Auctioning

German Auctioning of Emission Allowances
Periodical Report: May 2019
Editorial information

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Deutsche Versteigerungen von Emissionsberechtigungen

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 2019 auction calendar is published on the EEX website.

The following tables summarise the key data of the German auctions on the EEX in 2019:

<table>
<thead>
<tr>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Auction product</strong></td>
</tr>
<tr>
<td><strong>Period</strong></td>
</tr>
<tr>
<td><strong>Auction volume entire year</strong></td>
</tr>
<tr>
<td><strong>Auction volume per auction</strong></td>
</tr>
<tr>
<td><strong>Auction frequency</strong></td>
</tr>
<tr>
<td><strong>Bid volume</strong></td>
</tr>
<tr>
<td><strong>Auction mode</strong></td>
</tr>
</tbody>
</table>

1 Since the beginning of 2019, the Market Stability Reserve (MSR) has come into effect. The 2019 EUA auction volume is reduced by the MSR scheme until August and includes the volume of the cancelled auctions after 9th November 2018. The MSR reduction for the auction volumes from September 2019 to August 2020 was announced on 15th May 2019 on the European Commission’s website. The publication of the adjusted auction calendar 2019 will take place in time until September.
1 Overview

1.1 May 2019

In May, four auctions of emission allowances (EUA) of the third trading period were successfully carried out for Germany at the EEX. Due to public holidays there was no auction on 31st May.

Overall about 13 million EUA with a total value of over €325 million were auctioned. This results in a volume-weighted average price per allowance of €25.32. The deviations of the clearing prices from the current prices on the lead market fluctuated between –0.49 and –0.04 percent (see also Chapter 3.3).

Overall, valid bids totalling about 22 million allowances were entered into trading system across the four EUA-auction dates. Thus the average cover ratio in the reporting period was 1.70 (see also Chapter 2.2). The average participation number of 25 bidders was well above the level of the previous month (19). This also applies to the average number of 20 (16) successful bidders (see also Chapter 2.1).

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 2019

<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>03/05/2019</td>
<td>3,209,000</td>
<td>5,766,500</td>
<td>1.80</td>
<td>24</td>
<td>18</td>
<td>€24.32</td>
<td>€78,042,880</td>
</tr>
<tr>
<td>10/05/2019</td>
<td>3,209,000</td>
<td>5,234,000</td>
<td>1.63</td>
<td>24</td>
<td>19</td>
<td>€26.35</td>
<td>€84,557,150</td>
</tr>
<tr>
<td>17/05/2019</td>
<td>3,209,000</td>
<td>5,467,000</td>
<td>1.70</td>
<td>24</td>
<td>22</td>
<td>€25.01</td>
<td>€80,257,090</td>
</tr>
<tr>
<td>24/05/2019</td>
<td>3,209,000</td>
<td>5,282,000</td>
<td>1.65</td>
<td>26</td>
<td>22</td>
<td>€25.61</td>
<td>€82,182,490</td>
</tr>
<tr>
<td>May</td>
<td>12,836,000</td>
<td>21,749,500</td>
<td>*1.70</td>
<td>*25</td>
<td>*20</td>
<td>*€ 25.32</td>
<td>*€ 325,039,610</td>
</tr>
</tbody>
</table>

Source: EEX, DEHSt

1.2 Overview of the entire year 2019

In the first five months of the current year a total of about 51 million EUA with a total value of over €1.19 billion were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of €23.21. Despite lower auction volumes, the total revenues are about 34 percent above the previous year’s figure (Jan–May 2018: €888 million).

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

Table 2: Overview of the entire year 2019

<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>Feb</td>
<td>EUA</td>
<td>12,836,000</td>
<td>26,410,500</td>
<td>*2.06</td>
<td>*27</td>
<td>*22</td>
<td>*€ 20.75</td>
<td>€266,347,000</td>
</tr>
<tr>
<td>Mar</td>
<td>EUA</td>
<td>16,045,000</td>
<td>28,360,000</td>
<td>*1.77</td>
<td>*23</td>
<td>*17</td>
<td>*€ 21.89</td>
<td>€351,160,870</td>
</tr>
<tr>
<td>Apr</td>
<td>EUA</td>
<td>9,627,000</td>
<td>14,028,500</td>
<td>*1.46</td>
<td>*19</td>
<td>*16</td>
<td>*€ 25.89</td>
<td>€249,275,120</td>
</tr>
<tr>
<td>May</td>
<td>EUA</td>
<td>12,836,000</td>
<td>21,749,500</td>
<td>*1.70</td>
<td>*25</td>
<td>*20</td>
<td>*€ 25.32</td>
<td>€325,039,610</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>51,344,000</td>
<td>90,548,500</td>
<td>*1.76</td>
<td>*24</td>
<td>*19</td>
<td>*€ 23.21</td>
<td>€1,191,822,600</td>
</tr>
</tbody>
</table>

Source: EEX, DEHSt

* average
2 Bidder Participation

2.1 Participation

The number of participants in the German EUA-auctions in May averaged across all dates was about 25 bidders. The average number of successful bidders was about 20. Participation in the auctions fluctuated between 24 and 26 bidders during the reporting period. The number of successful participants ranged from 18 to 22. There was no such auction where all participating bidders were successful.

The following figure illustrates EUA-auction participation over time.

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

By the end of May 2019, a total of 81 trading members of EEX had been authorized to submit bids in the primary market auctions. In May, a total of 27 different bidders were successful in the German primary market auctions. Out of the 27 of those bidders, 15 were operators (i.e. operators of ETS covered installations or aircraft operators), which accounts for about 56 percent of all successful bidders. Overall, operators purchased approximately 54 percent of the auctioned volumes in May 2019. In the months of the preceding year, the operators’ share of the purchased auction volumes fluctuated significantly more than the proportion of successful bidders. Nonetheless, average values of both ratios in the past 12 months are relatively close to each other (at around 64 or 59 percent respectively).

The following figure illustrates the development of the proportion of operators among the successful bidders as well as of the purchased auction volumes in the past 12 months before the current reporting period.

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2 Pursuant to Art. 18 of the EU Auctioning Regulation bidding categories eligible to take part in the auctions at EEX are amongst others (stationary and aircraft) operators, credit institutions, investment firms and business groupings.
Figure 2: Share of operators among successful bidders and purchased auction volumes over the past 12 months (EUA)

2.2 Volume Demand

During the reporting period, the aggregated bid volumes per auction date fluctuated from 5.2 to 5.8 million allowances. Overall, valid bids totalling about 22 million allowances were entered into trading system in May. The resulting cover ratios during the reporting period ranged between 1.63 and 1.80 (1.70 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 220,000 allowances. The average volume awarded to each successful bidder was about 160,000 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. 3.2 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.
3  **Auctions and the Secondary Market**

3.1  **Trading Volume EUA**

In May 2019, a total of about 13 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 583 million EUA. This comprises the monthly data of the London Energy Brokers’ Association (LEBA) on OTC (see also Figure 6). The inclusion of this data allows for a more complete picture of the entire market volume in EUA trades.

The secondary market trading volume of 537 million EUA was divided into approximately 491 million EUA on the cleared futures market, some 36 million EUA on the cleared spot market and about 10 million EUA bilaterally settled through the LEBA-Brokers (OTC).

In May 2019, a total of about 47 million allowances were auctioned by Member States on the primary market as spot contracts. With respect to the relevant total market for EUA, around 8 percent of the traded volume was related to auctions (see also Table 3).

The figure below illustrates the trading volumes separately for different market segments based on calendar weeks (CW). In this weekly view, the LEBA data are not included as they are only published on a monthly basis.

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**Figure 4:** Trading volumes on the primary and secondary market in May 2019 (EUA)

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3 All emission allowances (EUA) of the third trading period traded on the spot and futures markets on the ICE/ECX, 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 2019 are also considered. As far as data on OTC volumes from bilateral trading activity (i.e. off-exchange) is available, it is included in the analysis. Option contracts are not involved.

4 LEBA is an association of large brokerage firms active in the trading of energy commodities (including EUA). Their monthly volume reports also include bilaterally settled contracts that were not registered on clearing platforms. The data are not broken down into futures-/spot-contracts. Moreover, since the volumes are only available as monthly aggregated values, the data were taken into account only in Figure 6, but not in Figure 4.
Figure 5 shows the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, auction volumes of other EU Member States are also included in the figure.

The following chart shows the development of the monthly EUA trading volumes on the primary and secondary market over the past 12 months before the current reporting month. In the first five months of the current year, the total market volume of about 3.79 billion EUA was about 4 percent below the previous year’s figure (Jan–May 2018: 3.96 billion EUA). In May, the trading volume reached the lowest level since January 2018.
Figure 6: Trading volumes on the primary and secondary market over the past 12 month (EUA)

Table 3: Market shares of the various trading segments (EUA)

<table>
<thead>
<tr>
<th>Market segments</th>
<th>May 2019</th>
<th>Apr 2019</th>
<th>Jan–May 2019</th>
<th>Jan–May 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUA-Auctions (Spot)</td>
<td>8.0%</td>
<td>7.4%</td>
<td>6.4%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Secondary market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUA-Futures (cleared)</td>
<td>84.1%</td>
<td>85.6%</td>
<td>85.7%</td>
<td>76.3%</td>
</tr>
<tr>
<td>EUA-Spot (cleared)</td>
<td>6.2%</td>
<td>5.2%</td>
<td>6.3%</td>
<td>7.3%</td>
</tr>
<tr>
<td>LEBA EUA OTC</td>
<td>1.7%</td>
<td>1.8%</td>
<td>1.6%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

Source: ICE, EEX, Nasdaq OMX, Refinitiv Eikon, LEBA, DEHSt
3.2 Trading Volume EUAA

In May 2019, no aviation allowances (EUAA) were traded on the secondary market\(^5\). During the reporting period, about 0.8 million EUAA were auctioned by the EU Member States (EU25) on the primary market. Further information on the EUAA auction calendars is available on the website of the European Commission.

3.3 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).

Table 4 shows the relative deviations of the auction clearing price from the secondary 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 € –0.12 (–0.49 percent) and € –0.01 (–0.04 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 € 0.07 or 0.29 percent averaged over all dates.

Table 4: Auctions and deviations from secondary market prices in May 2019 (EUA)

<table>
<thead>
<tr>
<th>Date</th>
<th>Contract</th>
<th>Auction price</th>
<th>Deviation from secondary market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Absolute</td>
</tr>
<tr>
<td>03/05/2019</td>
<td>EUA Spot 3rd TP</td>
<td>€ 24.32</td>
<td>*€ –0.12</td>
</tr>
<tr>
<td>10/05/2019</td>
<td>EUA Spot 3rd TP</td>
<td>€ 26.35</td>
<td>*€ –0.04</td>
</tr>
<tr>
<td>17/05/2019</td>
<td>EUA Spot 3rd TP</td>
<td>€ 25.01</td>
<td>*€ –0.01</td>
</tr>
<tr>
<td>24/05/2019</td>
<td>EUA Spot 3rd TP</td>
<td>€ 25.61</td>
<td>*€ –0.12</td>
</tr>
<tr>
<td>Mean absolute deviation</td>
<td></td>
<td>€ 0.07</td>
<td>0.29%</td>
</tr>
</tbody>
</table>

Source: ICE, EEX, Refinitiv Eikon, DEHSt

* best bid ICE Daily Future

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\(^5\) 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.
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 and the following 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.

The following graphic is based on volume-weighted daily average trading prices (VWAP). In addition, the daily trading range of the front-december contract is also shown in the chart. In May 2019 the prices fluctuated within an interval between € 24.28 and € 27.21.

Figure 7: ICE secondary market prices and EEX auction clearing prices (EUA)

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6 ICE EUA Dec19 contract expires on 16/12/2019.
7 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.
8 The volume-weighted average prices (VWAP) for the ICE EUA front-December future and the ICE daily future contract is based on data from Refinitiv Eikon.
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 May 2019 as follows (excerpt):

“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in May 2019 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 e-mail at auctions@eex.com.

4.3 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.

4.4 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).