An EPA War on Coal?

New federal efforts to cut emissions are the result of longstanding legal and judicial mandates, not a sudden Obama administration push.

BY RICHARD L. GORDON

The Environmental Protection Agency, under the direction of administrator Lisa Jackson, has launched a number of regulatory initiatives that affect the energy industry. Given President Obama's belief in the need to reduce greenhouse-gas emissions and in the ability of renewable energies to help secure those emission reductions, critics argue that the administration is using the EPA to conduct a "war" on coal (along with, to a lesser degree, oil and natural gas). The objective is to achieve through administrative action what the president could not achieve via cap-and-trade legislation by Congress.

The truth, however, is that the agency is implementing long-delayed legislative mandates dictated by various environmental statutes that well predate the current administration. Almost all of the EPA's current actions are efforts to respond to a backlog of unmet legislative and judicial requirements. The conclusion to draw is that complaints about the regulatory initiatives at issue—and there are many—should be made primarily to Congress, which has long ignored the problems it has created.

Design Flaws in the Clean Air and Clean Water Acts

The EPA is a favorite target of conservatives, too many of whom fail to recognize that many environmental policy problems stem from provisions of the Clean Air Act (CAA) and Clean Water Act (CWA) written and amended by Congress. The CAA, for the most part, requires the control of pollutants with a

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significant health and welfare effect, without regard to cost. Similarly, the CWA sets several open-ended requirements to eliminate the discharge of pollutants that harm aquatic life.

In reality, of course, resources are limited and the mandates, taken literally, prohibit nearly every sort of human activity. Thus, even though costs are relevant, they cannot play an official role in regulatory decisions. Instead, the EPA has to decide how stringently to regulate various pollutants based on "science." In practice, that means maintaining an uneasy balance between reality and the political pressures to tighten regulation. Reality involves what discharges can be measured, what controls are physically possible, and at least a tacit nod to the costs of action. Managing those realities causes long delays in implementation; mandates set as long ago as 1977 remain unmet today.

A second important aspect of the CAA is the two-tier nature of regulation. The first tier is the imposition of standards for the concentration in the atmosphere of specific "criteria" pollutants; the second and more widely examined tier is the imposition of limits on the emissions from specific sources. Existing sources of pollution at the time of the law's enactment were largely exempted from such direct regulatory controls, while new sources were subject to stringent, convoluted controls. This created incentive to maintain existing sources well beyond their designed life, and conduct endless litigation to maintain (by industry) or terminate (by environmental groups) the valuable right to operate existing plants that were not subject to emission controls.

Indeed, an extended, little noted consequence of more stringent rules is EPA action since 2000 to force utilities that were planning to modify plants to follow "new-source" rules. This action often resulted in settlements that included mandates to install pollution-control equipment. In some cases, the settlements required plants to use natural gas as fuel. In addition, the

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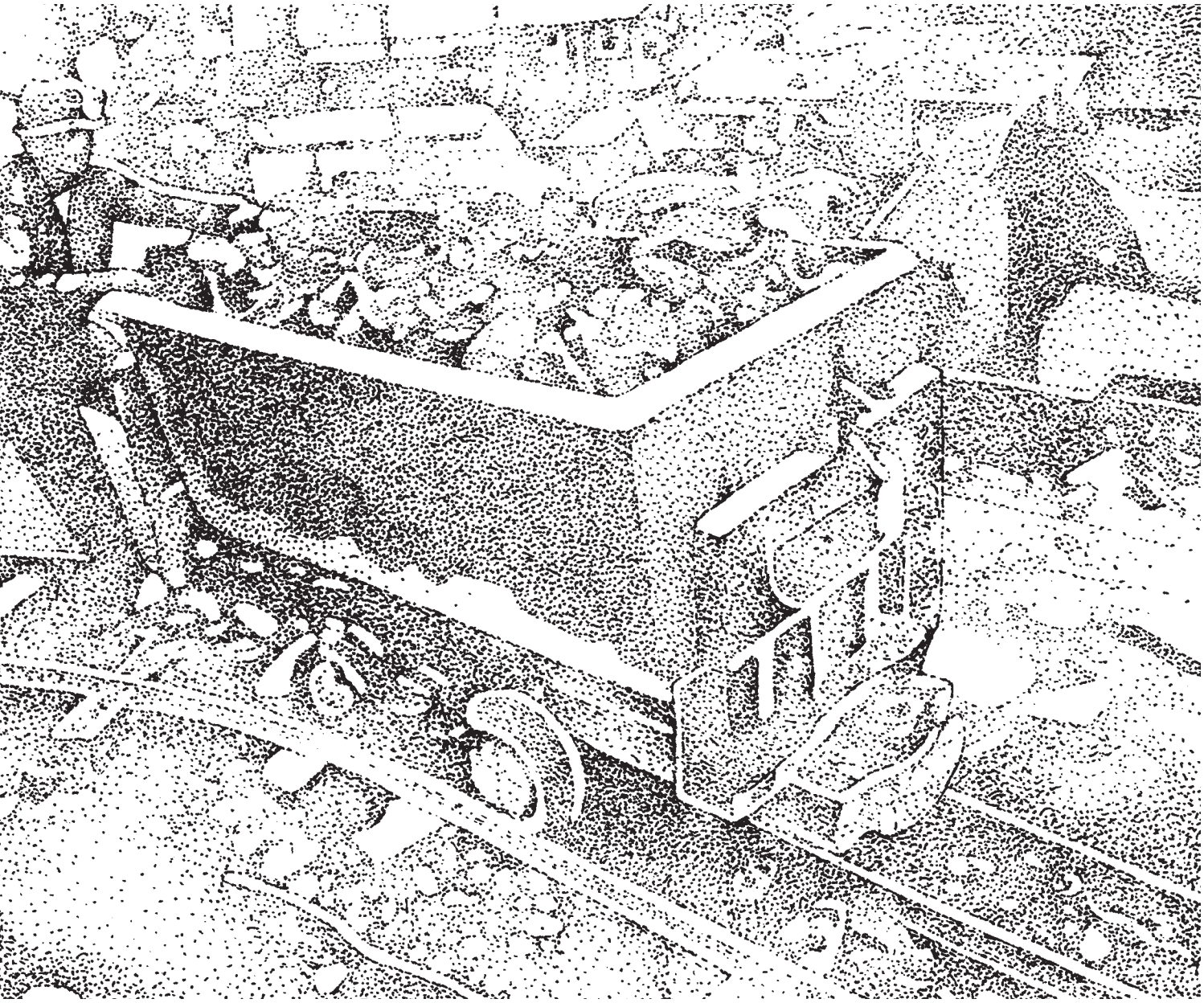

utilities were required to fund EPA-specified actions to promote unrelated remedial actions such as financing the refurbishing of national parks and switching utility trucks to natural gas.

The 1990 CAA Amendments modified the general new/old source distinction by specifying which existing power-generation units were subject to sulfur dioxide emission controls. The 1990 amendments also added or amended language directing the EPA to (1) regulate a laundry list of 189 miscellaneous toxic air emissions without evidence that they produced significant harm, (2) reduce the effects of the interstate transmission of pollution, and (3) regulate visibility around National Parks and recreation areas. (The last two were imposed in the 1977 amendments and modified in 1990.) The long-delayed efforts to enforce those cumbersome requirements are a major component of the Obama-administration actions. Another element is action to tighten the rules on atmospheric concentrations of various pollutants.

The third important aspect of the CAA is delegation of enormous discretion to the EPA to determine how stringently to regulate pollutants. As a result, most environmental policy is set at the administrative and judicial levels rather than in legislative arenas, because the legislation provides too little direction to the process. The result is a game in which polluters lobby for and use the courts to obtain less stringent EPA action and environmentalists lobby for and use the courts to force tighter controls. Given the underlying language of the act, the environmentalists tend to have greater success. The Obama-administration actions at issue, in fact, were responses to judicial decisions faulting inadequate regulatory proposals of the Bill Clinton and George W. Bush administrations. The EPA consequently signed consent decrees agreeing to vigorous pollution controls, possibly more than what was dictated by the courts.

How Does the EPA Respond to These Design Flaws?

The CAA and CWA direct the EPA to reduce pollution problems to meet sweeping, ambitious mandates established by Congress. However, the EPA is also obligated to follow a government-wide executive order that requires major regulatory initiatives to create benefits that exceed costs. How does the EPA respond to the conflict between the demand for proof of net benefit with laws requiring that the EPA ignore costs?

Simple admission of the incompatibility of these two directives is an option. However, with air-pollution control, the EPA routinely uses selective reading of the statistical scientific literature to assert that there are large health effects from exposure to various pollutants.

The critical basis for the recent EPA regulation of coal emissions, for example, comes from two epidemiological studies that associate human-mortality effects entirely to exposure to fine particles. Research about exposure to other pollutants does not demonstrate substantial benefits from reduced exposure, and research on other effects of particulates also fails to demonstrate significant payoffs. Thus, whatever the EPA does to tighten air pollution rules is justified by the allegedly massive mortality-reduction benefits from reduction of small-particle emissions purportedly produced as a byproduct (or in EPA jargon, "cobenefit") of the regulatory action.

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Six-cities and ACS studies | The first epidemiological study at issue is the "six-cities study" of 8,111 adults undertaken by researchers at the Harvard School of Public Health. The cities (and populations) were Harriman, Tenn. (6,350); Portage, Wisc. (10,662); Steubenville, Ohio (18,659); St. Louis, Mo. (318,069); Topeka, Kansas (127,473); and Watertown, Mass. (31,915). The respondents were surveyed first in the middle 1970s and resurveyed three times thereafter. This study was designed explicitly to determine the effects of exposure to pollution on health.

The second epidemiological study involved is an American Cancer Society (ACS) survey started in 1982 with 552,138 individuals in 154 municipalities. The participants were at least 30 years old, resided with someone who was 45 or older, and lived where air pollution monitors operated. The survey collected data on a wide variety of personal characteristics that might affect health.

These two studies massively cited by the EPA limited coverage to the portion of the sample residing where pollution was monitored. Periodic surveys of subsequent mortality among respondents led to reports on the statistical relationship between mortality and ambient pollution levels and other measured characteristics. The Obama EPA largely used a 2006 update of the six-cities study and a 2002 update of the ACS study. The first 2012 regulatory impact study on particulates, however, used a 2009 update of the ACS study; a December 2006 EPA update on particulates used a 2012 version of six-cities.

HEI review | The EPA has used these studies to rationalize rulemakings since at least 1997. Longstanding criticism of these studies, however, caused the agency to commission a third-party review of them from the Health Effects Institute (HEI), an organization established by the automobile industry and subsequently jointly funded by the EPA and the auto industry. The HEI review was published in 2000 and provided three assessments of the

studies at issue: that of a Canadian team of researchers that conducted the evaluation, that of another independent review group, and that of the lead investigators of the studies themselves.

The various assessments highlight—often off-handedly—a number of problems. First, even if one ignores the small size of most of the municipalities used in the six-cities studies, they are too few to encompass enough intercity variation in air quality to produce meaningful estimates of impacts. The HEI review strongly suggests this makes the report an unsatisfactory foundation for policy decisions. However, the substantially higher inferred mortality reductions bolster the EPA's benefits claims.

Second, the ACS survey involved respondents selected and interviewed by ACS volunteers. Neither the volunteers nor the respondents were randomly selected; the volunteers sought out those close to them. The survey was further compromised because it was designed to explore general health issues and was turned into a pollution impact study by marrying the survey data with EPA emissions data.

Third, outdoor ambient pollution concentrations are a poor surrogate for biologically relevant lifetime exposure. Since people spend 89 percent of their time indoors, exterior pollution levels tell us little about the level and composition of actual human exposure.

Fourth, the reliance on a limited number of fixed-location pollution monitors to measure actual population exposure ignores the spatial variation of pollution within a region.

Fifth, the HEI review repeatedly flags concerns about multicollinearity in the statistical analyses. The relevant variables are so highly correlated with each other that their independent effects are difficult, if not impossible, to isolate.

Finally, the HEI review was unable to determine whether the relationship between negative health effects and increased particulate exposure was linear or non-linear. The EPA, however, utilizes the no-threshold assumption implied by a linear relationship. That is, reductions in exposure are always assumed to have positive health effects, so further pollution reduction is always required by the statutory language.

Thus, the HEI review strongly suggests that the studies used by the EPA to generate assessments of the relationship between particulate emissions and human health are deplorably inadequate. (Industry opponents of proposed regulations and consultants hired by these industries only make these points more vigorously than the HEI report.) The EPA, however, is apparently so confident about the political support for tighter regulation that it does not bother to sponsor more reliable studies, instead financing updates of the existing efforts.

EPA response | Despite those inadequacies, the EPA uses the six-cities and ACS studies as the middle of a three-step process to justify proposed rules. The prior step is the employment of an EPA model to estimate the emission reduction from a proposed rule. The last phase involves estimating the value of a life saved to translate the death-reduction numbers into the monetary value of the claimed mortality reduction. The use of these techniques, which are surrounded by their own controversies, introduces further uncertainties about the EPA's benefit-cost analysis.

Similar analytic problems characterize the EPA's actions addressing other sources of pollution. The agency's regulatory analysis of efforts to reduce discharge of power plant waste heat into waterways, for example, shows costs far in excess of benefits. The agency's analysis of proposals to lower ozone emissions shows that the benefits are so low that costs greatly exceed benefits. The Obama administration responded to the latter by suspending action and using this isolated retreat as evidence of vigilance regarding regulatory overreach.

EPA Actions Under Obama

The numerous EPA air pollution regulatory initiatives during the Obama administration have several common characteristics. The most controversial proposed rulemakings reflect long-deferred implementation requirements. Most also involve a court decision upholding demands from environmental groups for stricter controls than those proposed by the Bush administration. Most also impose delayed enforcement in order to allow affected facilities an extended period to meet the standards.

The EPA's current major regulatory initiatives address three longstanding CAA mandates to reduce concentrations of criteria pollutants. The most important of these is the air-toxics rule. The rule is complete, with compliance required by June 14, 2015.

Air-toxics rule | Why has it taken 22 years for the EPA to issue the air-toxics emissions standards required by the 1990 amendments to the CAA? The law requires the agency to develop industry-by-industry rules and, for each industry, standards for multiple pollutants. That is a formidable task. Control of emissions from specific sources is inherently more complex than regulating pollution content in the atmosphere. The latter delegates to the states the decisions about specific implementation steps, while the former dictates implementation steps from Washington.

Regulation of the electricity sector proved the most difficult task, and this resulted in an extended delay to respond to legislation requiring further study. Thus, the most the Clinton administration could do was issue a notice of intent to regulate. The regulations subsequently proposed by the Bush administration were overturned by a federal circuit court for not being stringent enough and were terminated in a consent decree. The Obama administration managed to issue final rules in 2011.

Cross-state air pollution and ambient visibility | The two other CAA mandates being fulfilled by the Obama administration are regulations addressing cross-state pollution and ambient visibility. Both rules are in limbo. A 2012 appeals court decision stayed the EPA's cross-state pollution rule. Rather than apportion emission reductions according to the amount of pollution that each upwind state was contributing, as the statute required, the EPA sought to create a trading system that allowed emissions reductions to occur wherever such reduc-

tions could be most cheaply secured. The Obama cross-state rule was an attempt to modify a Bush administration rule that a prior court decision had also rejected for not strictly adhering to proportional emissions reduction. The 1977 visibility-protection mandate remains a subject of administrative study, and the EPA has only issued sketchy preliminary proposals suggesting where rulemaking might be heading.

The central difficulty associated with both of these rulemakings is to devise workable rules consistent with legislative mandates from 1977. Visibility and cross-state pollution concerns deal with the same pollutants, and EPA enforcement has long tried to develop one regulation that manages both. Unfortunately, cross-pollution impact relates only to those eastern states considered major sources of transported pollution, while visibility concerns arise in all the contiguous states. Accordingly, a single regulation that solves both is necessarily more difficult to craft.

The basic approach to cross-state pollution is to set emissions goals and allow the states to devise implementation plans. The Bush administration proposed allowing the states to set emissions quotas that named sources could trade. The Obama EPA seems mainly to have tinkered with the implementation of this rejected approach.

The sketchy EPA preliminary visibility proposals (issued in 2011 and 2012) suggest an interest in allowing compliance with cross-state pollution rules to provide visibility compliance as well. In states where cross-state pollution rules don't apply, generators would be forced to use the best available retrofit technology, as defined by the EPA, based on the 1977 CAA amendments.

Climate change | Another high-profile regulatory initiative addresses climate change. Following a 2007 Supreme Court ruling that greenhouse gases are subject to regulation under the CAA, the EPA issued a finding that greenhouse gases are pollutants under the act. A rulemaking on April 13, 2012 followed that would limit carbon dioxide emissions from new power plants. While most gas-fired electricity generators could meet the standards with currently employed designs (and those that don't could do so by, ironically, increasing the size of the generation units), new coal-fired generators cannot meet the standards unless they adopt the unproven technology of underground sequestering of carbon dioxide discharge. Generators will have until April 15, 2015 to meet that standard.

While this would appear at first glance to be a substantial initiative, in practice it may be an empty gesture. The low natural gas prices resulting from innovations in hydraulic fracturing almost certainly make coal plants uncompetitive in the future, even if the sequestration requirement is removed. Hence, the EPA's regulatory impact statement confesses that the rule will produce no benefits and impose no costs.

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Other rules | The EPA is also considering several ambitious rulemakings governing the discharge of water. After a 2009 review of water discharges from power plants (primarily concerned with waste heat), the EPA announced it would review existing regulations, but that review was incomplete as of December 2012. The EPA likewise published a notice that it would consider treating as dangerous coal-waste piles at power plants. A July 21, 2011 interagency agreement governing the regulation of water runoff from surface coal mines was set aside by a district court decision on July 31, 2012.

Conclusion

Several interpretations of those EPA efforts are possible. The minimum complaint is that defects in environmental legislation denounced by economists for decades continue to produce bad results. Environmental statutes set impossibly ambitious pollution standards. The resulting policies are expensive to implement. Those policies lead to EPA and industry delay, which then leads to environmentalists' use of lawsuits to enforce the ambitious standards. Accordingly, interminable delay becomes inevitable.

A stronger complaint is that there is little evidence that many of these regulatory initiatives are needed in the first place. If decades of effort still have not produced satisfactory evidence that a problem exists, perhaps campaigns to limit small levels of pollution are ill-advised.

In the often-overwrought public debate over these rulemakings (most recently witnessed during the 2012 presidential election campaign), too much concern is given to the nature of the Obama presidency. In practice, it matters not whether President Obama is seeking a radical transformation of the energy sector or whether the president is just a typical modern Democratic politician. Even if the latter is the correct explanation of his intent, it gives little comfort. The immense influence of environmentalists on Democratic politicians leads to administrative attempts to push the EPA's discretion to extreme lengths.

Whatever the truth, the regulatory status quo remains politically invulnerable despite decades of devastating contradictory economic analysis. How far President Obama will choose to push the still-largely-incomplete EPA initiatives in his second term remains unclear. Moreover, the challenge of court intervention remains. Thus, the perpetuation of chaos seems likely. R