

Rethinking the U.S. Air Quality Management System

Issues and Recommendations
from Past Studies

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Types of Studies

- Comprehensive Assessments of AQM
- Issue-Specific AQM Studies
- General Critiques of U.S. Environmental Management



“Since the enactment of landmark environmental legislation, the items on the pollution control agenda have increased faster than they have diminished. Progress has been made in controlling some sources of pollution, though more slowly and with greater difficulty than expected a decade ago. Serious pollution problems remain unsolved, while new problems continue to arise. Environmental regulation has worked in some areas, but progress often is excruciatingly slow. In many American cities, air quality has stopped getting worse and started getting better since passage of the Clean Air Act. Yet more than ... 140 million Americans live in areas where air pollutants still exceed health standards for some part of the year.... There is much evidence that compliance with even those pollution control standards that are in effect is poor. Monitoring, inspection, and enforcement have been sporadic and inconsistent.”



“Today the nation is well into its postenvironmental transition period for the traditional air pollutants. Air quality continues to improve, and politicians, no matter what their partisan stripe, have by and large embraced the environment.”



Recurring Topics

- Relative roles of federal govt, regions, and states, and structure of interactions between them
- Economics:
 - efficiency & cost-effectiveness of rules and process
 - market-based strategies and instruments
- Multipollutant & Multimedia Approaches
- Accountability
- Flexibility
- Risk
- Transport
- Climate change



Shifting Emphases

- Early evaluations focused more on process, procedure, and goal-setting
- Later evaluations have focused more on implementation, program design & efficiency
- Mid-1980s-mid 1990s:
 - Comparative Risk Assessment
 - Creating Market-based programs
- Mid 1990s- present:
 - Transport
 - Division of Responsibilities
 - Economic issues: improving efficiency
 - Accountability



Comprehensive Assessments

- National Commission on Air Quality, *To Breathe Clean Air* (1981)
 - 109 recommendations
 - Heavy focus on standard-setting process and institutional relationships, including SIP process



Recommendations from *To Breathe Clean Air*

- CAA should be modified to strengthen provisions requiring a state to reduce emissions which affect other states and to provide more useful criteria for a state to use in showing that emissions from sources in another state adversely affect it.
- Economic incentive approaches should be used as replacements for direct regulation if they could improve efficiency.
- The role of carbon dioxide emissions should be taken into account in the development of future energy and other national policies



FACA Subcommittee for Ozone, Particulate Matter and Regional Haze Implementation Programs, *Final Report* (1997)

- FACA Subcommittee sought to encourage its workgroup members to “develop innovative solutions to issues even if they were outside of the current statutory or regulatory framework—to ‘think outside the box.’”
- Started with a list of principles, which “served as the foundation for ... recommendations developed by the Subcommittee.”
- Made recommendations in numerous areas, including significant changes to AQM process



FACA Subcommittee for Ozone, Particulate Matter and Regional Haze Implementation Programs, *Final Report* (1997)

- 1) **Area of Influence/Area of Violation concept**—altering the traditional distinction between attainment and nonattainment areas to account for role of transport in causing air quality problems in many areas. AOV would be area in which NAAQS exceeded; AOI is the larger area contributing to the AQ violations.
- 2) **Regional Air Management Partnerships (RAMPs)**—cooperative partnerships comprising multiple States and tribes working collectively to address regional air quality problems. RAMPs would coordinate air quality assessment, share data, develop shared strategies for emissions reductions to control regional transport.



FACA Subcommittee for Ozone, Particulate Matter and Regional Haze Implementation Programs, *Final Report* (1997)

- 3) **Clean Air Investment Fund**—sources whose cost of control exceeds a certain level have the option of paying a fee in lieu of reducing emissions. The fund is used to pay for more cost-effective emissions reductions elsewhere.
- 4) **Need greater flexibility** and more use of **economic incentives** and **voluntary measures**, but simultaneously need to adjust **accountability mechanisms**.
- 5) **Need to provide better incentives for good air quality monitoring**: increase monitoring incentives, decrease/eliminate monitoring disincentives.



FACA Subcommittee for Ozone, Particulate Matter and Regional Haze Implementation Programs, *Final Report* (1997)

6) **Better metrics for assessing progress in air quality**

- rather than just measuring tons of emissions reduced, measure “effective” emissions reductions—based on location, height, species/composition, and timing, as well as amount.
- Allow latitude for multi-year programs to become effective
- Create opportunities for mid-course evaluation and correction
- Greater incentives for and use of private air quality data

7) **Preemptive air quality control strategies** for “borderline” or “declining” areas



FACA Subcommittee for Ozone, Particulate Matter and Regional Haze Implementation Programs, *Final Report* (1997)

Consensus Categories:

- I - Subcommittee reached consensus supporting the recommendations presented in the issue paper.
- IA - Subcommittee reached consensus on some, but not all of the recommendations.
- II - Subcommittee reached consensus on the range of options to be considered, but could not reach consensus on specific recommendations.
- III - Subcommittee reached consensus on a set of principles, but could not reach consensus (or did not attempt to) on a limited set of options.
- NC - Subcommittee could not reach consensus or agree on a limited set of options.
- W - Paper withdrawn from discussion by the Subcommittee.
- D - Subcommittee deferred discussion.

Presidential Memorandum, “Implementation of Revised Air Quality Standards for Ozone and PM” (1997)

Key goals:

- 1) Create rewards for early pollution reductions and cost-effective approaches
- 2) Enhance regulatory flexibility to improve efficiency without compromising health
- 3) Minimize State/local planning and regulatory burdens for regional problems
- 4) Create Clean Air Investment Fund to provide safety valve for improved efficiency



General Critiques of U.S. Env. System

Carnegie Commission, *Risk and the Environment* (1993) and NAPA, *Setting Priorities, Getting Results* (1995)

- EPA needs a clearer mission and more flexibility.
- States and localities should be granted more responsibility and decision-making authority (“accountable devolution”).
- The private sector and local governments should be given more flexibility in exchange for better-than required performance (“beyond compliance”).
- EPA should set priorities and spend resources based on comparative risk.
- EPA should refine and expand the use of CRA and CBA in making decisions.
- EPA’s fragmented environmental statutes and programs should be integrated across media into a single, comprehensive, and coherent approach.



NAPA, *Environment.gov* (2000)

Key recommendations for EPA Administrator:

- 1) **Tackle the big environmental problems**—especially nutrients in watersheds, smog, and GHGs—through application of market-based and other flexible, innovative tools. Encourage States to use trading systems to achieve federal goals.
- 2) **Invest in information and assessment**—by creating bureau of environmental information and increasing program evaluation and accountability.
- 3) **Hold States accountable for results**—increase accountability for outcomes, rather than just process and transfer greater responsibility to States. Strengthen/reform the NEPPS system
- 4) **Focus on** internal accountability for achieving major outcome-based goals, rework the outdated organizational structure of the agency and eliminate fragmented, media-based approach to problem; create “bias for action” and encourage innovation.



NAPA, *Environment.gov* (2000)

Key recommendations for Congress:

- 1) Authorize EPA and the States to use the tools they need to tackle the big problems—many critical sources are unregulated or under-regulated, and existing regulations are unduly expensive and static. Encourage use of market-based allowance trading systems rather than permits, correcting for hot-spots, and authorize experimentation with other performance-based and innovative approaches, including certification.
- 2) Invest in information—increase and standardize the collection of information, and tie it back to results through program evaluation (accountability).



NAPA, *Environment.gov* (2000)

Key recommendations for States:

- Challenge EPA, Congress, and one another to transform environmental governance—improve efficiency and effectiveness of environmental programs, seek continual progress, improve accountability and tracking of results, consider environmental implications of land-use and planning decisions.

Key recommendations for business leaders, NGOs & foundations:

- Embrace more effective and efficient policies for environmental protection.
- Help build a national system for gathering, disseminating, and using environmental information.



Market-Based Instruments: Where are the best opportunities for expanding their use?

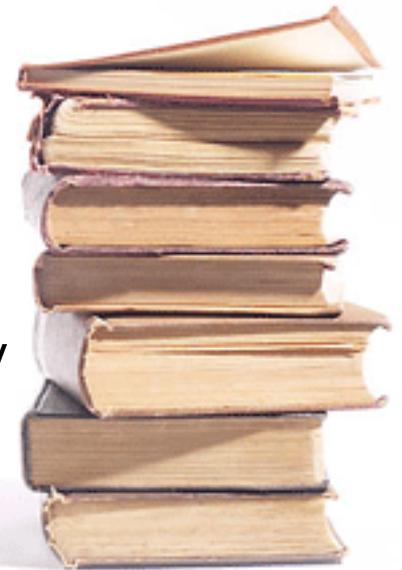
Considerations in using MBIs:

- How much do abatement costs vary across sources? If little, then trading approaches do not necessarily improve efficiency.
- Transaction costs
- Pollutant(s) involved
- Geographic spread & boundaries of market
- Appropriate market-based instrument—Taxes, Fees, Incentives, Permits
- Participants—who is in, who is out, and who can opt-in
- Characteristics of commodity at stake (what is being taxed or traded?)
- Hot spots
- Mechanisms for recording price and transaction data
- Establishment and revision of levels/caps
- Monitoring and enforcement



Alternative Futures: Goklany

“For intrastate pollutants—that is, relatively short-range, primary pollutants—the federal government’s role should be limited to undertaking research, providing scientific and technical information about benefits and costs of controls to the states and the public, and establishing guidelines for NAAQS. The states would then be responsible for adopting their own ambient air quality standards and attaining those standards at a pace dictated by their own political processes and their knowledge and perception of what balances need to be struck to optimize their quality of life. This is preferable to having such decisions made by those who do not directly bear either the costs or the benefits of attainment.”



Alternative Futures: Goklany

“Control of interstate pollution should be negotiated between affected states, with the downwind states being free to accept, in lieu of additional control of specific air pollutants, other reductions in risk to public health and welfare funded by the upwind (polluting) states...For intrastate pollution, the federal government should step back from its role as the micromanager of air pollution control and instead enter into a more equal partnership with the states. Under such a federalist approach, the federal government would set idealized goals, and states would determine their own attainment schedules and control measures for pollutants produced within, and affecting, their own jurisdictions.”



Alternative Futures: Goklany

The U.S. should:

- Allow emission trading between all sources for a given pollutant
- Freeze new source emissions standards
- Leave states free to institute stricter standards if desired
- Recognize that most health effects are due to local pollution control problems – and collective action barriers are not necessarily best solved by federalization
- Pursue most cost-effective solutions—federal programs and federally directed command & control approaches are often much more expensive than they could be
- Replace pollutant-by-pollutant approach with “one that focuses on reducing overall risks to public health and welfare at local and regional levels.



Alternative Futures: Krupnik & Shih

In recognition of the strong role of transport, they advocate altering the current AQM system substantially in one of two ways:

1) **Build Regional Air Management Partnerships**

(RAMPs)– The new regional organization could provide technical support and assessment, and create areas of influence (AOI) and areas of violation (AOV). Institutional mechanisms could also be structured to support the development and implementation of incentive- and market-based approaches to managing regional pollution problems, including developing positive incentives for upwind areas to reduce precursor emissions, such as emissions trading and air pollution funds. The organization may also endow areas of violation with some power to compel actions from areas of influence. Under RAMPs, states would retain primacy, subject to EPA oversight and Federal Implementation Plan (FIP) authority, to the greatest extent consistent with air quality and equity goals, with responsibility assigned at the lowest level of government practicable.



Alternative Futures: Krupnik & Shih

- 2) **Increase Federal Responsibility and Eliminate Most of SIP Process**—Federal measures are more effective and cost-effective than State/local approaches. Furthermore, may be easier to implement than RAMPs due to structure of federal system, and because will be less costly and contentious. Federal government is in better position to coordinate and ensure equity, also to conduct proper modeling to design programs appropriately. State/local governments would only be required to ensure no net increase in local emissions.



Key Questions for Consideration

- 1) How much progress have we made, and at what rate and cost?
- 2) Is the burden of responsibility and authority appropriately divided between Federal, State, regional and local authorities? If not, in which direction should power be shifted?
- 3) Have we used an appropriate mix of instruments to achieve our air quality goals? How, specifically, could market based instruments play an expanded role in the system?
- 4) How can we simultaneously increase innovation, flexibility, and accountability, if these are desired goals?
- 5) Is greater integration, across pollutants or across media, feasible and desirable? How would this be achieved?

