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# The Politics of Pollution, Another Fallout of Acid Rain

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ABSTRACT – The threat of acid rain is a side effect of the switch to coal as a major fuel for producing energy in the United States. Despite the existence of technology to reduce the pollutants that cause acid rain, the emissions of sulfur and nitric oxides are likely to increase because among several factors of political resistance to regulatory controls. The politics of pollution pit energy production and economic growth against environmental quality. Developing a regulatory policy is further complicated by the difficulty of isolating specific environmental effects attributable to acid rain apart from natural causes within the ecosystem. The question facing policy makers is whether the politics of pollution and the inherent difficulties of environmental research can be overcome before protecting the environ-from the effects of acid rain is no longer an option.

The United States Environmental Protection Agency (EPA) has warned that America may be facing a most serious environmental challenge. Since the increase in the acidity of precipitation in North America was first identified in the 1960's by Gene E. Likens of Cornell University, researchers in Canada and the United States have become increasingly concerned over the problem of acid rain.

Acid rain originates from the combustion of organic fuels and the attendant discharge of sulfur and nitrogen oxides into the atmosphere. The principal sources of these oxides are emissions from power generation, smelting processes, and transportation equipment. Released generally from tall smokestacks, these pollutants travel several hundred kilometers per day across state and national borders through a process called long-range transport of air pollutants. During transport, the sulfur and nitric oxides can be converted through oxidation into sulfuric and nitric acids. While the oxidation mechanism is not totally understood, EPA data notes that the reaction can be influenced by factors such as the intensity of sunlight, the presence of heavy metals, and the concentration of ammonia in the air (EPA, 1979). Some oxides react with airborne moisture to produce acidic contaminants in rain and snow through a process known as wet deposition. Dry deposition occurs when gases are absorbed directly by plants or when particles containing sulfates or nitrates fall to the ground. Both wet and dry deposition are considered part of the phenomena termed acid rain (Lyons, 1979).

Acidity or alkalinity of precipitation is measured on a logarithmic pH scale ranging from 0 to 14. The lower values indicate acidic solutions and higher values indicate basic solutions. A solution with pH of 7 is neutral. A change of one unit on the pH scale, from 5.6 to 4.6, for example, indicates a ten-fold change in acidity. Pure rain is slightly acidic with a pH reading of 5.6 as the result of the reaction of atmospheric carbon dioxide with water to form carbonic acid. The average acidic rainfall in the eastern United States is 25 to 50 times more acidic than unpolluted rainfall (Dumanoski, 1980). It has been shown that when the buffering capacity of a lake is exhausted, it can become increasingly acidic at a rapid rate. The reproductive capacity of fish is placed under stress when a lake acidifies to a pH of 5 and the fish cannot survive at values lower than pH 4.5 (Schofield, 1980).

Already more than 200 lakes in the Adirondack mountains are reported to have "died" because they are too acidic to support any of the usual fish and flora. There are indications that lakes in areas of similar geological composition such as Ontario and the Boundary Waters canoe Area of northern Minnesota are likely to be threatened within the next two decades (Gorham, 1980). In addition to confirmed data on the effects of increased acidity on aquatic life, there is preliminary evidence linking acid precipitation to reduced agricultural production, hazy air, mineral-depleted soils, respiratory ailments, and the accelerated decomposition of stone (Speth, 1980).

Recognizing the destructive capability of acid rain, the 1979-80 Minnesota Legislature stated that "the failure to act promptly to mitigate this danger through judicious regulatory policies will result in irreparable degradation of the environment (House File 490)." With respect to development of regulatory policies to control acid rain, this paper seeks to assess existing options under current law, including an analysis of the Clean Air Act and political resistance to regulation.

#### Nature and Effect of the Federal Law

The Clean Air Act is the basic federal law for controlling the emission of adverse pollutants into the air.

The National Ambient Air Quality Standards (NAAQS) (Section 108 of the Clean Air Act) set the maximum allowable ambient concentrations for pollutants throughout specified time periods. NAAQS are subdivided into primary standards which address impacts on human health, and secondary standards which take into account other values besides health. Examples of these other values, referred to as public welfare values, include environmental aesthetics and the effects of pollutants on plants and wildlife. The target time for state-by-state compliance with primary

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standards was set as 1982. No fixed date has been set for compliance with the secondary standards (Speth, 1980).

While the air quality standards were set on a national basis, implementation has been left up to the states. The Clean Air Act requires each state to prepare a State Implementation Plan or SIP designed to meet the standards for that area as promulgated by the EPA (Science, 1979). Under the SIP concept, a power plant has a number of options for removing air pollutants. These include burning low-sulfur coal, installing scrubbers in smokestacks, using coal with much of the sulfur removed (Speth, 1980), or switching to solvent-refined coal (Science, 1979). These approaches all address the need for economic growth as well as environmental protection but they are more expensive than tall smokestacks (Speth, 1980). The SIP standard encourages the construction of tall stacks which allow industries to spread pollutants afar and still meet ambient air quality standards in the local area (Dumanoski, 1980). The accumulation of pollutants in the atmosphere, wind-borne and deposited as acid rain, is not adequately addressed under the SIP concept (Speth, 1980).

Robert Rauch, an attorney for the Alliance to Save Energy, is critical of the EPA for its almost automatic approval of SIP relaxations. He points to two sections of the Clean Air Act designed to prevent the significant deterioration of air quality in downwind states that have been ignored by the EPA. Acknowledging the criticism, an EPA official offered that the agency hasn't the manpower necessary to define and enforce the requirements (Dumanoski, 1980). Other critics of the EPA point out the inconsistency of setting standards only to grant variances.

According to its own data, the EPA estimates acid rain will increase by 12 percent with no further SIP relaxations. Currently, however, the EPA has 50 applications from power and other industries requesting SIP relaxations (BWCA, 1980). SIP relaxations are granted on a company-by-company basis. It is interesting to note that 21 of the pending applications came from Ohio, which already produces as much sulfur dioxide pollution as the entire Northeast and has the highest emission allowances of any state. A number of downwind states including Maine, Vermont, New York and Pennsylvania have joined to protest any further relaxation of pollution limits for Ohio power plants (Dumanoski, 1980).

New Source Performance Standards (NSPS) (Section 111 of the Clean Air Act) apply to new power plants only. NSPS require utilities to remove from 70 to 90 percent of the sulfur from flue gases depending upon whether low-or high-sulfur coal is burned (Likens et al., 1979). While the NSPS will help control emissions from new plants, the greatest amount of sulfur emissions from existing plants exempt from the stricter controls. To illustrate the difference between the emissions limits on old and new plants, Rauch notes that under the current law, the Gavin power plant in Ohio can emit seven times more sulfur dioxide than a new plant subject to NSPS (Dumanoski, 1980). Thus, according to EPA estimates, sulfur dioxide emissions by utilities will increase "from 18.6 million metric tons in 1975 to between 20.5 (with conservation and the best available controls) and to 23.8 million metric tons (under existing regulations) in 1995 (Likens, 1979)."

According to Rauch, one effect of the NSPS may be to give the utilities an incentive to extend the life cycle of their older plants rather than investing in less polluting new facilities (Henly, 1980).

Nitrogen-oxide emissions can be expected to increase since the technology for control is not as advanced as that for sulfur removal (Speth, 1980). It is estimated that approximately 60 percent of acid rain comes from sulfur oxides and about 40 percent from nitric oxides (West, 1980a).

#### Pollution Across Borders Considered

The Abatement Conference Section (Section 115 of the Clean Air Act) addresses problems of interstate or international air pollution. This section authorizes those harmed by pollution from interstate or international sources to seek court relief (Berry et al., 1977). Greg Wetstone, an attorney for the Environmental Law Institute, notes however, that while the principle is established in international law, the effects of acid rain are so difficult to isolate that litigation is not an effective means of stopping international pollution (Lyons, 1979).

Douglas Costle, administrator of the EPA, terms the current law inadequate to meet the problems of acid rain. He believes a new law is needed and he pledged to push for such legislation when the Clean Air Act became subject to reauthorization in 1981 (Dumanoski, 1980). Some features of this proposed new legislation were intended to set controls on a regional basis instead of state-by-state (Statts, 1979) and to regulate the emissions of certain coal-burning plants (Speth, 1980).

#### Agency Meets Resistance to Regulation

Much criticism has been levelled at the EPA for its actions and inactions on the problem of acid rain. Rauch says, "There is an enormous chasm between the EPA's rhetoric on acid rain and reality." Acknowledging the criticism, sources within EPA say the agency is caught between conflicting pressures without a clear policy orientation (West, 1980b). For example, if EPA imposes sanctions against the states for air quality violations, would Congress move to amend their impact (Heath, 1979)? Also, in light of EPA's loss on coal conversion, what effect would an EPA denial of SIP relaxations have vis-a-vis a presidential offer to relax air quality standards as an inducement to burn coal instead of imported oil. (Grover et al., 1980)?

An obvious question arises: when the emissions from older power plants, not subject to NSPS, present the greatest pollution threat, why aren't scrubbers required for these plants as well? In part, the answer lies in the heavy pressure on congress to keep regulatory costs from translating into higher utility rates. But beyond this, Costle chairs the Regulatory Council charged with keeping the cost of regulations from becoming burdensome to the public by taxes. In his position, Costle must weigh pressures from environmentalists against those from the Council on Wage and Price Stabilization and the Council of Economic Advisors (Science, 1979).

In times of economic recession, tensions increase between labor and environmentalists over jobs. In Ohio, jobs of coal miners are threatened as the utilities claim that stricter emissions standards would force them to turn to low-sulfur western coal as opposed to investing in the pollution control equipment necessary to burn high-sulfur Ohio coal. Regardless of the truth or fiction or the industry's claims, few politicials are willing to risk jobs in the name of environmental protection (Lyons, 1979).

Groups such as the NAACP and AFL-CIO have leagued with industry in arguing that the rate at which environmental controls proceed is a crucial consideration. They claim that regulatory controls bring gains up to a point but cannot be considered cost-effective if they divert funds needed elsewhere (Heckert, 1979).

Some factions at EPA stress the need for confirmed data before regulatory standards can be established. From past experience, they note that standards based on incomplete data have been successfully challenged by industry (Berry et al., 1977). It is hard to sell a program involving billions of dollars based on inconclusive evidence (West, 1980b).

#### Evaluating Costly Trade-offs

In a climate of economic recession, costly environmental regulations find little support from the public, industry or politicians. Pollution control and environmental costs of uncontrolled emissions are both large and not easy to balance. Douglas Costle (1979) observes: "We must do our best to prevent inadequate concepts of 'cost' and 'benefit' based on a deficient economics and biased in favor of resource depletion from reversing the repair work we have begun on our global home. We can pay for that repair work now, at substantial economic cost and international inconvenience. Or we can pay for it later--at much greater cost."

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