# Content

German Auctioning of Emission Allowances ................................................................. 4

1 Current Developments ........................................................................................... 4

2 Overview .................................................................................................................. 4
   2.1 May 2016 ............................................................................................................ 4
   2.2 Overview of the entire year 2016 ..................................................................... 5

3 Bidder Participation ................................................................................................. 6
   3.1 Participation ....................................................................................................... 6
   3.2 Volume Demand ............................................................................................... 6

4 Auctions and the Secondary Market ..................................................................... 8
   4.1 Trading Volume EUA ....................................................................................... 8
   4.2 Trading Volume EUAA .................................................................................... 9
   4.3 Clearing Prices and Price Development on the Secondary Market ............... 9

5 Implementation of Valid Regulations .................................................................. 11
   5.1 Surveillance Report by HÜSt .......................................................................... 11
   5.2 Fair and Open Access ..................................................................................... 11
   5.3 Auction Result Publication ............................................................................. 11
   5.4 Other Events ................................................................................................. 12
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 German 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 2016 auction calendar is published on the EEX website.

The following tables summarise the key data of the German auctions on the EEX in 2016:

| 2016 |
|---|---|
| **Auction product** | Third trading period EUA spot contracts | Third trading period EUAA spot contracts |
| **Period** | 15/01/2016 to 16/12/2016 | 13/04/2016 |
| **Auction volume entire year** | 160,770,500 EUA | 857,500 EUAA |
| **Auction volume per auction** | 3.495 million EUA | 857,500 EUAA on 13/04/2016 |
| **Auction frequency** | Weekly (Fridays, 09:00 to 11:00 a.m. CET) | On 13/04/2016 (09:00 to 11:00 a.m. CET) |
| **Bid volume** | 500 EUA/EUAA |
| **Auction mode** | Single-round, uniform-price procedure with a closed order book |

1 Current Developments

**German Environment Agency extends contract with EEX as German auction platform until 2018**

The German Emissions Trading Authority (DEHSt) at the German Environment Agency has exercised the option to extend the three year contract with the European Energy Exchange (EEX) as auction platform of the Federal Republic of Germany for two further years. With this option, the contract could be extended once before a new procurement procedure has to be carried out. Thus, German auctions of EU allowances (EUA/EUAA) will be conducted at EEX until November 2018.

In the current third trading period of the EU ETS around 550 million EU allowances have been auctioned on behalf of the Federal Republic of Germany in 171 auctions.

2 Overview

2.1 May 2016

In May, four auctions of emission allowances (EUA) of the third trading period were carried out for Germany at the EEX.

Overall 13,980,000 EUA with a total value of € 82,936,350 were auctioned. This results in a volume-weighted average price per allowance of € 5.93 (+5.9 percent compared to the previous month). The deviations of the clearing prices from the current prices on the lead market fluctuated between -0.35 and +0.17 percent (see also Section 4.3).

Overall, valid bids totalling about 29 million allowances were entered into trading system across the four EUA-auction dates. Thus the average cover ratio in the reporting period was 2.05 (see also Section 3.2). The average participation number of 16 bidders was below the level of the previous month (17). This also applies to the average number of 13 (14) successful bidders (see also Section 3.1).
The following table gives an overview of the most important auction figures from the EUA-auctions performed during the reporting period.

### Table 1: Overview of German EUA-auctions in May 2016

<table>
<thead>
<tr>
<th>Date</th>
<th>Auction volume</th>
<th>Bid volume</th>
<th>Cover ratio</th>
<th>Bidders</th>
<th>Successful bidders</th>
<th>Price</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/05/2016</td>
<td>3,495,000</td>
<td>7,191,000</td>
<td>2.06</td>
<td>17</td>
<td>14</td>
<td>€ 6.13</td>
<td>€ 21,424,350</td>
</tr>
<tr>
<td>13/05/2016</td>
<td>3,495,000</td>
<td>5,355,000</td>
<td>1.53</td>
<td>16</td>
<td>16</td>
<td>€ 5.75</td>
<td>€ 20,096,250</td>
</tr>
<tr>
<td>20/05/2016</td>
<td>3,495,000</td>
<td>7,730,000</td>
<td>2.21</td>
<td>16</td>
<td>11</td>
<td>€ 5.95</td>
<td>€ 20,795,250</td>
</tr>
<tr>
<td>27/05/2016</td>
<td>3,495,000</td>
<td>8,352,000</td>
<td>2.39</td>
<td>14</td>
<td>11</td>
<td>€ 5.90</td>
<td>€ 20,620,500</td>
</tr>
<tr>
<td>May</td>
<td>13,980,000</td>
<td>28,628,000</td>
<td>*2.05</td>
<td>*16</td>
<td>*13</td>
<td>*€ 5.93</td>
<td>€ 82,936,350</td>
</tr>
</tbody>
</table>

Source: EEX, DEHSt

### 2.2 Overview of the entire year 2016

In the first five month of the current year a total of **67,262,500 EUA and EUAA** with a total value of **€ 376,410,800** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 5.60**. These overall figures are subdivided into 66,405,000 EUA with a total value of € 371,763,150 (average price €5.60) and 857,500 EUAA with a total value of € 4,647,650 (€ 5.42).

The amount of emission allowances to be auctioned by Germany in 2016 totals 160,770,500 EUA and 857,500 EUAA. Taking into account the total annual amount, around 41 percent of the EUA-auction budget and 100 percent of the EUAA-auction budget for 2016 has been auctioned to date.

The following table summarises the auction results on a monthly basis.

### Table 2: Overview of the entire year 2016

<table>
<thead>
<tr>
<th>Month</th>
<th>Type</th>
<th>Auction volume</th>
<th>Bid volume</th>
<th>Cover ratio</th>
<th>Bidders</th>
<th>Successful bidders</th>
<th>Price</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>EUA</td>
<td>10,485,000</td>
<td>23,660,500</td>
<td>*2.26</td>
<td>*21</td>
<td>*15</td>
<td>*€ 6.37</td>
<td>€ 66,754,500</td>
</tr>
<tr>
<td>February</td>
<td>EUA</td>
<td>13,980,000</td>
<td>30,818,500</td>
<td>*2.20</td>
<td>*22</td>
<td>*14</td>
<td>*€ 5.21</td>
<td>€ 72,800,850</td>
</tr>
<tr>
<td>March</td>
<td>EUA</td>
<td>10,485,000</td>
<td>25,693,000</td>
<td>*2.45</td>
<td>*22</td>
<td>*13</td>
<td>*€ 4.91</td>
<td>€ 51,481,350</td>
</tr>
<tr>
<td>April</td>
<td>EUA</td>
<td>17,475,000</td>
<td>35,332,000</td>
<td>*2.02</td>
<td>*17</td>
<td>*14</td>
<td>*€ 5.60</td>
<td>€ 97,790,100</td>
</tr>
<tr>
<td></td>
<td>EUAA</td>
<td>857,500</td>
<td>3,362,500</td>
<td>3.92</td>
<td>10</td>
<td>6</td>
<td>€ 5.42</td>
<td>€ 4,647,650</td>
</tr>
<tr>
<td>May</td>
<td>EUA</td>
<td>13,980,000</td>
<td>28,628,000</td>
<td>*2.05</td>
<td>*16</td>
<td>*13</td>
<td>*€ 5.93</td>
<td>€ 82,936,350</td>
</tr>
<tr>
<td>EUA</td>
<td>66,405,000</td>
<td>144,132,000</td>
<td>*2.17</td>
<td>*19</td>
<td>*14</td>
<td>*€ 5.60</td>
<td>€ 371,763,150</td>
<td></td>
</tr>
<tr>
<td>EUAA</td>
<td>857,500</td>
<td>3,362,500</td>
<td>3.92</td>
<td>10</td>
<td>6</td>
<td>€ 5.42</td>
<td>€ 4,647,650</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td><strong>67,262,500</strong></td>
<td><strong>147,494,500</strong></td>
<td><strong>2.19</strong></td>
<td><strong>19</strong></td>
<td><strong>13</strong></td>
<td><strong>€ 5.60</strong></td>
<td><strong>€ 376,410,800</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: EEX, DEHSt

* Volume-weighted average
3 Bidder Participation

3.1 Participation

The number of participants in the German EUA-auctions in May averaged across all dates was about 16 bidders. The average number of successful bidders was 13. Participation in the auctions fluctuated between 14 and 17 bidders during the reporting period. The number of successful participants ranged from 11 to 16. At the auction on 13th May all participating bidders were successful. The following figure illustrates EUA-auction participation over time.

![Graph showing number of participating and successful bidders per auction date (EUA)](image)

Source: EEX, DEHSI

Figure 1: Number of participating and successful bidders per auction date (EUA)

3.2 Volume Demand

During the reporting period, the aggregated bid volumes per EUA-auction date fluctuated from 5.4 to 8.4 million allowances. Overall, valid bids totalling about 29 million allowances were entered into trading system in May. The resulting cover ratios during the reporting period ranged between 1.53 and 2.39 (2.05 on average). The figure below summarises the results for each EUA-auction date.
Thus, the average bid volume per EUA-auction participant in May was about 455,000 allowances. The average volume awarded to each successful bidder was about 270,000 allowances.

Awarding allowances at all 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. 3.495 million EUA) 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.
4 Auctions and the Secondary Market

4.1 Trading Volume EUA

In May 2016, a total of about 14 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 456 million EUA.\(^1\) Thus, the total market trading volume was 23 percent below the level of the previous month. This market volume was divided into approximately 65 million allowances which were completed as contracts for immediate delivery (spot) and about 391 million allowances for delivery in the future (futures). Thus, about 86 percent of the traded volume was handled on the dominant futures market. The figure below illustrates the trading volumes separately for spot and futures segments based on calendar weeks (CW).

In May 2016, a total of about 52 million allowances were auctioned by Member States on the primary market as spot contracts. On the spot secondary market about 13 million allowances were traded. This means that around 80 percent of traded spot contracts have been purchased in primary market auctions. With respect to the relevant total market for EUA, around 11 percent of the traded volume was related to auctions.

Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters, DEHSt
* CW 18: 02/05/2016-06/05/2016; CW 21: 23/05/2016-27/05/2016

Figure 3: Trading volumes differentiated by spot and futures in May 2016 (EUA)

In May 2016, a total of about 52 million allowances were auctioned by Member States on the primary market as spot contracts. On the spot secondary market about 13 million allowances were traded. This means that around 80 percent of traded spot contracts have been purchased in primary market auctions. With respect to the relevant total market for EUA, around 11 percent of the traded volume was related to auctions.

Figure 4 shows the trading volume in the spot secondary market and the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, aggregated auction volumes of other EU Member States are also included in the figure.

---

1 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. The EUA spot contracts auctioned in May 2016 are also considered. Option contracts are not involved.
4.2 Trading Volume EUAA

In May 2016, no aviation allowances (EUAA) were traded on the secondary market\(^2\). Also no EUAA were auctioned on the primary market during the reporting period.

Further information on the EUAA auction calendars is available on the website of the European Commission.

4.3 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 on the EUA-spot auctions. The reference contract for the auctions is the daily future traded on the London ICE or the EEX EUA spot contract. The product specifications are comparable with the spot-product of the auctions. The trade price immediately before the end of the bidding period was used as a reference price. If no trades take place immediately before the end of the bidding period, the last best bid was used as a reference price (see also Info box below).

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\(^1\) CW 18: 02/05/2016-06/05/2016; CW 21: 23/05/2016-27/05/2016

\(^2\) All aviation allowances (EUAA) of the third trading period traded on the spot and futures markets on the ICE/ECX and EEX 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.
Table 3 shows the relative deviations of the clearing price from the lead market. The deviation on each EUA-auction date just before the end of the bidding period (11 a.m. CET) varied over the reporting period between -€0.02 (-0.35 percent) and +€0.01 (+0.17 percent).

For a mean value analysis, the arithmetic mean of the absolute values of individual deviations over the reporting period is calculated. The average deviation from the last best bid was €0.02 or 0.29 percent averaged over all dates.

Table 3: 
Auctions and deviations from secondary market prices in May 2016 (EUA)

<table>
<thead>
<tr>
<th>Date</th>
<th>Contract</th>
<th>Clearing price</th>
<th>Deviation from ICE Daily Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/05/2016</td>
<td>EUA Spot 3rd TP</td>
<td>€6.13</td>
<td><em>€ -0.02</em></td>
</tr>
<tr>
<td>13/05/2016</td>
<td>EUA Spot 3rd TP</td>
<td>€5.75</td>
<td><em>€ -0.02</em></td>
</tr>
<tr>
<td>20/05/2016</td>
<td>EUA Spot 3rd TP</td>
<td>€5.95</td>
<td><em>€ 0.01</em></td>
</tr>
<tr>
<td>27/05/2016</td>
<td>EUA Spot 3rd TP</td>
<td>€5.90</td>
<td><strong>€ -0.02</strong></td>
</tr>
</tbody>
</table>

Mean absolute deviation  
€0.02  0.29 %

Source: ICE, EEX, Thomson Reuters, DEHSt

* best bid ICE Daily Future  
** best bid EEX Spot

The following figure shows an overview of the price development for emission allowances in 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“). Rather than following the common practice of considering only settlement prices, our analysis takes into account all trades completed at the exchanges during the reporting period.\(^3\) The following graphic is based on volume-weighted average trading prices (VWAP), which fluctuated in an interval between around €5.70 to €6.40\(^4\) in May 2016.

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\(^3\) Settlement prices are determined by the exchanges at the end of the trading day. Hence, they only reflect trade activity immediately before closure of the exchange and are, thus, not always an adequate reflection of the prevailing intra-day prices in the secondary market.

\(^4\) The volume-weighted average price (VWAP) for the ICE EUA front-december futures is published on a daily basis by the ICE. The VWAP for the ICE daily future contract is based on the calculations of Thomson Reuters.
5 Implementation of Valid Regulations

5.1 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 May 2016 as follows (excerpt):

“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in May 2016 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.”

5.2 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 e-mail at auctions@eex.com.

5.3 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 (2016 auction results).
5.4 Other Events

There are no matters relating to the implementation of the existing rules to be reported during the reporting period. The current regulations can be downloaded from EEX Website (Regulations).