

## *Why Are Electricity Prices Increasing?*

### ■ Environmental Compliance Costs Are Rising

Electric utilities are subject to literally hundreds of environmental rules, including dozens of federal and state air and water quality requirements created in the wake of the Clean Air Act (CAA) and Clean Water Act (CWA). Electric utilities also are subject to numerous regulations for waste disposal, hazardous waste handling, recycling, and land management. The combined impact of these regulations—and newer regulations—is the annual expenditure of billions of dollars to help ensure protection of the air, land, and water.

#### Environmental Costs and the Impact on Rates

Complying with environmental regulations requires significant capital investment and increases the operating costs of electric utilities. From 2002-2005, the electric utility industry as a whole spent \$24 billion on compliance with federal environmental laws; state and local rules drive that total even higher. These expenditures must be recovered in electricity rates in order to maintain the financial integrity of electric utilities.

The most significant environmental regulations for the electric utility industry involve air emissions from fossil fuel-based plants. For example, according to the U.S. Environmental Protection Agency (EPA), complying with three new federal regulations—the Clean Air Interstate Rule, the Clean Air Mercury Rule, and the Clean Air Visibility Rule, which are aimed at further reducing power plant emissions of nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and mercury—will cost electric utilities about \$3 billion per year in 2010, and increasing to more than \$6 billion per year in 2020. All told, the electric utility industry will spend \$47.8 billion between the years 2007 to 2025 to comply with these regulations. Nearly one-half of that amount will be spent on investment in emission controls.<sup>1</sup> Affected states are now considering how to implement these rules, with several states adopting regulations or passing legislation that go beyond the requirements in EPA's rules—and adding to the cost of compliance.

Complying with water regulations also requires substantial investment by electric utilities. The electric power industry uses billions of gallons of water each day to operate fossil, nuclear, and hydroelectric generating plants. The CWA regulates water intake, discharges to the nation's water systems, and stormwater runoff from rights-of-ways. The CWA also directs the management of wetland resources. The electric power industry faces significant new investments to comply with recent rules initiated in 2004 under the CWA. According to EPA, complying with the new water regulations will cost the electric power industry \$400

“Under recently implemented EPA rulemakings, electric utility environmental costs are expected to rise dramatically, with utilities planning about \$40 billion in capital costs over the next decade primarily to reduce air emissions.”

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<sup>1</sup> “Multi-Pollutant Regulatory Analysis: CAIR/CAMR/CAVR,” U.S. Environmental Protection Agency, Office of Air and Radiation, October 2005.

million per year.<sup>2</sup> As with the new air regulations, actual compliance costs could be higher depending upon final implementation of the rule.

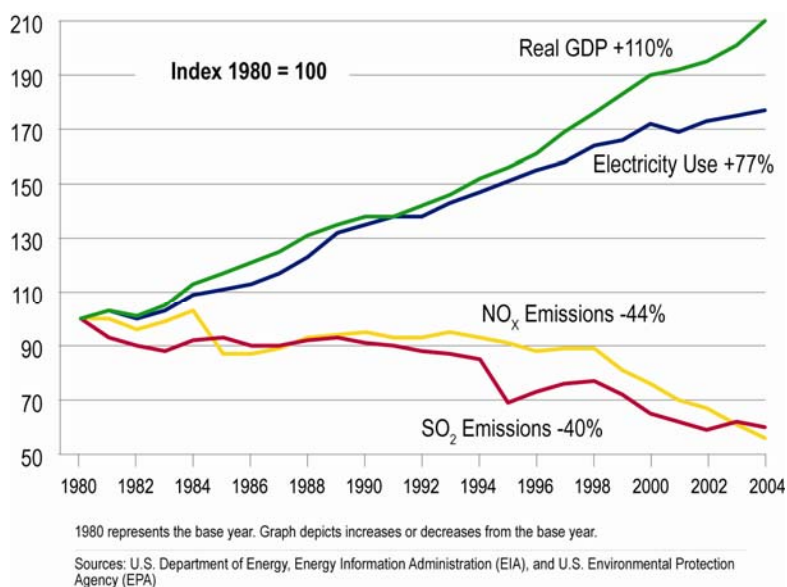
According to an Edison Electric Institute survey, electric utilities spent at least \$3.2 billion in 2005 on environmentally related capital investments—compared to less than \$1.2 billion in 1999. The survey also indicated the electric utilities plan considerable investments in the future, with more than \$40 billion in planned capital investments and other environmental expenditures during the next 10 to 12 years to comply with recent air regulations. This estimate does not reflect any additional requirements that may arise with new legislation or rules.

The impact of environmental compliance costs on electric rates varies by state and utility. Some states with traditional regulatory structures allow full cost recovery of environmental compliance expenditures. Other regulated states require the costs to be included in general rate increase requests, which can delay cost recovery by the utility. In states with restructured markets, recovery of environmental compliance costs is not guaranteed—adding a considerable financial burden to utilities that are making additional investments in their generation, transmission, and distribution systems.

## Power Plants Reduce Emissions Despite Increasing Electricity Demand

Electric utilities are more than ready to do their share to help preserve and improve our nation's environmental quality, and the evidence is there to support that. As illustrated in Figure 1, since 1980, air quality in the United States has improved dramatically, and emissions of NO<sub>x</sub> and SO<sub>2</sub> have fallen significantly—all during a time in which demand for electricity increased by more than 70 percent. Electric utilities have invested in emissions reduction technology and utilized cleaner generation technologies to help reach these environmental milestones.

Figure 1: Power Plants Reduce Emissions Despite Increasing Electricity Demand



<sup>2</sup> U.S. Environmental Protection Agency, Office of Water, *Economic and Benefit Analysis for the Final Section 316(b) Phase II Existing Facilities Rule*, February 2004, Chapter B-1, "Summary of Compliance Costs."

## CO<sub>2</sub> Regulation—The Big Unknown

While carbon dioxide (CO<sub>2</sub>) is not currently a regulated emission, the potential for greenhouse gas (GHG) regulation creates financial uncertainty for utilities as they plan for the future investments in new baseload generation. Any future regulations would fall heavily on electric generators—and would come with substantial compliance costs.

The electric utility industry is a leader in voluntary efforts to reduce CO<sub>2</sub> emissions and many utilities are making investments in anticipation of future regulation. Although no economic technologies currently exist to remove CO<sub>2</sub> from power plants, the electric utility is involved in a variety of emission-reduction projects, including direct reductions from generation, end-use efficiency, cogeneration, and carbon sequestration. The electric utility industry also is developing clean coal technologies that reduce GHG emissions. However, these long-term investments raise utilities' short-term costs.

In addition to electric utilities, capital markets and institutional investors are influenced by the possibility of CO<sub>2</sub> regulation. In their outlooks and planning, investment rating firms have begun to consider the potentially significant impacts of future regulation on the risk that the sector faces. Additionally, shareholders have begun to ask electric utilities for reports on the potential impact of CO<sub>2</sub> regulation on their financial prospects for the future.

Electric utilities remain committed to investing in environmental controls that reduce the impact of emissions in the communities where they operate. As utilities enter another phase of emissions reductions, those costs will be reflected in customers' electric bills and must be borne equitably by all customers on the system.

*Unless otherwise noted, the information and data herein are derived from Why Are Electricity Prices Increasing? An Industry-Wide Perspective, a June 2006 study prepared for the Edison Foundation by The Brattle Group, a leading energy and economic consulting firm. The full report is posted on EEI's Web site, [www.eei.org](http://www.eei.org).*

September 2006



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