

Clean Air Act: Its Basic Framework, Enforcement, Mechanisms and Cases

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ENVIRONMENTAL DEFENSE FUND

finding the ways that work

History of Clean Air Regulation in the US

- Prior to 1970, clean air laws in the US (such as the Air Quality Act of 1965) were ineffective
 - Weak enforcement mechanisms
 - Did not control important sources of pollution like motor vehicles or individual municipal and industrial sources.

Major Elements of US CAA of 1970, as amended in 1977 and 1990

- EPA may list new air pollutants that endanger public health and welfare based on science (section 108 and 109)
- EPA authorized to set National Ambient Air Quality Standards (NAAQS) for pollutants at levels that will protect public health and welfare
- Emission standards set for criteria pollutants - e.g. NO_x, PM, O₃, SO₂, Pb, Co - for which there are NAAQS and hazardous air pollutants from stationary sources (electric utility/industry)
- Emissions standards imposed for individual sources through permit program

Major Elements

- EPA also sets emission standards for mobile sources
 - motor vehicles, commercial trucks, ships, airplanes, train engines
- California is authorized to adopt more stringent motor vehicle emission standards that other states may adopt

Major Elements

- States must prepare State Implementation Plans (SIPs) for air quality areas that are not in attainment with NAAQS
- EPA and states enforce permit programs and individual permits through financial penalties and judicial injunctive relief
- Non-government organizations or individual citizens have certain powers to enforce CAA permit programs and individual permits

Listing of Air Pollutants

- What if EPA does not list or identify a pollutant as an air pollutant?
- Recent example: EPA refused to regulate CO₂ emissions from motor vehicles on grounds that CO₂ is not a CAA air pollutant
- States and Environmental NGOs brought lawsuit, Massachusetts v. EPA
- 5-4 decision of US Supreme Court April 2, 2007:
 - 1) States have standing to contest EPA failure to consider whether CO₂ may endanger human health and welfare
 - 2) EPA has authority under CAA to address global warming – CO₂ qualifies as a CAA air pollutant
 - 3) Policy reasons for inaction, such as possible overlap with federal fuel economy law, not statutorily valid
- Endangerment ANPR
 - July 11, 2008 EPA invites comment on benefits and ramifications of regulating greenhouse gases under CAA

Setting and Reviewing NAAQS

- 40 CFR part 50 requires EPA to set NAAQS for pollutants considered harmful to public health and environment
- EPA must revise standards based on science
- Challenges to Revised Standards
 - EPA set stringent standards for PM and ozone in 1997 – American Trucking Association challenges in federal court
 - Several states and environmental groups intervene to support EPA
 - Revised standards upheld by the US Supreme Court in 2001

Major Categories of Stationary Source Emission Control Programs

- New Source Performance Standards (NSPS)
 - Federal emissions standard apply to new or modified sources
- New Source Review (NSR) Program
 - Programs regulating new construction of or modifications to industrial sources which emit or will emit air pollutants
- Prevention of Significant Deterioration (PSD) Standards
 - Major new sources or major modifications at existing sources for pollutants in attainment areas
- SO₂ Electric Utility Standards and cap and Trade Program

New Sources since 1970

- Emission standards depend on the nature of the source and the attainment status of the location
- In non-attainment areas that violate one or more NAAQS, new stationary sources must comply with NSPS
- In attainment areas a new or modified source has to comply with PSD standards that may be stringent enough to protect air quality that is better than NAAQS

PSD Standard Classification

- Class I
 - the most pristine areas in the US, including national parks and wilderness areas
- Class II
 - All other areas where PSD provisions apply
- New sources in PSD Classes I and II must install best available control technology (“BACT”)

New Source Reviews

- Applies to grandfathered electric generating sources
- Electric generating sources built prior to 1977 did not have to reduce emissions (grandfathered), but did have to meet NSP Standards if they underwent major modifications
 - 100+ plants built pre-1977 were coal-fired power plants in the Mid-West and South burning high sulfur coal that emitted millions of tons of SO₂ and NO_x
- Grandfathering created economic incentive for electric utilities to keep old coal-fired power plants in operation beyond their original useful life
 - Avoid having to comply with NSP standards
 - Upgrade plants and circumvent major modification trigger
 - Legal fights over definition of “modification”: e.g., EDF v. Duke Energy

Duke Energy legal challenge

- Duke Energy modernized 30 coal-fired electric generating units without obtaining permits
 - EPA: meet NSR and PSD standards because total emissions will increase even though emission rates will not
 - Duke: because rates are not increasing, compliance with NSR/PSD unnecessary
- EPA brought lawsuit in federal district court and EDF intervened on behalf of EPA

Duke Energy

- EPA lost in district court and again in federal appellate court
- EDF petitions US Supreme Court
- April 2, 2007 Supreme Court decision
 - EPA's NSR regulations require that an increase in annual emissions or increases in emission rates trigger NSR
- EPA amending NSR regulations

CAA Title V

- Authorizes EPA to implement applicable emission standards through a permit program
- EPA can delegate the permit program to a state that has comparable or tougher emission standards and the legal authority to enforce them
- CAA federal or state permit conditions relate to:
 - Emissions limits
 - Construction schedule
 - Maintenance of equipment
 - Monitoring requirements
 - Reporting requirements

Benefits of Permits

- Records all air pollution control requirements applying to a source in one document
- Requires sources to report emissions
- Adds monitoring, testing, or record keeping requirements
- Requires the source to certify each year whether or not it has met the requirements
- Terms of the permit are enforceable (EPA, states, citizens through citizen suits).

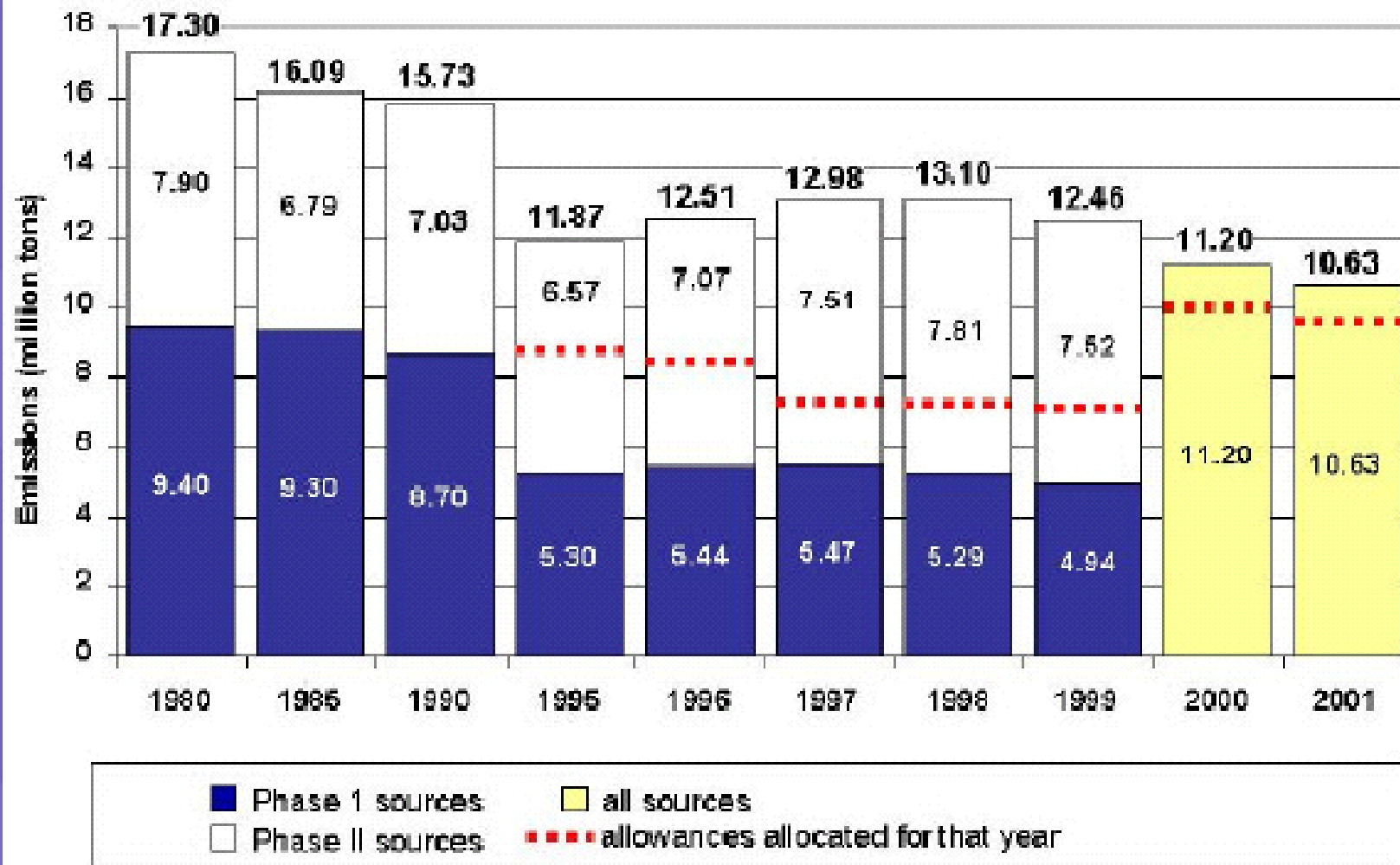
Monitoring

- Sources are generally responsible for monitoring their own emissions
- Specific requirements vary by state
- Public access to data through the National Emissions Inventory
 - <http://www.epa.gov/air/data/neidb.html>
 - Updated every 3 years

Title IV Cap and Trade Program 1990 CAA Amendments

1. National cap on electric utility SO₂ emissions reduced in two places
2. Limits on SO₂ emissions through annual tonnage limits enforced through permit program
3. Applies to “grandfathered” plants as well as post-1977 generating plants
4. Title IV and EPA regulations determine SO₂ emission rates and total annual SO₂ emissions each plant must meet
5. Emissions trading program
6. New sources offset anticipated emissions through reductions at existing sources

SO2 Emissions for Utility Sources 1980-2001



Source: U.S. EPA (2002)

Reasons for Success

- The 1990 CAA SO₂ cap and trade program has been effective because:
 - All plants subject to the program must monitor and report their emissions
 - This information is available to the public as well as EPA and states
 - each plant must establish annually that it has complied with the emissions rate and annual emission loading set in its permit unless it can demonstrate that it has purchased allowances from another complying source if it has exceeded its limit

Implementation

- Implementation through the CAA stationary source permitting program
- A plant may use low sulfur fuels, scrubbing, investments in conservation or any techniques that lower overall SO₂ emissions or other techniques
- If a plant reduces its SO₂ emissions annually beyond the requirements of its permit, it may bank those extra SO₂ allowances or sell them to a plant that finds it cost-effective to purchase allowances

Automatic Enforcement

- CAA cap and trade program provides EPA and state agencies with an automatic penalty in the event that a plant has not complied during any particular year with its emissions limit
- In addition to other monetary penalties, EPA must require a plant that ends the year out of compliance with its permitted limit within a set period of time after year end to purchase the requisite number of pollutant allowances from other plants that have demonstrated over-compliance or from EPA's pool of excess allowances

Revised Emission Standards

- EPA may periodically propose by regulation and adopt more stringent standards for stationary sources
- Clean Air Interstate Rule (CAIR)
 - Formally adopted March 2005
 - establishes further reductions in SO₂ and NO₂ emission limits and modifies the Title IV cap and trade program to accommodate these new emissions limits
 - Intended to help “downwind” states in the eastern US that do not meet NAAQS because of upwind sources of SO₂ and NO₂

CAIR Judicial Challenge DC Circuit Court of Appeals

- States claim that CAIR is not strict enough, Industrial groups claim CAIR is too strict
- EPA: rule is reasonable
- Environmental intervenors EDF and NRDC: regulation is reasonable
- July 11, 2008 initial ruling: CAA does not allow EPA to modify Title IV SO₂ cap and trade standards to accommodate tough new Title I SO₂ and NO₂ emission limits, CAIR rule is vacated
- EPA and environmental intervenors petition for rehearing
- October 21, 2008: DC Circuit considering withdrawing order to vacate and remanding to EPA for reconsideration

Violations and Penalties for Stationary Sources

- EPA has authority to impose \$32,500 per day per violation. A state to which EPA has delegated permit enforcement has comparable powers
- Examples of violations:
 - Failure to comply with the emission standards of a program that EPA applies to the source (NSR/PSD)
 - Failure to comply with any condition of a permit (emissions exceedances, improper monitoring or reporting)

CAA Section 113 and 120

- Statutory factors that affect severity of any penalty
 - Economic benefit of non-compliance
 - Size of the business
 - Violator's compliance history and good faith efforts to comply
 - Duration of violation
 - History of non compliance
 - Seriousness of violation

- EPA (or a state) may seek financial penalties for violations through administrative or judicial actions
- May also seek injunctive relief designed to compel compliance with emission standards through installation of pollution control technology on an established time schedule
- May also pursue criminal remedies for willful violations in federal court

EPA Policy on Civil Penalties

- Adopted in 1984
- Considers three general factors:
 - Deterrence (two components)
 - Economic benefit and gravity
 - Fair and equitable treatment of violators
 - Utility of swift resolution of environmental problems and settlement

Economic Benefit Component

- Designed to remove any economic benefit the violator has accrued from non-compliance or a delay in compliance deferred and avoided costs
- EPA uses computer-based methodology called BEN for calculating the economic benefit, i.e. money the firm has saved by violating the standard

Gravity Component

- Three major subcomponents
 - 1) Magnitude of actual or possible harm
 - Amount by which emissions are above the standard 1-30% to over 300%
 - Toxicity of pollutant
 - Sensitivity of the environment (PSD class, severity of non-attainment)
 - Duration of violation

2) Importance to regulatory scheme

- reporting, testing and monitoring violations each = \$15,000

3) Size of the violator

- \$2,000 for a firm with net worth less than \$100,000 up to \$70,000 for a firm with a net worth greater than \$100 million
- additional \$25,000 for each \$30 million increment

Fair and Equitable Treatment

- Degree of willfulness or negligence
- Degree of cooperation
- History of non-compliance
- Ability to pay

Factors Affecting Enforcement

- EPA enforcement is affected by Presidential policies
- States may not want a reputation that might scare off business
- EPA tends to commit its resources to major sources that emit 100 tons per year of pollution or more
- Most cases resolved by settlement
- In cases where economic benefit component exceeds \$10 million, EPA pursues an injunction-type relief to compel compliance investments rather than adhering to its general civil penalty policy

Enforcement in Action

- United States v. Merit Energy Company, Civil Action 1:08-cv-917 (W.D. Mich.), July 23, 2008
 - Merit made major modifications to a natural gas processing plant while failing to obtain the required permits and install the controls necessary to reduce SO₂ (excess emissions 100-200 tons per year range)
 - Complaint filed on behalf of EPA for injunctive relief and civil penalties for violations of PSD provisions, Michigan's SIP, NSPS, and Title V permit requirements
 - In consent decree, Company agreed to pay \$500,000 penalty, perform supplemental environmental project (SEP) valued at \$1 million and undertake injunctive relief valued at \$1 million. Additional penalties for failure to comply with stipulations in decree results in further fines.

- US v St. Marys Cement Inc, Civil Action 3:08-cv-50199 (Northern District of Illinois), September 8, 2008
 - Complaint filed on behalf of EPA seeking civil penalties and injunctive relief alleging violations of the PSD provisions of CAA and Illinois SIP
 - Enter Consent Decree to avoid further litigation
 - Civil Penalty of \$800,000, injunctive relief in form of pollution controls valued at \$1.9 million. Subsequent fines for failure to adhere to terms of decree possible
 - Stipulated fine- \$2500 per ton for first 100 tons of NOx over 1900 tons per year and then \$ 5000 per ton.

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- US v Alcoa, Inc., Case No. A-03-CA-222-SS (Western District of Texas), March 14, 2007
 - Suit brought by Citizen Plaintiffs (EDF included) and United States alleges Alcoa failed to obtain appropriate pre-construction permits for modifications to three boilers that emit excessive amounts of NO_x, SO₂ and PM
 - Consent decree offers Alcoa three options, Alcoa choose to replace facility with new electricity-generating units that make use of proper pollution controls required by SIP
 - Alcoa Fails to meet deadlines in consent decree and court orders penalties
 - \$859,000 failure to commence operation of new and improved source
 - \$50,000 into Court registry for failure to meet stipulations of Consent Decree
 - Attorney's fees and costs \$81,995.78
 - \$100,000 for environmental mitigation projects
 - \$1,851,718 in stipulated penalties and interest for violations of SO₂ emissions limits and opacity requirements in Consent Decree
 - Alcoa has to complete new unit by specified date.

Enforcement Actions

Significant Economic Benefit

- US v. Salt River Agricultural Improvement and Power District (SRP), Civil Action 2:08-cv-1479-JAT (Arizona District Court), August 15, 2008
 - On behalf of EPA, US filed a complaint seeking injunctive relief and civil penalties alleging that SRP undertook construction projects at a major emitting facility in violation of PSD provisions and in violation of Arizona SIP
 - Settlement: NO_x and PM emission controls must be installed at cost of \$400 million, SRP prohibited from netting credits or offsets
 - \$4 million environmental projects; civil penalty of \$950,000
 - Likely economic benefit from non-compliance exceeded \$100 million
- EPA justifies deviation from penalty policy based on “litigation risk”, or the likelihood that if a certain case is taken to judgment it will receive a poorer result

Citizen Suits and Fees

- Three broad categories of legal actions citizen's can take
 - Lawsuit against a company for violating emission standards or other requirements
 - Lawsuit against EPA when it has failed to carry out its CAA responsibilities
 - Lawsuit against EPA when it issues rules or standards believed to be contrary to law
- Created as a complement to government enforcement of the CAA
- Key element is right to obtain compensation for the fees and costs necessary to carry out enforcement action if citizen prevails

Citizens Suit

- Grand Canyon Trust v Southern California Edison, CV-S-98-00305-LDG (Arizona District), February 19, 1998
 - Excessive smoke emissions from Mohave coal-fired power plant on the Colorado River in Nevada
 - Plaintiffs seek declaratory and injunctive relief, the imposition of civil penalties and costs of litigation
 - Citizen plaintiffs settled for an agreement that required the payment of no penalties, but improved controls for SO₂ and NO_x. Additional controls would have cost hundreds of millions. Ultimately the company elected to shut down the facility.

Motor Vehicle Emissions Standards

- CAA Section 202 – EPA sets emission standards for new motor vehicles
- EPA certifies compliance of new models with standards.
- Since 1970's, motor vehicle emission rates have fallen 90-95%
- Owners of vehicles must have their vehicle inspected annually
 - Registered service shops have installed appropriate testing gear
 - A number of states have centralized rather than decentralized testing
 - If the car does not pass inspection, it gets a “no-pass” sticker, the driver is allowed time to repair the vehicle

EPA Regulation of Other Mobile Sources

- Heavy commercial trucks
 - Weakly regulated until 2007
 - Strict limits on sulfur diesel fuel and significant emission standards apply only to new trucks (not pre-2007 trucks)
 - EPA certifies specific engine models for compliance before truck models may be sold
- EPA recently adopted first regulations for marine engines

California's Motor Vehicle Emissions Standards

- California is the only state that can initiate standards for motor vehicles that are stricter than EPA standards
- California's standards need EPA approval through a waiver process
- Other states may adopt California's standards
- California's regulations have been consistently more stringent than federal standards and have forced most of the emission control technological treatment advances since the 1960s

California Program That Sets CO₂ Emission Standards for Motor Vehicles

- First motor vehicle CO₂/GHG emission standards in US
- Auto makers have challenged in federal court in CA, Vermont, Rhode Island and New Mexico
- Environmental groups have intervened
- CA standards upheld in Vermont and CA federal court in 2007
 - appeals underway
- March 6, 2008 EPA decision to disapprove this CA program
 - CA, other states and environmental NGOs are jointly appealing to the DC Circuit Court of Appeals

Where is Enforcement Going

- Will EPA be allowed to impose tougher NO₂ and SO₂ emission standards (CAIR)
- Will EPA adopt CO₂ emission standards for motor vehicles and stationary sources (7/30/08 Federal Register Notice)
- Who will win the Presidential election
- Who will the next EPA Administrator be?
- Will new EPA Administrator approve the CA motor vehicle GHG program?

CAA Lessons

- Specify clear and timely environmental responsibilities for enterprises
- Do not grandfather existing sources: make them comply with emission standards applicable to new sources over a specified period
- Create strong enforcement tools that constitute a credible and significant threat to a firm's financial health if it violates requirements
- Forge partnerships with states and ideally individual corporations to develop new cost-effective pollution reduction strategies
- Improve remote (automatic) and continuous emissions monitoring
- Use emission cap and trade programs for pollutants such as SO₂, NO₂ and CO₂ that have automatic enforcement and penalties built-in
- Apply increasingly tougher emission standards as science warrants