and other impacts of alternative strategies to improve visibility at four northern Class I areas located in Michigan and Minnesota. We believe that the EC/R analysis of potential "EGU 1" and "EGU 2" emission

controls on electric generating units in alternative 3- and 9-state regions is deficient, or otherwise objectionable, in several key respects:

- 1) The estimated visibility benefits of imposing EGU1 or EGU2 controls in the 3- or 9-state regions are substantially outweighed by the costs of these strategies measured in absolute terms, and in terms of the cost-effectiveness of their visibility improvements;
- 2) EC/R's summary of potential health benefits, based on previous work by Stratus Consulting, may be misleading because it overlooks the potential offsetting health effects of MRPO's EGU strategies when emission trading is allowed outside the 5-state MRPO region;
- 3) EC/R's analysis of the potential health benefits of the EGU1 and EGU2 control strategies is not called for by current U.S. EPA guidance on assessing reasonable progress toward regional haze goals;
- 4) EC/R has not adequately assessed the time required for compliance with the proposed EGU control strategies, particularly constraints on the installation of large numbers of additional FGD scrubbers on units in the 3- and 9-state regions;
- 5) EC/R's assumption that EGU1 or EGU2 control strategies could be imposed within the 3- or 9-state regions with emission trading restricted to these affected states appears to be inconsistent with relevant legal precedent; and
- 6) EC/R has not taken into account the impacts of international emissions from Canada and elsewhere contributing to the inability of the four northern Class I areas to meet EPA's recommended "glide path" approach for measuring reasonable progress.

Each of these points is discussed in more detail below.

1. Visibility benefits are substantially outweighed by costs

CEED commends MRPO for pursuing cost-effectiveness analyses for improving visibility at the four northern Class I areas, including estimated costs for achieving a one deciview (dv) improvement at each area.

According to U.S. EPA, a 10% or 1 dv change in extinction coefficient "is a small but perceptible scenic change under a wide range of visibility conditions."¹

¹ U.S. EPA, "Guidance for Tracking Progress Under the Regional Haze Rule," (EPA-454/B-03-004, 2003).

Recent research suggests, however, that many individuals are unable to perceive changes in visibility less than 1-2 deciviews.²

EC/R estimates that MRPO's EGU1 strategy would improve visibility by an average of 0.37 to 0.92 dv at the four northern Class I areas, if implemented on a 3- or 9-state basis.³ Implementation of EGU2 on a 3- or 9-state basis is estimated to improve visibility by an average of 0.50 to 1.09 dv at the four areas. These improvements may not be noticeable to many of the visitors to these areas.

EC/R's analysis of the costs of achieving a one deciview improvement in visibility at the four northern Class I areas is summarized below (in millions of dollars annually per dv), along with cost-effectiveness per change in Q/d (in \$1000 dollars per mile/ton).

Table 5.1-11. Cost Effectiveness of EGU Control Strategies in Terms of Visibility Improvement

Strategy and region	Cost effectiveness per visibility improvement (\$million/deciview)	Cost effectiveness per change in Q/d (\$1000-mi/ton)*
EGU1 Emission Caps		
3-State Region		
SO2	2,249	499
NOX	2,585	508
Total	1,581	603
9-State Region		
SO2	2,994	740
NOX	2,332	695
Total	2,177	733
EGU2 Emission Caps		
3-State Region		
SO2	2,281	553
NOX	3,604	748
Total	1,462	592
9-State Region		
SO2	3,336	843
NOX	4,045	1,128
Total	2,578	901

*Q/d reflects the summation of the ratios of emissions to distance for individual sources in each region.

Source: EC/R (2007).

² See, EPRI, "EPRI Regional Haze Research - A Summary of Visibility Research During the Past 5 Years (Final Report, March 2007) at 93-95.

³ EC/R, Table 5.1-10.

Accepting EC/R’s visibility improvement costs for the sake of discussion, CEED has taken the cost-effectiveness analysis to the next step, by estimating costs per deciview of improvement per visitor-day⁴ of use at the four northern Class I areas. We then benchmarked these costs against the estimated cost per dv per visitor-day at all eastern Class I areas with implementation of CAIR, using U.S. EPA cost and visibility improvement data. (See Attachment 1 for detailed results.)

This assessment underscores the unreasonably high costs of achieving visibility improvements at the four northern Class I areas through multi-state EGU-based control strategies. Unlike most Class I areas in the eastern U.S., the four northern Class I areas receive relatively little benefit from the SO₂ and NO_x reductions required by CAIR, typically less than one deciview. This reflects, *inter alia*, their remote northern locations, the annual distribution of their 20% worst visibility days (occurring in winter as well as summer), and other meteorological factors.

The results of this visitor cost-effectiveness analysis are summarized below:

Cost per deciview per visitor-day at Northern Class I Areas
versus CAIR Eastern Class I Average

	<i>Boundary Waters</i>	<i>Voyageurs</i>	<i>Isle Royale</i>	<i>Seney</i>	<i>CAIR Eastern Class I Areas</i>
Visitor days/yr	1,500,000	109,693	105,460	32,400	53,500,000
EGU1 3-state	\$1,054	\$14,413	\$14,991	\$48,796	n.a.
EGU1 9-state	\$1,451	\$19,846	\$20,643	\$67,191	n.a.
EGU2 3-state	\$975	\$13,328	\$13,863	\$45,123	n.a.
EGU2 9-state	\$1,719	\$23,502	\$24,445	\$79,568	n.a.
CAIR	n.a.	n.a.	n.a.	n.a.	\$42

Source: See Attachment 1.

⁴ A visitor-day is a 12-hour period of recreational use.

This user-oriented cost-effectiveness metric illustrates the unreasonably high costs of the EGU1 and EGU2 policies relative to the visibility benefits achieved by CAIR at all eastern Class I areas. EPA projects that CAIR will achieve an average 1.6 dv improvement of 20% worst-day visibility at eastern Class I areas by 2015. When visitor utilization is included in the cost-effectiveness measure, CAIR achieves a 1.0 dv improvement in 20% worst-day visibility at an average cost of \$42 per visitor-day at eastern Class I areas.

The Boundary Waters Canoe Area is the only northern Class I area with implied costs per deciview per visitor-day below \$10,000. Boundary Waters is one of the most heavily utilized wilderness areas in the U.S., accounting for 10% of all wilderness area visitation.⁵ Its 200,000 annual visitors spend a total of 1.5 million visitor-days.

Recent EPRI research summarizing various “willingness-to-pay” visibility studies provides another useful benchmark for considering the cost-effectiveness data presented by EC/R. EPRI reports that the mean valuation of a 1 deciview change in visibility among a sample of 394 respondents was \$42 +/- \$13 (\$2003).⁶ These estimates are independent of the duration of the benefit, i.e., they do not represent a willingness to pay \$42 per day for a one dv improvement in visibility.

CEED recognizes that other measures of visibility benefits also may be relevant, such as residential and urban visibility improvements and the “existence values” associated with preserving pristine areas for future use. However, EC/R’s estimates of the incremental costs of achieving a one dv improvement – which we consider to be understated for reasons that will be addressed by other comments – range from \$1.5 to \$2.6 billion annually in the 3-state and 9-state regions. Taken at face value, EC/R’s cost estimates provide states with a reasonable basis for rejecting both EGU strategies in the 3- and 9-state regions, and accepting CAIR and other on-going federal and state programs as the bases for achieving reasonable progress toward regional haze goals.

⁵ See, www.wilderness.net/toolboxes/documents/education/BWCAW%20Ed%20strategy.doc

⁶ EPRI, n. 2 *supra*, at Table 6-3.

2. Misleading health benefits assessment

EC/R relies on previous analyses by Stratus Consulting⁷ to support claims that implementation of the EGU1 or EGU2 control strategies would generate significant public health benefits within and outside of the LADCO/MRPO region.

Stratus' calculations suggest that the EGU1 and EGU2 strategies could generate between \$22 and \$25 billion of annual health benefits, respectively, within and downwind of the 5-state MRPO region.⁸ While CEED does not agree with the methodology or assumptions underlying the Stratus analysis, for reasons discussed in previously submitted comments by Cambridge Environmental,⁹ we note that Stratus also presented alternative modeling results based on unrestricted emission trading.

Stratus' health impact findings, summarized in the national IPM cases below, indicate that the potential downwind impacts of emissions "leakage" from the MRPO region largely or wholly offset the benefits of controls imposed within the MRPO. The net benefits of the EGU1 strategy are projected to be negative:

Table ES-9. Estimated benefits and costs of candidate control programs (millions of 1999\$)

	National analysis			MRPO region only		
	Benefits	Costs	Net benefits (B - C)	Benefits	Costs	Net benefits (B - C)
EGU1	\$17,894	\$1,454	\$16,440	\$9,378	\$1,454	\$7,924
EGU2	\$21,098	\$1,729	\$19,369	\$11,100	\$1,729	\$9,371
EGU1 with IPM	\$479	\$491	-\$12	\$4,871	\$935	\$3,936
EGU2 with IPM	\$2,844	\$1,054	\$1,830	\$7,176	\$1,300	\$5,876

Source: Stratus Consulting, Inc. (2006).

When unrestricted emission trading is permitted, the emission reductions resulting from EGU1 and EGU2 controls within the MRPO region generate tradable allowances that can be sold outside the region. The 2006 Stratus analysis illustrated the effects of such trading in states outside the MPRO region, based on IPM modeling of annual PM_{2.5} concentrations:

⁷ Stratus Consulting, Inc., "Benefit Study of MRPO Candidate Control Options for Electricity Generation," (August 25, 2006).

⁸ EC/R, Table 5.1-9.

⁹ Dr. Laura Green, Cambridge Environmental Inc., "Comments on 'Benefit Study of MRPO Candidate Control Options for Electricity Generation,'" (November 17, 2006).

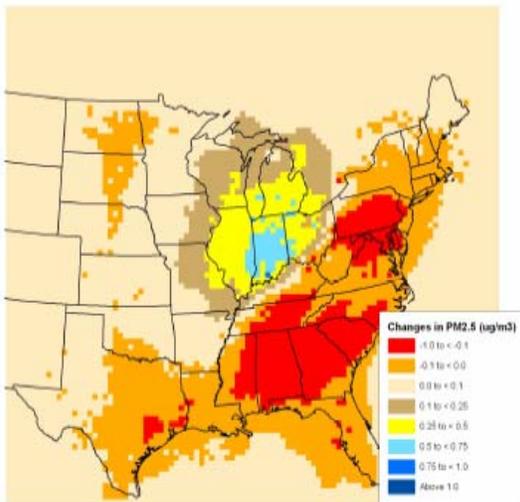


Figure ES-3. Changes in annual mean PM_{2.5} with EGU1 with IPM candidate control program.

Note: Positive values indicate an improvement in PM_{2.5} levels. Negative values indicate a worsening of PM_{2.5} levels.

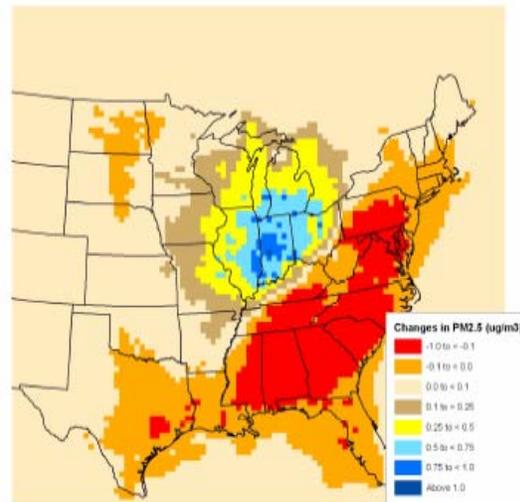


Figure ES-4. Changes in annual mean PM_{2.5} with EGU2 with IPM candidate control program.

Source: Stratus Consulting, Inc. (2006).

3. Conflicts with U.S. EPA Guidance

EC/R’s assessment of the potential health benefits of the EGU strategies is not called for by current U.S. EPA guidance on measuring reasonable progress toward regional haze goals.¹⁰ EPA’s recent guidance discusses the four statutory factors to be considered in determining appropriate source controls to achieve reasonable progress goals – the core focus of the EC/R analysis. In fact, EPA makes no reference to “public health” as a consideration. The only reference to “health” is to the health of affected industries:

“The first factor to take into consideration is the “costs of compliance.” In this context we believe that the cost of compliance factor can be interpreted to encompass the cost of compliance

¹⁰ U.S. EPA, “Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program” (June 1, 2007)

for individual sources or source categories, and more broadly the implication of compliance costs to the health and vitality of industries within a state.”¹¹

CEED agrees that public health considerations are relevant to state strategies for attaining health-protective primary National Ambient Air Quality Standards for pollutants such as ozone and PM_{2.5}. However, public health is not a relevant consideration for the development of strategies to achieve welfare-related reasonable progress toward visibility improvement goals at Class I national parks and wilderness areas.

4. Deficient assessment of time required for compliance

EC/R estimates that implementation of the EGU1 strategy in 3- or 9-state regions would entail retrofitting 14.8 to 46.7 Gigawatts of capacity (representing 74 to 200 individual boilers) with flue gas scrubbers for SO₂ control, in addition to the capacity scheduled to be controlled under EPA’s CAIR.¹² The EGU2 strategy applied in the 3- and 9-state regions would require even larger numbers of retrofits: from 17.9 to 56.8 Gigawatts of scrubbers at 107 to 271 individual boilers. Recent IPM projections indicate that CAIR compliance will entail nearly 100 GW of scrubber retrofits by 2018, in addition to 65 GW of SCR retrofits. EC/R simply asserts that any of MRPO’s EGU strategies could be implemented by 2018.

EC/R notes that the availability of boilermaker labor represents the most critical constraint to implementation of the EGU strategies. This judgment appears to rely largely on out-of-date EPA studies prepared for CAIR.¹³ More recent IPM analyses of “CAIR-Plus” control strategies prepared for MARAMA constrain the construction of FGD capacity throughout the CAIR region beyond the installations projected for CAIR compliance.¹⁴

As summarized below, the MARAMA CAIR-Plus strategy retrofits less than 20 Gigawatts of capacity with additional FGD equipment by 2018. Most of this capacity is located in western states subject to EPA’s Clean Air Visibility Rule.

¹¹ Id., at 18.

¹² EC/R at Tables 5.1-3 and 5.1-5.

¹³ See, EC/R at 30.

¹⁴ ICF Resources, “Comparison of CAIR and CAIR Plus Proposal using the Integrated Planning Model (IPM®),” (Draft Final Report prepared for Mid-Atlantic Regional Air Management Assn., May 2007).

The bulk of SO₂ emission reductions projected for the VISTAS and LADCO regions (approximately one-third below CAIR levels) are achieved by fuel-switching and other strategies.

Table 7: Incremental Pollution Control Installations by Technology in the MARAMA CAIR Plus Policy Case with the MARAMA Base Case (GW)

Technology	2008	2009	2010	2012	2015	2018
MARAMA Base Case						
Scrubber	24.9	31.4	59.7	65.6	87.5	98.7
SCR	9.0	15.0	38.5	42.1	58.6	66.3
MARAMA CAIR Plus Policy Case						
Scrubber	30.5	38.9	69.5	85.1	106.4	115.3
difference wrt MARAMA Base Case	5.6	7.5	9.8	19.5	18.9	16.6
SCR	9.0	15.0	115.2	120.0	124.5	131.2
difference wrt MARAMA Base Case	0.0	0.0	76.8	77.8	65.9	64.9

Source: ICF Resources (MARAMA, May 2007).

In view of the apparent inconsistency between EC/R and MARAMA’s assumptions concerning the feasibility of additional FGD installations beyond those projected for CAIR, we recommend that EC/R re-evaluate the feasibility of the scrubber and SCR installations projected for EGU1 and EGU2, including surveys of equipment and chimney vendors. CEED understands that constraints on chimney construction have compounded earlier concerns about labor availability.

5. Improper constraints on emissions trading

As discussed above, the only means to confine the emissions reductions and associated air quality benefits due to the application of EGU1 or EGU2 is to limit emissions trading of surplus allowances outside the MRPO states. EC/R has assumed just such limitations in its analyses of these strategies.

CEED questions the legality of such constraints in light of the decision in *Clean Air Markets Group v. Pataki*, 194 F. Supp. 2d 147, 160 (N.D.N.Y. 2002), *aff’d*, 338 F.3d 82 (2d Cir. 2003). In *Clean Air Markets Group* (CAMG), plaintiffs objected to a New York statute seeking to limit the geographic sale of Title IV sulfur dioxide emissions allowances to certain upwind states. Plaintiffs argued that New York’s allowance trading restrictions were impermissible under the Clean Air Act and various provisions of the U.S. Constitution, including the Supremacy and Commerce clauses.

The Commerce Clause implications of potential restrictions on the trading of allowances for visibility protection at the four northern Class I areas need to be carefully considered by MRPO and adjacent states potentially involved in such a program. Where a state law or regulation is found to be discriminatory, courts will employ strict scrutiny, and the defendant must “show that it advances a legitimate local purpose that cannot be adequately served by reasonable nondiscriminatory alternatives.” Notwithstanding the underlying legislative or regulatory purpose, however laudable, a statute or regulation that discriminates against commerce is protectionist and violates the Constitution. If a plaintiff can demonstrate that a regulation discriminates against interstate commerce, the burden of proof shifts to the defendant to demonstrate that there are no other non-discriminatory means to advance a legitimate local interest.

In CAMG, the 2d Circuit upheld the district court decision finding that New York’s statute was unconstitutional and was preempted by the Clean Air Act. The 2d Circuit summarized the holdings of the lower court before affirming the decision in favor of plaintiffs:

Because SO₂ emissions can travel hundreds of miles in the wind, much of the acid deposition in the Adirondacks results not from SO₂ emissions in New York, but, rather, from SO₂ emissions in fourteen “upwind” states. These states include New Jersey, Pennsylvania, Maryland, Delaware, Virginia, North Carolina, Tennessee, West Virginia, Ohio, Michigan, Illinois, Kentucky, Indiana, and Wisconsin.

In 2000, the New York legislature sought to address this problem by passing the Air Pollution Mitigation Law, N.Y. Pub. Serv. L. § 66-k (“section 66-k”). Pursuant to this statute, the New York State Public Service Commission (“PSC”) is required to assess “an air pollution mitigation offset” upon any New York utility whose SO₂ allowances are sold or traded to one of the fourteen upwind states. N.Y. Pub. Serv. L. § 66-k(2). The amount assessed is equal to the amount of money received by the New York utility in exchange for the allowances. *Id.* Moreover, the assessment is made regardless of whether the allowances are sold directly to a utility in an upwind state or are subsequently transferred there. *Id.* Accordingly, in order to avoid the assessment, New York utilities must attach a restrictive covenant to any allowances they sell that prohibits their subsequent transfer to any of the fourteen upwind states. *See* N.Y. Pub. Serv. L. § 66-k(3).

With respect to preemption, the Court first determined that section 66-k is not expressly preempted by Title IV. *Id.* at 157. Next, it held that Title IV is not “sufficiently comprehensive” to preempt all state law in the field of air pollution control. *Id.* Nevertheless, the District Court concluded that section 66-k was preempted because it “actually conflicts with” Title IV by creating “an obstacle to

the accomplishment and execution of the full purposes and objectives of Congress” in passing the Act. *Id.* at 158 (quoting *Hillsborough County, Florida v. Automated Med. Labs., Inc.*, 471 U.S. 707, 713 (1985) (internal quotation marks and citation omitted)). The Court reasoned that “New York’s restrictions on transferring allowances to [utilities] in the Upwind States is contrary to the federal provision that allowances be tradeable to *any* other person.” *Id.* It also noted that “Congress considered geographically restrict[ing] allowance transfers and rejected it,” and that “[t]he EPA, in setting regulations to implement Title IV, also considered geographically restricted allowance trading and rejected it over New York State’s objections.” *Id.* (citations omitted).

The District Court next considered CAMG’s alternative argument that section 66-k violates the Commerce Clause of the Constitution. The Court concluded that section 66-k “is a constitutionally invalid protectionist measure” because “[its] explicit restriction on the transfer of SO₂ allowances to [utilities] in Upwind States erects . . . a barrier against the movement of interstate trade.” *Id.* at 161; *see also City of Philadelphia v. New Jersey*, 437 U.S. 617, 624 (1978) (holding that “where simple economic protectionism is effected by state legislation, a virtually *per se* rule of invalidity has been erected”). The Court further held that, even if the statute were not merely protectionist, it would still violate the Commerce Clause because “it cannot be ‘fairly . . . viewed as a law directed to legitimate local concerns, with effects upon interstate commerce that are only incidental.’” *Hillsborough*, 471 U.S. at 161 (quoting *City of Philadelphia*, 437 U.S. at 624); *see also Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970) (“Where the statute regulates evenhandedly to effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.”).

In light of its conclusion that section 66-k violates the Supremacy Clause and the Commerce Clause of the Constitution, the District Court denied defendants’ motions for summary judgment, granted CAMG’s cross-motion for summary judgment, and enjoined defendants from enforcing section 66-k. . . .

Although section 66-k does not technically limit the authority of New York utilities to transfer their allowances, it clearly interferes with their ability to effectuate such transfers. First, by requiring utilities to forfeit one hundred percent of their proceeds from any allowance sale to a utility in an upwind state, section 66-k effectively bans such sales. Moreover, the only way for New York utilities to ensure that they will not be assessed pursuant to section 66-k is to attach to every allowance they sell a restrictive covenant that prohibits the subsequent transfer of the allowance to an upwind state. Because such a restrictive covenant indisputably decreases the value of the allowances, section 66-k clearly “restrict[s] or interfere[s] with allowance trading,” 40 C.F.R. § 72.72(a). In sum, section 66-k impermissibly “interferes with the *methods* by which [Title IV] was

designed to reach [the] goal” of decreasing SO₂ emissions, and therefore it “stands as an obstacle” to the execution of Title IV’s objectives. *International Paper*, 479 U.S. at 494 (emphasis added).

Defendants argue that, even if section 66-k “stands as an obstacle” to the execution of Title IV’s objectives, *see Hillsborough County*, 471 U.S. at 713, it does not “actually conflict” with federal law because it is expressly permitted by two other statutory provisions of the Clean Air Act. First, defendants draw our attention to 42 U.S.C. § 7416, a savings clause that preserves state authority “to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution.” Defendants argue that section 66-k is a “requirement respecting control or abatement of air pollution,” *id.*, that is not preempted because it “simply goes further than the relevant federal law.” Pataki Br. at 26. But, as properly noted by the District Court, section 66-k does not set requirements for air pollution control or abatement within New York, but, rather, is an attempt to “control emissions in another state.” *CAMG*, 194 F. Supp.2d at 159. Nothing in the language of 42 U.S.C. § 7416 permits such legislation.

Defendants also maintain that section 66-k is authorized by 42 U.S.C. § 7651b(f), which provides in relevant part that the allowance trading system “shall [not] be construed as requiring a change of any kind in any State law regulating electric utility rates and charges or affecting any State law regarding such State regulation or as limiting State regulation . . . under such a State law.” But section 66-k does not regulate “utility rates and charges” and it does not “affect[] any State law regarding” the regulation of “utility rates and charges.” Accordingly, 42 U.S.C. § 7651b(f) does not save section 66-k from preemption.

In sum, section 66-k is preempted by Title IV of the Clean Air Act Amendments of 1990 because it impedes the execution of “the full purposes and objectives” of Title IV, *see Hillsborough County*, 471 U.S. at 713, and because it is not otherwise authorized by federal law. Accordingly, section 66-k violates the Supremacy Clause of the United States Constitution.”

CEED views the decision in *CAMG* as a definitive precedent against any proposed restrictions on trading of Title IV/CAIR allowances in the upper Midwest for purposes of achieving progress toward visibility protection goals. New York’s purposes in restricting allowance sales to certain states to help protect its ecosystems against acid deposition are quite similar to the state objectives in limiting allowance trading for visibility protection purposes.

6. Need to consider international emissions

Recent studies by EPRI indicate that the four northern Class I areas can achieve EPA “glide path” progress toward visibility goals when the impacts of international emissions are taken into account.¹⁵ Three of the four areas – Boundary Waters, Isle Royale and Seney – surpass uniform rate of progress goals by 2018 when international emissions are subtracted from pollution concentrations on the 20% worst visibility days. Voyageurs achieves a rate of progress in line with the 2018 glide path slope.

EPRI’s findings should be considered by states evaluating the multi-billion dollar MRPO EGU control proposals evaluated by EC/R. Together with the cost-effectiveness measures discussed above, states could reasonably conclude that “on the books” controls including CAIR, CAMR, CAVR and other federal and state measures are sufficient to satisfy “reasonable progress” toward meeting Class I visibility protection goals.

CEED appreciates the opportunity to submit these comments.

Sincerely,

/s/

Eugene M. Trisko

Attachment

¹⁵ EPRI, “Effect of Transboundary Pollution on Visibility – A Case Study for Northern Class I Areas (Technical Brief, 2007), available at <http://www.epriweb.com/public/000000000001015251.pdf>

ATTACHMENT 1

COST PER VISITOR DAY OF VISIBILITY IMPROVEMENTS AT NORTHERN CLASS I AREAS, EGU CONTROLS PER EC/R REPORT TO MRPO JULY 2007

		ANNUAL VISITOR-DAYS AT NORTHERN CLASS I AREAS			
		SENEY	ISLE ROYALE	VOYAGEURS	BD. WATERS
		32,400	105,460	109,693	1,500,000
3-STATE CAPS	MIL. \$ PER DV	COST PER DECIVIEW PER VISITOR-DAY			
EGU1					
SO2	\$2,249	\$69,414	\$21,326	\$20,503	\$1,499
NOX	\$2,585	\$79,784	\$24,512	\$23,566	\$1,723
TOTAL	\$1,581	\$48,796	\$14,991	\$14,413	\$1,054
9-STATE CAPS					
EGU1					
SO2	\$2,994	\$92,407	\$28,390	\$27,294	\$1,996
NOX	\$2,332	\$71,975	\$22,113	\$21,259	\$1,555
TOTAL	\$2,177	\$67,191	\$20,643	\$19,846	\$1,451
3-STATE CAPS					
EGU2					
SO2	\$2,281	\$70,401	\$21,629	\$20,794	\$1,521
NOX	\$3,604	\$111,235	\$34,174	\$32,855	\$2,403
TOTAL	\$1,462	\$45,123	\$13,863	\$13,328	\$975
9-STATE CAPS					
EGU2					
SO2	\$3,336	\$102,963	\$31,633	\$30,412	\$2,224
NOX	\$4,045	\$124,846	\$38,356	\$36,876	\$2,697
TOTAL	\$2,578	\$79,568	\$24,445	\$23,502	\$1,719

SOURCES: EGU CONTROL COSTS FROM EC/R REPORT TO MRPO, JULY 2007; VISITOR-DAY DATA FROM NATIONAL PARK SERVICE 2006 STATISTICAL ABSTRACT; U.S. FOREST SERVICE, BOUNDARY WATERS CANOE AREA WEBSITE; U.S. FISH AND WILDLIFE SERVICE SENEY FACTSHEET (88,000 VISITORS CONVERTED TO 32,400 VISITOR-DAYS BASED ON AVERAGE NATIONAL PARK SERVICE RATIO OF VISITORS TO VISITOR-DAYS (0.37)).

ESTIMATED COST PER DECIVIEW PER VISITOR-DAY AT CLASS I NATIONAL PARKS AND WILDERNESS AREAS, EPA CAIR BASE CASE, 2015

CAIR 2015 ANNUALIZED COST \$2005 BIL	\$3.6
EASTERN CLASS I VISIBILITY* (DV)	
2015 BASE	24.6
2015 CAIR IMPROVEMENT	23.0
	1.6
*20% WORST VISIBILITY DAYS	
COST PER DV (\$2005 BIL.)	\$2.25
VISITOR-DAYS AT EASTERN CLASS I AREAS (MILLIONS)	
NATIONAL PARKS	46.0
NATL WILDERNESS AREAS	7.5
TOTAL	53.5
CAIR COST PER DV IMPROVEMENT PER VISITOR-DAY	
NATIONAL PARKS	\$49
NATL WILDERNESS AREAS	\$300
TOTAL	\$42

SOURCES: EPA CAIR COSTS FROM EPA FINAL CAIR RIA, TABLE 7.3 (2005); VISIBILITY IMPACTS FOR EASTERN CLASS I AREAS FROM EPA, TECHNICAL SUPPORT DOCUMENT FOR CAIR, (MARCH 2005), TABLE III-3; NATIONAL PARK VISITOR-DAYS DATA FROM NPS, 2006 STATISTICAL ABSTRACT, TABLE 3; NATIONAL WILDERNESS AREA VISITOR USE IS 15 MILLION VISITOR-DAYS (U.S. FOREST SERVICE WEBSITE), OF WHICH 50% IS ASSUMED TO BE IN EASTERN CLASS I WILDERNESS AREAS (COMPARABLE TO EAST/WEST DIVISION OF NATIONAL PARK VISITOR USE.)