



# Auctioning

## German Auctioning of Emission Allowances Periodical Report: Second Quarter 2018

## Editorial information

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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 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 2018 auction calendar is published on the [EEX website](#).

The following tables summarise the key data of the German auctions on the EEX in 2018:

2018		
<b>Auction product</b>	Third trading period <b>EUA spot contracts</b>	Third trading period <b>EUAA spot contracts</b>
<b>Period</b>	12/01/2018 to 14/12/2018	10/10/2018
<b>Auction volume entire year</b>	194,027,000 EUA	800,500 EUAA
<b>Auction volume per auction</b>	<b>4,360,000 EUA</b> (2,180,000 EUA in August)	800,500 EUAA on 10/10/2018
<b>Auction frequency</b>	Weekly (Fridays, 09:00 to 11:00 a.m. CET)	On 10/10/2018 (13:00 to 15:00 a.m. CET)
<b>Bid volume</b>	500 EUA/EUAA	
<b>Auction mode</b>	Single-round, uniform-price procedure with a closed order book	

## 1 Overview

### 1.1 Second Quarter of 2018

Between April and June, twelve 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 11/05/2018.

Overall about **52 million EUA** with a total value of over **€ 748 million** were auctioned. This results in a volume-weighted average price per allowance of **€ 14.30** (+47 percent compared to the previous quarter). Thus, this was the highest quarterly average price since the second quarter of 2011. In addition, the highest monthly revenue since the start of sales/auctioning in 2008 was achieved in June. The deviations of the clearing prices from the current prices on the lead market fluctuated between -1.00 and +0.88 percent (see also Section 3.3).

Overall, valid bids totalling about 108 million allowances were entered into trading system across the twelve EUA-auction dates. Thus the average cover ratio in the reporting period was 2.07 (see also Section 2.2). The average participation number of 25 bidders was above the level of the previous quarter (22). This also applies to the average number of 20 (16) successful bidders (see also Section 2.1). In the German auction on 04/05/2018, the bidder participation set a new record with 29 participants.

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 the second Quarter of 2018

Date	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
06/04/2018	4,360,000	8,181,000	1.88	24	18	€ 12.68	€ 55,284,800
13/04/2018	4,360,000	7,123,500	1.63	26	21	€ 13.80	€ 60,168,000
20/04/2018	4,360,000	6,144,000	1.41	23	21	€ 13.05	€ 56,898,000
27/04/2018	4,360,000	7,897,500	1.81	26	20	€ 13.28	€ 57,900,800
<b>April</b>	<b>17,440,000</b>	<b>29,346,000</b>	<b>*1.68</b>	<b>*25</b>	<b>*20</b>	<b>*€ 13.20</b>	<b>€ 230,251,600</b>
04/05/2018	4,360,000	8,570,500	1.97	29	23	€ 12.78	€ 55,720,800
18/05/2018	4,360,000	10,486,500	2.41	27	17	€ 15.20	€ 66,272,000
25/05/2018	4,360,000	7,417,000	1.70	23	22	€ 15.89	€ 69,280,400
<b>May</b>	<b>13,080,000</b>	<b>26,474,000</b>	<b>*2.03</b>	<b>*26</b>	<b>*21</b>	<b>*€ 14.62</b>	<b>€ 191,273,200</b>
01/06/2018	4,360,000	10,703,500	2.45	25	20	€ 14.90	€ 64,964,000
08/06/2018	4,360,000	7,720,000	1.77	21	17	€ 15.78	€ 68,800,800
15/06/2018	4,360,000	7,322,000	1.68	26	23	€ 14.62	€ 63,743,200
22/06/2018	4,360,000	15,051,000	3.45	24	14	€ 14.78	€ 64,440,800
29/06/2018	4,360,000	11,649,500	2.67	22	18	€ 14.85	€ 64,746,000
<b>June</b>	<b>21,800,000</b>	<b>52,446,000</b>	<b>*2.40</b>	<b>*24</b>	<b>*18</b>	<b>*€ 14.99</b>	<b>€ 326,694,800</b>
<b>Q2 2018</b>	<b>52,320,000</b>	<b>108,266,000</b>	<b>*2.07</b>	<b>*25</b>	<b>*20</b>	<b>*€ 14.30</b>	<b>€ 748,219,600</b>

Source: EEX, DEHSt  
\* Average

## 1.2 Overview of the entire year 2018

In the first half of 2018 a total of about **100 million EUA** with a total value of over **€ 1.21 billion** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 12.11**. Thus, the total revenues in 2018 already exceed the record annual revenues of 2017.

The amount of emission allowances to be auctioned by Germany in 2018 totals about 194 million EUA. Taking into account the total annual amount, about 52 percent of the EUA-auction budget for 2018 has been auctioned to date.

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

Table 2: Overview of the entire year 2018

Month	Type	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
January	EUA	13,080,000	31,950,500	*2.44	*21	*14	*€ 8.47	€ 110,787,600
February	EUA	17,440,000	40,112,500	*2.30	*21	*16	*€ 9.31	€ 162,279,200
March	EUA	17,440,000	37,299,000	*2.14	*24	*18	*€ 11.08	€ 193,278,800
April	EUA	17,440,000	29,346,000	*1.68	*25	*20	*€ 13.20	€ 230,251,600
May	EUA	13,080,000	26,474,000	*2.03	*26	*21	*€ 14.62	€ 191,273,200
June	EUA	21,800,000	52,446,000	*2.40	*24	*18	*€ 14.99	€ 326,694,800
<b>Total</b>		<b>100,280,000</b>	<b>217,628,000</b>	<b>*2.17</b>	<b>*23</b>	<b>*18</b>	<b>*€ 12.11</b>	<b>€ 1,214,565,200</b>

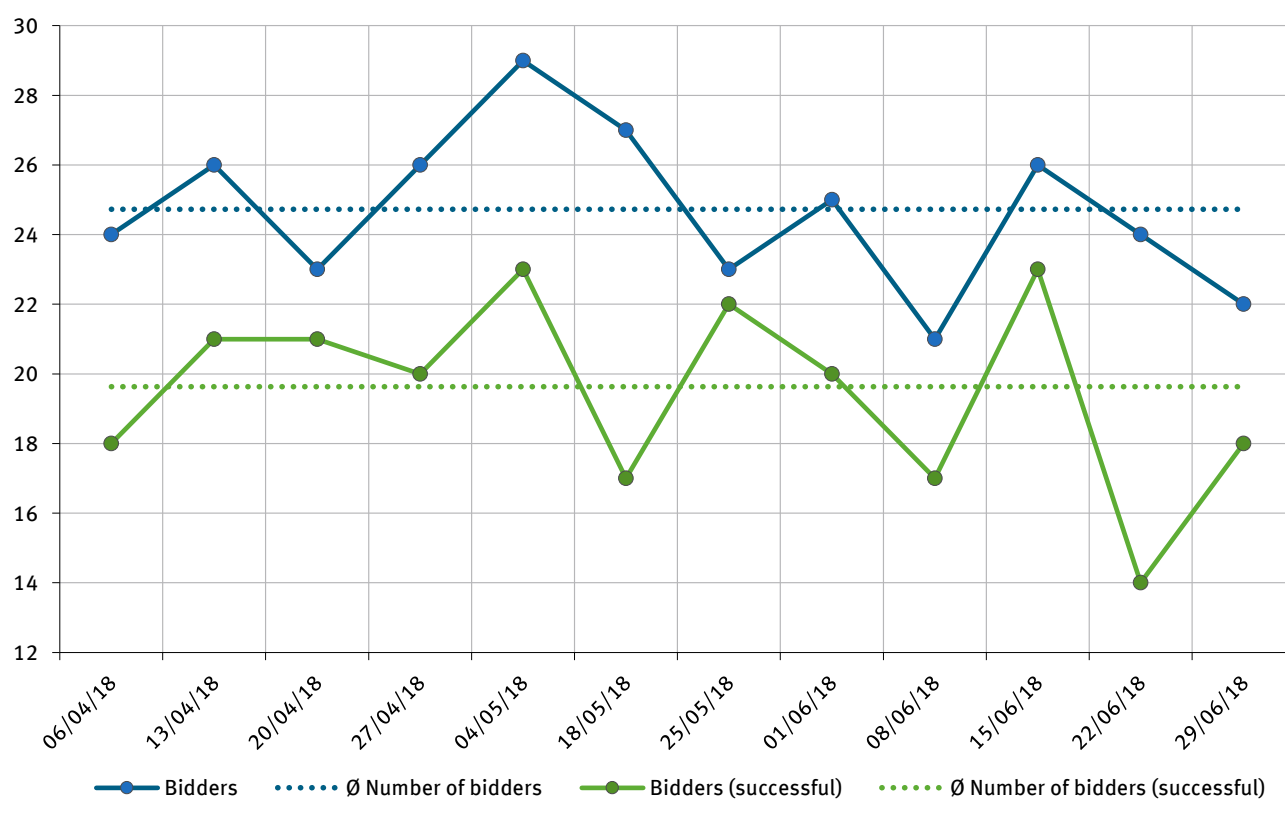
Source: EEX, DEHSt  
\* Average

## 2 Bidder Participation

### 2.1 Participation

The number of participants in the German EUA-auctions in the second Quarter averaged across all dates was about 25 bidders. The average number of successful bidders was about 20. Participation in the auctions fluctuated between 21 and 29 bidders during the reporting period. The number of successful participants ranged from 14 to 23. There was no such auction where all participating bidders were successful.

The following figure illustrates EUA-auction participation over time.



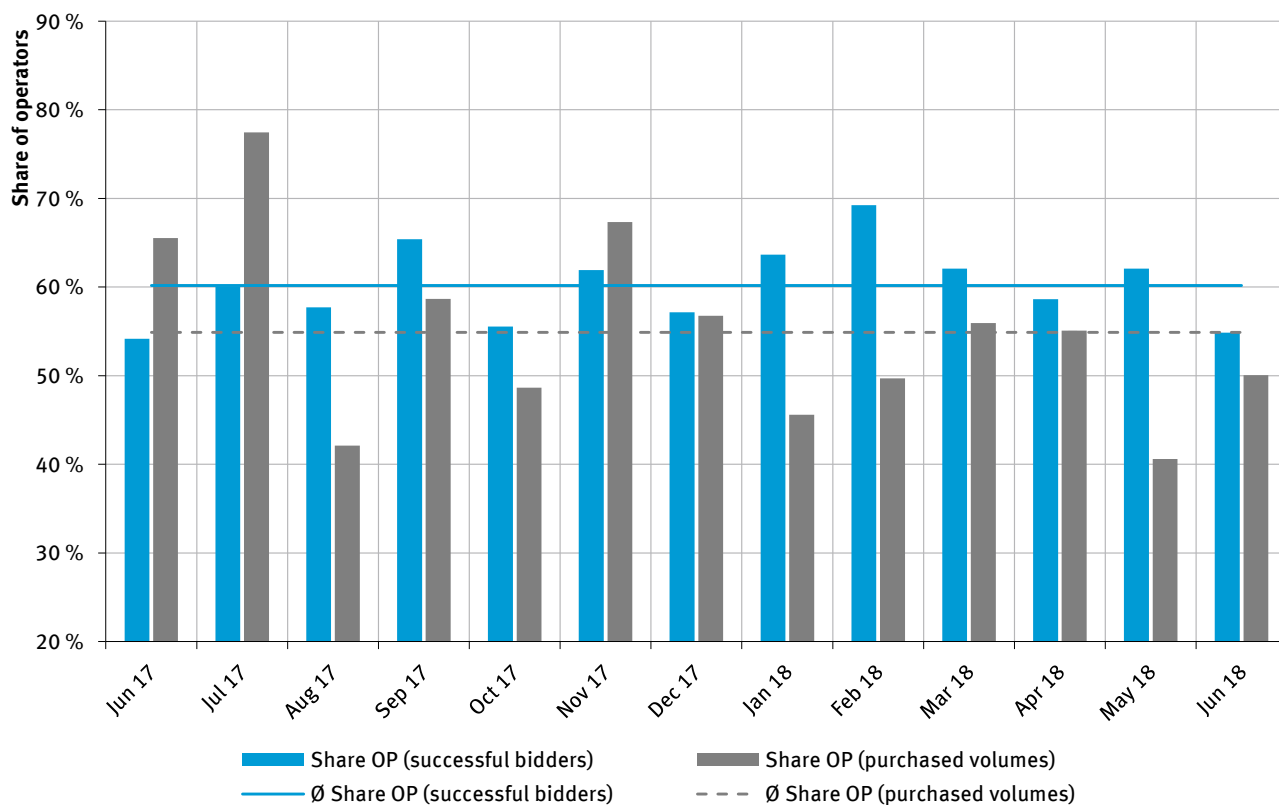
Source: EEX, DEHSt

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

By the end of June 2018, a total of 77 trading members of EEX (+1 compared to the previous month) had been authorized to submit bids in the primary market auctions. In June, a total of 31 different bidders were successful in the German primary market auctions. Out of the 31 of those bidders, 17 were operators (i.e. companies of ETS covered installations), which accounts for about 55 percent of all successful bidders.<sup>1</sup> Overall, operators purchased approximately 50 percent of the auctioned volumes in June 2018. 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 stayed close together (at around 60 or 55 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 month.

<sup>1</sup> 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.



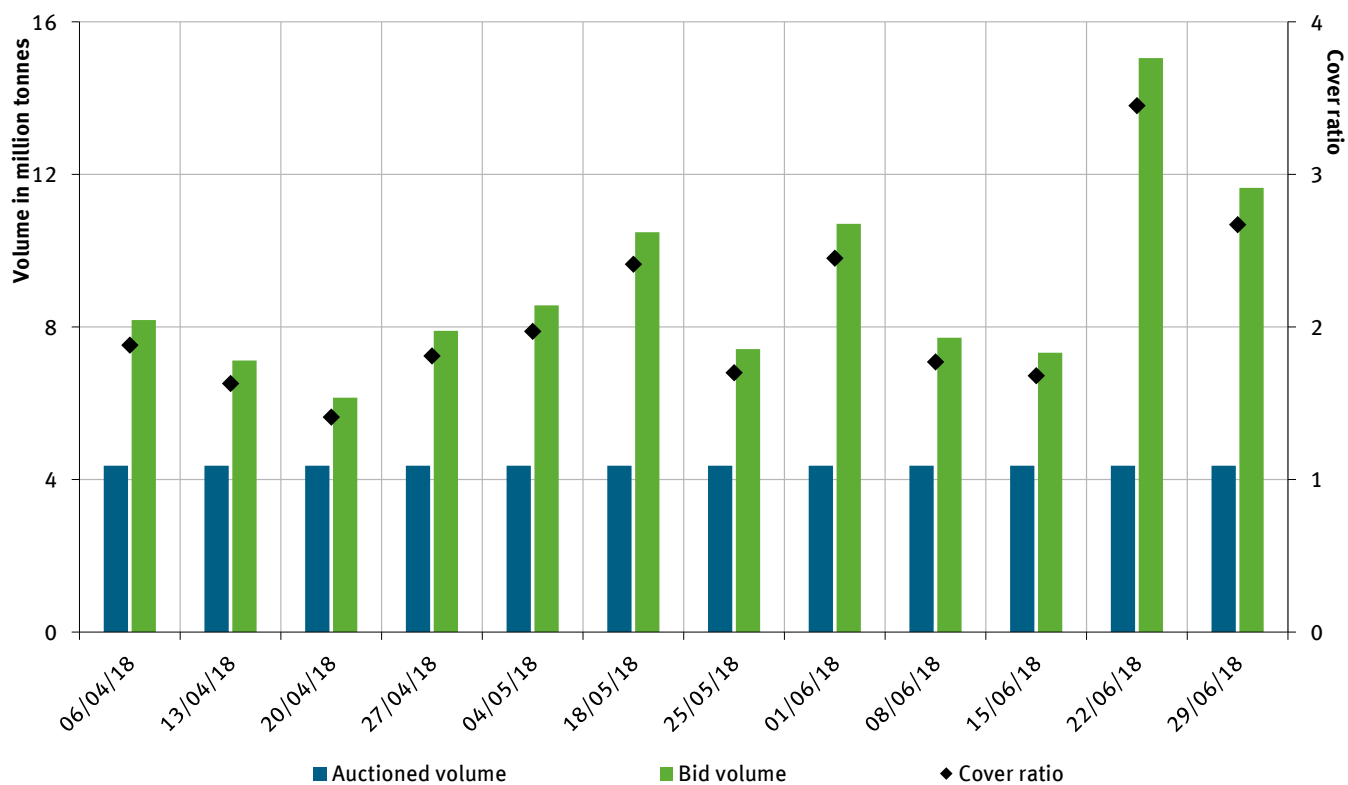
Source: EEX, DEHSt  
OP = Operators

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 6.1 to 15 million allowances. Overall, valid bids totalling about 108 million allowances were entered into trading system in the second Quarter. The resulting cover ratios during the reporting period ranged between 1.41 and 3.45 (2.07 on average).

The figure below summarises the results for each EUA-auction date.



Source: EEX, DEHSt

Figure 3: Auctioned and bid volume and cover ratio for each auction date (EUA)

Thus, the average bid volume per EUA-auction participant in the second Quarter was about 365,000 allowances. The average volume awarded to each successful bidder was about 225,000 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. 4.36 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

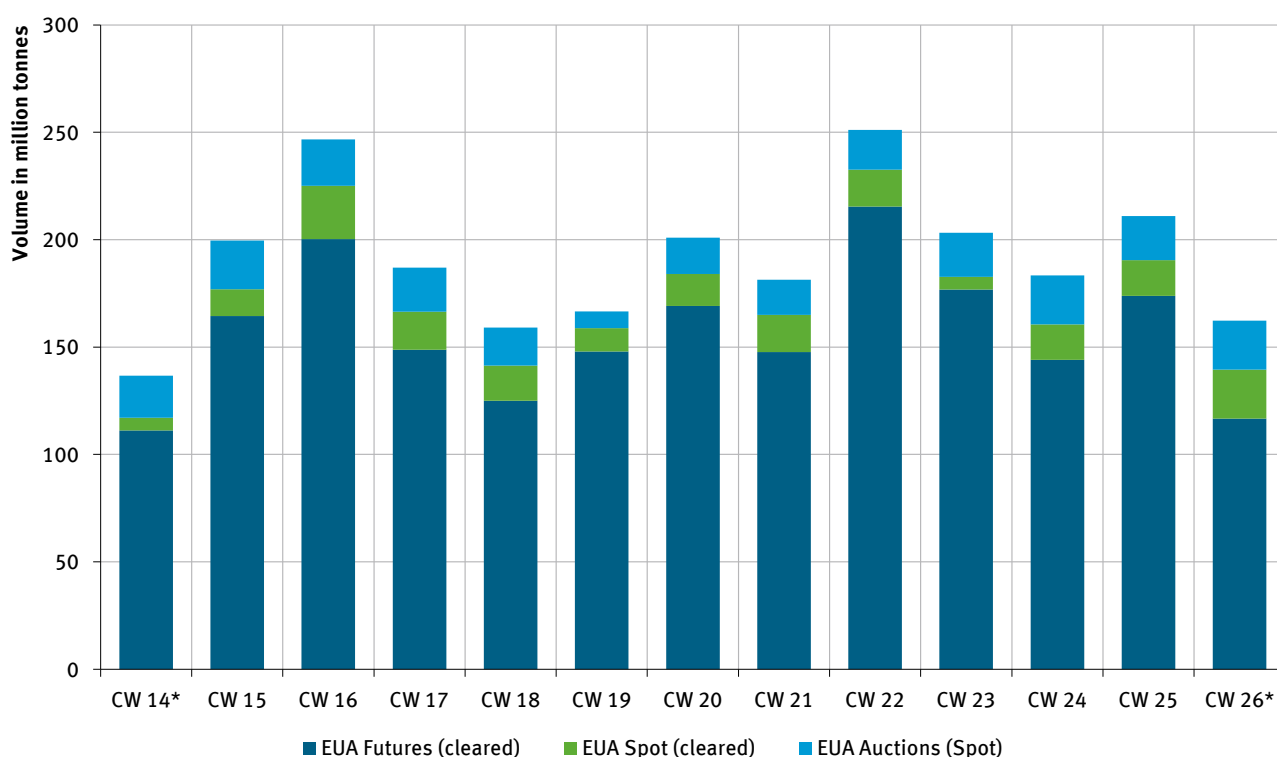
### 3.1 Trading Volume EUA

In the second Quarter of 2018, a total of about 52 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 2.67 billion EUA.<sup>2</sup> 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.<sup>3</sup>

The secondary market trading volume of 2.42 billion EUA was divided into approximately 2.04 billion EUA on the cleared futures market, some 200 million EUA on the cleared spot market and about 182 million EUA bilaterally settled through the LEBA-Brokers (OTC).

In the second Quarter of 2018, a total of about 248 million allowances were auctioned by Member States on the primary market as spot contracts. With respect to the relevant total market for EUA, around 9.3 percent of the traded volume was related to auctions.

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.

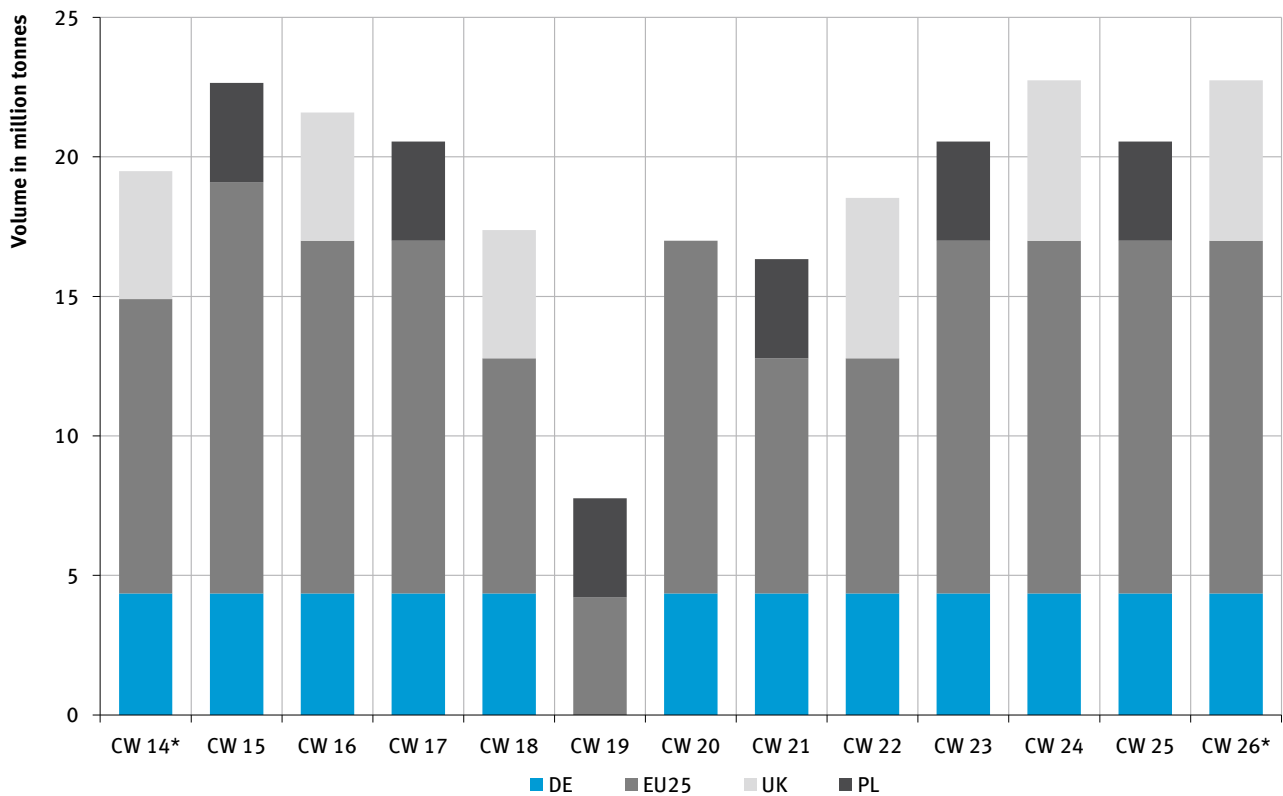


Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, DEHSt  
\* CW 14: 03/04/2018-06/04/2018; CW 26: 25/06/2018-29/06/2018

Figure 4: Trading volumes on the primary and secondary market in the second Quarter of 2018 (EUA)

- All emission allowances (EUA) of the third trading period traded on the spot and futures markets on the ICE/ECX, EEX, CME/NYMEX 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 the second Quarter of 2018 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.
- 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.

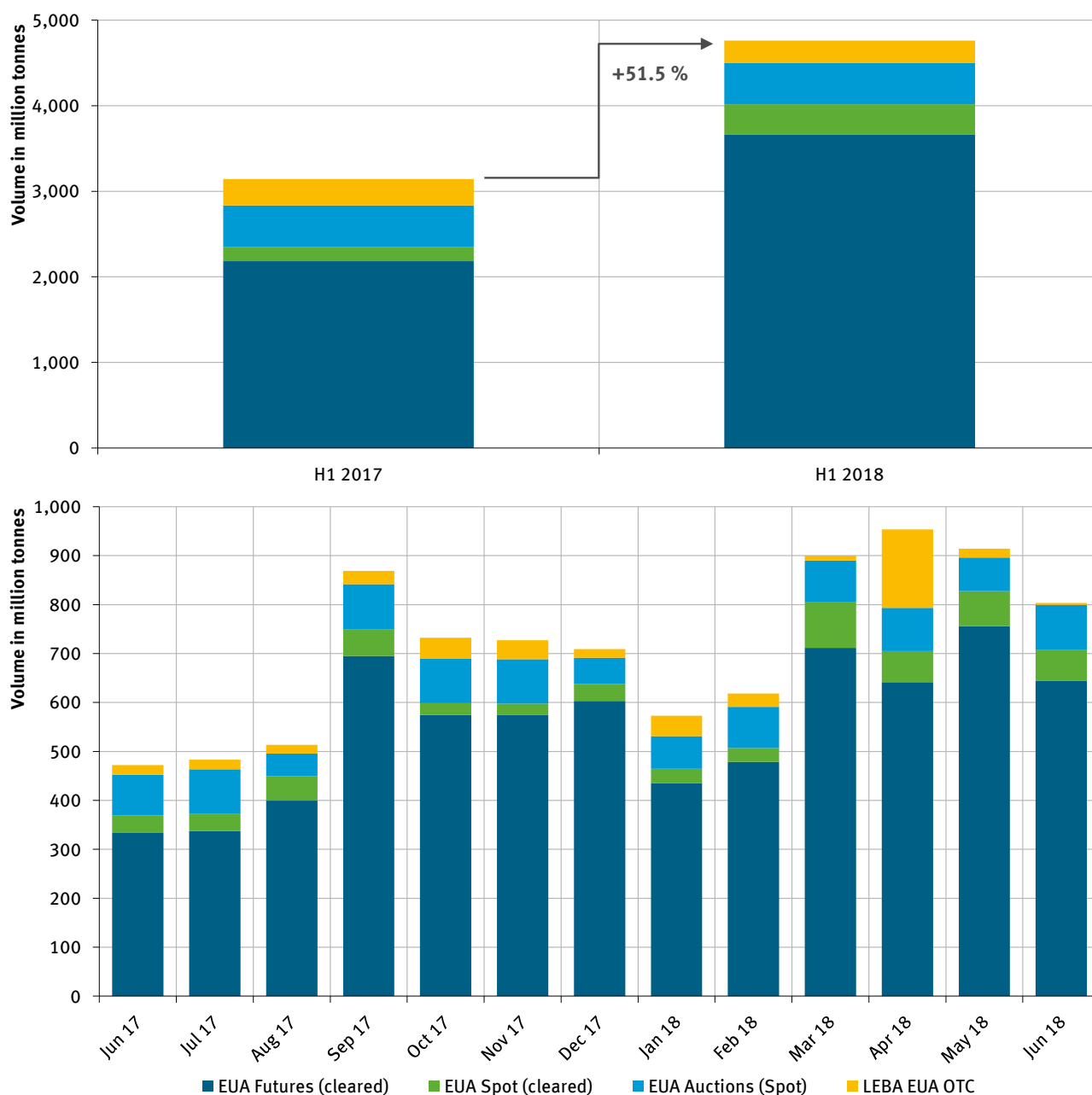
Figure 5 shows the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, auction volumes of other EU Member States are also included in the figure.



Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, DEHSt  
 DE = Germany, UK = United Kingdom, PL = Poland, EU25 = EU-Commission on behalf of other member states  
 \* CW 14: 03/04/2018-06/04/2018; CW 26: 25/06/2018-29/06/2018

Figure 5: Auction volumes on the primary market in the second Quarter of 2018 (EUA)

The following chart shows the development of the monthly EUA trading volumes on the primary and secondary market over the past 12 month before the current reporting month. In the first half of 2018, the total market volume of 4.76 billion EUA was about 51 percent above the previous year's figure (H1 2017: 3.14 billion EUA). Following a record high in April (160 million EUA), the volume of bilateral transactions (OTC) settled through the LEBA members declined considerably (see also Table 3).



Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, LEBA, DEHSt

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)

Market segments		June 2018	May 2018	H1 2018	H1 2017
Primary market	EUA-Auctions (Spot)	11.3 %	7.5 %	10.1 %	15.5 %
	EUA-Futures (cleared)	80.2 %	82.7 %	77.0 %	69.4 %
Secondary market	EUA-Spot (cleared)	8.0 %	7.9 %	7.4 %	5.2 %
	LEBA EUA OTC	0.5 %	2.0 %	5.5 %	9.9 %

Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, LEBA, DEHSt

## 3.2 Trading Volume EUAA

In the second Quarter of 2018, 1.7 million aviation allowances (EUAA) were traded on the secondary market.<sup>4</sup> During the reporting period, about 1.1 million EUAA were auctioned by the EU Member States on the primary market. **The next German aviation auction will take place on 10/10/2018.** 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).

### 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.

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 -€ 0.16 (-1.00 percent) and +€ 0.11 (+0.88 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 € 0.08 or 0.57 percent averaged over all dates.

Table 4: Auctions and deviations from secondary market prices in the first Quarter of 2018 (EUA)

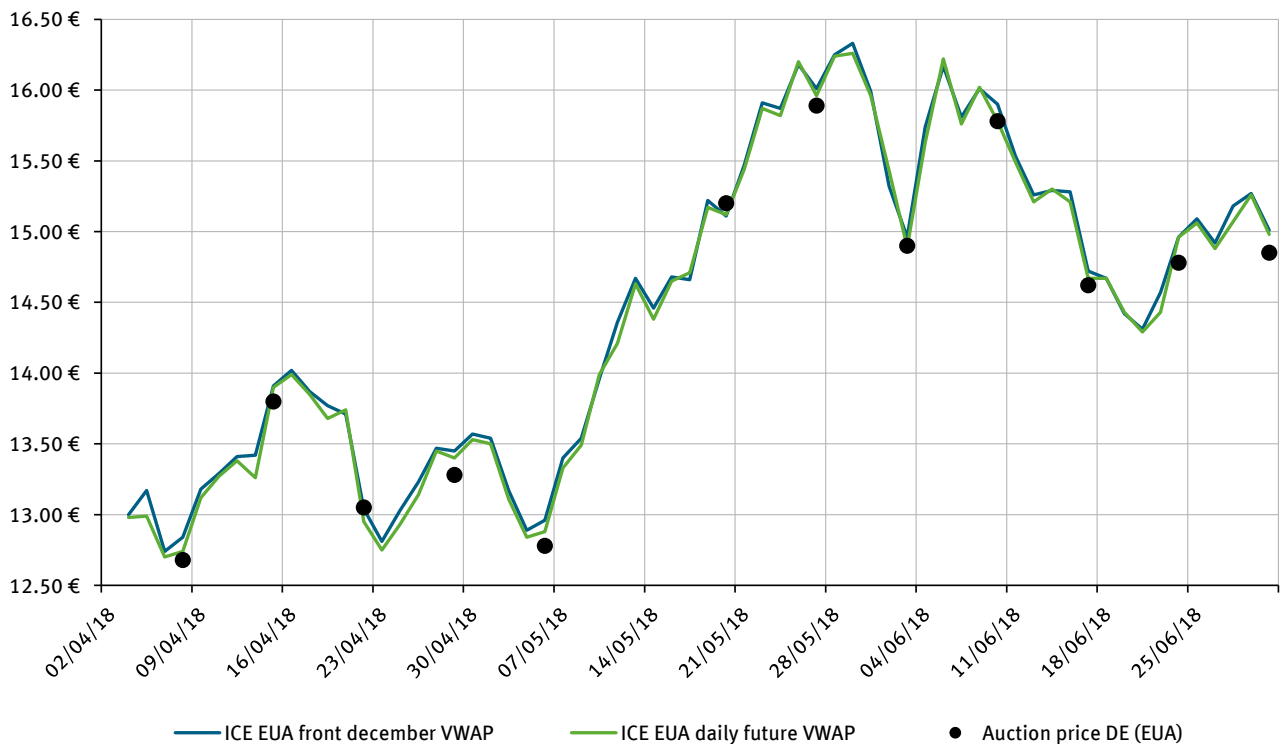
Date	Contract	Auction price	Deviation from secondary market	
			Absolute	%
06/04/2018	EUA Spot 3 <sup>rd</sup> TP	€ 12.68	*€ 0.11	*0.88 %
13/04/2018	EUA Spot 3 <sup>rd</sup> TP	€ 13.80	*€ -0.10	*-0.72 %
20/04/2018	EUA Spot 3 <sup>rd</sup> TP	€ 13.05	*€ -0.13	*-0.99 %
27/04/2018	EUA Spot 3 <sup>rd</sup> TP	€ 13.28	*€ -0.06	*-0.45 %
04/05/2018	EUA Spot 3 <sup>rd</sup> TP	€ 12.78	*€ 0.00	*0.00 %
18/05/2018	EUA Spot 3 <sup>rd</sup> TP	€ 15.20	**€ 0.06	**0.40 %
25/05/2018	EUA Spot 3 <sup>rd</sup> TP	€ 15.89	*€ -0.16	*-1.00 %
01/06/2018	EUA Spot 3 <sup>rd</sup> TP	€ 14.90	*€ -0.01	*-0.07 %
08/06/2018	EUA Spot 3 <sup>rd</sup> TP	€ 15.78	**€ -0.09	** -0.57 %
15/06/2018	EUA Spot 3 <sup>rd</sup> TP	€ 14.62	*€ -0.08	*-0.54 %

<sup>4</sup> 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.

Date	Contract	Auction price	Deviation from secondary market	
			Absolute	%
22/06/2018	EUA Spot 3 <sup>rd</sup> TP	€ 14.78	*€ 0.09	*0.61 %
29/06/2018	EUA Spot 3 <sup>rd</sup> TP	€ 14.85	*€ -0.09	*-0.60 %
<b>Mean absolute deviation</b>			<b>€ 0.08</b>	<b>0.57 %</b>

Source: ICE, EEX, Thomson Reuters Eikon, DEHSt  
 \* best bid ICE Daily Future  
 \*\* last trade ICE Daily Future

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“).<sup>5</sup> 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.<sup>6</sup> The following graphic is based on volume-weighted average trading prices (VWAP), which fluctuated in an interval between around € 12.70 to € 16.30 in the second Quarter of 2018.<sup>7</sup> On 29/05/2018, the highest value since June 2011 was reached.



Source: ICE, EEX, Thomson Reuters Eikon, DEHSt  
 DE = Germany

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

<sup>5</sup> ICE EUA Dec18 contract expires on 17/12/2018.

<sup>6</sup> 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.

<sup>7</sup> The volume-weighted average prices (VWAP) for the ICE EUA front-december future and the ICE daily future contract is based on data from Thomson Reuters 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 the second Quarter of 2018 as follows (excerpt):

*“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in the second Quarter of 2018 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](mailto: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 \(Regulations\)](#).

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