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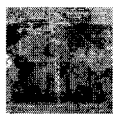
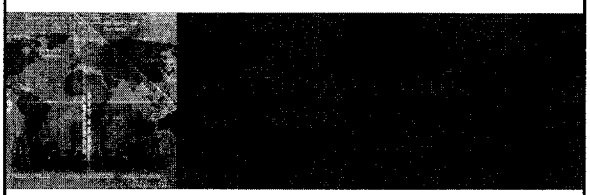


How Markets Work℠

Developing an Emissions Trading Program for Regional Haze

Dr. David Harrison
Senior Vice President
May 6, 2005

- Background and Objectives
- Potential Gains from Emissions Trading
- Lessons from Experience with Emissions Trading
- Key Elements of an Emissions Trading Program for Regional Haze
- Next Steps



- NERA Economic Consulting
  - Firm of about 500 professionals with 10 offices in U.S. and six offices abroad
  - Extensive experience assisting public and private groups with regard to emissions trading programs, including Acid Rain, RECLAIM, NOX SIP Call and most recently EU program for CO2
- Regional Haze Regulations
  - EPA Proposed Rule provides regulatory framework and guidelines for BART
  - EPA supports use of a regional trading program instead of source-by-source BART determination

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1. Clarify emissions trading and the nature of its potential gains
2. Provide lessons from experience in previous emissions trading programs
3. Outline the major features of a trading program for regional haze
   - Note that we do not consider how the overall cap/budget should be set
4. Identify next steps in deciding whether to pursue the emissions trading option

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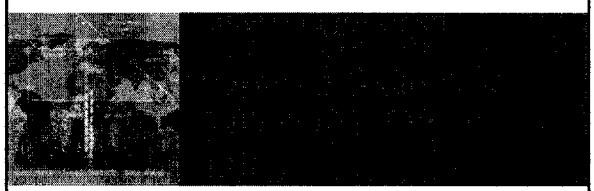
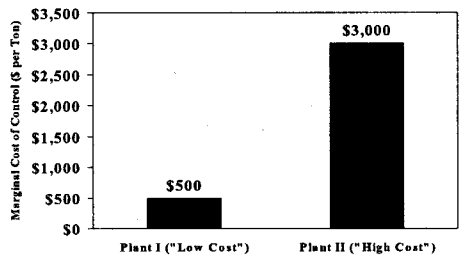
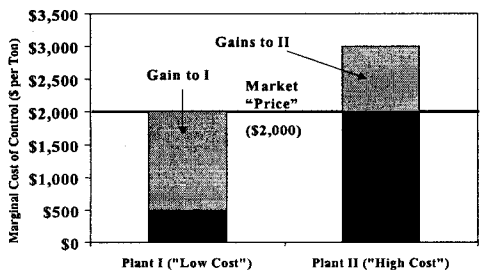


- Flexibility to find and to choose the lowest cost means for reducing emissions
- Allows plants to transfer emission reductions from relatively high cost plants to lower cost plants
- Works only when costs differ among plants
- Assumes requirement to reduce emissions and effective enforcement

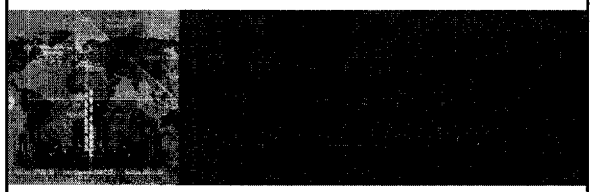
- Environmental gains
  - Emission budget must achieve greater visibility progress than BART
  - "Cap" provides greater certainty that the visibility progress actually will take place
- Economic gains
  - Cost savings from trading (relative to uniform "command-and-control" approach)
  - Dynamic incentives to develop cost-effective technologies

- Each facility has three major options
  1. Reduce to level set by initial allocation ("standard")
  2. Reduce more and sell allowances
  3. Reduce less and buy allowances
- The additional options (2 and 3) translate into lower overall cost of meeting the cap
  - Key reason: facilities differ in the marginal costs of reducing emissions





- Buyer of allowance gains $1,000
  - Face higher costs of control
  - Gain $1,000 from buying allowance ($2,000) rather than reducing ($3,000)
- Seller of allowance gains $1,500
  - Have lower costs of control
  - Gain $1,500 from selling allowance ($2,000) that only costs $500 to "produce"
- Sum: Overall gain of $2,500 split between buyer and seller
  - Full trading is more complicated; but this simple example illustrates the basic nature of the gains and their split between buyers and sellers



1. SO_2 Allowance Trading (Acid Rain Program)
   - Most prominent program
2. RECLAIM NO_x and SO_2 Trading Programs
   - Illustrate how to include multiple sectors
3. Northeast NO_x Budget Program
   - Illustrates how to include multiple states

Note: all are "cap-and-trade" programs

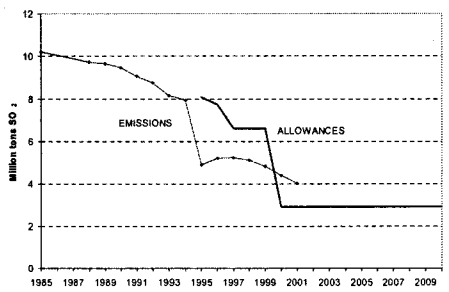
- Other trading programs include credit-based programs and emissions averaging programs.

- Best known emission trading program
- Widely regarded as success and prototype for other programs
- Program to reduce SO2 emissions from existing electric generating plants
- Passed in 1990 Clean Air Act Amendments

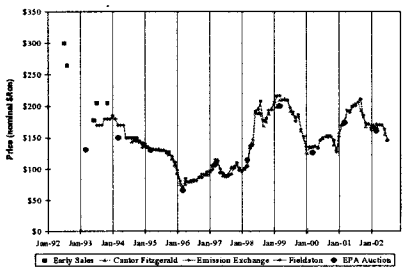
- National cap on SO2 emissions from electric generating plants
- Phase 1: 1995-1999
  - Cap reduced emissions by 3.5 million tons per year
  - 263 largest emitters
- Phase 2: 2000-
  - Cap reduced emissions by about 9 million tons per year
  - Covers virtually all generating units

- Cost savings may not materialize
  - Regulated utilities incentives?
  - Allowances not "property right"
  - EPA oversight?
- Environmental effects may be perverse
  - Adverse effects on the Northeast
  - No constraints on trading
- Administrative costs may be excessive
  - Experience with EPA ET programs
  - New program

- Active Market for SO2 Allowances
  - Generators did trade allowances
  - Restructuring in some states helped
- Banking Substantial in Phase 1
  - Use of scrubbers lead to "overcontrol"
- Environmental performance not perverse
  - Modeling suggests no increase in Northeast air pollution due to trading
- Administrative costs not excessive
  - Evidence suggests costs of setting up and administering the program have been modest



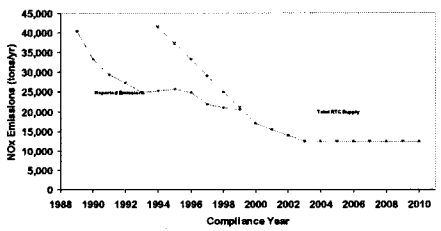
SO_2 Allowance Prices 1993-2003

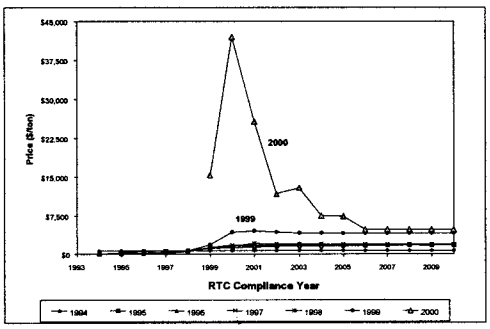


- **Estimating cost savings complicated**
  - Equivalent "command and control" regulations?
- **MIT careful study including all sources of cost savings**
  - Spatial flexibility in Phase 1 and Phase 2
  - Temporal flexibility (banking)
- **Some evidence of overcontrol in Phase 1 that reduced savings somewhat**

- **Cap-and-trade program developed at the same time as national acid rain program**
- **More complex than acid rain trading**
  - NOx and SO2
  - Many sectors, not just electric generators
  - Two trading zones, coastal and inland
  - Detailed allocation formulas
- **Did not include banking, creating problems in 2000 when prices increased substantially**

RECLAIM NO_X Emissions and RTC Supply, 1994-2000 (tons/year)





- Price exceeded "trigger price" of $15,000 per ton
- White Paper to evaluate causes
- Major cause: increased demand by electric generation sources
- Cost-effective control options exist (e.g., SCR) but cannot be installed quickly

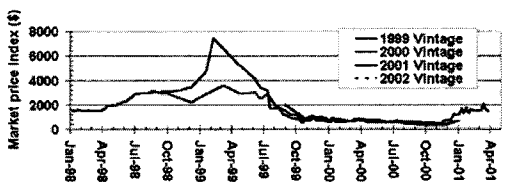
- Power plants separated temporarily from RECLAIM
- Power plants pay mitigation fee
  - $15,000 per ton
  - Fees used to reduce emissions
- Power plants must submit compliance plans
- Temporary credit programs for mobile and area sources

- Uncertainty over allowance prices under cap-and-trade program
- Mitigation fee similar to "safety valve" recommended to avoid price spikes
- Prices have declined and compliance plans have been submitted
- Too early to determine full effects of the changes

- Provide cap-and-trade flexibility to reduce NOx
  - Power plants
  - Other large stationary sources
- Covers summer (May-September) emissions
- Three phases, two with caps
  - Phase 2: 55-65 percent reduction
  - Phase 3: 65-75 percent reduction
- Requirements differ within the region

- EPA Model Rule
  - Provides template for trading program
  - Allocation by states
  - Banking permitted, but use of banked emissions limited ("flow control")
- Considered different requirements for different days within the summer
  - No practical option

Market Price Index for the OTC NOx Budget Program

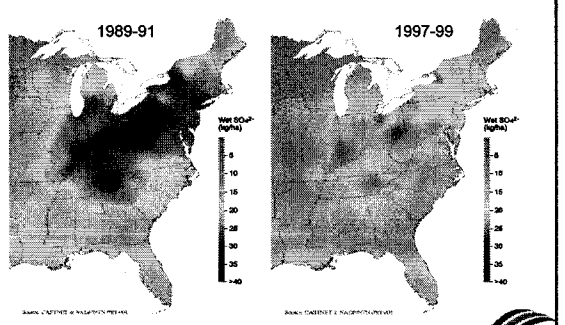


- **Cost savings**
  - Estimated at 30 percent
- **Market participation high**
  - Eight states participated
  - 15 percent of allowanced traded
- **Environmental performance good**
  - Emissions reduced
  - No evidence of "wrong-way trades"

1. Economic performance
2. Environmental performance
3. Initial allocation and "equity"
4. Trading flexibility with banking
5. Enforcement and monitoring

- **Cap-and-trade programs have lowered the cost of meeting environmental goals**
  - Best evidence is ≈ 50% cost savings in SO_2 acid rain program (relative to no trading)
- **Significant trading in other programs implies cost savings**
- **Evidence of some impetus for technological innovation (e.g., scrubber technology)**
- **No evidence of excessive administrative costs**

- **Trading has *enhanced*—not compromised—achievement of environmental goals**
- **Automatic "offset" for high-cost situations instead of relaxed emissions standards**
- **Banking accelerates emission reductions**
- **Flexibility facilitates consensus on demanding environmental goals**



- **Clear allocations critical to success**
  - Must know "where you start"
  - Allow for efficient markets to develop
- **Contentious and difficult because allowances have substantial value**
- **Many different allocation methods applied, but without perceptible effect on economic or environmental performance**
- **Allowance allocation can address equity and political concerns that arise in adoption and implementation**

- Temporal flexibility is undervalued but important
- Provides incentive for early reductions in phased-in programs
- Provides flexibility in dealing with source-specific adjustment costs and unexpected cost shocks
- RECLAIM's NO_x experience illustrates importance of temporal trading

- Environmental integrity critical to success
- Accurate emissions monitoring
  - Continuous emissions monitors (CEMs) for large sources
  - Flexibility for lower cost options for smaller sources (RECLAIM)
- Significant penalties for cheating
  - Provide for "true up" period

1. Emissions trading has been successful in reducing the cost of meeting emissions targets
2. Emissions trading has enhanced achievement of environmental gains
3. Acceptable initial allocations can be set without impairing cost saving and environmental objectives
4. Banking has played a major rule in improving the economic and environmental performance of emissions trading
5. Accurate monitoring and enforcement are critical to the integrity of the programs

- CAIR
  - Provides for interstate cap-and-trade programs for NOx and SO2
- Mercury Rule
  - Provides for interstate cap-and-trade program for mercury
  - Caveat: concern for "hot spots" in potential litigation
- EU Emissions Trading Scheme
  - Establishes a EU-wide cap-and-trade program for CO2

- Successful examples suggest emissions trading is a promising approach
- But, details matter!
- Need to consider specific features of a program for regional haze
  - Specific elements identified and organized
  - Likely performance relative to technology-oriented approach for all relevant sources
  - *Note: the presentation does not consider the level of the cap, but rather how to design and implement a trading program to achieve whatever cap is ultimately set*
- Existing information
  - EPA preamble in final Regional Haze rule (July 1999)
  - Western Regional Air Partnership (WRAP) backstop Market Trading Proposal (August 2003)
  - CENRAP Emissions Trading Subgroup (February 2005)

1. **Threshold Features**
   - Facilities included
   - States included
   - Opt-in possibilities
   - Cap/budget and timing
2. **Design Features**
   - Initial allocation
   - Trading rules
   - "Hot spots" Trigger
   - Banking
   - Safety valve
3. **Implementation Features**
   - Monitoring/reporting
   - Tracking/registry
   - True-up period
   - Compliance
   - Enforcement/Penalties
   - Program audit

- BART-eligible sources
  - 26 specific source categories listed under CAA
  - Constructed/placed in operation between August 1962 and August 1977 and potential to emit 250 tons or more of visibility-impairing pollutant
- Non-BART-eligible sources
  - Sources included to achieve "reasonable progress"
  - E.g., WRAP includes facilities with SO2 emissions 100+ tons (subject to case-by-case review) and new sources with potential to emit 100+ tons
  - Caveat: accurate measurement/tracking necessary
- Caveat: inclusion not required if installed BART and/or source included in CAIR
  - But,
    - Emission requirements can be more stringent than BART
    - CAIR does not apply to facilities in Western states

- **States to be included**
  - Cost savings greater with more states
  - Some elements (e.g., allocation) can differ among states
  - Geographic differences among sources more important with larger trading area
- **Use of "model rule" can reduce the administrative costs to states of participating**

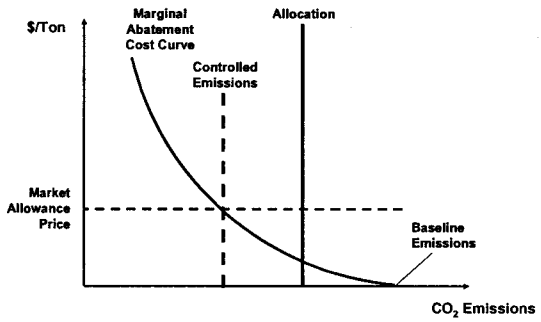
- Opt-in candidates
  - Beyond those included specifically (BART-eligible and linked to "reasonable progress" requirement)
  - Should influence regional haze to be considered
- Gains from allowing opt-in
  1. Environmental gains if require "contribution to the environment" to opt in
     - Caveat: want to avoid "anyway reductions," i.e., reductions that would have occurred without opt-in
  2. Cost saving gains from introduction of additional credits

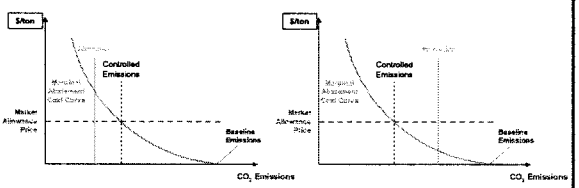
- Emission cap/budget is limit on total emissions for sources in the program
  - Set separately for each state, with total cap depending upon which states participate
  - Many technical and legal issues related to setting the cap and determining its timing (including "progress" milestones)
- Technical considerations include
  - BART technologies and effectiveness
  - Growth projections
  - Emissions/dispersion modeling
- Legal considerations include
  - EPA forthcoming response to court remand related to 2002 American Corn Growers v. EPA decision invalidating EPA method of determining BART
  - WRAP response to February 2005 CEED v. EPA decision declaring WRAP determination of cap invalid under *American Corn*
- Level and timing of overall cap are important considerations but they are not the focus of this presentation

- Typically the most contentious element
  - Allocation of shares of fixed cap a "zero sum game"
  - But sometimes confused with setting overall cap (e.g., controversies in Europe over Member State NAPs)
- State leeway to determine for in-state facilities
  - Different formulas among states generally do not affect the success (e.g., cost savings) of the program
  - Some complications *could* affect program performance (e.g., new source set asides, updating)
- Following slides provide information on:
  1. Basic choices
  2. Difference between facility allocation and control decision
  3. Set asides and early action credits
  4. Other complications related to allocations

■ The table below summarizes basic allocation alternatives

Basic Allocation Type	☐Free ☐Non-updated ☐Updating	☐Auctioning ☐Maximum 5% ☐Other	
Metric Used	☐Emissions ☐Fuel or other Inputs	☐Product Output ☐Capacity	
Years Used	☐1998 ☐2001	☐1999 ☐2002	☐2000 ☐Other Years
Specific Data/ Formula	☐Single Year	☐Average	☐Max





■ Two different allocation levels...
  – ...but facility emissions levels are the same
■ Note, however, that the distributional effects are very different!

■ Set asides
  – Take some of the cap and use for specific circumstances
  – Frequently used for new sources
    ▫ WRAP includes a new source set-aside for both new sources and for existing sources that increase their capacity
  – Does not affect the overall cap, but does decrease the number of allowances allocated to direct participants
■ Early action credits
  – Provide allowances for reductions before the cap-and-trade program begins
    ▫ WRAP includes early reduction bonus allowances (below floor established in the plan) from 2003 to the program trigger year
  – Early action credits create banked allowances that can be used to meet requirements
  – Increases the overall cap (when the program takes effect)
  – Procedures need to be developed to ensure that the credits represent "real reductions," i.e., reductions from business-as-usual emissions

Various other issues can arise in determining the initial allocation of allowances

■ Allocations to non-emitters
  – E.g., "Indirect emissions", "Sky Trust"
■ Relationship to other programs
  – Renewable programs, energy efficiency programs
■ Changes over time in allocation choices
  – E.g., shift in percentage of auctioned allowances
■ Other changes tied to allocations
  – E.g., Public Utility Commission decisions on electricity rates and "opportunity costs" of using "free" allowances

■ Inter-pollutant trading
  – Tentatively not allowed in WRAP
  – Possibility if equivalence (visibility effects) can be determined
■ Trading across states/geography
  – Consider whether to include geographic differences (e.g., trading ratios depending on distance from Class I areas)
  – Caveats:
    ▫ (1) need to keep system relatively simple to avoid high transactions costs (and no trading)
    ▫ (2) Overlay of state-specific controls may be better means of dealing with hot spots than restrictions or trading ratios
■ Interaction with CAIR
  – Co-mingling of trading programs?

- Related to geographic restrictions on trading
- Trigger mechanism for source-specific BART if visibility at a particular Class 1 area is exceeded
  - "Certification of impairment" by federal land manager or state if visibility goals not met
  - Existing element in EPA's 1980 rulemaking provides precedent for this approach
- Trigger would constrain the market and thus potentially reduces cost savings
  - Useful to clarify need for source-specific BART as soon as possible
  - Mechanisms for early warning include public meetings to share information on possible concerns early in the implementation (WRAP)

- Allows facilities to use excess allowances to cover emissions in future years
  - Provides environmental/economic gains
- Flow controls possible
  - Limits number of banked allowances that can be used on 1:1 basis
  - Beyond limit, some ratio required (e.g., 2:1)
  - WRAP prohibits use of banked allowances for final compliance year (2018)
- Consider whether flow controls necessary to avoid excessive emissions in a single year

- Represents a maximum value for the price per ton
  - Set to provide protection against unlimited allowance prices, which can exceed the value of reductions
  - Revenue can be used to obtain emission reductions elsewhere (e.g., South Coast Clean Air Investment Fund)
- Allows for increases in emissions beyond the cap
  - Caveat: if revenues used to acquire emission reduction credits
- Differs from penalty
  - Set on basis of "value" of emission reductions
  - No civil liability/onus attached to exceedences
- Differs from "trigger review"
  - E.g., South Coast RECLAIM sets price of $15,000 per ton, which triggers a review of the program

- Monitoring actual emissions can be done with different techniques but different costs
  - Continuous emission monitors (CEMs), most costly
  - Mass balance
  - Fuel meters
- Required monitoring techniques
  - Useful to allow less costly techniques for smaller sources
  - E.g., WRAP allows for some flexibility for non-Part 75 sources
- Monitoring Plan
  - Clarify method and accuracy of monitoring information
  - Subject to initial certification and recertification to validate accuracy
- Substitute data procedures
  - Required to provide for missing/invalid data
  - Typically require use of maximum concentration/flow rate values

- Account Representative
  - Selection of Account Representative with authority to submit legally binding information
- Quarterly and annual emissions reports
  - Include information on emissions and allowances held/used
  - Submitted within period (e.g., 30 days of end of quarter or compliance year
- Allowance Transfers
  - Submit relevant information on purchases/sales (e.g., serial numbers, names, dates)
  - Use of allowances banked in previous years
- Compliance Report
  - Submit within certain period (e.g., 60 days) to show that allowances held are equal to or greater than emissions

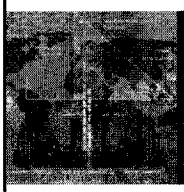
- Tracking system for ownership and transactions
- Registry to provide information on emission allowances held by individual facilities subject to the cap-and-trade program
  - Include opt-in sources

- Provide period after the compliance year to allow for purchases/sales
- Typically 60-90 days
- Avoids end-of-year problems
  - Inadvertent non-compliance
  - Run up (or run down) in price because of excess of buyers (or sellers)

- Basic requirement: hold allowances (by end of true-up period) equal to or greater than total emissions (as monitored/reported)
- Based upon data provided to program administrator
  1. Monitoring data
  2. Compliance account balance
- Allowances (serial numbers) retired based upon relevant emissions

- Net debit (after true up) triggers penalties
  - Emissions greater than allowances held
- Penalties can include two types
  1. "Make up" debits with some ratio (e.g., 2:1)
  2. Financial penalty (e.g., $5,000 per ton)
- Recorded/enforced by agency administering the program
  - Could involve civil liability

- Program reviews/audits provide opportunities to review performance
  - Environmental performance
  - Administrative considerations
  - Cost savings achieved
- Caveat: audit should not "second guess" technology/control choices
  - Interference with market choices would undermine the trading program
- Part of ongoing effort to make sure that "performance equals promise"



1. Consider any general issues/concerns with use of emissions trading for regional haze
   - Any general concerns?
   - Issues left out?
2. Develop background information for the specific region
   - Distribution of sources and potential for "hot spots"
   - Number/characteristics of relevant sources
   - Likely cost-effectiveness variations (and thus gains from emissions trading)
   - Likely monitoring/administrative costs (relative to BART/other controls)
3. Develop evidence to decide whether emissions trading would be desirable
   - Likely visibility protection
   - Likely cost savings
   - Likely administrative costs (or savings)

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January 31, 2006

Lydia Wegman
US EPA
Director, Air Quality Strategies & Standards Division
Mail Code: C504-01
Research Triangle Park, NC 27711

Re: AF&PA Comments on EPA's November 28, 2005 Draft "Guidance for Setting Reasonable Progress Goals Under the Regional Haze Program"

Dear Ms Wegman:

The American Forest & Paper Association (AF&PA) appreciates the opportunity to submit these comments on EPA's draft guidance on reasonable progress goals under the Regional Haze Program.

The American Forest & Paper Association ("AF&PA") is the national trade association of the forest, paper and wood products industry. AF&PA represents more than 200 companies and related associations that engage in or represent the manufacture of pulp, paper, paperboard and wood products. The forest products industry accounts for approximately seven percent of total U.S. manufacturing output, employs 1.1 million people, and ranks among the top ten manufacturing employers in 42 states. AF&PA member companies own and operate kraft paper and pulp mills which make up one of the industrial categories enumerated under BART. In addition, many AF&PA members utilize large boilers to generate steam utilized in mill operations and to generate electricity for their own use and to sell to the grid. AF&PA and its members have, therefore, a direct interest in how the regional haze program is implemented by states.

Our fundamental concern with EPA's draft guidance centers on its potential to restrict a states ability to fashion the most effective regional haze program for the unique geographic, air shed, political, and economic conditions within its borders. EPA's final BART rule made clear that BART was **not** a program to impose a certain level of control on certain selected sources, but rather was part of a larger strategy to make progress toward visibility goals. Accordingly, any State that wanted to substitute other control measures for case by case BART controls would be allowed to do this as long as greater visibility progress would result. EPA has specifically recommended relying on CAIR or other cap and trade programs as substitutes for case by case BART to the extent they can pass the visibility improvement test.

EPA's proposed guidance, however, barely mentions such innovative, win-win approaches. Indeed, it downplays the need to achieve air quality results, in the form of reasonable progress toward visibility protection goals – and instead emphasizes the automatic installation of controls, even when they are not needed to achieve reasonable progress. The comments filed by the Utility Air Regulatory Group, which we endorse, document this shift of position in detail and explain why it conflicts with both the statute and EPA's implementing regulations.

Because of this misplaced emphasis, the draft guidance strongly suggests – contrary to the rules it supposedly interprets – that case by case BART is legally required. That approach is bad law and bad policy. The state is the best judge of the most cost effective way to meet their specific state requirements under the regional haze rule given the specific conditions in that state. This guidance should not limit the discretion of the states beyond the broad latitude which was provided in the final BART rule.

1. CAIR or Other On-the-Way Controls may Meet the Reasonable Progress Goal for Some Class I Areas

Overall, the guidance seems to assume that the emissions reductions expected by 2018 under existing regulations will be insufficient to meet reasonable progress goals. The document focuses on the decision criteria necessary to justify the installation of emission controls on BART-eligible sources, as though controlling all such sources were legally required. However, modeling results obtained by the RPOs indicate that emission reductions due to implementation of the Clean Air Interstate Rule (CAIR) and other on-the-way controls will achieve reasonable progress goals for many Class I areas for the 2018 compliance period.

EPA has previously acknowledged in rulemaking preambles that CAIR or other on-the-way regulatory controls may satisfy reasonable progress goals for some Class I areas. EPA should reaffirm that position explicitly stated in the current guidance.

2. Cap and Trade Plans Need to be Encouraged

AF&PA believes that an emissions trading program, especially a trading program that brings non EGU facilities into the CAIR program, promises to be the most cost effective means for states to make any additional emissions reductions required for reasonable progress goals. While EPA endorses such trading, many questions remain as to how such a program would actually work.

AF&PA is working with the Midwest Ozone Group to develop a white paper to help assist those states interested in trading as an optional means of compliance with the rule. The draft EPA guidance on reasonable progress goals needs to endorse the concept of trading at a minimum. Ideally, EPA should also be able to promise to assist interested states by using the expertise of the EPA Clean Air Markets Program to help sort out the details of a workable cap and trade program.

This guidance should do more to promote state use of cap and trade programs even though it may not be the right place to address detailed questions about their design. For example, Section 1.3, 2nd paragraph, 1st sentence might be revised to read, "The LTS is the compilation of all control measures, *including trading*, and is the principal vehicle through which the State will meet the RPGs." And Section 2.2, (c)(ii) could be revised to read, "Available measures, *including trading,* for the sources and source categories that contribute significantly ....".

If the EPA guidance on reasonable progress goals is forwarded to the states prior to the publication of the Final Alternatives to BART Rule, currently expected to be signed in February or March 2006, accompanying language with the document should note that the Alternatives to BART Rule will provide additional information from EPA on how emissions trading may satisfy the requirements of the Regional Haze Rule.

3. BART-eligible Sources Do Not Need to be Controlled if Greater Contribution to Reasonable Progress Goals can be Obtained by Controlling Other Sources

Section 5.0 states "In the case of BART, Congress identified a specific class of sources that may have been grandfathered from review, and for which an appropriate retrofit emission limitation must be determined." This sentence, along with language in other sections of the draft, suggests that there is a need to control specific classes of sources. As we have noted, such "top-down" guidance for BART implementation was withdrawn from the final rule.

While a BART analysis may be required for BART sources, there is not a requirement to control those sources unless the state determines those reductions are required as part of its plan to meet its regional haze goal. In other words, those BART sources need not be controlled if CAIR or other controls make the reductions unnecessary for reaching reasonable progress goals in 2018, or if controls on other sources in the state prove to be more cost effective for compliance. We recommend the sentence identified above from Section 5.0 and other similar language be revised to make plain that though BART assessment is a necessary part of the SIP, control of such sources is only one alternative among many for meeting reasonable progress goals.

4. Section 5.6 Narrows the Scope of Energy and Nonair Quality Environmental Impacts

Section 5.6 discusses the examination of potential energy and nonair quality environmental impacts that states must consider when deciding whether controls are reasonable for a particular facility. The Section seems to narrow the scope of inquiry to impacts that are "significant or unusual." Such terminology regarding this statutory factor for BART compliance is absent from the final BART Rule and should not be included in guidance from EPA on this analysis.

5. No Documentation on the Definition of "Reasonable" as Used in this Guidance

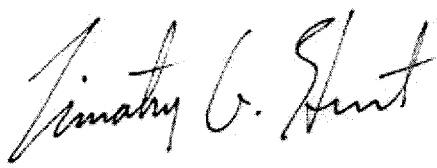
Section 4.0 states "...the State should adopt a rate of progress greater than the uniform rate of progress if this is found to be reasonable according to the statutory factors." Such

guidance implies that EPA defines "reasonable" progress to include a mandate for controls on every source that makes it through an analysis of the statutory factors to be considered for BART sources. This means that even if controls are not needed for compliance with the regional haze rule, they should be applied anyway.

Contrary to the implications of the language discussed above, Section 4.2 states that, "A minimum strategy could simply address controls expected from already promulgated or soon to be promulgated State and federal rules." AF&PA believes that the statement from Section 4.2 has it right. The Regional Haze Rule mandates compliance with the Clean Air Act goal of natural visibility in all Class I areas in the U.S. by 2064, unless that proves economically or socially impractical. The rule was not developed as an excuse to install controls beyond what is necessary for meeting the goal of the regional haze rule. Such guidance from EPA seems clearly unjustified.

Please feel free to contact Glynn Rountree at (202) 463-2762 or Glynn_rountree@afandpa.org with any questions that you may have on these comments.

Sincerely,



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SUBMITTED ELECTRONICALLY

September 16, 2005

Comments of the American Forest & Paper Association on EPA's Proposed Revisions to the Regional Haze Regulations to Facilitate BART Compliance through Emissions Trading Approaches, 70 Fed. Reg. 44154 (August 1, 2005), Docket No. OAR 2002-0076

I. Introduction and Summary

On August 1, 2005 the Environmental Protection Agency ("EPA") published in the Federal Register proposed amendments to its 1999 "regional haze"" rules, 64 Fed. Reg. 35714 (July 1, 1999), 40 C.F.R. Part 51, Subpart P, designed to allow and encourage compliance with "best available retrofit technology" ("BART") requirements through alternative approaches based on emissions trading. This proposal follows and builds on EPA's issuance of final guidelines for setting BART control levels, see 70 Fed. Reg. 39104 (July 6, 2005).

The American Forest & Paper Association ("AF&PA"), the trade association of the forest products industry, has a vital interest in this issue, since both "kraft pulp mills" and "fossil-fuel boilers of more than 250 British thermal units per hour heat input" are included in the twenty-six categories of sources subject to BART requirements.

AF&PA represents more than 250 companies and related associations that engage in or represent the manufacture of pulp, paper, paperboard and wood products. The forest products industry accounts for more than eight percent of total U.S. manufacturing

output, employs 1.5 million people and ranks among the top ten manufacturing employers in 46 States.

AF&PA supports both the Clean Air Act goal of long-term visibility improvement, and the use of market-based approaches to achieve air quality goals. Accordingly, we support the goals of EPA's proposal. However, we believe that in two vital respects, EPA's proposed standards do not provide a foundation for achieving the full benefits of emissions trading. First, EPA does not provide – as it clearly must – for accepting emissions reductions under the Clean Air Interstate Rule (CAIR) as BART compliance for industrial sources that are not electric generating units (EGUs). Second, EPA does not provide a framework to encourage the development of "robust" BART trading markets that include many sources and thereby encourage the development of least cost approaches.

We also disagree with EPA's proposal to include all sources in a sector in a trading program if any are included, and with EPA's proposal for widespread use of Part 75 monitoring. As we explain, these provisions are likely to impose particularly unreasonable burdens on the smaller units at BART sources.

Our discussion follows.

II. Major Flaws in EPA's Proposal

A. EPA Must Provide for Accepting CAIR Reductions as BART Compliance for Non-EGUs as well as for EGUs

Throughout EPA's recent CAIR and BART rulemakings, the agency has consistently and correctly maintained that BART is **not** a program designed to impose specific control requirements on a specific set of sources, but rather a program designed

to make sure that a certain minimum emission reduction occurs as part of the first ten-year plan for "reasonable further progress" (RFP) toward the visibility improvement goal. Accordingly, EPA will allow states to substitute any other set of emission reductions for BART as long as the reductions stem from requirements established after the visibility program's "baseline date" of 2002 and are "better than BART" in terms of visibility improvement. See, e.g. 70 Fed. Reg. 39142-43. Indeed, the current proposal states that an RFP plan that provides for "better than BART" reductions can itself make BART unnecessary. 70 Fed. Reg. 44161.

The law does not require the "better than BART" plan to address the same sources that would be covered by case by case BART controls. Indeed, EPA has expressly recognized that CAIR reductions could potentially substitute for BART on **all** sources subject to BART within a state, including both EGUs and non-EGUs. 70 Fed. Reg. 25301. EPA's recent proposal to accept RFP plans as BART substitutes illustrates the same point. As EPA recognizes, there is no requirement for an RFP plan to address any particular set of sources, as long as RFP is the result. See 70 Fed. Reg. 44161-62.

EPA's most recent proposal strongly encourages states to accept CAIR as BART for EGUs. However, it does not contain **one word** either explaining that CAIR can be BART for non-EGUs as well, or encouraging states to accept CAIR as BART for non-EGUs, or providing any analysis to support that choice. These omissions are contrary to the law, to sound policy, and to the facts.

They are contrary to the law for the reasons given above. Since alternative programs can substitute for BART across the board, EPA has no warrant to restrict CAIR's BART substitution opportunities to EGUs.

They are contrary to sound policy because inexpensive methods of achieving environmental goals should always be preferred to expensive methods of achieving them. EPA recognized when it designed the CAIR rule and restricted its coverage to EGUs that controls on EGUs are more cost-effective and easier to administer for both sources and regulatory agencies than controls on non-EGUs. If CAIR controls can substitute for BART on non-EGUs as well as on EGUs, ignoring that opportunity will only steer control efforts toward non-EGUs and away from EGUs, thus increasing both control costs and administrative burdens for no environmental gain.

Finally, the undisputed facts show that in the vast majority of cases, CAIR reductions **could** substitute for BART for non-EGUs as well as for EGUs. EPA has not analyzed in specific detail the ability of CAIR to substitute for non-EGU BART – that is one major problem with its proposal. But every analysis EPA **has** conducted has shown that in general, the CAIR reductions will produce about twice the visibility benefits of BART controls on EGUs. See 70 Fed. Reg. 25300, 25303; 70 Fed. Reg. 39139-39142. Emissions from BART-eligible EGUs far exceed emissions from other BART-eligible sources. Just to pick one example, EPA's final CAIR rule concludes that in the 2010 base case, SO_2 emissions from EGUs would be over four times the emissions from non-EGU boilers and turbines, while EGU NO_x emissions would be over 150% of the emissions from these other sources. 70 Fed. Reg. 25214. If CAIR's visibility benefits are indeed twice those of BART on EGUs, it therefore seems clear that they would also exceed the benefits of BART on **all** BART-eligible sources.

To correct this error, AF&PA requests that EPA, in the final rule:

- Expressly affirm that CAIR reductions can substitute for BART reductions from non-EGUs as well as from EGUs, and encourage States to rely on CAIR in that manner. This must include an express amendment of 40 CFR 51.308(e)(4) to refer **both** to EGUs and non-EGUs being covered by BART.

- Provide supporting analysis, comparable to that provided for EGUs alone in the CAIR rule, showing how strongly the facts support accepting CAIR as BART for both EGUs and non-EGUs, together with guidelines for States to use in extending the analysis to cases it might not completely cover.

B. EPA Should Advise States How to Develop a Robust Emissions Trading Market

Emissions trading approaches will generally provide substantial economic benefits only if they include a large number of sources. Such broad coverage allows the best scope for substituting low-cost emissions reductions for high-cost reductions, to the benefit of both the economy and the environment.

EPA's proposal barely mentions this important issue. We urge the Agency to correct that oversight in the final rule. In particular, we urge EPA to explain how to integrate the operation of BART trading programs with the operation of trading programs under CAIR. Since in many BART States CAIR will be both the biggest trading program and the biggest source of cost-effective reductions, such integration makes complete sense. AF&PA would be pleased to work with EPA on this issue.

C. EPA Should Not Require All BART-Eligible Sources in a Sector to Participate in a Trading System

EPA's current proposal would require States developing trading alternatives to BART to include in their coverage all BART-eligible sources in a given industrial sector. EPA apparently believes that without such a requirement, production might shift from sources whose costs were increased because they were covered by the program to lower-cost sources outside it. See proposed §51.308(e)(2)(ii), 70 Fed. Reg. 44173. In an extension of that logic, EPA also proposes to require States to either include in trading programs **all** sources in an industrial sector, or else show that there will be no production shift from covered to uncovered sources. See proposed §51.308(e)(2)(vi)(A), 70 Fed. Reg. 44173.

AF&PA sees no reason for either requirement.

In the forest products industry specifically, there is little to no practical chance to shift production from one mill to another. To be economically viable, mills must operate near capacity if they are operated at all. Shifts in demand are addressed by opening or closing mills, not by running an individual mill more or less intensely.

More generally, the requirement seems conceptually unjustified. Under the basic BART program, not all BART-eligible sources will in fact install BART. For example, EPA has suggested, based on its own modeling, that a State could properly conclude that a source that emitted less than 500 tons a year of NO_x and SO_2 combined and was more than 50 kilometers from a Class I area did not "contribute to visibility impairment" and therefore was not subject to BART. Sources that were not BART-eligible would of course be excluded from BART as well.

Those uncontrolled sources would enjoy a cost advantage over controlled sources even in the absence of trading. Under EPA's logic that could lead to the exact same production shift that is feared under a trading approach, as production shifted from high-cost sources subject to BART to low-cost non-BART sources. Yet the imposition of "compensating costs" on sources that were not subject to BART to remove their competitive advantage would clearly be illegal, and EPA's rules do not provide for that outside the alternative program context.

AF&PA believes that both the law and sound policy require omitting this provision from the final rule. Instead, **any** trading program that can be show to be "better than BART" in terms of visibility improvement should be acceptable, regardless of its coverage.

D. EPA Should Correct the Problems Its Proposal Will Cause for Smaller Emissions Units

Under CAA §169A (g)(7), BART can only apply to "sources" with the potential to emit (PTE) more than 250 tons per year of regulated pollutants. However, such sources often have individual emissions units with much smaller PTE that got caught in the mix because of their construction date. In our industry, such units can include smelt dissolving tanks, material handling systems, digesters, storage tanks, wastewater treatment systems, and incinerators.

EPA's statement that all "sources" in a category must be included in a BART trading program if any are included could be interpreted to mean that all such small units must be included in any BART trading program that covers any sources in our industry. That in turn would create major –and we believe, unintended- problems.

Often, it may not be cost-effective to control such small sources. If BART is set directly for a source, that lack of cost-effectiveness can be considered in the regulatory process. But when trading is concerned, EPA's proposal encourages States to set the trading programs baseline by assuming that tight BART limits will apply automatically to all sources – perhaps including their smaller components.

EPA's proposal also requires Part 75 monitoring for all sources covered by a trading program. That could mean that smaller emissions units that were automatically included in a trading program as described above would then be automatically required to install Part 75 monitoring.

This makes no sense. Even with recent cost-reducing improvements Part 75 CEMs are very expensive, particularly if they are retrofitted in existing units. Because the costs of CEMS tend not to decline as much as output or emissions, the cost of CEMs per ton of emission reduction is much greater for smaller industrial units than for large EGUs.

An example will illustrate this point. In connection with the NOx SIP Call CIBO estimated the cost of installing a Part 75 CEM on a boiler emitting one ton of NOx per day, or 365 tons per year, and subject to a 30%, or 110 ton per year, reduction requirement. The capital cost of the CEM would be $250,000, or $40,000 per year applying a .16 capital recovery factor. Operating costs would be $45,000 a year, for a total annual CEM cost of $85,000. That works out to $770 per ton of NOx reduction in monitoring costs alone.

We see no justification for such a counterproductive requirement for CEMs. Indeed, EPA, to enforce its own regulations, typically requires CEMS only for the very largest units.

We fully agree that every emissions control rule needs monitoring requirements that cannot be gamed, that quantify emissions with the precision and accuracy that the underlying program requires, and that will catch deliberate violations. We also understand that a cap and trade program requires the ability to quantify annual emissions so as to determine compliance with the program. However, Part 75 CEMS are not the only way to satisfy these conditions. Where CEMs are not required, NOx emissions can be adequately determined by source verified emission factors and fuel usage.[1]

For a large unit, where a small percentage change in emissions translates to an emissions difference of many tons, the small accuracy gains from CEM use may be justified. But for smaller units, where the annual difference will be measured in single digits, the extra cost of achieving that gain could be prohibitive. For example, if we assume, in the example given above, that CEMs would correct an emissions reduction overestimate of four tons a year that would have occurred if emission factors and fuel usage were relied on to determine emissions, the cost of those extra reductions would be over $20,000 per ton. A proposed emissions control rule that selected a technology for reducing emissions directly that had a much greater marginal cost per ton of SO_2 or NOx removed than another approach would not survive meaningful review. Yet requiring smaller units to use CEMs rather than alternative approaches has exactly this effect, even if we assume they would actually use CEMs.

We suggest that EPA make two changes to correct these problems.

[1] In addition, sources that have already installed Part 60 CEMs for other reasons can calculate NOx emissions using F-factor information and fuel usage. However, Part 60 CEMs, like Part 75 CEMs, are too expensive to be imposed as a new requirement on opt-in sources.

First, EPA should make clear that controls on small units need not be assumed when calculating the baseline for a BART trading program. We believe that EPA should allow States to assume that individual units with annual emissions less than EPA's de minimis levels would not be controlled.

Second, to the extent a State does include smaller units in a BART trading program, use of CEMS should not be required for the reasons given above.

The American Forest & Paper Association appreciates the opportunity to submit these comments. If you wish to contact me with any questions, I may be reached at (202) 463-2588 or tim_hunt@afandpa.org.

Sincerely,

Tim Hunt
Senior Director, Air Quality Programs
American Forest & Paper Association

Uniform Rate of Reasonable Progress Glide Path
Sipsey Wilderness (AL) - 20% Worst Days