The UK Emissions Trading Scheme auction

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EU ETS Auction Workshop
University of Cambridge, 12 January 2007
UK Emissions Trading Scheme

- UK ETS began March 2002.
  - World’s first large-scale greenhouse gas trading scheme

- “Direct” participants
  - 32 successful bidders in March 2002 auction
  - Undertook voluntary targets for additional abatement, in exchange for incentive payment (ie subsidy per tonne of abatement in 2006, against historic baseline)
  - Cap-and-trade system: DPs are allocated allowances equal to baseline emissions minus abatement target

- “Agreement” participants
  - Firms within Climate Change Agreements can achieve compliance by trading
  - Baseline-and-credit system: CCA members generate allowances through over-compliance with CCA target
  - Up to 6000 potential "agreement" participants
The subsidy auction

11-12 March 2002

"Descending clock" auction, to allocate abatement subsidy budget of £215m
- started at £100 / tCO2e
- 38 initial bidders
- bids totalled 4.9 mtCO2e (aggregate cost of £490m)
- Price per tonne successively reduced, until aggregate bid matched budget
- Auction closed after 9 rounds, at price of £53.37 /tCO2e.
- Total percentage emission reduction in 2006, against baseline = 13%

32 successful bidders.
- A small number of firms awarded a high proportion of the total auctioned allowances. (One firm awarded 20% of total)
- Over half of DP emission reductions are in non-CO2 GHGs.
# The ETS auction outcome: successful bidders and targets

<table>
<thead>
<tr>
<th></th>
<th>Target (emission reduction in 2006 against baseline) thousand tonnes CO2e</th>
<th>Share of total target (Share of auctioned allowances) percentages</th>
<th>Percentage emission reduction against baseline percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ineos Fluor Ltd</td>
<td>806</td>
<td>20.0</td>
<td>43.3</td>
</tr>
<tr>
<td>Du Pont (UK) Limited</td>
<td>500</td>
<td>12.4</td>
<td>19.0</td>
</tr>
<tr>
<td>Shell UK Ltd</td>
<td>439</td>
<td>10.9</td>
<td>11.5</td>
</tr>
<tr>
<td>Rhodia Organique Fine Limited</td>
<td>430</td>
<td>10.7</td>
<td>20.5</td>
</tr>
<tr>
<td>UK Coal Mining Limited</td>
<td>400</td>
<td>9.9</td>
<td>8.8</td>
</tr>
<tr>
<td>British Petroleum plc</td>
<td>354</td>
<td>8.8</td>
<td>5.2</td>
</tr>
<tr>
<td>First Hydro Company</td>
<td>285</td>
<td>7.1</td>
<td>20.8</td>
</tr>
<tr>
<td>Lafarge plc</td>
<td>250</td>
<td>6.2</td>
<td>7.8</td>
</tr>
<tr>
<td>24 smaller bidders</td>
<td>564</td>
<td>14.0</td>
<td>13.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,026</strong></td>
<td><strong>100.0</strong></td>
<td><strong>13.2</strong></td>
</tr>
<tr>
<td>top 3 firms</td>
<td>1,745</td>
<td>43.3</td>
<td>21.0</td>
</tr>
<tr>
<td>top 10 firms</td>
<td>3,688</td>
<td>91.6</td>
<td>13.2</td>
</tr>
<tr>
<td>bottom 10 firms</td>
<td>26</td>
<td>0.6</td>
<td>16.7</td>
</tr>
</tbody>
</table>

Source: Defra emissions trading website.
Cost of GHG abatement in the auction

- DP auction cleared at price of £53.37 /tCO2e.
  - But commitments in the auction were for 2006 reductions (as against baseline, normally 1998-2000 emissions).
  - Intermediate reductions were also required, with rising profile over five years: 20% 40% 60% 80% 100%
  - This profile requires 3 tonnes of total abatement for each 2006 tonne.
- .......implies a price per tonne of abatement of £17.79 /tCO2e
- .......equivalent to approx $114 /tC  ( 17.79 *1.75 * 44/12 )
Market price has fluctuated, but always well below auction price. Currently about £2 ($4) /tonneCO₂.
The “problem” of the accumulated permit bank

• DPs agreed to cumulative abatement of 11.88 mtCO2e over 5 years (2002-06).
  – Rising profile of targets (20% of 2006 target in year 1, 40% in year 2,..etc).

• In first two years, abatement by DPs exceeded targets by 7.41 mtCO2e
  – ie abatement was 4x target

• The accumulated allowance bank was projected to be well over 10 mtCO2e by end-2004.
  – The large bank reduces the value of allowances, and hence abatement incentives for CCA participants.

• April 2004 National Audit Office report criticised over-generous baselines for some firms
  – allowing them to obtain allowances for non-additional abatement
Reducing the bank

Defra considered various options for reducing the size of the bank.
• eg cancel allowances, restrict tradeability, re-run auction
• consultation document sent to DPs in August 2004
• Goal: a bank of approx 2.5 mtCO2e by end-2006, when DPs leave the scheme.
• one-off cancellation of allowances to achieve this would need to be approx 15 mtCO2e.

Requires drastic intervention:
• retrospective measures affect behaviour less than measures affecting future years
• if no retrospective measures, intervention must be very stringent, because bank is already very large.
• various legal and practical issues arise with retrospective measures. eg should there be "buyer" or "seller" liability for cancelled allowances already traded?

Outcome (Defra announcement on 30 November 2004)
• Six companies agreed to make voluntary additional emission reductions totalling 8.9 mtCO2e
• Ineos Fluor, Rhodia Organique Fine, INVISTA textiles, BP, British Airways, Lafarge Cement
• Is 8.9 mtCO2e enough?

Price impact?
• Price series shows no impact at August 2004 review, or of November 2004 announcement.
• Did April 2004 price rise from £2 to £4 anticipate this deal?

Why didn’t the firms offer more, in order to maximise value of remaining allowances?
Over-compliance in the first three years, and the effect of the 2004 adjustment

- Ineos Fluor Ltd
- Invista Textiles (UK)
- Shell UK Ltd
- Rhodia UK Limited
- UK Coal
- BP
- First Hydro Company
- Lafarge plc
- British Airways plc
- British Sugar plc
- Remaining 22 firms

Cumulative overcompliance (3yrs), after adjustment
Adjustment (year 3)