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Chapter 2

POWER PLANT POLLUTION IN THE SPOTLIGHT

Over the last two decades, electric power plants have reduced many of their pollution emissions significantly. Tougher federal standards and the move toward efficient natural gas combined-cycle units ensure that today's average new plant is far cleaner than the behemoths built twenty or thirty years ago. Meanwhile, the visible soot that once poured from smokestacks has all but disappeared with the addition of bag houses and electrostatic precipitators. Thanks in part to the Clean Air Act Amendments of 1990, sulfur dioxide emissions from power plants dropped by more than one-third between 1980 and 1995; ^[1] these emissions represent the chief cause of both acid rain and excessive levels of fine airborne particles. This progress has led some to assume that the problem of air pollution from power plants has been "solved." Nothing could be further from the truth.

Electric generation remains the single largest source of air pollution in the United States, although it has extensive competition and should not be deemed the sole or principal culprit. In 1994 (the last year for which we have complete data for all sources) electricity generation was responsible for 35 percent of U.S. carbon dioxide (CO₂) emissions, 70 percent of sulfur dioxide (SO₂) emissions, 33 percent of nitrogen oxide (NO_x) emissions, 23 percent of point source direct emissions of particulate matter, and 23 percent of anthropogenic mercury emissions. ^[2] Of the top 50 individual sources of SO₂ emissions in the U.S., all are electric power plants. Of the top 50 NO_x sources, 49 are power plants. ^[3] Based on current regulations and trends, by 2010 electricity generation is projected to increase its share of CO₂ emissions slightly to 37 percent, ^[4] to reduce its share of SO₂ emissions somewhat to 60 percent, and to maintain its share of NO_x emissions at one-third. ^[5] Direct particulate emissions and mercury emissions are also expected to increase. While these projections depend on a host of economic factors and policy decisions that are inherently uncertain, they clearly indicate that power plants will remain a central focus of environmental protection efforts.

Notes

1. See Environmental Protection Agency, National Air Pollution Emission Trends, 1990-1994, PA-454/R-95-011, (October 1995); this conclusion also rests in part on EPA's preliminary 1995 continuous emission monitoring data.

2. EPA Office of Air and Radiation, EPA's Clean Air Power Initiative (April 1996).

3. EPA, National Air Pollutant Emission Trends, 1900-1994, EPA-454/R-95-011 (October 1995).
4. Energy Information Administration, Annual Energy Outlook 1996, DOE/EIA-0383(96) (January 1996).
5. EPA, National Air Pollutant Emission Trends, 1900-1994, EPA-454/R-95-011 (October 1995).