



Auctioning

German Auctioning of Emission Allowances Periodical Report: October 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		
Auction product	Third trading period EUA spot contracts	Third trading period EUAA spot contracts
Period	12/01/2018 to 09/11/2018	10/10/2018
Auction volume entire year	172,220,000 EUA ¹	800,500 EUAA
Auction volume per auction	4,360,000 EUA (2,180,000 EUA in August)	800,500 EUAA am 10/10/2018
Auction frequency	Weekly (Fridays, 09:00 to 11:00 a.m. CET)	On 10/10/2018 (13:00 to 15:00 a.m. CET)
Bid volume	500 EUA/EUAA	
Auction mode	Single-round, uniform-price procedure with a closed order book	

¹ The amount of emission allowances to be auctioned by Germany in 2018 initially totaled 194,027,000 EUA. Auctions that were previously provisionally scheduled for the period after 14th November 2018 have been removed from the 2018 auction calendar. The corresponding volume of 21,807,000 EUA will be distributed over the volume to be auctioned in 2019. Germany's current contract with EEX expires on 14th November 2018. In March, the German Environment Agency appointed the EEX as a new auction platform from November 2018. However, before the auctions can be continued under the new mandate, the EEX must be formally listed as an auction platform in the Annex to the Auctioning Regulation as part of an EU Commission review procedure. As this process takes longer, the originally planned auction dates for Germany cannot be continued in the auction calendar from 14th November 2018. According to the latest information, we expect the German auctions to resume in the course of the first quarter of 2019. We will inform you in time.

1 Overview

1.1 October 2018

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

Overall almost **21 million EUA** with a total value of over **€ 411 million** were auctioned. This results in a volume-weighted average price per allowance of **€ 19.85** (-4.3 percent compared to the previous month). Thus, the **highest monthly revenue since the start of sales/auctioning** in 2008 was achieved in October. The deviations of the clearing prices from the current prices on the lead market fluctuated between -0.62 and +0.58 percent (see also Chapter 3.3).

Overall, valid bids totalling about 66 million allowances were entered into trading system across the four EUA-auction dates. Thus the average cover ratio in the reporting period was 3.18 (see also Chapter 2.2). The average participation number of 25 bidders was below the level of the previous month (26). The average number of successful bidders was however above the previous month's level at 18 (17), (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 October 2018

Date	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
05/10/2018	5,450,000	16,381,500	3.01	26	16	€ 21.14	€ 115,213,000
12/10/2018	5,450,000	22,112,000	4.06	27	18	€ 19.95	€ 108,727,500
19/10/2018	5,450,000	10,025,000	1.84	24	19	€ 19.17	€ 104,476,500
26/10/2018	4,360,000	17,296,000	3.97	24	17	€ 18.98	€ 82,752,800
October	20,710,000	65,814,500	**3.18	*25	*18	**€ 19.85	€ 411,169,800

Source: EEX, DEHSt
* average
** volume-weighted average

In addition, **800,500 aviation allowances (EUAA)** with a total value of over **€ 16 million** were auctioned for Germany on 10th October 2018. The auction price for the 6 successful bidders was **€ 20.38**. Overall, 9 bidders with valid bids totaling about 1.8 million allowances participated in the auction.

1.2 Overview of the entire year 2018

In the first ten month of the current year a total of over **164 million EUA and EUAA** with a total value of about **€ 2.43 billion** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 14.77**. Thus, the total revenues in 2018 already clearly exceed the record annual revenues of 2017 (€ 1.15 billion).

The amount of emission allowances to be auctioned by Germany until 9th November 2018 totals about 172 million EUA and 0.8 million EUAA. Taking into account the total annual amount, about 95 percent of the EUA-auction budget and 100 percent of the EUAA-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
July	EUA	17,440,000	47,763,000	*2.74	*24	*20	*€ 16.29	€ 284,097,600
August	EUA	10,900,000	38,234,000	*3.51	*24	*16	*€ 19.02	€ 207,318,000
September	EUA	14,170,000	44,262,500	**3.12	*26	*17	**€ 20.74	€ 293,842,200
October	EUA	20,710,000	65,814,500	**3.18	*25	*18	**€ 19.85	€ 411,169,800
	EUAA	800,500	1,823,500	2.28	9	6	€ 20.38	€ 16,314,190
EUA		163,500,000	413,702,000	**2.53	*24	*18	**€ 14.75	€ 2,410,992,800
EUAA		800,500	1,823,500	2.28	9	6	€ 20.38	€ 16,314,190
Total		164,300,500	415,525,500	**2.53	*24	*17	**€ 14.77	€ 2,427,306,990

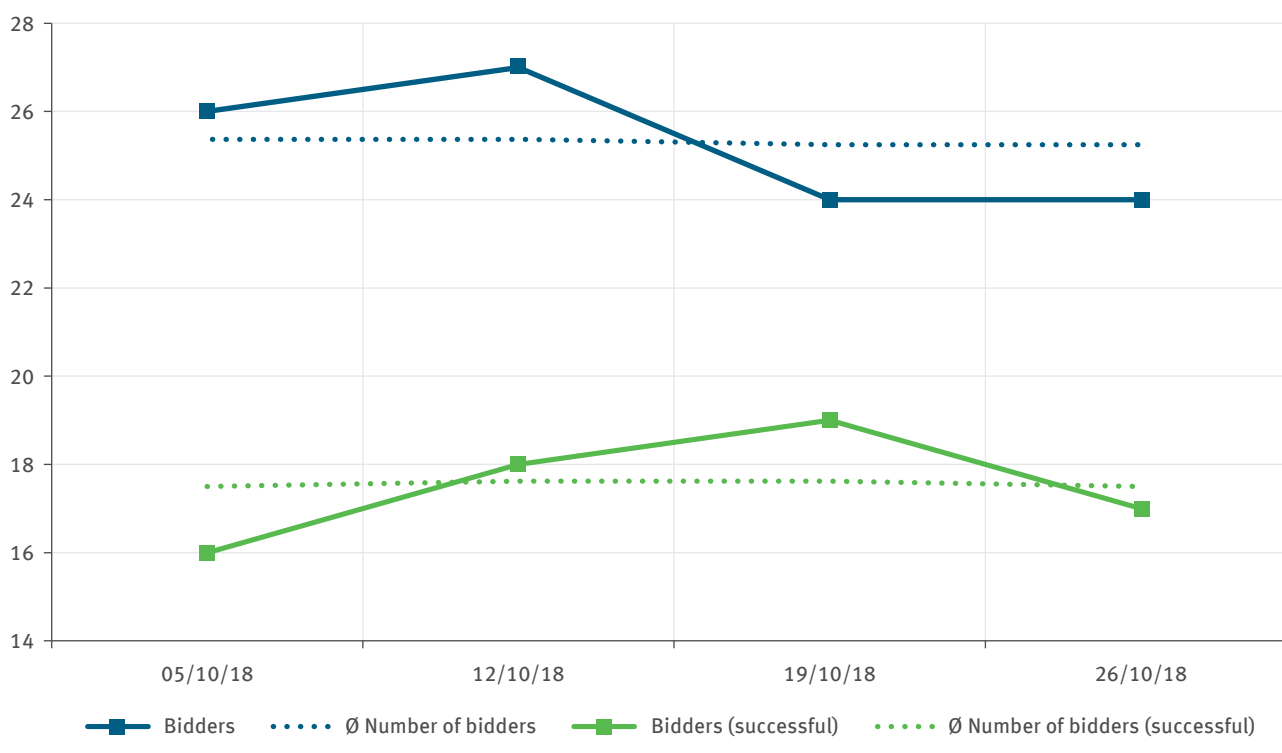
Source: EEX, DEHSt
* average
** volume-weighted average

2 Bidder Participation

2.1 Participation

The number of participants in the German EUA-auctions in October averaged across all dates was about 25 bidders. The average number of successful bidders was about 18. Participation in the auctions fluctuated between 24 and 27 bidders during the reporting period. The number of successful participants ranged from 16 to 19. There was no such auction where all participating bidders were successful.

The following figure illustrates EUA-auction participation over time.



Source: EEX, DEHSt

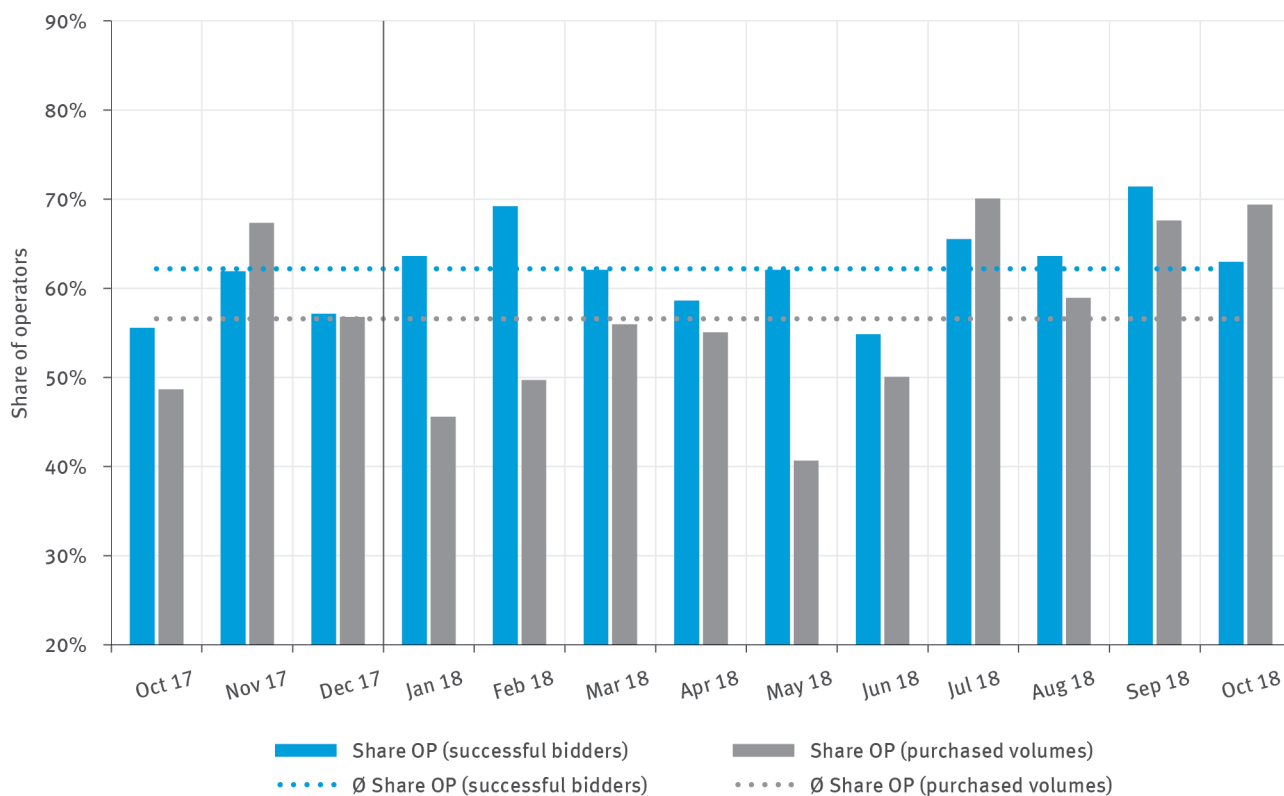
Figure 1: Number of participating and successful bidders per auction date (EUA)

With 9 bidders, the participation in the aviation allowances auction on 10th October was well below the average participation in the EUA-auctions. However, it has to be noted that the usability of EUAA for ETS compliance is limited to aircraft operators, whereas EUA can be used by all operators subject to emissions trading.

By the end of October 2018, a total of 77 trading members of EEX had been authorized to submit bids in the primary market auctions. In October, a total of 27 different bidders were successful in the German primary market auctions. Out of the 27 of those bidders, 17 were operators (i.e. operators of ETS covered installations or aircraft operators), which accounts for about 63 percent of all successful bidders.² Overall, operators purchased approximately 69 percent of the auctioned volumes in October 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 are relatively close to each other (at around 62 or 57 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.

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.



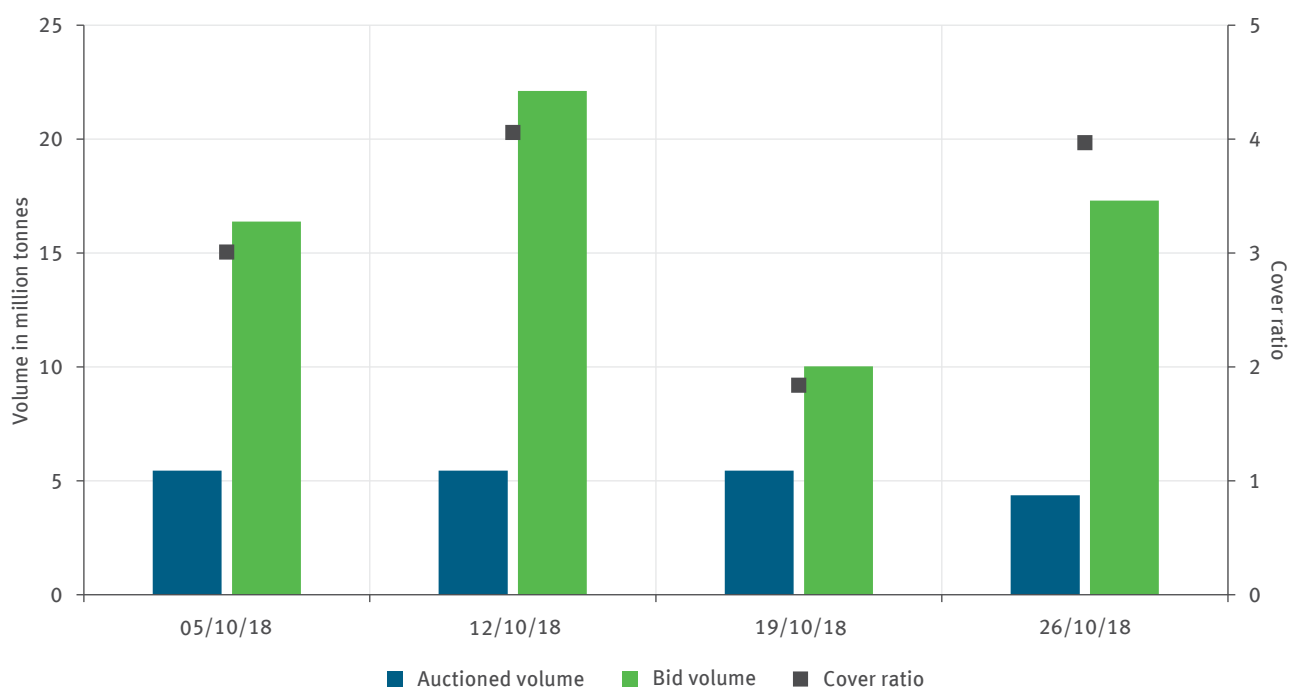
Source: EEX, DEHSt
OP = Operators

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 10 to 22.1 million allowances. Overall, valid bids totalling about 66 million allowances were entered into trading system in October. The resulting cover ratios during the reporting period ranged between 1.84 and 4.06 (3.18 on average). The cover ratio in the EUAA-auction on 10th October was 2.28 and thus within the fluctuation range of the cover ratios in EUA-auctions.

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 October was about 650,000 allowances. The average volume awarded to each successful bidder was about 295,000 allowances. In the EUAA-auction on 10th October the average bid volume per auction participant was about 200,000 allowances. The average volume awarded to each successful bidder was about 135,000 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

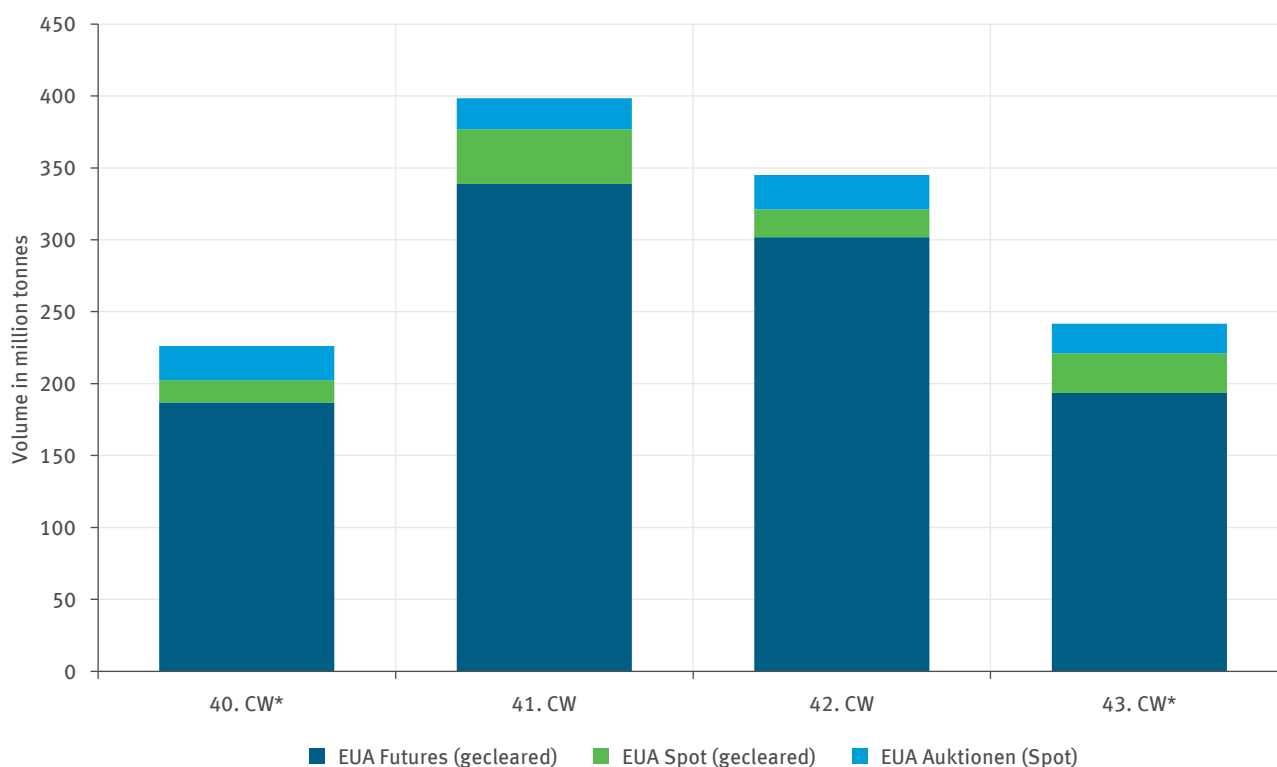
3.1 Trading Volume EUA

In October 2018, a total of about 21 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 1.45 billion EUA.³ 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.⁴

The secondary market trading volume of 1.35 billion EUA was divided into approximately 1.23 billion EUA on the cleared futures market, some 116 million EUA on the cleared spot market and about 8 million EUA bilaterally settled through the LEBA-Brokers (OTC). Overall, trading volume on the secondary market reached a new record high in October, exceeding the one billion EUA mark for the third time after March 2014 and September 2018 (see also Figure 6).

In October 2018, a total of about 104 million allowances were auctioned by Member States on the primary market as spot contracts. With respect to the relevant total market for EUA, around 7.2 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.



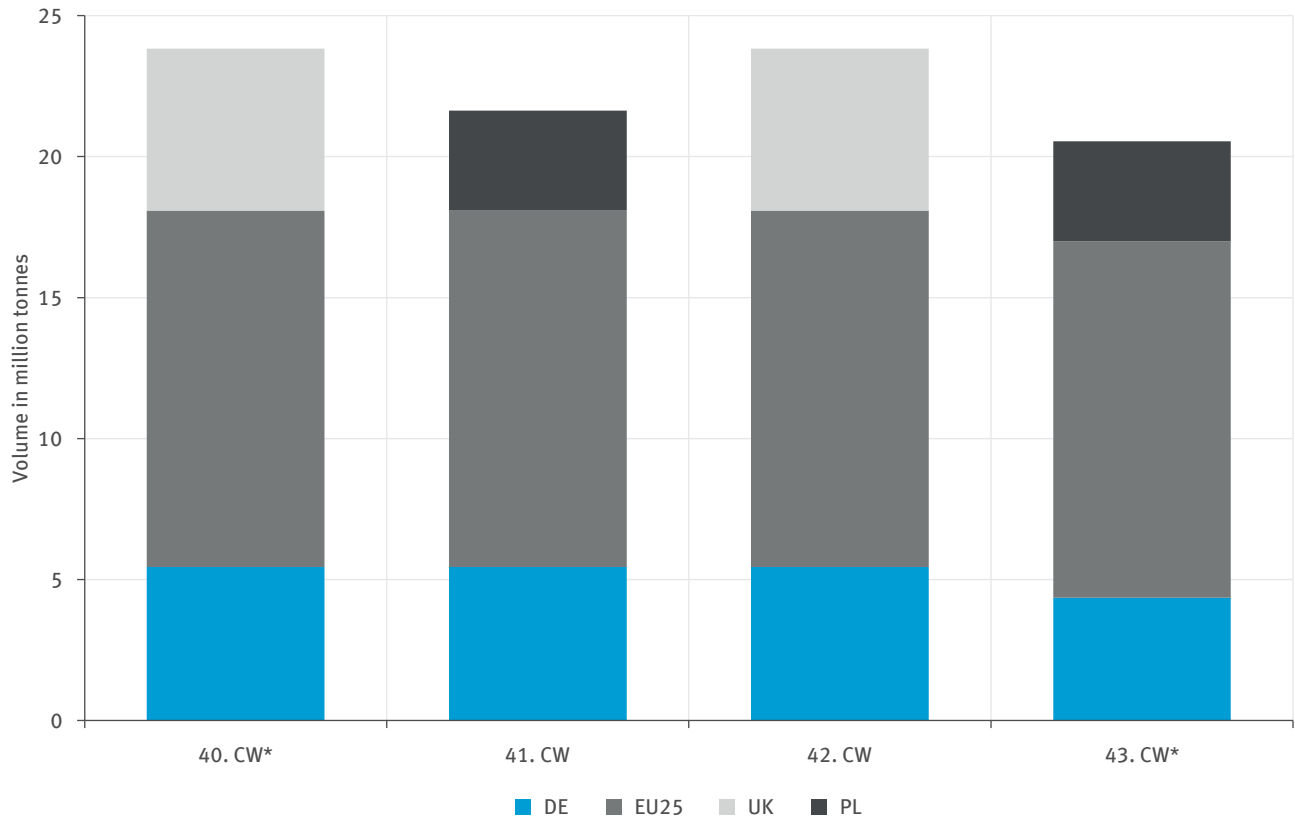
Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, DEHSt
 * CW 40: 01/10/2018-05/10/2018; CW 43: 22/10/2018-26/10/2018

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

3 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 October 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.

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.

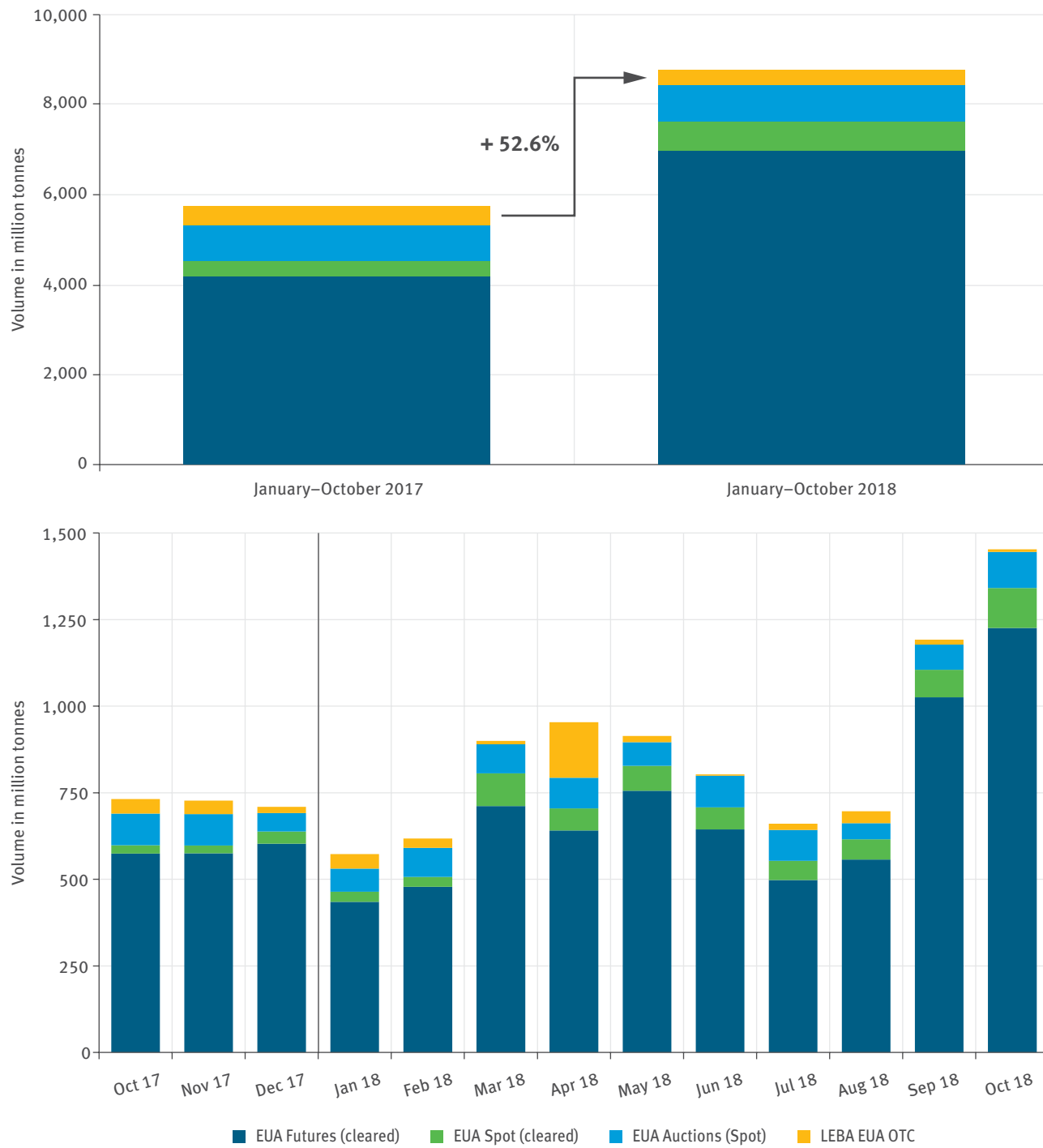
Figure 5 shows the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, auction volumes of other EU Member States are also included in the figure.



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 40: 01/10/2018-05/10/2018; CW 43: 22/10/2018-26/10/2018

Figure 5: Auction volumes on the primary market in October 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 nine month of the current year, the total market volume of about 8.76 billion EUA was about 53 percent above the previous year's figure (Jan–Oct 2017: 5.74 billion EUA).



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		Oct 2018	Sep 2018	Jan-Oct 2018	Jan-Oct 2017
Primary market	EUA-Auctions (Spot)	7.2 %	6.2 %	9.1 %	14.1 %
Secondary market	EUA-Futures (cleared)	84.3 %	86.1 %	79.6 %	73.0 %
	EUA-Spot (cleared)	8.0 %	6.6 %	7.5 %	5.7 %
	LEBA EUA OTC	0.5 %	1.1 %	3.8 %	7.3 %

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

3.2 Trading Volume EUAA

In October 2018, no aviation allowances (EUAA) were traded on the secondary market⁵. During the reporting period, 0.8 million EUAA were auctioned for Germany 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).

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 - € 0.12 (- 0.62 percent) and + € 0.11 (+ 0.58 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 0.36 percent averaged over all dates.

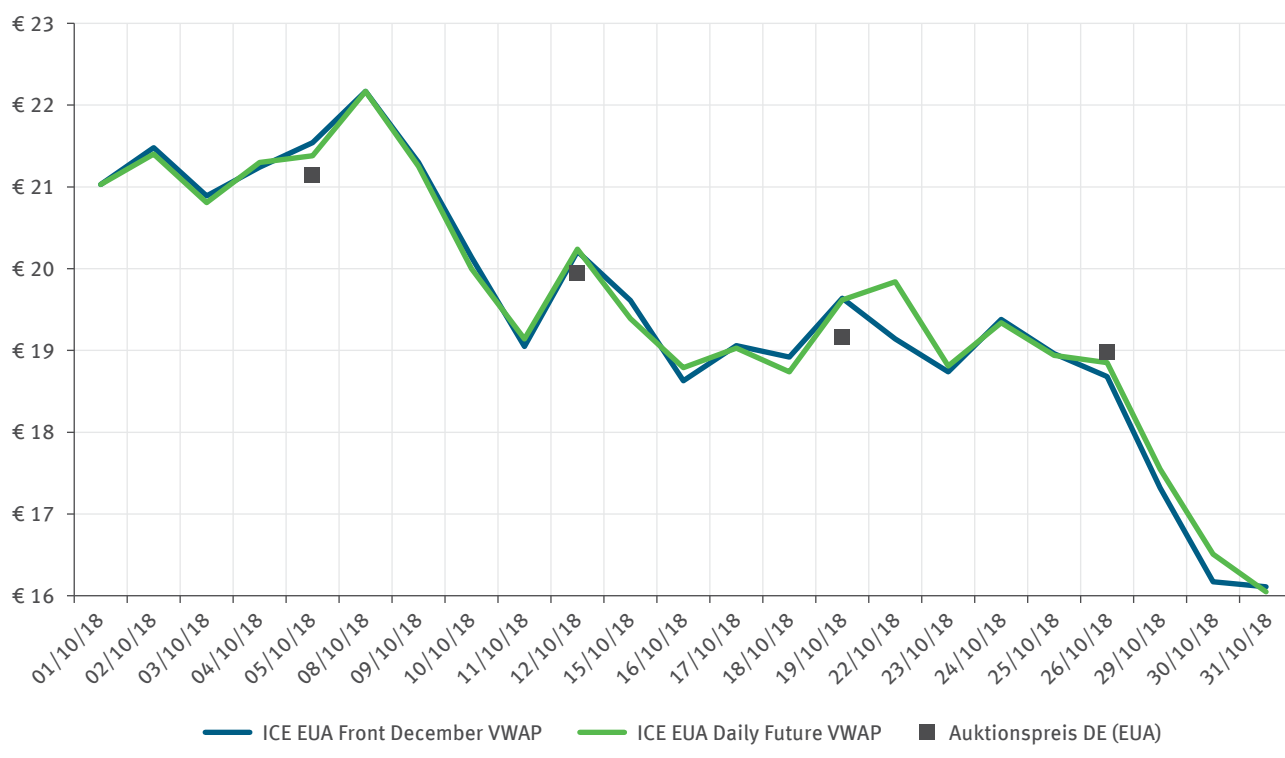
⁵ All aviation allowances (EUAA) of the third trading period traded on the spot and futures markets on the ICE/ECX and EEX exchanges are considered. Transactions completed directly on the stock exchange (screen traded) or those bilateral transactions that at least used the stock exchange clearing mechanism are included.

Table 4: Auctions and deviations from secondary market prices in October 2018 (EUA)

Date	Contract	Auction price	Deviation from secondary market	
			Absolute	%
05/10/2018	EUA Spot 3 rd TP	€ 21.14	*€ 0.03	*0.14 %
12/10/2018	EUA Spot 3 rd TP	€ 19.95	*€ - 0.02	*- 0.10 %
19/10/2018	EUA Spot 3 rd TP	€ 19.17	*€ - 0.12	*- 0.62 %
26/10/2018	EUA Spot 3 rd TP	€ 18.98	*€ 0.11	*0.58 %
Mean absolute deviation			€ 0.07	0.36 %

Source: ICE, EEX, Thomson Reuters Eikon, DEHSt
* best bid 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”).⁶ 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.⁷ The following graphic is based on volume-weighted average trading prices (VWAP), which fluctuated in an interval between around € 16 to € 22 in October 2018.⁸



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

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

6 ICE EUA Dec18 contract expires on 17/12/2018.

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 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 October 2018 as follows (excerpt):

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

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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