

[short version]

MEMO

POSITION ON AUCTIONING OF EMISSION ALLOWANCES WITHIN THE EU EMISSION TRADING SCHEME (EU ETS)

- Position 1:** The principles used for the distribution of allowances (EUAs) to the market have no implications for the level of greenhouse gas (GHG) emission reductions as defined for the relevant trading period.
- Position 2:** The allocation principles only purpose should be to distribute EUAs to the market in an efficient and fair manner, without creating additional (dis)incentives. This is necessary in order to preserve the CO₂ price signal and safeguard the EU ETS ability to stimulate the most cost-efficient measures to reduce emissions.
- Position 3:** The resulting EUA price implications from an increased degree of EUA auctioning are expected to be of minor significance compared to other developments such as the gradual tightening of the emissions cap.
- Position 4:** On liberalized electricity markets with marginal cost pricing, we expect the electricity price to remain largely unchanged under a transition to full auctioning. The reason is that on these markets, the opportunity costs of EUAs are already to a large extent passed-through to the wholesale prices of electricity.
- Position 5:** In markets characterized by price regulation, we expect a more significant upward effect on wholesale electricity prices. Unless the EUAs are actually purchased by operators, the average-cost pricing constraints the extent to which the EUA costs are actually passed-through on these markets. Considering the gradual introduction of auctioning in these countries, we expect an increasing share of the EUA costs to be passed-through over time, leading to increased wholesale electricity prices.
- A similar effect can be expected to emerge solely from the on-going deregulation of these electricity markets, which allows for a greater degree of cost pass-through of the EUA opportunity costs.
- Position 6:** The transition from free allocation to full auctioning in Phase III is expected to eliminate the implicit support to CO₂-intensive electricity generation and thereby contribute to a more level playing field for investments in non-CO₂ intensive electricity technologies.
- Position 7:** In order to ensure a smooth and effective transition to auctioning, it is important that the auctioning process is well prepared and designed

according to the principles of efficiency, fairness, predictability and simplicity.

Position 8: The auction design should preferably be based on an uniform price-setting and single-round sealed-bid process allowing for multiple bids. Auctioning of EUAs for Phase III should start in advance of the period (preferably in 2011) in order to allow for hedging of EUA price risks.

Position 9: Auctions should be held frequently (preferably weekly) and be based on a fixed time-schedule. Information on the precise quantities of EUAs that is to be sold at each auctioning occasion must be communicated extensively and in due time.

Position 10: Full access to the auction processes for all EU ETS operators, as well as other market participants, is indispensable. Member states must not arrange auctions that favour certain operators or sectors, nor should they be allowed to steer the supply and affect the market in order to maximise their revenues.

The EUAs should be sold on a common EU-wide auction platform as this increases the prospects for equal treatment of market participants, reduces the risk of strategic behaviour from auctioneers, increases the system's transparency and lowers the overall administrative costs.

1 INTRODUCTION

The overarching purpose of the allocation process is to deliver a capped amount of emission allowances to the market participants in an efficient and fair manner. The market mechanisms will then work to ensure that the allowances are used in a cost-efficient manner by creating incentives to reduce the emissions where the operators' marginal abatement costs are lower than the market price of allowances. However, the CO₂ price effect on decisions tends to be blurred if the principles for allocating the allowances to the market give rise to additional (dis)incentives for operators.

2 ECONOMIC IMPLICATIONS OF A TRANSITION FROM FREE ALLOCATION TO FULL AUCTIONING

Free allocation has been the dominant allocation principle during Phase I and II of the EU ETS, and is often viewed as having rewarded polluters and given rise to "windfall profits". In economic terms, free allocation of EUAs is above all a transfer of wealth, but depending on the actual orientation of the allocation principles, it also tends to support electricity generation capacity based on the generator's CO₂-intensity.

As such, free allocation often entails disincentives for CO₂ emission reduction efforts, meaning that the environmental steering is not as effective as the uniform EUA price suggests, thus implying that more costly abatement measures are required to reach the defined emission cap. Consequently, the EUA price might be distorted when the most cost efficient measures are not implemented within the covered sectors.

The most immediate disincentives can be derived from the following two allocation features.

- **Updating free allocation to incumbents**
 - For both an “updating” principle (e.g. emission-based allocation with a sliding reference period) and fuel-dependent “benchmarking” principle (separate benchmarks for generation based on which fuel is used), the individual operator’s allocation is dependent on the fuel-choice, which tends to provide additional incentives to keep CO₂ intensive electricity generation capacity in place, thus blurring the intended (cost-effective) steering signal of the CO₂ price.

- **Free allocation to new entrants and contingent allocation to plant closures**
 - Free allocation of EUAs to new entrants and forfeiting EUAs upon closure of old installations both support the introduction of new, and preservation of existing, electricity generation capacity on the market. As such, these entry and closure provisions have a dampening effect on electricity prices and it could therefore potentially offset a part of the pass-through of EUA costs into electricity prices. At the same time, the new entrants and closures provisions tends to support CO₂ intensive production, and thus, it could entail increased EUA prices as more costly emission abatements must be achieved within the system.

Box 1: New entrants and closure rules

- The allocation principles practiced for new entrants during the first phases of the EU ETS are both contingent on the investment being materialized and dependent on the CO₂ intensity of the installation. An implication is that the opportunity cost of the freely allocated EUAs is not fully perceived (since a decision to use a more CO₂ efficient alternative would render a lower allocation of allowances, instead of a surplus of allowances that can be sold). Therefore, the new capacity is likely to be more CO₂ intensive than under an auctioning scenario where the operators face the full CO₂ price signal.
- As a consequence, the current rules for allocation to new entrants can have a reducing effect on the electricity price in one region, but at the same time an increasing effect on the EUA price, thus higher electricity prices elsewhere.
- In Member states where “closure rules” are explicitly contained in the national allocation plan, the installation-level allocation decided for the period generally ends by the year that the installation is taken out of operation. Forfeiting the free allocation upon plant closure gives rise to incentives to keep old and inefficient capacity in operation longer than is motivated based on the real CO₂ price.

- The disincentives associated with closure rules appear only under a free allocation regime. Without free allocation to existing installations the treatment of installations that close is not an issue, and hence, there are no such disincentives involved.

2.1 Instantaneous transition from free allocation to full auctioning

The EU's agreement on the revised EU ETS directive stipulates that there will be an instantaneous transition to full auctioning for electricity generating installations in the majority of Member states from 2013. Most of these countries are characterized by liberalized electricity markets featuring marginal-cost pricing.

We expect the *EUA price* to remain mostly unaffected by an instantaneous transition to full auctioning, as the EUA price is set by the demand and supply of EUAs and in principle does not depend on the allocation mechanism under marginal cost pricing. Nevertheless, a limited (negative) price correction could arise from a lower demand for EUAs since the incentives to invest in CO₂ intensive generation capacity which are associated with free allocation (new entry and closure provisions) disappear.

In principle, we expect also the *electricity price* in most European markets to remain largely unaffected since the EUA cost is already reflected within the marginal cost of electricity generation. On liberalized electricity markets with marginal cost pricing, it does not matter if the EUA cost is paid "out of pocket" or comes in the form of an opportunity cost.

To divert from the allocation provisions for new entrants and closures might however entail a small (upwards) correction of the electricity prices since the implicit support for investments in new, and conservation of existing, power capacities disappears.

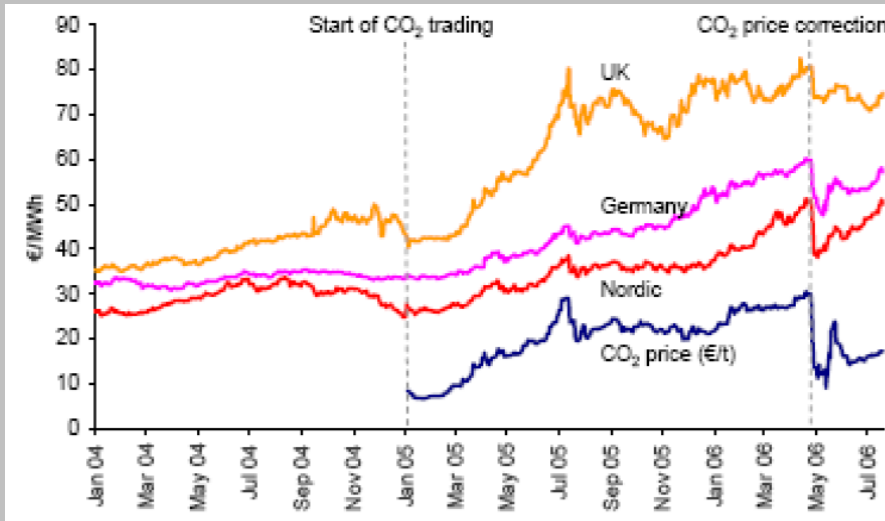
The main effect of the transition from free allocation to auctioning in the utility sector will take the form of decreased profitability for fossil-fuel fired installations as the free allocation of EUAs cease and it is not accompanied with a corresponding increase in electricity prices since the EUA effect is already incorporated (liberalized markets).

Box 2: EUA cost pass-through into electricity prices

- Numerous investigations on the economics of the EU ETS's impact on electricity prices conclude that, in deregulated and competitive markets, the pass-through of CO₂ prices into electricity prices is inevitable. Both freely allocated and purchased EUAs have an real economic value for the operators, and thus, affect the marginal production cost.¹
- The downturn in EUA prices (referring to allowances only valid during Phase I) in the spring of 2006 can serve as an indicator of the interdependence between the EUA price and electricity prices (see Figure). The drop in EUA prices by € 10 per

¹ ECN [2008], IEA [2007], Honkatukia et al. [2006], Frontier Economics [2006], ILEX [2004]

tCO₂ was immediately followed by a drop in the wholesale electricity prices of € 5-10 per MWh in many EU markets simultaneously.



- The highest rates of pass-through of costs can be detected in highly deregulated and competitive markets. In other markets, the presence of price regulation has prevented some of the (opportunity) costs from propagating into consumer prices, although this is changing as the deregulation of these markets proceeds.

2.2 Gradual transition from free allocation to full auctioning

According to the revised EU ETS directive, a limited number of Member states are allowed to deviate from the principle that electricity generation shall be subject to full (100 %) auctioning as from 1 January 2013.² This is an optional measure (attributed to Poland among others), which enables the Member states in question under certain conditions to perform “transitional free allocation for the modernisation of electricity generation” for installations taken into operation by 2008. In these cases, the free allocation is gradually reduced from 70% to 0% between 2013-2020.

The Member states that fulfil the criteria for being able to perform a transitional free allocation for the modernisation of the electricity largely corresponds to the Member states that have the least liberalized electricity markets featuring e.g. average cost pricing. However, many of these countries are now taking steps to liberalize their electricity markets and it can be expected that most of these markets will feature marginal-cost pricing by 2013. Provided that this will happen, the implications of a

² In order to qualify for optional free allocation to utilities, the Member state in question must have more than 30 % of its electricity produced from a single fossil fuel and a gross domestic product per capita that does not exceed 50 % of the EU average. The other circumstance that can qualify for such option is where the electricity markets are insufficiently connected to the international electricity grid (UCTE).

transition to full auctioning will resemble the economic implications described in Section 2.1, but to a less extent as free allocation is phased out only gradually.

The *EUA price* will probably remain mostly unaffected by the increased degree of auctioning, and to an even lesser extent than under an instantaneous transition as the disincentives associated with free allocation and closure provisions are phased-out more gradually. In addition, the number of Member states that has the possibility to perform a transitional free allocation represents only a limited part of the market.

At the same time, an upward effect on the wholesale *electricity price* can be expected. Unless the EUA cost is paid for out of pocket, average cost pricing puts constraints on the extent to which EUA costs are passed-through. Based on the gradual introduction of auctioning on these electricity markets, there should be an increasing share of the EUA costs passed-through, leading to an increase of the wholesale electricity prices over time (also under the regulated market scenario).

Furthermore, we expect that the abolishment of the new entrants provision and the gradually reduced effect from the closure provisions will entail a small, but positive correction of electricity prices. The electricity generation levels are likely to decrease somewhat because of the increased out-of-pocket costs and reduced demand. As the EUA price effect is more preserved, the non-CO2 intensive generation technologies increase their competitiveness at the expense of CO2 intensive technologies.

3 THE IMPORTANCE OF SOUND AUCTION DESIGN

Linked to the question of a transition from free allocation to auctioning of EUAs is the practical design of the auctions. Considering that the lion share of EUAs (more than 1 billion EUA per year) will be distributed through auctions in Phase III, efforts must be made to ensure that the auctioning conduct is as fair and efficient as possible from a market perspective.

The design elements of auctioning can have considerable impact on the EUA price formation, and thus the electricity prices, especially in connection to e.g. a potential artificial scarcity on the market, other forms of non-balanced release and insufficient access to the auction process for certain market participants (leading to non-uniform clearing prices). Therefore, a sound auction design is imperative, and this can protect against both a discriminatory conduct and a possibly thin secondary market, which is increasingly important as most of the market volume originates from the auctioning.

Box 3: Vattenfall's position on the design of EU ETS auctions

Recommendation on auction formats

- The auctions should preferably be based on a single-round sealed bid format with multiple bids allowed. Since the EUAs are already actively traded in the secondary markets, the information gained from a multiple-round system is not crucial. Instead, a single-round procedure allows for simpler conduct and lower transaction costs.

- The price-setting mechanism practiced in the EUA auctions should be of uniform-price type. This method is most likely to promote equal treatment of all participants and avoid the risk of strategic behavior where bidders “guess” the lowest successful bid. The uniform-price method improves both how fair the EU ETS is perceived, makes the participation more understandable and transparent for all stakeholders, and creates better conditions for (the smallest) operators that might run the risk of paying a too high price because of a limited capacity to assess all relevant market information.

Recommendation on auction parameters

- The most preferred option is to use only one auctioneer or one single EU-wide auctioning platform. The more centralized the auctions are, the more prospects for a cost-efficient and non-discriminatory conduct. The risk that a Member state (indirectly or directly) favors certain operators or sectors is significantly lower in case a common (or heavily coordinated) EU platform is used. Decoupling the management of auctions from those that benefit from the proceeds could also serve to ensure that conflicts of interests are avoided.
- Anyone interested in placing bids in the auction process should be allowed to do that as long as they fulfill basic requirements. Unlimited access for all market participants, regardless of e.g. their geographical location, is a precondition for non-discriminatory conduct. The use of existing exchanges facilitates broad and simple participation.
- The EUA auctions should preferably be held on a weekly basis. This is the optimal balance between the need of a continuous release of EUAs to the market, creating as low disturbances on the price formation on the secondary market as possible, and practical aspects (incl. transaction costs) for arranging auctions.
- Although there are both pros and cons associated with a reserve price (or effectively a price floor), the market is most positively affected by keeping the political intervention on market prices to a minimum. Hence, a reserve price should not be applied in the auction process. Increased certainty must instead be achieved by a well-balanced and transparent cap-setting procedure, in combination with a liquid secondary market.

3.1 Auction formats

The issue of practical auction design is extensively discussed in the literature³. Provided that a strong secondary market exists, the auctioning process is not the ultimate source of price discovery in the market. On the contrary, the prices in the secondary trade works as a reference point for the individual bidders. Important to consider is also that the choice of method for placing and assessing the participants' bids (single or multiple bids, open or closed bidding, etc.) is not expected to result in fundamentally different clearing prices. Against that backdrop, most attention should be paid to auction design parameters (e.g. frequency, timing, reserve price, access for bidders) which have a tendency to affect the efficiency, equal treatment, etc.

³ Burtraw et al. [2007], Hepburn et al. [2006], Matthes et al. [2007], etc.

3.1.1 Open or sealed bid auctions

Open-bid auctions tends to be more vulnerable to collusion than sealed-bid auctions because the participants can better monitor the price effect of the behaviour within a potentially non-competitive auction process. Compared to a one-round sealed-bid auction there might also be scope to await the other auction participants before submitting a bid. As a consequence, this procedure is more time-consuming.

3.1.2 Single or multiple round(s)

Multiple bidding rounds have the advantage that the auction participants can learn about their competitors' demand (i.e. their economic valuation of the EUAs) as the auction price changes from round to round. However, single-round bidding (where the participants only once per auctioning occasion deliver information on how many EUAs they are interested to purchase at different prices) is generally expected to generate lower transaction costs. In addition, the secondary market provides a reference price to the operators that are interested to participate in auctions.

3.1.3 Discriminatory or uniform price (sealed-bid) auction

If the price paid by the successful bidders varies between the participants in relation to their individual bids, the price formation in the auction is called "discriminatory". All participants that have placed bids that are higher than the lowest price required for all available allowances to be demanded receive the amount that they asked for, paying the price contained in their own bids respectively.

Under the "uniform-price" auction, the bidders submit multiple bids at different prices but the price paid by the participants is homogenous. All successful bidders that have placed a bid higher than the "clearing price" reached at the intersection between the aggregated demand and supply curves pay a price equal to the highest rejected bid.

If the aggregated demand curve is eventually revealed by the auctioneer(s), the discriminatory price auction could involve an element of discontent for participants that have placed bids far from the clearing price. More importantly, the uniform price auction gives no incentives to guess the lowest accepted bid, but rather to take the own willingness to pay (incl. their own internal abatement costs) as a reference, at the same time as the outcome is perceived as more equal and fair.

3.2 Auction design parameters

3.2.1 Holder of auctions / auctioneer(s)

According to the directive, the Member states are instructed to auction EUAs to the market. These are free to join forces with each other and/or assign an independent

institution to perform the auctions on their behalf, but there is no legal requirement on e.g. minimum level of centralization/cooperation.

A high degree of coordination between the Member states has not only the potential of contributing to less scope for strategic behaviour with the purpose to maximise the revenues. It also serves to reduce the Member states' administrative costs and to facilitate the access for especially small market players with regional orientation.

3.2.2 Timing of auctions

The first round of auctions for the 3rd trading period (2013-2020) should start already in advance of the period (preferably in 2011) and this is particularly important for the operators' hedging of risks, the creation of a liquid secondary market and to promote early price discovery. This will reduce the uncertainties that surrounds Phase III and facilitate the planning of abatement activities and investments with long lead times.

The timing of auctions must be communicated as early as possible in order to create full visibility on where operators can obtain EUAs and when these amounts will reach the market. It is important to announce exactly what portions of EUAs that is going to be released at each auctioning occasion. Full predictability is crucial in order to avoid additional risk and to facilitate participation from the smallest operators in the market.

More specifically, it is important that the Member states are not tempted to use the auctioning conduct as a tool to maximize their revenues through e.g. a creation of artificial scarcity in the market.

3.2.3 Frequency of auctions

Auctions should be held frequently (preferably weekly) and be based on a fixed time-schedule. In addition, the quantities of EUAs to be released on the market at different times must be communicated extensively and in due time. A distributed release on the market could allow for better price discovery, reduce the risk of collusion and minimize price disturbances in the secondary market.

3.2.4 Contract types on the auctions

It is important to ensure that the EUA auctioning starts early and that there is good possibilities to hedge against the EUA price risk in advance of the Phase III market. This is especially the case of the utility sector where electricity production is normally sold several years ahead. Providing also EUA futures within the auctions (in addition to the spot contracts) can serve as a means to reduce the price risk and requirements on high upfront payments as the sector becomes increasingly exposed to auctioning. Preferably, at least 50 % of the auctioned EUA volume in a given year should be sold on future contracts starting two years ahead (20 % in year n-2 and 30 % in year n-1), whereas the remaining part is sold on spot (50 % in year n).

3.2.5 Access for buyers

Unrestricted access for all entities that want to participate in the auction is necessary for a fair and efficient auctioning conduct. More specifically, access for all operators regardless of their geographical location within the EU-27 is a precondition for non-discriminatory transactions and the avoidance of a situation where certain EU ETS operators receive EUAs below the market price (indicating the presence of unduly state aid).

An effective way to reduce the risk of restricted access for certain market participants or sectors during the auctioning process is to coordinate the selling of EUAs through one common EU-wide auctioning platform.

3.2.6 Reserve price / price floor

Although a reserve price is not exactly the same thing as an *absolute* “price floor”, we believe that a reserve price applied in the auction process would in practice very much work towards a price floor for the EU ETS market. The reason is that the main source of supply will come from the auctions, forming a large potential for locked-in supply of EUAs at all times the reserve price is not satisfied by the bids. And the bidders are not likely to request EUAs on the auctions to a price that exceeds what they can acquire EUAs on the secondary market. In other words, the supply of EUAs from auctions would be restricted to the extent that it prevents the market price of to get lower than the stipulated reserve price.

Although a price floor could come with some positive effects (e.g. more stable markets prices, and thus, more predictability for investors), we believe that the arguments against a reserve price weigh more heavily. A price floor applied in the auctions could create new uncertainties related to the future development of the price floor’s level or expectations on also a “price cap” being introduced. Therefore, the market is most positively affected by the administrative interference in the EUA price formation mechanism being kept to a minimum.

The political intervention is already significant in the cap-setting procedure that has to be made in advance of each new trading period. Provided that this process is carried out effectively, and there are sound hedging opportunities available based on a well-functioning secondary market for EUAs, additional political intervention in the price formation process is not desired.