The politics of air pollution

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The notion that the Clean Air Act exists solely to protect the public from the adverse effects of air pollution is an oversimplification. In fact, much of the act, especially as amended in 1977, was explicitly designed to achieve an assortment of distributional and other non-environmental goals for a powerful coalition of special interests. The cost, however, of pursuing such goals under the guise of air pollution legislation has been restricted energy development, increased oil-import dependence, inflation, and, ironically, in some cases not less but more pollution.

The 1970 Clean Air Act was a laudable response to a widely perceived "environmental crisis" in the late 1960's. A piece of landmark legislation ushered in with broad public support, the act was reasonably free of purely political motives, and its mandate "to protect and enhance" air quality "so as to promote the public health and welfare" seemed to represent a clear and popular solution to a serious and deep-rooted problem.

The approach of the 1970 act was simple. The federal government would determine what level of pollution was "safe," enshrine those levels as national ambient-air-quality standards (NAAQS), and enlist the states to ensure that those standards were achieved. In an era of abundance—prior to the energy crisis—and in light of the
undeniable desirability of the goals pursued, economics hardly mattered (and it was barely mentioned). We—the nation which had put a man on the moon—would clean up our air, water, and land in short order, and never mind the cost.

Though the goals were laudable and the approach simple, the process of implementing the 1970 act had a number of unfortunate, largely distributional, side effects that created a pool of winners and losers in what quickly turned out to be a rather high-stakes game.

The primary losers were the East and Midwest coal producers and, more generally, business and utility interests in the heavily populated—and politically powerful—Eastern half of the country. The principal winners were the Western coal producers and Sunbelt—primarily Western—states looking to attract industry and promote growth.

Between losers and winners stood the “environmentalists,” a potential swing force ready to join hands with whichever side would support their goals—goals which included not only less air pollution but also, as it turned out, a variety of other objectives such as preservation of wilderness and farmland acreage, prevention of strip mining, and, for the most zealous, the complete halting of industrialization and economic growth.

The two major provisions of the 1970 act which created this pool of special interests were those establishing new-source-performance standards (NSPS) and national ambient-air-quality standards, both of which became, in their implementation, more binding constraints on the East than on the West.

The NAAQS provision established “safe” levels of pollution for six pollutants, including sulphur dioxide (SO2), the principal pollutant emitted by coal-fired power plants; it also divided the country into 236 air-quality regions which were designated “clean,” i.e., attainment areas, or “dirty,” i.e., non-attainment areas, depending on whether the air quality was above or below the NAAQS. The states were then directed to implement plans which would clean up the dirty areas “in a reasonable time.”

Since the majority of the dirty, non-attainment areas were in the heavily industrialized East, and most of the clean, attainment areas were in the more rural and less densely populated West, the act thus fostered a two-pronged competitive advantage of the West over the East. First, because states had to impose stricter controls in dirty areas, pollution-control costs for industries and utilities located in those areas tended to be higher than those of competitors in clean areas. Second, those clean areas—principally in the West—became rel-
atively more attractive as growth areas, not only because pollution control costs were lower, but also because the initial interpretation of the non-attainment portion of the NAAQS precluded any growth at all in many areas of the East. Thus East was pitted against West—with the stakes, of course, profits for industry, tax revenues for the states, and jobs for the regions.

The second and more controversial NSPS provision placed strict limits on the level of pollutants a new (or modified) plant could emit. In particular, NSPS restricted sulphur-dioxide emissions (the principal pollutant of coal) to 1.2 lbs per million BTU’s.

Since electric power plants burn over 75 percent of the coal consumed in the nation and generate approximately 73 percent of the sulphur emissions, electric utilities bore the brunt of the NSPS provision. That provision, however, did not specify how the standard should be met. In fact there were two options: Sources of pollution could either burn high-sulphur coal and install expensive “scrubbers” to remove that sulphur from the flue gas or, alternatively, use low-sulphur or “compliance” coal, which could be burned without scrubbers and still meet the standard.

Since most of the coal in the “dirty” East is relatively high in sulphur (ranging from a sulphur content of 1 to 2 percent in states like West Virginia and Pennsylvania to as much as 3 percent or more in Ohio and Illinois), and since the vast bulk of low-sulphur coal (below 0.8 percent) is located in the West, the choice for utilities and industry boiled down to equipping new facilities with scrubbers to burn local, high-sulphur coal, or, importing Western “compliance coal” and running without scrubbers. In this complex decision the increased cost of transporting Western coal the greater distance had to be weighed against the added expense of scrubber technology, which boosted capital and operating costs by as much as 30 percent.

In the Midwest, the region with the highest-sulphur coal and the heaviest levels of sulphur emissions, the choice more often than not was low-sulphur coal—though it meant hauling that coal over a thousand miles and not utilizing local deposits. And even as far East as West Virginia, utilities—wary of the unreliability of the new scrubber technology—started talking about “importing Wyoming coal.”

The NSPS provision, therefore, unavoidably affected the division of market shares among coal producers in different regions, as well as the numbers of mining jobs in the deep mines of the heavily unionized East, and coal-severance-tax revenues for the states. And
the stakes were high: hundreds of millions of dollars and thousands of jobs.

Together, the NSPS and NAAQS provisions of the 1970 act thus put a "double whammy" on the East; and it was only logical that the affected parties would turn to the political process to regain what had been taken from them by the designation of both their air and their local coal supplies as unacceptably dirty.

The 1977 Clean Air Act Amendments

The seven-year battle culminating in passage of the 1977 Clean Air Act Amendments represented a fundamental change in the practice—if not in the rhetoric—of implementing the act, and signaled an abrupt shift of emphasis from meeting and maintaining the NAAQS to a much more comprehensive (and costly) effort to reduce overall pollution emissions. The amendments also represented a clear victory for the Eastern-industrial/coal-producer/environmentalist coalition—the so-called "Unholy Alliance" which found in the suppression of Western growth and Western coal development a common cause.

The major provisions of the 1977 amendments developed to neutralize the West's advantages were: more stringent new-source-performance standards (NSPS); the institutionalizing and toughening of the Environmental Protection Agency's "prevention of significant deterioration" policy; new "visibility" provisions; and the baldest distributional measure, a section to protect "local coal."

The tougher NSPS specified that new (or substantially modified) plants burning coal had to achieve a "percentage reduction in emissions" and reflect "the degree of emission reduction achievable through the application of continuous emission reduction"—code words which, in effect, eliminated the option of burning low-sulphur compliance coal by forcing the use of scrubbers on all coal, regardless of its sulphur content. This, of course, largely eliminated the cost advantage of using Western coal.

To supplement the strictures of NSPS as well as to put pressure on existing plants using Western coal, in one of the most transparent displays of legislating for special interests Senator Howard Metzenbaum (supported by the United Mine Workers Union, local coal producers, and the Chamber of Commerce) succeeded in tacking his "local coal amendment" onto the act. This measure banned the importation of Western coal in cases where it threatened jobs in the high-sulphur coal mines of Ohio and Illinois. In essence, this amend-
ment was designed to force utilities to spend millions of dollars to protect fewer than 10,000 jobs—and, as we shall see, it also meant not less but more pollution.

While NSPS and the Metzenbaum Amendment effectively eliminated the premium users would pay for low-sulphur Western coal, the prevention of significant deterioration (PSD) and visibility provisions in the 1977 amendments took dead aim at the advantages of siting new factories and power plants in the West.

The PSD provision was the end result of a complex legal and administrative battle over an ambiguous phrase in the 1967 version of the Clean Air Act which indicated that one of the legislation's goals was to "protect and enhance air quality." As a result of litigation brought by environmentalists, this phrase was declared by the courts and the Environmental Protection Agency (EPA) to mean a policy of "non-degradation" in which clean or "attainment" areas had to be protected from being rapidly polluted or "dirtied up" to the minimum acceptable limits of the NAAQS.

In the EPA's interpretation of the Supreme Court's 1976 "decision"—the vote was 4-4 with no written opinion—clean areas were divided into pristine, virtually no-growth Class I areas; moderate-growth Class II areas; and heavy-growth Class III areas. The level of growth in these areas was then controlled through an increment system which specified what portion of the available clean air could be "used up," with the smallest increments specified for the pristine Class I areas and the largest for the heavy-growth Class III areas.

PSD was not, then, a new concept; its pre-1977 implementation by the EPA had tended to slow growth somewhat. However, in institutionalizing the provision in the 1977 amendments, Congress went several steps further than the EPA, significantly tightening the requirements of, and adding several new features to, the original program—all of which moved in the direction of an even greater restraint on growth.

First, the new area-classification scheme, to the delight of the Western "preservationists," placed large national parks and wilderness areas—75 percent of which were in the West—in the no-growth Class I category, put everywhere else in the Class II moderate-growth division and established several conditions which made it virtually impossible to reclassify an area into Class III. In addition, it reduced the size of the "increments" allowed to be consumed by new plants, thus further ratcheting down the potential for growth. Second, the provision created a lengthy "new source review" permission procedure which, in addition to requiring the usual en-
environmental impact statements and public hearings, also imposed
detailed (and costly) pre- and post-pollution monitoring procedures
and a stringent "technology test" that forced the installation of "best
available control technology" (BACT) on all new heavy-pollution
sources locating in clean areas.

This last BACT requirement, in addition to making it as expensive
to construct facilities in clean areas as in dirty ones, also was the
final nail in the Western-coal coffin, since from yet another angle it
reinforced the mandatory use of scrubbers (i.e., the best available
technology) by all new coal-burning facilities, regardless of the
sulphur content of the coal burned. Together, then, the "prevention
of significant deterioration" requirements created an effective regu-
latory barrier to growth in the West both through the creation of
additional delays and uncertainties in the permission process and
by increasing the costs of locating in clean areas.

As an additional barrier to growth, environmental interests also
managed to insert several sections protecting "visibility," particu-
larly in the pristine West—provisions which have the very real po-
tential of further limiting, and perhaps even precluding, any growth
within hundreds of miles of Class I areas. For example, a subsection
of the PSD provision now requires a "visibility impact review" in
the permit application when a new source might affect visibility in
a Class I area; and should an adverse impact on visibility be
demonstrated, that source may not be granted a permit to construct,
even if it doesn't violate the allowable PSD increments. Thus, a
tough PSD provision has been made even tougher.

In addition, visibility regulations were extended to existing pol-
luters, spawning yet another four-letter acronym in the Clean Air
Act vocabulary. Specifically, any polluting source built within the
last ten years that threatens to impair visibility in certain Class I
areas could be forced to install "best available retrofit technology"
(BART) to control emissions—a requirement softened only by the
fortunate allowance that economic considerations may be taken
into account in applying BART.

**Costs of the 1977 amendments**

While the 1977 amendments appear to have successfully restored
the balance between East and West and furthered several non-
pecuniary or value-oriented goals of environmentalists (e.g., preser-
vation of the Western wilderness and farm areas, slower growth,
less strip mining), Congressional pursuit of these objectives has im-
posed substantial costs upon our economy as a whole and on the coal industry in particular. Further, in many cases the incremental costs of the amendments have been incurred with little or no associated environmental benefits and at the expense of other national policy goals, namely, energy independence and controlling inflation.

Imposing higher (and unnecessary) costs on the production and use of coal delays progress toward the goal of energy independence in a number of ways:

First, the voluntary conversion to coal by oil or gas users is often delayed because higher coal costs swing what usually is only an economically marginal decision back in favor of petroleum. Similarly, the trend toward early retirement of usable oil- and gas-fired capacity—which has been induced by escalating petroleum prices—is retarded when coal costs also rise.

Second, as coal costs rise, the “new capacity decision” whether to use oil, gas, coal, or nuclear fuel turns against coal. The result: smaller industrial-energy users seek (and easily find) exemptions to build new oil- or gas-fired boilers in the loophole-ridden Fuel Use Act (which prohibits such construction). Moreover, large users, such as power plants, may defer new construction by extending the life of old, dirtier coal plants, a decision which leads to more air pollution. Alternatively, they might rely more heavily on peak-load gas or oil capacity, which draws down dwindling natural gas supplies or increases oil consumption. Lastly, and often overlooked by environmentalists, they may choose the nuclear option.

Finally, the operation of pollution control equipment—scrubbers, precipitators, bag houses—increases a plant’s energy requirements by as much as 5 to 10 percent. For the electric-utility industry alone, such an increase means a future additional energy requirement of over one-half million barrels of oil-equivalent per day by 1990.

Besides raising oil imports, there are other impacts which hit much closer to home. The most obvious effect is on inflation. With electric utilities relying on coal for over 75 percent of their fuel requirements, rising coal costs swiftly translate into higher electricity rates. Moreover, there is an indirect add-on to manufactured goods—not only because producers are using more expensive electricity but also because many primary industries (e.g., steel, smelting, cement) use coal for process heat.

More subtly—and most ironically—the 1977 amendments have in some areas meant more pollution, not less. For example, the scrubber and local-coal provisions result in more high-sulphur coal being
burned, and this has led to the so-called “Midwestern Anomaly”—a higher overall level of sulphur emissions in that region than would otherwise have been experienced under the 1970 act. (Since the majority of the sulfate air pollution in the Eastern half of the United States has its origins in Midwestern sulfur emissions, this anomaly has even broader implications for public health than one might first suspect.)

Furthermore, requiring scrubbers on all sources irrespective of the coal’s sulphur content greatly increases the quantities of scrubber “sludge” which must be disposed of. Since the principal method of disposing of this sludge is land storage—and because the sludge is neither biodegradable nor firm enough to support structures—the end result is the permanent removal of thousands of acres of land, often productive farmland, from any future use. (To comprehend the magnitude of this problem, note that one 1800-megawatt power plant equipped with scrubbers will, over its 30-year productive life, require roughly 1400 acres of land for sludge disposal.)

Lastly, the current “wet-scrubbing” technique in most common use requires large quantities of water to cleanse or “scrub” the flue gases. This creates both thermal and chemical water pollution, while exacerbating the water-scarcity problem industrial developers must cope with in the arid West.

As a final, perhaps more hidden impact, there are what economists call the “opportunity costs” of using too little of a resource—in this case coal—because it is priced too high. Such opportunity costs, by and large hidden, translate into an efficiency loss to the American economy which, though difficult to quantify, runs into the many millions of dollars.

Reconsidering the 1977 amendments

The pursuit of non-environmental goals under the cloak of the Clean Air Act Amendments—and at the expense of energy independence, price stability, and economic efficiency—seems to be a questionable Congressional strategy, particularly within the context of current economic conditions. The clear danger is that in excessively impeding energy development and exacerbating inflation, these amendments will provoke a “backlash.” Energy-hungry Americans, fed up with gas lines and soaring electricity bills, in time may force what environmentalists most fear, a “gutting” of the Clean Air Act.

The pendulum need not take this drastic swing—if only attempts are made to acknowledge that economics does indeed mat-
ter. It is in this spirit—and perhaps in recognition of the "backlash" danger—that the EPA has recently shown an increased flexibility in its interpretation and implementation of the Clean Air Act.

For example, the Agency's new "offset policy," which allows for the sale and transfer of air pollution rights in non-attainment areas, is an innovative effort to facilitate economic growth while improving air quality; and it represents the kind of market solution that economists typically favor on efficiency grounds. Similarly, in promulgating new-source-performance standards for electric-utility boilers, the EPA—to the dismay of environmentalists—stopped short of imposing the maximum emission limitations the 1977 amendments would have allowed, and instead chose a slightly more polluting, but substantially less expensive standard, basing that decision on cost-effectiveness.

But despite its new flexibility, EPA still must operate within the bounds set by air pollution laws. With the Clean Air Act up for revision next year, there is an excellent opportunity for the Congress to broaden those boundaries and to incorporate a greater measure of economic sense into an important environmental law.

The hope is that our legislators will realize that the continued pursuit of distributional goals at the expense of energy and economic policy is resulting in the "shrinking pie syndrome". Through onerous regulations, the total American economic pie is reduced to such an extent that all of us—Easterners, Westerners, industrialists, environmentalists—are losers, regardless of who initially gained from Congressional favor.

If such an awareness is forthcoming, then perhaps the 1981 revisions to the Clean Air Act will reflect the kind of constructive political compromise that recognizes the full range of energy and economic tradeoffs implicit in environmental policy. Such a compromise could ease our divisive and exceedingly costly inter-regional conflict of interests, in a way more favorable to the national interest.