

# The road to price discovery

There are at least two different market-based approaches now being undertaken to address the problem of climate change: multi-sector and voluntary versus single-sector and mandatory. Over time both should provide valuable insights into the cost of mitigating the problem. Little attention has been given to the process of developing these approaches as opposed to the specifics of each. It is our objective to look at the different approaches in this light.

As multi-sector voluntary programmes go, the UK's Emissions Trading Scheme (ETS) is complex and therefore a bit difficult to analyse. This does not detract from its value. It simply requires students of markets to carefully analyse its multiple objectives and measure its progress against these objectives. Too much of the early discussion has focused on the inadequacies of the architecture and the nature of price discovery to date. Not enough dialogue has been devoted to the process of building institutions. Our purpose here is to highlight the success of the process as opposed to the details of the ETS (see *Environmental Finance*, April 2002, for a more detailed discussion of the scheme).

The initial objective of the UK was to develop a voluntary 'cap-and-trade' scheme. The UK Emissions Trading Group was established to achieve a consensus on the mechanics of the programme and to build institutions which would facilitate the achievement of the objectives. Some of these objectives have already been unambiguously accomplished. The British government, private sector and non-governmental organisations (NGOs) together developed a three-part participation framework: absolute reductions from a pre-determined baseline; the meeting of efficiency targets to reduce the impact of the Climate Change Levy; and participation for domestic project-based reductions of greenhouse gases (GHGs). A gateway mechanism was also

developed to manage trading between the absolute and efficiency-based sectors. This was done to ensure that total GHG emissions would be reduced. We are only at the beginning of the process of determining whether all or parts of the participation framework will ultimately be successful.

Consensus was also built regarding a specific financial incentive of £215 million (\$312 million) for participating companies as well as a mechanism for allocating this sum. As an aside, practitioners and institutional economists would benefit greatly from a fuller description of this process.

We can infer from the results released in mid-March that the incentive auction has been highly successful. The multiple-round Dutch auction attracted 34 successful participants. Some expectations were that only six or seven companies would take part. The incentive auction began at a price of £90 and after nine rounds a clearing 'price' of £53.37 was achieved. The true per-tonne auction incentive level is in fact one-third of this value, or £17.79 (see box).

But it is important to emphasise that this is not the 'price' of allowances. It is simply a point on the road to price discovery. This was an incentive payment to induce participants to commit to specific emission reduction targets. There has been considerable misunderstanding of this number. The purpose of the incentive money was to insure that the volunteers didn't put themselves in an un-competitive position within their industry relative to the non-volunteers. Market participants and economists can debate whether the incentive was too high but the price of allowances will ultimately be determined only when the participation framework is fully actualised.

Another significant by-product of the process was the emergence of a consensus on the need for a centralised registry system. The successful building and operation of this insti-



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tution is very significant.

The other market approach – single-sector and mandatory – already exists in Denmark. That process required political consensus which enabled legislation to be passed. Its restriction to the power sector and the relatively small size of this industry (eight participants) provided for a quicker launch. The market cap has already been achieved, so the process was successful in relation to this objective. On the other hand, there has been no need to trade. The Danish system has initialised a process that can eventually provide another point on the road to price discovery. As announced by the Danish Energy Agency, several participants have expressed a desire to form an exchange. It too has created a registry. It is noteworthy that the UK's multi-sector voluntary programme does not directly address emissions from power production, while the simpler Danish programme addresses only power sector emissions.

Variations on both of these approaches are already in progress in the US. The Chicago Climate Exchange is a voluntary and comprehensive programme while the states of Massachusetts and New Hampshire are pursuing the mandatory single-sector approach. Both should provide us with insights into how flexible mechanisms can be used to mitigate GHG emissions. We believe in the wisdom of Eugene O'Neill – "All God's chillun got wings".

Finally, as promised, here's an update from the CCX. Its newest members include Baxter International, representing the pharmaceutical sector, while The Carbon Fund and Conservacion Mexico have recently joined as offset providers. New members Det Norske Veritas, SCS Engineers and Edelman Worldwide will help provide market infrastructure. We are also glad to announce that Gerard Pannekoek has joined Environmental Financial Products as a senior vice president and chief operating officer.

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## Example: UK ETS auction incentive payments

- An 'annual target' of 100,000 tonnes means the target falls by 100,000 tonnes a year
- An 'overall target' means the reduction in the fifth year relative to the baseline, ie, an 'overall target' of 500,000 tonnes means the year 5 emissions target is 500,000 tonnes below the baseline

### Hypothetical example of 100,000-tonne 'annual target'

Baseline	1,000,000 tonnes	Cut relative to baseline
2002 target	900,000 tonnes	100,000
2003 target	800,000 tonnes	200,000
2004 target	700,000 tonnes	300,000
2005 target	600,000 tonnes	400,000
2006 target	500,000 tonnes	500,000
Total tonnes cut (relative to baseline)		1,500,000
Per-tonne incentive payment at £53.37 clearing 'price'		£5,337,000 × 5 = £26,685,000
Total cuts:		1,500,000 tonnes
Incentive payment per tonne (pre-tax)		£17.79