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## Discussion Paper

Berlin, 11.09.2007

# Auctioning in the EU ETS

### Summary

WWF welcomes the view of the Council of the European Union that the EU-ETS Review “should seriously consider an increased level of auctioning and greater harmonisation”.

Source: Council Conclusions on Review of the EU ETS, June, 28<sup>th</sup>, 2007

WWF recently commissioned Öko-Institut and the University of Cambridge to analyse the case for auctioning and existing options for the auctioning design. This discussion paper is largely based on the findings of this report, as interpreted by WWF, which demonstrates that:

- auctioning is the only instrument allowing the introduction of true carbon pricing;
- implementation of auctioning is straightforward;
- auctioning eliminates windfall profits within those sectors covered by the scheme;
- auctioning does not in itself lead to an increase in electricity prices.

Critical points around an auction include **who** should hold the auction and **where** the auction should be held.

NB: the issue of recycling of the auction revenues was not addressed in this report.

### Introduction

#### Experiences in the first and second phases

Grandfathering has been the main allocation method in the first phase of the scheme (2005-2007). Problems associated with grandfathering are twofold: grandfathering unfairly rewards historical large polluters and does not reward early action to reduce emissions by EU ETS installations. Furthermore, grandfathering with a moving baseline encourages installations not to reduce their emissions as this would result in fewer allowances in future phases.

In the second phase of the EU ETS (2008-2012), Member States will still be largely using the grandfathering allocation method but benchmarking will also play an increasingly significant role. More interestingly, 10 Member States will be phasing in auctioning within the 10% limit set by the Directive.

Experiences from the first phase are that although allowances were largely distributed for free, electric utilities passed on the price of CO<sub>2</sub> certificates as costs to their customers. This price factoring of CO<sub>2</sub> costs led to tremendous windfall profits for the large utilities. In the UK, DTI analysis has estimated that large electricity generators gained GBP 1.2-1.3 billion in 2005.

Source: As estimated by the DTI and noted in the Partial Regulatory Impact Assessment accompanying the draft Climate Change Bill, March 2007,



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<http://www.defra.gov.uk/corporate/consult/climatechange-bill/ria.pdf>

In Germany, research by WWF showed that the windfall profits for the five largest utilities could be in the range of EUR 31 and 64 billion for the two phases of the EU ETS.

Source: Background information, WWF Germany, March, 27<sup>th</sup>, 2006

## Implications for the EU ETS Review

In summary, the issue of auctioning is increasingly raising attention in the debate around the EU ETS Review, in particular since:

- the deficiencies of free allocation become more and more obvious;
- the windfall profits related with free allocation raised debates;
- in other emerging emissions trading schemes (Regional Greenhouse Gas Initiative and California in the US) auctioning will play a significant and prominent role.

## The case for auctioning

The political debate has moved on from grandfathering and now focuses on auctioning versus benchmarking. As referred to above, a strong argument for auctioning is that it would eliminate windfall profits. Indeed, in Phase I, electric utilities, although having received their allocation for free, passed the costs of carbon through to their customers. Furthermore, some indications exist that other industries are also able to pass-through the costs of carbon.

## Problems with benchmarking

Many commentators commonly confuse benchmarking as an alternative to grandfathering. However, this is not the case as both are based on

the principle of giving away permits for free. There are many serious problems with benchmarking that leave it open to abuse and, worst still, dampen the overall effectiveness of the carbon reduction signals. These include:

- Determining a benchmark – A robust benchmark is based on the production and cost data of a company. This is commercially sensitive information and there are many barriers to making this information public and sharing it between competitors. So there is significant uncertainty over the transparency in which benchmarks can be identified and agreed thus questioning their validity;
- The number of benchmarks – There is no incentive to set a single benchmark per sector. Industry is currently calling for a benchmark per product and/or per process. This is dependent on the complexity of the product and process. This means that there are likely to be far too many benchmarks to incentive low carbon production which is exactly the case with the Best Available Techniques and Technologies that has rendered the Integrated Pollution Prevention Control measures largely obsolete;
- Rewarding ‘early movers’ – Giving permits away for free does not give ‘early movers’ (companies that made efficiency improvements either through other regulatory drivers or because they had a strong economic efficiency case) an incentive to continually reduce emissions as effectively as auctioning all permits;
- Lack of dynamism – Because technologies and techniques change constantly, it is extremely costly to have to constantly change the benchmark to the extent that it leads to confusion and a lack of certainty;



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- Competitive disorders – there is no guarantee that there will be EU sector wide benchmarks thus reinforcing sectoral distortion across the EU.

## Four reasons in favour of auctioning

Overall, several reasons speak for the phase-in of auctioning:

- Auctioning allows the creation of an undistorted carbon price signal. The recent experiences show that no regulator was able to create a scheme of free allocation which did not create major distortions of the CO<sub>2</sub> price signal;
- Even with the general trend towards benchmarking, the allocation is still far from being simple and transparent because of the manifold distributional effects. Auctioning is the only way to overcome the complexity and remaining distortions of free allocation schemes;
- The phase-in of auctioning could remove at least a part of the windfall profits arising from free allocation and pass-through of opportunity costs in competitive markets;
- The appropriate use of auction revenues could enable “double dividends”<sup>1</sup> in terms of innovation, emission reduction and prosperity.

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<sup>1</sup> Double dividends:

- by recycling the revenues to support innovation and technological development or to overcome barriers for cost-efficient mitigation options;
- by recycling the revenues to remove other distorting taxes or duties, e.g. on labour costs, social insurance, pensions.

## The debate on international competitiveness

Auctioning of allowances will impact the cash flow of the companies which operate installations under the scope of the EU ETS. The ability to pass-through the costs of carbon differs between different sectors and products. Where the pass-through is not possible, competition distortions could arise, potentially leading to leakage. However, the empirical evidence that the introduction of the EU ETS has so far created major competition distortions or leakage is rather poor at this stage of the scheme. This empirical evidence is supported by research commissioned on the subject.

Source: The impacts of the EU ETS on Competitiveness and Employment in Europe – A Literature Review, ZEW, May 2006

According to the report, the probability of competitive distortions will not arise from the CO<sub>2</sub> intensity of certain processes but from the share of energy necessary in these processes. As a result, only few industrial sectors could potentially claim a significant vulnerability to international competition distortions. The most significant energy costs for the majority of these sectors are electricity costs. Therefore these sectors will face the effects of increased electricity prices independently from the allocation approach for their direct emissions if it is assumed that competitive power markets will allow pass-through of CO<sub>2</sub> costs. Competitive distortions in this case can not be addressed by continuing free allocation.

## Auction Design

Auction design is important to ensure:

- Simplicity and transparency to simplify communication, participation and acceptance of the auction and the overall emission trading scheme;



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- Low transaction costs, information requirements, cash flow implications and price risk to facilitate wide participation, including by small players;
- A market clearing price that reflects the value of the allowances in the market;
- A design which minimises the problems from collusion and abuse of market dominance or market power;
- A design which helps to maintain a liquid secondary market for emission allowances.

Auction design starts with the definition of the objectives to be achieved with the auction:

- Simplicity and transparency to simplify communication, participation and

acceptance of the auction and the overall emission trading scheme.

- Low transaction costs, information requirements, cash flow implications and price risk to facilitate wide participation, including by small players.
- A market clearing price that reflects the value of the allowances in the market.
- A design which minimises the problems from collusion and abuse of market dominance or market power.
- A design which helps to maintain a liquid secondary market for emission allowances.

The authors discuss several options, indicating for each of them their preferences:

## Overview on design options and preferences by report authors

Aspect	Options	Preference by report authors
<i>Key design feature</i>		
Participants	<ul style="list-style-type: none"> <li>• Restricting participation to emitters from specific sector/country could reduce demand and offer lower price, but seems difficult to enforce and is likely to be incompatible with common market.</li> <li>• Restricting participation to emitters to exclude traders. Sometimes argued to avoid gaming/profitting. Such artificial restrictions increase profit margins and reduce benefit of intertemporal and spatial arbitrage and services provided by traders.</li> <li>• Allow participation to all entities with registry account.</li> </ul>	Allowing all entities with registry accounts ensures competitive auction and contributes to liquid secondary market so as to achieve the overall objectives of the auction design and does not seem to create any real disadvantages.
Single/multiple rounds	<ul style="list-style-type: none"> <li>• Multiple-round auctions reveal information about demand.</li> <li>• Sealed bid auction is simple.</li> </ul>	Relevant information is already in secondary market, so simple sealed bid auction suffices.
Calculation of clearing price	<ul style="list-style-type: none"> <li>• Uniform price auction is simple and allows participation by small/uninformed players.</li> <li>• Discriminatory price auction avoids bid shedding, but discriminates against uninformed players.</li> <li>• Vickery auction achieves truthful</li> </ul>	The number of emitters and financial players participating across Europe is large, so it is unlikely demand will not be revealed. The simple uniform price auction format suffices to address concerns.



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	revelation, but discriminates against small players.	
Auction frequency	<ul style="list-style-type: none"> <li>• Low frequency allows for complex format where required to address market power and reduces transaction costs.</li> <li>• Higher frequency auctions offer allowances at time required by participants, reduce need and costs for financial intermediaries to take short-/long positions to hold allowances, avoid gaming and reduce risks for participants.</li> </ul>	At least monthly auctions of the simple format described above create limited transaction costs and can achieve the benefits associated with higher frequency auctions. If full auctioning will be implemented the shift to weekly auctions could be suitable.
Distribution of allowances across auctions	<ul style="list-style-type: none"> <li>• Early announcement of government strategy reduces market uncertainty.</li> <li>• Governments could retain flexibility to respond to market prices (revenue maximisation, price stabilisation).</li> <li>• Selling allowances earlier on to provide for hedging demand when producers sell forward contracts, or produce and sell output.</li> <li>• Selling allowances later to meet compliance demand.</li> </ul>	Governments should credibly announce distribution of allowances over time to avoid uncertainty and use transparent policies where there is a desire to avoid, for example, extremely low prices. Allowances should be distributed across auctions to meet market demands – this requires more information about, for instance, hedging demand.
Reserve price	<ul style="list-style-type: none"> <li>• No reserve price increases number of participants.</li> <li>• Reserve price related to price in secondary market, e.g. 90% previous day(s) – protects auction from unforeseen events.</li> <li>• Announcing reserve price increases transparency but increases risk of market participants coordinating on this reserve price.</li> </ul>	Announcing a reserve price related to prices in secondary markets on the previous day increases transparency and protects integrity from unexpected outcomes related to technical failures, etc.
Credit posting requirements	<ul style="list-style-type: none"> <li>• Without any credit posting/collateral, bids in the auction are options, facilitating gaming and reducing confidence in clearing price.</li> <li>• Credit posting at full bid value creates transaction costs/entry barriers.</li> <li>• Credit posting proportional to fraction of maximum bid value, similar to margin requirements in financial market, ensures viable bids at lowest possible costs.</li> </ul>	Credit posting for fraction of maximum bid value (e.g. 10%) ensures integrity of auction. Allowing multiple options reflects the diversity of bidders (letters of credit, ESCO account, posting of collateral, corporate credit card).
Institution hosting the auction	<ul style="list-style-type: none"> <li>• New governmental body</li> <li>• Built on Treasury bond auction experience, but usually not (yet) equipped to deal with large number of bidders.</li> </ul>	Set up, running costs and implementation delays are likely to be smaller if an institution with similar operations is



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	<ul style="list-style-type: none"> <li>• Commission to institution with similar existing operations to implement separate auction.</li> <li>• CO<sub>2</sub> trading like ECX, EEX, Nordpool, Power exchanges like APX, UKPX, EEX, Nordpool, Financial market places.</li> </ul>	commissioned to execute the auction on behalf of one or multiple governments. A large set of potential candidates is available.
<i>Additional features</i>		
Restriction of bids	<ul style="list-style-type: none"> <li>• No restriction on bids.</li> <li>• Limitation of bids to a certain share of the number of allowances to be auctioned (considering all firms of a group).</li> </ul>	No limit on bids and enabling the implementation of limitations on bids in the regulatory framework if this should prove being necessary in future.
Market monitoring and transparency	<ul style="list-style-type: none"> <li>• No regulation or market observation.</li> <li>• Regular observation of the market.</li> <li>• Full transparency of the auctions.</li> </ul>	The responsible authority should get access to all information of the auctions and publish aggregate data from the auctions on a regular basis.

## Impact of auctioning in the power sector

One of the concerns of the phase-in of auctioning in the EU-ETS which is often expressed in the political debate is the argument that auctioning could lead to a (further) increase of power prices. The report analyses the effects of auctioning on the power prices of the wholesale market, **demonstrating that auctioning will NOT in itself lead to an increase in electricity prices.**

### Short-term impacts

Power plants operators include the full cost of CO<sub>2</sub> in the short term marginal costs. If the price formation in the electricity market relies on the short term marginal costs of the marginal plant (i.e. the plant which will produce the next unit of electricity) the price of electricity includes the market value of the allowances needed to generate the marginal unit of electricity. Hence, the full costs of carbon will be reflected by the market price independently of whether the operator

received the allowances for free or has had to purchase the necessary allowances in the market.

As a result, the phase-in of auctioning will have no impact on the power prices in the short-term because it will only transform opportunity costs of the free allowances into real costs for the purchase of allowances.

### Long-term impacts

In the long term different mechanisms must be reflected. It is argued that removing the free allocation for new installations effectively removes an investments subsidy which could delay some investments and lead to higher power prices. However, continuing free allocation will continue to distort the CO<sub>2</sub> price signal (free allocation to new entrants, closure provisions, updating, etc.) thereby decreasing the efficiency of the scheme which would increase future allowance prices and as such increase power prices.

Overall, auctioning of CO<sub>2</sub> will enable undistorted CO<sub>2</sub> price signals, which will result in lower total



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costs of emission mitigation. Furthermore the reflection of the undistorted CO<sub>2</sub> price signal will decrease the future vulnerability of the power prices regarding the CO<sub>2</sub> allowance prices.

## WWF Conclusions and Recommendations

### Further Information:

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You can find further background information including this discussion paper and the report on the Internet at [www.wwf.de](http://www.wwf.de)

This analysis indicates that:

- Considering the distortions associated with free allocation, auctioning should be seen as the preferable way for the further development of the EU ETS.
- Auctioning eliminates windfall profits;
- Auctioning is the only instrument allowing the introduction of true carbon pricing;
- Auctioning is easy to implement if the design is properly thought through;
- Auctioning does not lead in itself to an increase in electricity prices.

**WWF recommends that when Phase III of the EU ETS starts in 2013, all permits be allocated on an auctioning basis.** This ensures:

- The ‘Polluter Pays Principle’ is implemented;
- The equal access to permits;
- The distribution of permits in an open and transparent manner;
- Dramatic simplification and harmonisation of the allocation process (in particular the new entrant reserves and closure rules become redundant);
- Appropriate carbon pricing and the elimination of windfall profits.

WWF recommends that revenue from auctioning is spent on climate change mitigation and adaptation solutions.