

A decade of SO₂ allowance auctions

It hardly seems newsworthy. The Environmental Protection Agency's (EPA's) 10th annual auction of sulphur dioxide (SO₂) allowances conducted by the Chicago Board of Trade (CBOT) on 25 March provided no surprises. But we think it is newsworthy precisely because of its routine results. It also provides us with an opportunity to describe the anatomy of an auction.

A decade is not a sufficient period to reach final judgement on a tool of public, social or environmental policy. However, during that time the price discovery and related information that is published by the CBOT has significantly altered the nature of the debate and possibly the future of emissions trading.

The last issue of this magazine indicated that, following an increase in prices associated with the current administration's Clear Skies initiative, "prices levelled off around \$170.00 for the rest of the month on low volume as the market prepares for the EPA's auction of 2002 and 2009 vintage allowances on 25 March". Data provided by the CBOT provides us with both price discovery and a different kind of insight into the recent quiescent market (see Tables 1 & 2).

1. Allowances available for auction

Origin	Spot auction (first usable 2002)	7-year advance auction (first usable 2009)
EPA	125,000	125,000
Privately offered	2,388	2,388
Total	127,388	127,388

Source: CBOT and EPA

2. Spot auction results

Allowances	Number of bids	Number of bidders	Bid price
Bid for: 302,285	Successful: 46	Successful: 21	Highest: \$215
Sold: 127,388	Unsuccessful: 7	Unsuccessful: 6	Clearing: \$160.50 (the clearing price is the lowest price at which a successful bid was made)
Total	53	27	Lowest: \$150 Average: \$167.74 (weighted by the number of allowances in each bid)

Source: CBOT and EPA

3. Seven-year advance auction results

Allowances	Number of bids	Number of bidders	Bid price
Bid for: 273,388	Successful: 13	Successful: 5	Highest: \$120
Sold: 127,388	Unsuccessful: 3	Unsuccessful: 3	Clearing: \$68 (the clearing price is the lowest price at which a successful bid was made)
Total	16	8	Lowest: \$60 Average: \$81.87 (weighted by the number of allowances in each bid)

Source: CBOT and EPA

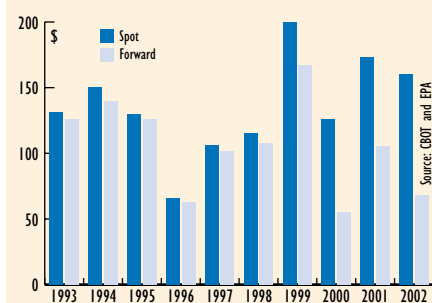
The clearing price in the spot auction was \$160.50 while the weighted average of winning bids was \$167.74. This was consistent with recent pricing in the over-the-counter (OTC) market. Furthermore, the difference between the highest and lowest bid was \$65.00, which compares with \$120.00 last year. The results confirm the reduction in OTC volatility that has occurred in recent months. The number of successful bidders was 21 while six were unsuccessful. This also reflected a more uniform set of expectations by market participants. By comparison, last year's auction had 14 successful and 71 unsuccessful bids.

The clearing price in the seven-year advance auction was \$68.00 while the weighted average of winning bids was \$81.87 (see Table 3).

Despite the proliferation of market intermediaries, the forward OTC market still appears to be inefficient and price discovery is insufficient, making price information from the CBOT forward auction even more important. The profile of price ranges and the relationship of successful to unsuccessful bids followed the same patterns as the spot auction. There was a greater range in bids than in the spot market but a narrower range than last year. In contrast to last year, there was also a similar ratio of successful to unsuccessful bids, as in the spot market. Furthermore, there was a higher number of successful bidders than last year.

In a pattern that has continued for the last few years, the difference between spot and forward prices remained much higher than it was during the 1990s. Some market partici-

4. Auction results, 1993-2002



pants attribute this specifically to regulatory uncertainty. Others say it is due to general market uncertainty.

What can we infer from this particular auction and the 10-year history?

This year's results specifically suggest that the SO₂ market is functioning very effectively. Prices continue to be well below levels that were forecast in 1992. In that year, the median forecast was \$600 with a low of \$309 and a high of \$981. During the past 10 years, spot prices have averaged \$135.8 and forward prices \$106.1 (see Table 4). This is well below what experts had predicted. Furthermore, sulphur emissions have fallen faster than required. Recent analysis by the EPA and others suggests that the total cost of the programme ranges from \$750 million to \$2 billion. Benefits range from \$25 billion to \$40 billion. It is hard to imagine many policies and tools that could match this level of success.

If imitation is the highest form of flattery, then the most recent SO₂ 'cap-and-trade' development flatters the concept and illustrates how far the environmental movement has come in embracing market-based solutions to pollution. This year Slovakia witnessed the first trade of SO₂ allowances in its own domestic programme. This is quite remarkable to any student of politics and economics. When the US programme was being designed in the latter part of the 1980s Slovakia was a region of another country in the Soviet bloc. At the time of the CBOT's first auction, it became a sovereign nation. And now, nearly a decade later, it has launched what appears to be a successful trading programme of its own.

What a shining example to us all of how any country can successfully build institutions and implement market-based solutions to environmental problems. In this light, solutions to global warming are much less daunting than is often proclaimed. Despite widespread predictions that SO₂ trading would fail in the US, annual turnover in the cash and derivative markets is now equal to the value of the US wheat crop. Successful uptake of the concept in a former Soviet satellite reminds us that the nay-sayers have often made the mistake of selling short the potential for innovative environmental markets to succeed. **Richard Sandor is chairman and chief executive of Environmental Financial Products. He would like to thank Michael Walsh, Alice LeBlanc and Rafael Marques for their assistance in the preparation of this article**