Auctioning

German Auctioning of Emission Allowances
Annual Report 2013
Impressum

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German Auctioning of Emission Allowances

The German auctions of the third trading period are held weekly on the European Energy Exchange (EEX) spot market. The German Emissions Trading Authority (DEHSt) at the Federal Environment Agency is the competent authority for the German auctions. Further updated information on the third trading period auctions can be downloaded from the EEX website. Reports on the second and third trading period auction results are available on the DEHSt auction website. The 2013 and 2014 auction calendars are published on the EEX website.¹

The following table summarises the key data of the German auctions on the EEX in 2013 and 2014:

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period</td>
<td>11/01/2013 to 13/12/2013</td>
<td>08/01/2014 to 12/12/2014</td>
</tr>
<tr>
<td>Auction volume entire year</td>
<td>182,560,500 EUA</td>
<td>127,127,500 EUA</td>
</tr>
<tr>
<td>Auction volume per auction</td>
<td>4.02 million EUA (2.01 million EUA in August; 3.67 million EUA on 13/12/2013)</td>
<td>Up to 14/03/2014: 4.6 million EUA From 21/03/2014: 2.352 million EUA (1.176 million EUA in August; 2.335 million EUA on 12/12/2014)</td>
</tr>
<tr>
<td>Auction product</td>
<td>Third trading period EUA spot contracts</td>
<td></td>
</tr>
<tr>
<td>Auction frequency</td>
<td>Weekly (Fridays, 09:00 to 11:00 am CET)</td>
<td></td>
</tr>
<tr>
<td>Bid volume</td>
<td>500 EUA</td>
<td></td>
</tr>
<tr>
<td>Auction mode</td>
<td>Single-round, uniform-price procedure with a closed order book</td>
<td></td>
</tr>
</tbody>
</table>

1 Overview of 2013

In 2013 a total of 182,560,500 allowances (EUA) of the third trading period were auctioned at the EEX for Germany.² In relation to the EU-wide auction amount, this corresponds to a share of about 22 per cent. The total German revenues in the same period amounted to €791,253,420. This results in a volume-weighted average price per allowance of €4.33. Due to last year’s decreasing market price developments, the 2013 average auction clearing price levelled around 42 per cent below the previous year’s average (€7.47 in 2012³). The following table summarises the auction results of the completed year on a monthly basis.

¹ In the adjusted auction calendar 2014 EUA volume reductions based on the so-called back-loading decision are already taken into account. The first German auction with reduced amounts took place on March 21st 2014.
² This total annual auction volume was merely a preliminary estimate made by the European Commission in 2012. Meanwhile, the decision on the allocation amount until 2020 and the resulting updated auction volumes for 2013 was published by the European Commission. The difference between effective and updated auction volumes has been considered in the auction calendar for the year 2014.
³ Auctions of the second trading period.
The deviations of the clearing prices from the reference prices on the lead market were mainly in the range of parts per thousand. The average deviation from the best bid just before the end of the bidding period (11 a.m. CET) was 0.75 per cent or €0.03 (see also Section 3.2). A major factor behind this development was the robust demand on the primary market.

Overall, valid bids totalling about 530 million allowances were entered in the trading system across the 46 auction dates. Thus the average cover ratio in the reporting period was 2.90 (see also Section 2.2). In 2013 the average participation number of 18 bidders was significantly above the level of the previous year. In 2012, the last year of the second trading period, this value was at 7 bidders. The average number of successful bidders amounted to 14 in 2013. From a bidder’s perspective, the average success rate over all auction dates was over 78 percent (see also Section 2.1).

Overall, last year’s auctions were implemented in accordance with the applicable national and European regulations (see also Chapter 4).
2 Bidder Participation

2.1 Participation

By December 2013, a total of 58 trading members of EEX had been authorised to submit bids in the primary market auctions. Participation in the individual auctions fluctuated between 13 and 25 bidders in 2013. Thus, never all approved bidders were simultaneously active in an auction. The number of successful participants varied between 7 and 21 bidders. Only on the 29th November auction all 19 participants were successful. In general, the ratio of successful to participating bidders was significantly above 50 percent.

The number of participants in the German auctions in 2013 averaged across all dates was 18 bidders, the number of successful bidders averaged 14.

The average ratio of successful to participating bidders was thus around 78 percent. Therefore, on an annual average, about 3 out of 4 auction participants were awarded allowances in a German auction. The probability of successfully being awarded emission allowances in an auction was therefore relatively high from the average bidder’s perspective.

Bidder participation was generally more intense than in the second trading period of the German auctions. In 2012, on average 7 trading participants were involved in the auctions. Also in relation to the so-called “early auctions” in the beginning of third trading period, a slight increase was observed in the last quarter of 2012, 14 bidders participating on average in the early auctions.

The significant expansion of the auction volumes was therefore also accompanied with a significant increase in bidder activity. Compared to 2012, more than twice as many trade participants on average were actively participating in the 2013 auctions. The following figure illustrates auction participation over time for the year 2013.

![Figure 1: Number of participating and successful bidders per auction date](source: EEX, DEHSt)
2.2 Volume Demand

In 2013, a total of valid bids amounting to some 530 million allowances were made in the German auctions. In relation to the total auctioned volume, this determines an average cover ratio of 2.90. The aggregated bid volumes for each auction date fluctuated noticeably during the reporting period from 4.5 to 20.6 million allowances. The resulting cover ratio for each auction date varied within a range of 1.12 to 5.67.

It should be noted that bid volumes in the individual auctions varied to some extent. Generally, 4.02 million EUAs per auction date were auctioned. In accordance with the requirements of the EU Auctioning Regulation, the auction volumes were halved in the five August auction dates to 2.01 million EUAs. The remaining 3,670,500 EUAs of the total budget were finally auctioned in the year-end auction. Since two auctions had to be terminated without results in January and February, the regular bid volumes of these two auction dates had to be divided equally among the next four follow-up auction dates each. Thus the volumes auctioned in a total of eight auctions amounted to 5.025 million EUAs (see also Section 4.3). The following figure summarises the main findings for each auction date.

![Graph showing auctioned volume, bid volume, and cover ratio for each auction date from January to December 2013.](image)

Source: EEX, DEHSt

Figure 2: Auctioned and bid volume and cover ratio (secondary axis) for each auction date

The average bid volume per auction participant, averaged over all dates, was approximately 640,000 allowances. The average award volume was around 290,000 allowances per successful bidder. In the August auctions with halved auction volume, the average award volume per auction participant was around 180,000 allowances, thus well below the annual average. In the adjacent months of July and September, the comparative values were also higher than in August with around 290,000 and 250,000 EUAs. This suggests that demand in the primary market weakened less than the corresponding auction volume in August. This is also indicated by the average cover ratios in these three months. In August, this figure was 4.26, well above the comparative figures for July (2.71) and September (2.73).
Awarding allowances at the auctions is based on the EU-wide applicable uniform price procedure with one prescribed round of bidding (also see Info box below).

**Info Box: Uniform Price Auction at the EEX**

The auctions at the EEX follow the uniform price procedure which is common practice throughout the European Union. It involves one round of bidding and a closed order book. This simple and robust procedure protects against market manipulation and was used already for German auctions during the second trading period. The uniform price procedure means that all successful bidders pay the same price. The auction clearing price is determined by ranking all eligible bids, beginning with the highest bid, according to the bidding price.

In the event of equal bids, the bids are sorted by a random process. The bid volumes are aggregated starting with the highest bid until the volume of emission allowances on offer (e.g. 4.02 million EUAs) is reached. The bid price at which the aggregate volume of bids reaches or exceeds the offered volume of auctioned allowances determines the auction clearing price.

Bidders will thus be awarded their bid volume if their bidding price at least matches the auction clearing price. If a bid matches the clearing price exactly, the bidder may be awarded the remaining allowances which may be below the volume requested, depending on the bidding situation. If the bid from several participants matches the auction clearing price exactly, the above-mentioned random process applies.

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3 **Auctions and the Secondary Market**

3.1 **Trading Volume**

In 2013, a total of roughly 182 million EUA of the third trading period were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 8.83 billion EUA.\(^5\) This market volume was divided into approximately 1.08 billion allowances which were traded as contracts for immediate delivery (spot) and about 7.75 billion allowances for delivery in the future (futures). Thus, about 88 percent of the traded volume was handled on the dominant futures market. The figure below illustrates the monthly trading volumes separately for spot and futures segments.

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\(^5\) All emission allowances (EUA) of the third trading period traded on the spot and futures markets on the ICE/ECX, CME/NYMEX, EEX and Nasdaq OMX exchanges are considered. Transactions completed directly on the stock exchange (screen traded) or those bilateral transactions that at least used the stock exchange clearing mechanism are included. Option contracts are not involved. The spot contracts auctioned in 2013 are also considered.
In 2013, a total of about 826 million allowances were auctioned by Member States on the primary market as spot contracts. Thereof, about 22 percent of the EU-wide auction volume was auctioned by Germany. Pursuant to relevant provisions of the EU Auctioning Regulation the EU-wide auction volume was evenly distributed over the whole year. However, in August, the auction volumes were halved compared to the other months as provided by the Regulation. Auctioning of allowances only stopped for the two weeks over Christmas and New Year.

About 250 million allowances were traded on the secondary market as spot contracts. Around 77 percent of all traded spot contracts were awarded in the auctions during the reporting period. Based on the total relevant market for emission allowances, about 9 percent of the volume traded can be attributed to the auctions.

Figure 4 shows the monthly trading volume in the spot secondary market and the auction volumes on the primary market. In addition to the German auctions, aggregated auction volumes of the other EU Member States are also included in the figure. In addition to the regular auctions of allowances of the third trading period, allowances of the second trading period from the national new entrant reserves were also auctioned by certain Member States between February and April.
3.2 Clearing Prices and Price Development on the Secondary Market

Reference prices from the most liquid trading venues served as appropriate benchmarks for evaluating the auction clearing prices achieved at the EUA spot auctions. The reference contract for the auctions is the daily futures traded on the London ICE, whose product specifications are comparable with the spot-product of the auctions. The last best bid immediately before the end of the bidding period was used as a reference price (see also Info box below).

Table 3 shows the deviations of the clearing price from the London lead market based on monthly averages.

For a mean value analysis, the arithmetic mean of the absolute values of individual deviations per auction date is calculated. This prevents positive and negative deviations balancing each other when averaged, thus, the resulting values correspond to the average absolute deviations per month.

Info Box: Reference Prices

In regular exchange trading (secondary trading), participants enter their buying and selling requests (bids and asks) into an order book which is constantly updated. As in auctions, such buying bids in secondary trading include quantity and price limits. The price limit is the highest price a buyer is prepared to pay for the purchase of an allowance. Sellers can also put a price limit on their bid, i.e. a minimum price per allowance sold.

The order book is open to inspection by any participant. It shows the current highest purchase offer (best bid) and the lowest sales offer (best ask) with the relevant quantities. Trading occurs where best bid and best ask overlap. Trading price records finally show the price limits where supply equals demand.
The monthly average deviation from the “best bid”, immediately before the end of the bidding period (11 a.m. CET), varied during the reporting period between €0.02 and €0.06. The relative deviations ranged between 0.31 percent and 1.54 percent. The average deviation from the “last best bid” averaged over the full year was 0.75 percent, or €0.03.

Table 2: Auctions and deviations from secondary market prices in 2013

<table>
<thead>
<tr>
<th>Date</th>
<th>Contract</th>
<th>Clearing price</th>
<th>Deviation from Lead Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Best Bid ICE Daily Future</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Absolute*</td>
</tr>
<tr>
<td>January</td>
<td>EUA Spot 3rd TP</td>
<td><strong>€4.71</strong></td>
<td>€0.02</td>
</tr>
<tr>
<td>February</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.14</em>*</td>
<td>€0.05</td>
</tr>
<tr>
<td>March</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.12</em>*</td>
<td>€0.06</td>
</tr>
<tr>
<td>April</td>
<td>EUA Spot 3rd TP</td>
<td><em>€3.88</em>*</td>
<td>€0.05</td>
</tr>
<tr>
<td>May</td>
<td>EUA Spot 3rd TP</td>
<td><em>€3.46</em>*</td>
<td>€0.03</td>
</tr>
<tr>
<td>June</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.29</em>*</td>
<td>€0.03</td>
</tr>
<tr>
<td>July</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.17</em>*</td>
<td>€0.02</td>
</tr>
<tr>
<td>August</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.43</em>*</td>
<td>€0.02</td>
</tr>
<tr>
<td>September</td>
<td>EUA Spot 3rd TP</td>
<td><em>€5.28</em>*</td>
<td>€0.02</td>
</tr>
<tr>
<td>October</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.86</em>*</td>
<td>€0.02</td>
</tr>
<tr>
<td>November</td>
<td>EUA Spot 3rd TP</td>
<td><em>€4.54</em>*</td>
<td>€0.05</td>
</tr>
<tr>
<td>December</td>
<td>EUA Spot 3rd TP</td>
<td><strong>€4.77</strong></td>
<td>€0.02</td>
</tr>
</tbody>
</table>

Mean absolute deviation €0.03 0.75 %

Source: ICE, EEX, Thomson Reuters, DEHSt
* Average
** Volume-weighted average

In addition to the above table, the following figure illustrates the actual deviations of the clearing prices from the “best bid” for each of the 46 individual auction dates. A statistical arithmetic mean assessment has not been carried out here. Therefore, the difference between positive and negative deviations can be seen. Clearing prices that were below the respective best bid, lead to a negative deviation. However, if the clearing prices were above the reference price in the secondary market, the figure shows a positive deviation.

Over the year, deviations fluctuated within the range of -€0.13 and +€0.08 (blue bars). Depending on the particular price level, this resulted in a relative deviation interval of -2.98 per cent to +2.79 per cent (green line). In a total of 20 auctions, the auction price was above the secondary market price and in 24 auctions it was below. In two auctions, both prices were identical. The absolute deviation averaged over all 46 dates was €0.00. Positive and negative deviations cancelled each other out over the full year.
The following figure shows an overview of the price development for emission allowances of the third trading period on the London lead market. In addition to the daily futures the development of futures for December delivery of the current year is also shown (so-called “front-december future”). The daily London closing prices fluctuated in the reporting period in an interval between around €2.70 to €6.60. Both reference contracts exhibited the strongest price movement in January 2013. During this period, the price dropped within one month from around €6.60 to a level of less than €3.50, almost half its initial value. Between mid-April and the end of December, prices gradually stabilised again at around €5.

In addition to the secondary market prices, the figure also shows the German auction clearing prices. In principle, the auction clearing prices followed the prevailing prices on the secondary market. It should be noted that there are several hours’ time difference between the end of the auction and the calculation of the daily closing prices (“settlement price”). The relevant deviations between auction clearing price and the secondary market price per auction date are shown in Figure 5 and Table 3.

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6 The presentation is based on daily closing prices (so-called “settlement prices”), as these are available for the same time and thus a price comparability can be ensured.
4 Implementation of Valid Regulations

4.1 Surveillance Report by HÜSt

In order to guarantee above-board market activities are free of manipulation on the EEX continuous surveillance is conducted by an independent Market Surveillance Office (Handelsüberwachungsstelle HÜSt) as required under German law. HÜSt reports to the DEHSt on the results of its surveillance activities through regular internal reports. HÜSt reported on auctions in 2013 as follows (excerpt):

“Within their surveillance for the auctioning of emission allowances on behalf of the Federal Environment Agency at the EEX in 2013 the Market Surveillance Office of the EEX could not detect any irregularities and especially no behaviour of bidders that was targeted at manipulating the auction price.”

4.2 Fair and Open Access

The implementation of the provisions of the EU Auctioning Regulation guarantees a fair and open access for all auction participants at EEX. Current access options can be found at EEX Website (Access).

More information about the auction process is also available on the EEX auction hotline. EEX can be reached by phone from Mondays to Fridays from 8:00 a.m. to 6:00 p.m. CET at +49 341 2156-331 or by email at auctions@eex.com.
4.3 **Adjustment of the Auction Calendar**

In accordance with the provisions of Article 7(6) of the EU Auctioning Regulation, auctions planned for 18 January and 22 February with auction volumes of 4.02 million EUA each were terminated without results because the auction clearing price would have been below the reserve price. The volume not auctioned was evenly distributed to the four subsequent German auctions in accordance with Article 9 of the EU Auctioning Regulation. Therefore, the auction volume in the auctions between 25 January and 22 March was effectively raised to 5,025,000 allowances.

4.4 **Auction Result Publication**

All auction results and accompanying data were made publicly available during the reporting period within a 15-minute time window directly linked to the respective auction at [EEX Website (2013 auction results)](http://www.eex.de).

4.5 **Other Events**

There has been reported one minor technical incident to DEHSt in July. The smooth and successful execution of the auctions had not been at risk. No other matters relating to the implementation of the existing rules are to be reported. The current regulations can be downloaded from [EEX Website (Regulations)](http://www.eex.de).

