

# A story of success

**Daniel Chartier** reviews Phase I of the US Acid Rain Program

Reviewing the progress made at the Fifth Conference of the Parties (COP5) to the United Nations Framework Convention on Climate Change held in Bonn, Germany, 25 October through 5 November 1999, I was pleased to note the focus of the international emissions trading debate is shifting. At COP4 in Buenos Aires in 1998 the focus was on debating whether emissions trading was an appropriate mechanism. At COP5 the focus had shifted to working to develop the rules to implement the emissions trading mechanisms.

As a supporter of market-based mechanisms for environmental control I am heartened to see such progress. In fact, a similar shift has also occurred in the United States relating to the Acid Rain Program's market-based cap and trade system for sulphur dioxide (SO<sub>2</sub>). Many sceptics of market-based systems at the time Congress passed the Clean Air Act Amendments (CAAA) in 1990 now support cap and trade. Even detractors who say the cuts may not have been enough to protect certain areas susceptible to acid rain damage have included emissions trading in proposals that seek to tighten the limits further.

The reasons for this shift are clear. The US Acid Rain Program has delivered unsurpassed results. Emissions have consistently been below the targets set by the CAAA<sup>1</sup> and costs have been at the low end of most early estimates<sup>2</sup>. In addition to these results, from the trader's perspective an active market in emission allowances has developed.

## The basics of compliance

Looking at the basics of the system, the CAAA introduced the first large-scale use of tradable permits. Utility emissions are capped at what will eventually be one-half of 1980 levels. Utilities must surrender one emission allowance for each ton of SO<sub>2</sub> emitted. An initial allocation of allowances is given to each

utility based on its operational history.

To come into compliance with the requirement to hold allowances, firms have the flexibility to choose the emissions-reduction plan that works best for their facilities. They could change to lower-sulphur fuels, install technologies to reduce their emissions, or buy, sell or trade allowances in the market place.

## The market

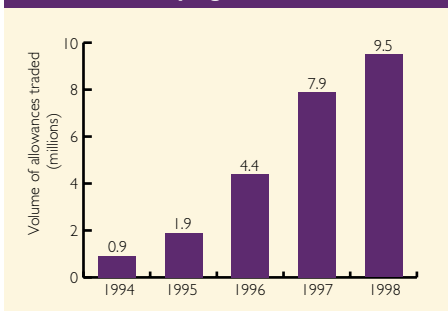
A review of the volume of Phase I trades (Phase I generally affected only the largest facilities) shows a clear trend toward a marketplace with increasing liquidity. Trading activity in 1994, one year before the compliance target became effective, was low. Less than one million tons traded in economically significant transfers (that is, transactions between different companies). Unfamiliarity with markets and utility conservatism are likely causes for the low volume of trades in the early years. As players became more experienced in the market a tenfold increase, to 9.5 million tons, was seen by 1998 (see Figure 1).

Next year, when Phase II of the Acid Rain Program brings small and mid-sized utility units under the requirement to hold allowances, further increases in trading volumes are expected.

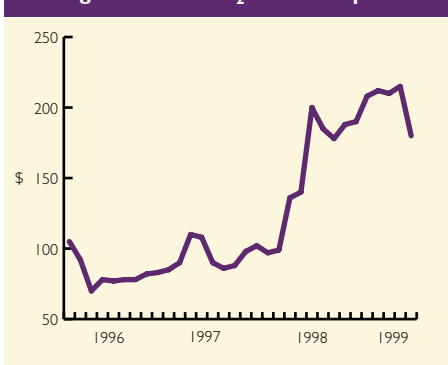
In addition to the trades reported to the Environmental Protection Agency to effect transfer on the government's official registry, many other trades, including options and forward settling transactions, are occurring. Industry experts estimate that the true size of the market is up to 1-1/2 times greater than the EPA's figures, or about 15 million allowances. Assigning each trade the nominal market value of \$180 per ton makes this market worth approximately \$2.7 billion annually.

Market price has experienced considerable volatility in the early years of trading. An

**Fig 1. Volume of SO<sub>2</sub> allowances traded in economically significant transfers**



**Fig 2. Historic SO<sub>2</sub> allowance price**



Source for illustrations: <http://www.epa.gov/acidrain>

all time low was set at \$68 per ton in April of 1996, with a recent high set near \$215 per ton in late-Spring 1999 (see Figure 2).

While there is debate as to why the prices took the path they did and where they will go in future, there is one area the experts do agree. The flexibility to choose control mechanisms, including the ability to use emission markets to help achieve compliance, has helped firms keep costs down. This flexibility has also ensured that the underlying environmental target has been met in each year of the Acid Rain Program.

<sup>1</sup> 1998 Compliance Report, US Environmental Protection Agency, Acid Rain Program: Washington, DC, July 1998; EPA-430-R-99-010

<sup>2</sup> Smith, A; Platt, J; Ellerman, A, *The Costs of Reducing Utility SO<sub>2</sub> Emissions – Not as Low as You Might Think*, MIT Center for Energy and Environmental Policy Research: Cambridge, Massachusetts, August 1998; MIT-CEEPR 98-010 WP

**The Emissions Marketing Association consists of more than 200 members from 140 companies worldwide. Its aim is to promote market-based trading solutions for environmental control. For more information, go to [www.emissions.org](http://www.emissions.org)**



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