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# Restructuring the Electric Utility Industry and Its Effect on the Environment

WILLIAM G. ROSENBERG\*

Today, I am going to talk to you about what I perceive to be the largest challenge to date to the successful implementation of the Clean Air Act Amendments of 1990 (CAAA).<sup>1</sup> That legislation was the environmental priority of the Bush Administration and passed the House by a 401 to 21 vote,<sup>2</sup> and the Senate by a 89 to 11 vote.<sup>3</sup> The goals of the CAAA were to solve the international Acid Rain problem and to reduce national ambient air pollution levels by fifty billion pounds. The CAAA have been difficult and costly to implement for some industries and states — but the nation is seeing results.

The Title IV Acid Rain program,<sup>4</sup> the first ever truly market-based clean air program, has successfully reduced SO<sub>2</sub> nationwide faster than scheduled and at 10% of the projected cost. The Acid Rain program will generate even more reductions in the next phase of implementation, beginning in 2000. The reformulated gasoline program has benefited the nation with 15% emission reductions. Cars keep getting

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1. Clean Air Act Amendments of 1990 (CAAA), Pub. L. No. 101-549, 104 Stat. 2399 (1990).

2. See CONGRESSIONAL INDEX (CCH), 101st Cong., H.R. 37,135 (1989-1990).

3. See CONGRESSIONAL INDEX (CCH), 101st Cong., S. 23,035 (1989-1990).

4. Clean Air Act (CAA) §§ 401-416, 42 U.S.C. §§ 7651-7651o (1990).

cleaner; and due to requirements in the CAAA, new cars emit 50% less VOC and NO<sub>x</sub> pollutants than 1990 models.

In summary, the CAAA were adopted only after extensive debates and contradicting political wills, but ultimately with near unanimous support — Congress and the Bush Administration made the commitment to clean up America's air and improve our nation's health. However, these gains, and future improvements in air quality, are threatened by the unintended, but very real consequences of unfolding federal and state efforts to restructure the electric utility industry without appropriate accompanying environmental protection provisions.

Let me lay the groundwork of the energy policy before we begin to discuss environmental policy. The Federal Energy Regulatory Commission (FERC) is the federal agency responsible for regulating wholesale electricity transactions. In an effort to deregulate the last remaining regulated industry in America and to introduce more market incentives, FERC initiated, through Order 888,<sup>5</sup> a framework to allow utilities to compete with one another and to have the opportunity to provide power to areas and customers that were previously restricted to the regulated, local utility.

The electric utility industry is the nation's largest industry, as well as the single largest source of air pollution emissions. The annual revenue of the electric industry nationwide is approximately \$180 billion. To put that in context, gasoline refiners revenues are approximately \$100 billion in annual revenue; and, the automobile industry sales are \$160 billion annually. The electric industry is a major industry with huge revenues and tremendous local and national political clout — not to mention its daily contact with every citizen of this country. It is that amount of money and power that makes its behaviors and business decisions so very important in this country.

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5. Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, 61 Fed. Reg. 21540 (1996) (to be codified at 18 C.F.R. Parts 35 and 385).

What I learned at the Environmental Protection Agency (EPA) is that, notwithstanding all the details of science, implementation problems, VOC vs. NO<sub>x</sub>, etc., the principle focus to reduce air pollution is to make cars, gasoline, and power plants cleaner and more efficient. Consequently, any major political or economic decisions relating to these industries are going to have significant impacts on the environment - impacts that policy-makers should watch very closely.

Automobiles and gasoline were thoroughly addressed in the CAAA and are consequently cleaner. The power industry was also addressed - but in a more limited way. The pollution predictions and consequent regulations were based on behaviors resulting from a regulated market. Unfortunately, the power generation and distribution changes that will occur from FERC's deregulation efforts in the energy sector were never anticipated or predicted during the clean air debate. The Energy Policy Act of 1992 (EPAct)<sup>6</sup> paved the way for FERC's deregulation effort, but did not specifically address the resulting environmental impacts on air pollution. It is those potential impacts that policy-makers are struggling to address.

Presently, in a regulated power environment, there are a small number of regional markets around the country where utilities are organized into "power pools" to serve their respective customers. The Midwest utilities serve, essentially, only the Midwest region. The New Jersey, Delaware, Pennsylvania and Maryland utilities serve their local areas. There is a "New England" power pool and a "Florida" power pool, as well as one in the Middle Atlantic states, and others. For the most part, the power that is needed in any particular area is generated and distributed by utilities or independent power producers located in the same area.

I represent the largest utility in the Northeast, Public Service Electric & Gas Company (PSE&G) in New Jersey. PSE&G produces most of its power through a combination of nuclear, gas, oil and coal facilities. PSE&G does not presently compete with other power producers to sell retail elec-

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6. Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (1992).

tricity in its service area. The New Jersey Board of Public Utilities, a state utility regulatory board, plays the traditional utility economic regulatory role and ensures PSE&G and other New Jersey utilities charge "reasonable and prudent" prices in exchange for monopoly status.

Restructuring of the electricity industry will eliminate these separate regional market areas by opening up access to customers for other marketers and, in essence, move toward the creation of a competitive national marketplace. It may be economically attractive to make these utilities compete with one another, but it introduces a host of issues and consequences that this country has not previously faced. When there is growth in any region of the country (i.e., south, west, or coastal areas), rather than focusing on meeting the power needs for that growth with local generation, customers will have the ability to buy power from any utility or power marketer, regardless of where they are physically located. Customers can contract directly for power transmission across electric lines which will, of course, favor increased production from the least expensive generators. Unfortunately, the least expensive sources are also likely to be the most polluting sources.

In the recently deregulated telecommunications industry, customers can choose MCI, AT&T, Sprint or other long distance companies and look for the least expensive service. The same competitive system is now being considered for the utility industry and, in the same vein of "saving money," customers will look for the cheapest rates.

With one big marketplace, the most compelling issue initially is: where will the cheapest power be generated? The problem for the environment presents itself when one realizes that kilowatt hour prices do not reflect the full societal expense for utilizing that energy. The kilowatt price captures the cost of generation, transmission, and distribution. But, what about the cost to clean up the pollution that comes from producing the electricity. Who pays for that? And when do they pay?

We know that coal burning produces high levels of NO<sub>x</sub>, SO<sub>2</sub>, particulate matter, and airborne toxics compared to

more expensive nuclear and natural gas generation. We know what these pollutant do to trees, crops, equipment, and human lungs. We know through the CAAA how much it costs and how difficult it is to clean up ambient air pollution in the largest population areas. The resulting policy issue that must be addressed today is: electric industry restructuring will predictably respond to free market pressures and favor the least-cost power — but, is it the responsibility of the government to ensure that the initial kilowatt price captures the predictable environmental consequences of power production? And, if the initial kilowatt price for the producer is not structured in a way to include the price of environmental clean up, how does the country appropriately strengthen the CAAA and force recoument of these costs on the customers that suffer from the pollution, but who had nothing to do with its creation? It is the classic policy question around the appropriate role of government to protect national interests in the framework of free market economic systems.

Now, let me address the environmental impact. As demonstrated in the following statistical charts,<sup>7</sup> the lowest-cost producers of power, by far, are the older, Midwest power plants that have the fewest environmental controls. These plants, which are also incidentally upwind of the Northeast and Midwest population centers of the eastern half of the United States, with no further governmental intervention, will benefit from the greatest consumer demand and will significantly increase production in turn increasing emissions. If a purely free market selling price is the only issue, rather than utilizing clean burning nuclear or gas power or building a new clean generator, customers across the country will favor the cheapest power (typically a coal-based generator) instead of local production — even if the local producer offers cleaner energy. The amount of cheap power production in the Midwest will increase, the amount of pollution generated upwind of Midwest and Northeast population centers will increase, and the need for controls to clean up the additional

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7. On file with speaker.

pollution in the Northeast will exceed the predictions and controls planned for in the CAAA.

Under the current regulated system, prior to electricity restructuring, to meet demand growth, a utility has a choice to build either a clean-burning, new natural gas generator at 3 to 4 cents per kilowatt hour, or new coal generator at 5 or 7 cents per kilowatt hour. When a region needs more power, the state utility commission must approve plans by the local utility company to build, or purchase power, from either a new natural gas facility, a coal facility that meets the emission requirements of the CAAA, or to increase demand-side energy conservation investments. Under a deregulated structure, this utility or its customers directly, will be able to provide the additional power by purchasing excess power from any other part of the country. Current rates for various fuel sources are: old coal (1 to 3 cents/kWh), natural gas (3-4 cents/kWh), new coal (5-7 cents/kWh), and nuclear (8 cents/kWh).

Where cost of generation is the primary factor,<sup>8</sup> the market choice is obvious. The vast majority of consumers will go for the lowest-cost option. The cost of increasing production from existing facilities, which do not require significant new capital costs and, for the most part, can use existing transmission lines, is approximately 50% lower than the next lowest alternative cost. Therefore, the important question to ask is: what is the capacity to increase production from existing power plants and will there be a flood of this cheap, dirty coal power that will displace demand for more expensive new natural gas or modern coal plants?

What makes this a particularly interesting issue is that this is not a theoretical political question. It is happening in real time. Electricity restructuring is providing choices that affect rates, the economy, and the environment. There are many avenues to restructuring and the final route selected today by consumers, policy-makers, and elected officials will shape how the future market will function and how public health will be affected.

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8. This assumes that transmission costs are minimal.

The politics of this issue are very relevant. The EPA Act of 1992 gave FERC the authority to approve open transmission access on a "case by case" basis. FERC proposed Order 888 in an effort to devise a broad, uniform policy to open access. In the original rule as proposed by FERC, there was no Environmental Impact Statement (EIS) analyzing the potential clean air implications. PSE&G and other Northeast utilities joined forces with the Natural Resources Defense Council (NRDC), the Mid-Atlantic Energy Project (MAEP), and other environmental organizations as well as all of the Northeast Governors to appeal to the White House and Council on Environmental Quality to insist on an EIS.

The EIS ultimately concluded that there would be an increase in emissions resulting from the increased plant capacity utilization. However, the EIS also determined that it was the EPA's job to address clean up rather than FERC's, the agency crafting and implementing restructuring. It cannot be overlooked that the decision to defer FERC responsibility and the early inclusion of environmental mitigation language was made in a political year when there were important electoral votes in the Midwest coal-burning states of Ohio, West Virginia, Indiana, and Illinois.

During FERC Order 888 policy development, FERC acknowledged that there is capacity to increase utilization of old coal plants from the current 62% to an 82% utilization without having to invest major capital for plant improvement. That is a one-third increase in the amount of energy generated from these high-polluting power plants, located downwind of Northeast and Midwest population centers. Therefore, under Order 888, as it is currently written using FERC's own projections, a deregulated electricity market will demand 311 billion more kilowatt hours from old coal plants rather than new natural gas plants.

Environmentally speaking, that amount of increased coal production will generate 572,000 tons of additional NO<sub>x</sub> east of the Mississippi. In the context of the CAAA, that amount of NO<sub>x</sub> is equivalent to all the Phase One NO<sub>x</sub> reductions under the Title IV Acid Rain program; it is equivalent to doubling all the utility generation in Ohio and West Virginia



in the year 2000; and it is equivalent to all the NO<sub>x</sub> emitted from every power plant from Washington D.C. to Maine. A one-third increase in production from existing coal generators will create a major air pollution problem.

The Northeast is already spending billions of dollars to comply with the CAAA, such as requiring inspection and maintenance (I&M) for vehicles, cleaner cars, and reformulated gasoline. If done properly, the I&M program is designed to reduce NO<sub>x</sub> emissions in the Northeast by 162,000 tons. It is costly, inconvenient, and highly unpopular, yet full compliance and implementation would only offset one-third of the estimated emissions that will result from increasing the Midwest coal plant capacity from 62% to 82%. There are also other examples that put this into context: the reformulated gasoline program was designed in the CAAA to reduce NO<sub>x</sub> emissions in the Northeast by 30,000 tons. If 10% of all cars sold in the Northeast during the next ten years were electric cars, only 10,000 tons of NO<sub>x</sub> reductions would result. Three hundred eleven billion kilowatt hours of coal would replace natural gas generation that would utilize 2.5 trillion cubic feet of natural gas. It is a gigantic number and it is ridiculous to assume that the environment will not be adversely affected by fuel shifting from clean natural gas to dirty coal plants, unless preventative controls are placed on the plants prior to restructuring.

As a policy-maker responsible for implementing the 1990 CAAA, I can tell you that it is a tough job to impose significant pollution controls. Yet, I have difficulty understanding why the Administration would not do everything in their power to prevent pollution before it is created, instead of contributing to another massive pollution build-up that will have to be fixed, at a higher eventual cost to industry and consumers, sometime in the future.

In closing, I might point out that not all lawmakers are closing their eyes to this problem: every Northeast state Governor, whether Republican, Democrat, or Independent — from Governors Ridge (R-Pa.), Whitman (R-N.J.), Pataki (R-N.Y.), and Weld (R-Mass.) to Dean (D-Vt.) and King (I-Me.) — has sent letters to the Administration in support of open

access for economic competition among utilities, provided that as a part of such an effort, provisions for mitigation of the regional adverse environmental consequences are included. They know that "what goes up, must come down," and significant NO<sub>x</sub> pollution emitted from high stacks in the Midwest — just like SO<sub>2</sub> from the same sources — will eventually come down as ozone and particulates in the Northeast. Cleaning up the pollution in the Northeast will require tighter local emission standards for gasoline, cars, printing presses, pharmaceutical plants, and dry cleaners, as well as regionwide reductions from power plants contributing to transboundary pollution. When you look at the aggregate of these costs, and the impact on consumers, it is far more expensive to pay for more local Northeast controls than it is to reduce pollution at its source in the Ohio Valley. Transported pollution from utility restructuring is not only a bad idea from a public health point of view, but it also imposes a stiff economic burden on the downwind states, which will surely offset many of the economic gains that FERC promises with deregulation.