Emission targets for SO_2 in the US (cap and trade)

In the US, the 1990 Clean Air Act Amendments established an emissions trading system to reduce emissions of SO2 from fossil-fuel burning power plants located in the continental 48 states of the United States.

The program consisted of two phases. Phase I, from 1995 to 1999, covered 263 electric generating units larger than 100 MW with an annual average emission rate in 1985 greater than 2.5 pounds of SO2 per MMBtu of heat input. Emissions caps for these Phase I units were provided in the Act.

In Phase II, beginning in 2000, additional plants having generating units larger than 25 MW were added to the program. Phase II limited emissions to an annual cap of 8.95 million tons, equivalent to an average emission rate of 1.2 pounds of SO2 per MMBtu, when divided by the mid-1980s level of heat input at fossil-fuel burning power plants. This cap level is about half of the total electric utility SO2 emissions in the early 1980s.

Caps on emissions were implemented by issuing tradable allowances that in total equalled the annual cap level. To comply, sources were required to surrender one allowance for each ton of emissions. A source that had more allowances than it needed to cover its emissions could sell the excess allowances, and sources that required additional allowances to cover emissions could purchase allowances to cover the gap. Allowances not used in the year they are issued could be banked for future use.

The graph below shows the development of SO_2 emissions from electric utilities from 1980 to 2002, with an indication of the yearly allowances allocated. Because banking is allowed, the emission can exceed the yearly allowance (this is the case in 2000-2002). The yearly allowances increased from 1999 to 2000 because more sources were included in Phase II of the program.

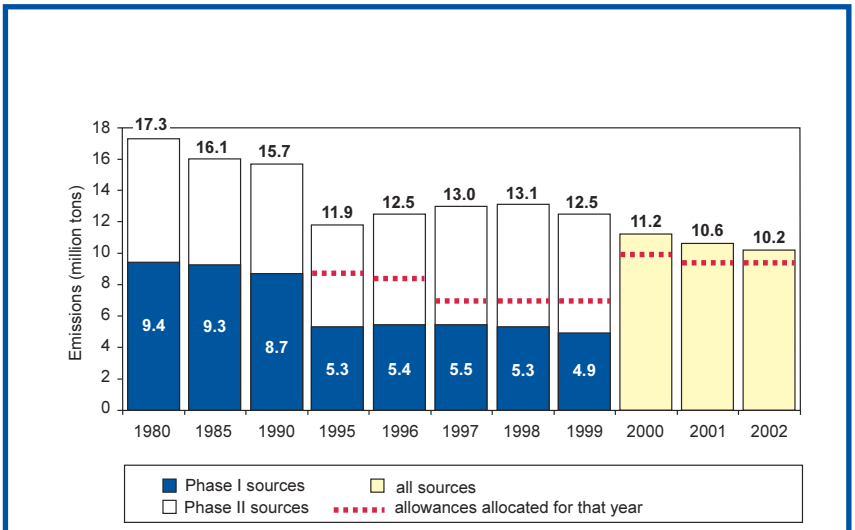

Figure 1. SO_2 Emissions from Acid Rain Sources, 1980 through 2002.
Source: EPA

References

Source: EPA (U.S. Environmental Protection Agency). (2003). Acid Rain Program: 2002 Progress Report. Washington DC: Office of Air and Radiation, Clean Air Markets Division. http://www.epa.gov/airmarkets/cmprpt/arp02/index.html

More information can be found in the case study on acidification, eutrophication and ground level ozone (at the present Web site).
See also: US Clean Air Market Web site, http://www.epa.gov/airmarkets/index.html