



Auctioning

German Auctioning of Emission Allowances Periodical Report: First Quarter 2017

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 2017 auction calendar is published on the [EEX website](#).

The following tables summarise the key data of the German auctions on the EEX in 2017:

2017	
Auction product	Third trading period EUA spot contracts ¹
Period	13/01/2017 to 15/12/2017
Auction volume entire year	196,820,000 EUA
Auction volume per auction	4.473 million EUA (2.2375 million EUA in August)
Auction frequency	Weekly (Fridays, 09:00 to 11:00 a.m. CET)
Bid volume	500 EUA
Auction mode	Single-round, uniform-price procedure with a closed order book

1 Overview

1.1 First Quarter of 2017

Between January and March, twelve auctions of emission allowances (EUA) of the third trading period were carried out for Germany at the EEX.

Overall **53,676,000 EUA** with a total value of **€ 274,821,120** were auctioned. This results in a volume-weighted average price per allowance of **€ 5.12** (-4.7 percent compared to the previous quarter). The deviations of the clearing prices from the current prices on the lead market fluctuated between -0.82 and +1.20 percent (see also Section 3.3).

Overall, valid bids totalling about 152 million allowances were entered into trading system across the twelve EUA-auction dates. Thus the average cover ratio in the reporting period was 2.83 (see also Section 2.2). The average participation number of 20 bidders was above the level of the previous quarter (17). This also applies to the average number of 14 (12) successful bidders (see also Section 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 the first Quarter of 2017

Date	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
13/01/2017	4,473,000	15,186,000	3.40	21	11	€ 5.06	€ 22.633.380
20/01/2017	4,473,000	8,762,000	1.96	20	15	€ 5.16	€ 23.080.680
27/01/2017	4,473,000	14,932,000	3.34	21	13	€ 5.05	€ 22.588.650
January	13,419,000	38,880,000	*2.90	*21	*13	*€ 5.09	€ 68.302.710
03/02/2017	4,473,000	14,191,000	3.17	21	10	€ 5.22	€ 23.349.060
10/02/2017	4,473,000	12,410,000	2.77	21	15	€ 5.30	€ 23.706.900

¹ The auction calendars for aviation allowances (EUAA) on the EEX and the ICE have not been determined and published yet. The further coordination process with regard to the inclusion of the aviation sector in the EU-ETS for the period from 2017 to 2020 is awaited.

17/02/2017	4,473,000	10,176,000	2.27	20	18	€ 4.85	€ 21.694.050
24/02/2017	4,473,000	11,973,000	2.68	18	15	€ 5.31	€ 23.751.630
February	17,892,000	48,750,000	*2.72	*20	*15	*€ 5.17	€ 92.501.640
03/03/2017	4,473,000	10,667,000	2.38	20	17	€ 5.55	€ 24.825.150
10/03/2017	4,473,000	14,078,500	3.15	22	15	€ 5.08	€ 22.722.840
17/03/2017	4,473,000	15,148,500	3.39	23	11	€ 5.13	€ 22.946.490
24/03/2017	4,473,000	11,097,500	2.48	21	18	€ 4.88	€ 21.828.240
31/03/2017	4,473,000	13,013,000	2.91	17	12	€ 4.85	€ 21.694.050
March	22,365,000	64,004,500	*2.86	*21	*15	*€ 5.10	€ 114.016.770
Q1 2017	53,676,000	151,634,500	*2.83	*20	*14	*€ 5.12	€ 274.821.120

Source: EEX, DEHSt
* Average

1.2 Overview of the entire year 2017

In the first three month of the current year a total of **53,676,000 EUA** with a total value of **€ 274,821,120** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 5.12**.

The amount of emission allowances to be auctioned by Germany in 2017 totals 196,820,000 EUA. Taking into account the total annual amount, around 27 percent of the EUA-auction budget for 2017 has been auctioned to date.

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

Table 2: Overview of the entire year 2017

Month	Type	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
January	EUA	13,419,000	38,880,000	*2.90	*21	*13	*€ 5.09	€ 68.302.710
February	EUA	17,892,000	48,750,000	*2.72	*20	*15	*€ 5.17	€ 92.501.640
March	EUA	22,365,000	64,004,500	*2.86	*21	*15	*€ 5.10	€ 114.016.770
Total		53,676,000	151,634,500	*2.83	*20	*14	*€ 5.12	€ 274.821.120

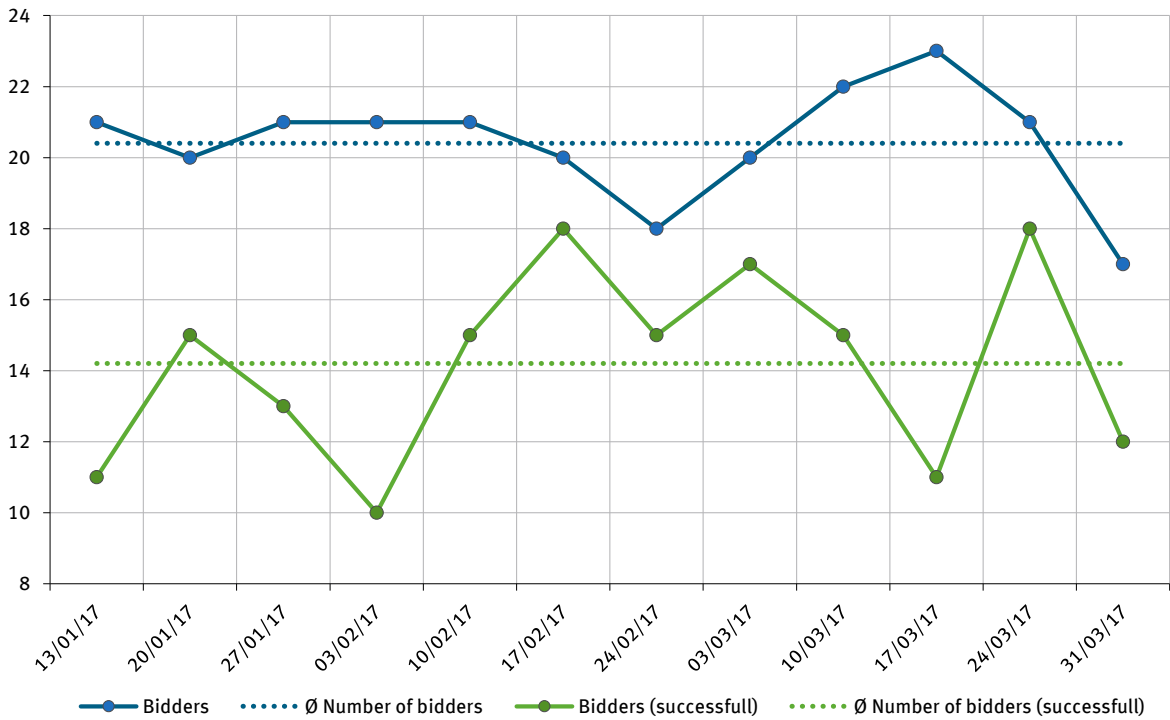
Source: EEX, DEHSt
* Average

2 Bidder Participation

2.1 Participation

The number of participants in the German EUA-auctions in the first Quarter averaged across all dates was 20 bidders. The average number of successful bidders was about 14. Participation in the auctions fluctuated between 17 and 23 bidders during the reporting period. The number of successful participants ranged from 10 to 18. There was no such auction where all participating bidders were successful.

The following figure illustrates EUA-auction participation over time.



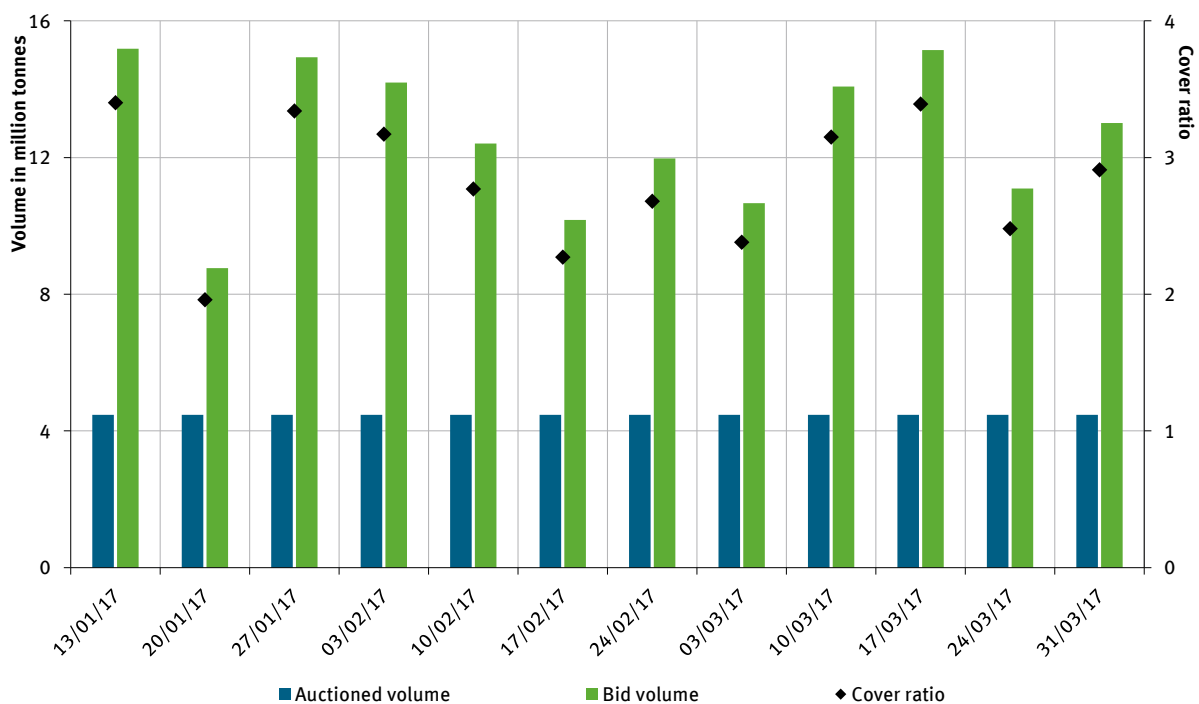
Source: EEX, DEHSt

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

2.2 Volume Demand

During the reporting period, the aggregated bid volumes per auction date fluctuated from 8.8 to 15.2 million allowances. Overall, valid bids totalling about 152 million allowances were entered into trading system in the first Quarter. The resulting cover ratios during the reporting period ranged between 1.96 and 3.40 (2.83 on average).

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



Source: EEX, DEHSt

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

Thus, the average bid volume per EUA-auction participant in the first Quarter was about 620,000 allowances. The average volume awarded to each successful bidder was about 315,000 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. 4.473 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 first Quarter of 2017, a total of about 54 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 1.63 billion EUA.² This comprises the monthly data of the London Energy Brokers' Association (LEBA) on OTC (see also Figure 5). The inclusion of this data allows for a more complete picture of the entire market volume in EUA trades.³

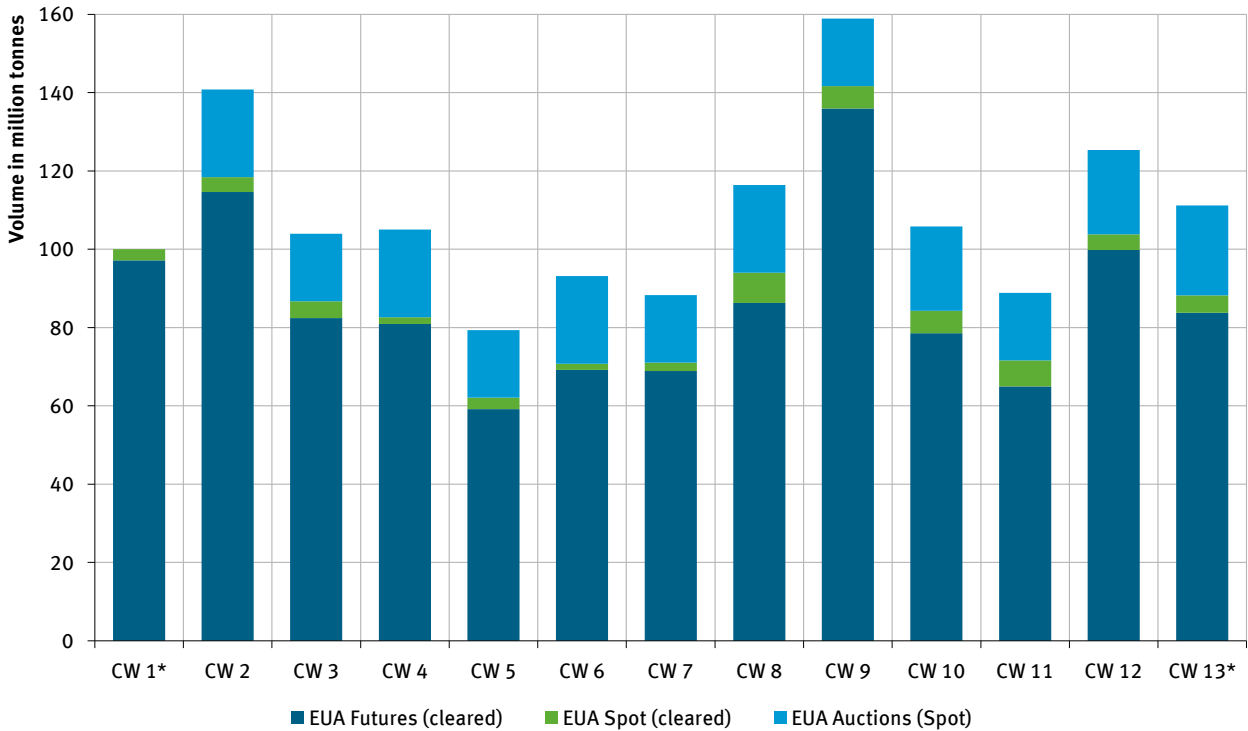
The secondary market trading volume of 1.39 billion EUA was divided into approximately 1.12 billion EUA on the cleared futures market, some 54 million EUA on the cleared spot market and about 217 million EUA bilaterally settled through the LEBA-Brokers (OTC).

In the first Quarter of 2017, a total of about 242 million allowances were auctioned by Member States on the primary market as spot contracts. With respect to the relevant total market for EUA, around 15 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.

2 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 first Quarter of 2017 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.

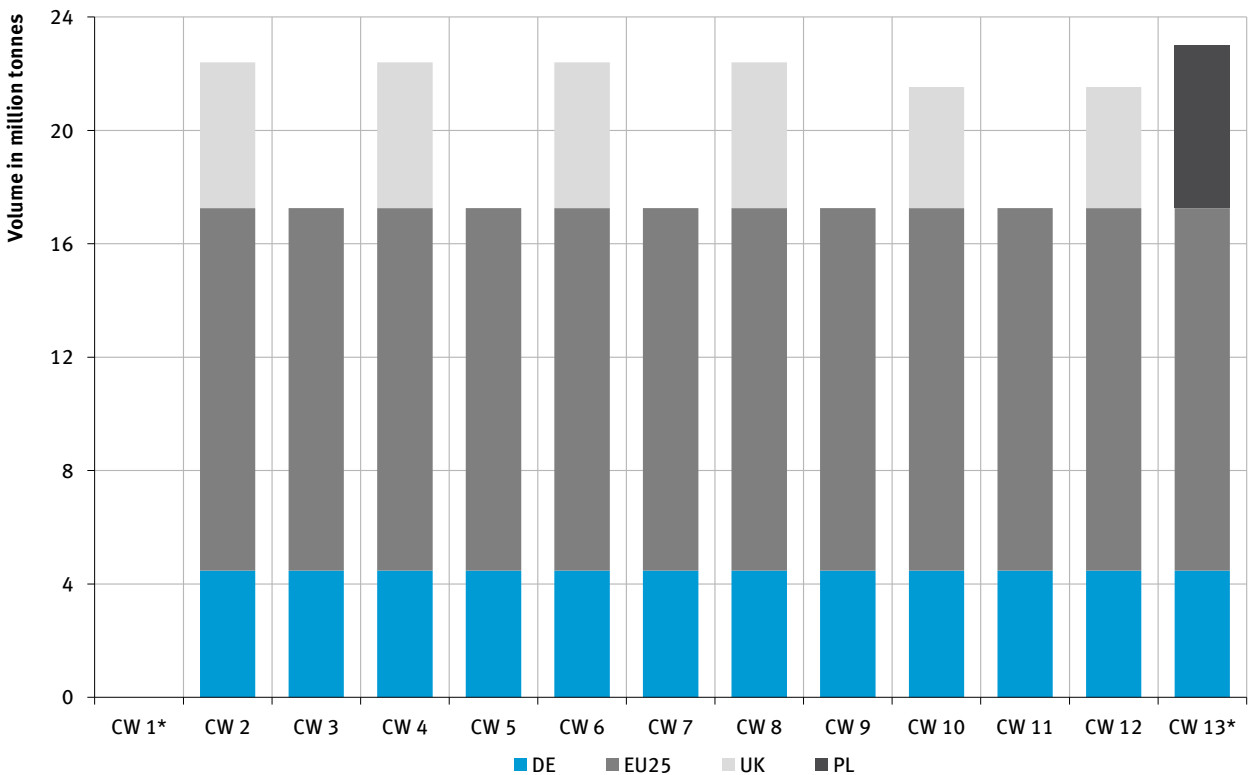
3 LEBA is an association of large brokerage firms active in the trading of energy commodities (including EUA). Their monthly volume [reports](#) also include bilaterally settled contracts that were not registered on clearing platforms. The data are not broken down into futures-/spot-contracts. Moreover, since the volumes are only available as monthly aggregated values, the data were taken into account only in Figure 5, but not in Figure 3.



Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, DEHSt
 * CW 1: 02/01/2017-06/01/2017; CW 13: 27/03/2017-31/03/2017

Figure 3: Trading volumes on the primary and secondary market in the first Quarter of 2017 (EUA)

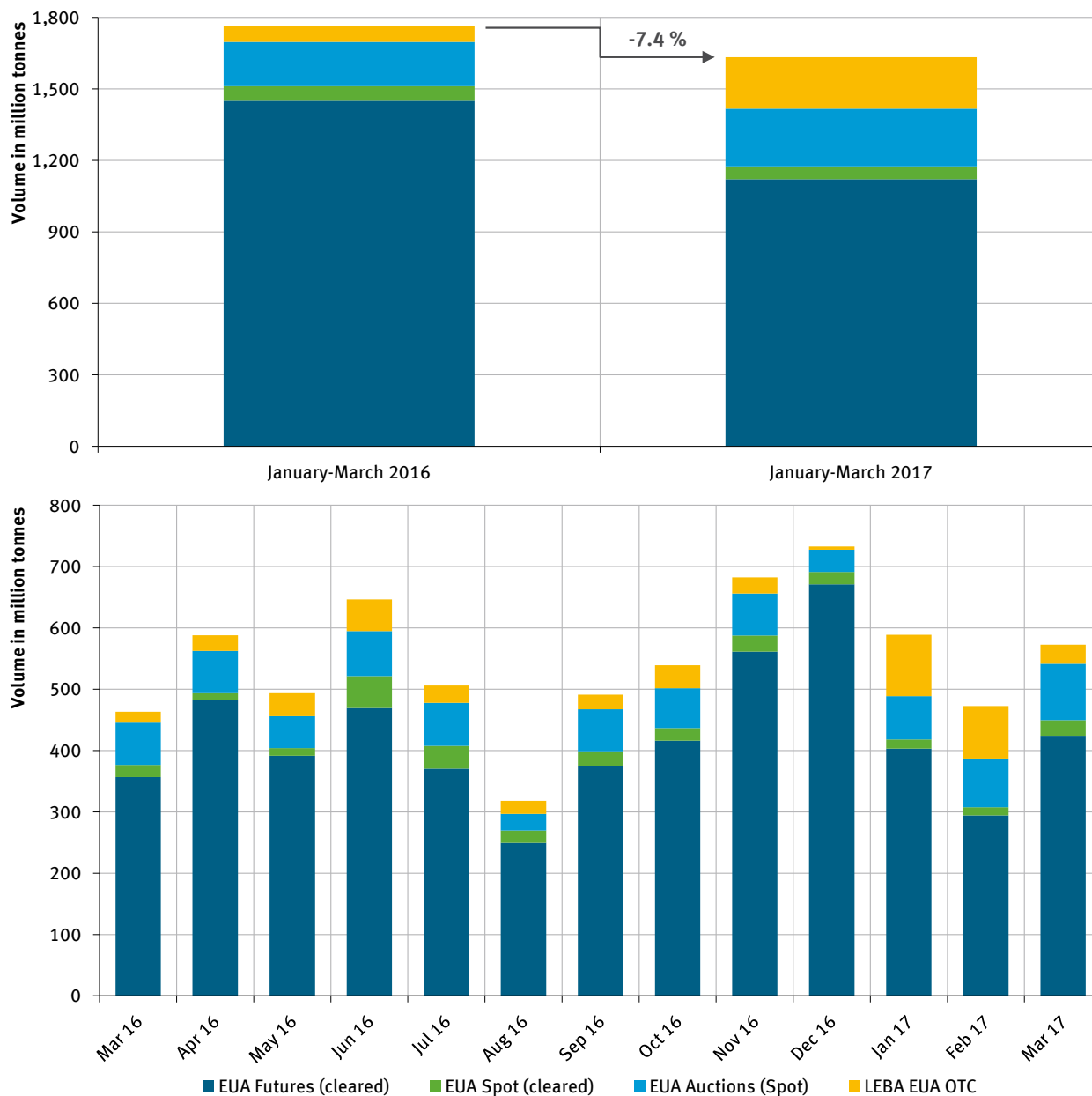
Figure 4 shows the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, auction volumes of other EU Member States are also included in the figure.



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 1: 02/01/2017-06/01/2017; CW 13: 27/03/2017-31/03/2017

Figure 4: Auction volumes on the primary market in the first Quarter of 2017 (EUA)

The following chart shows the development of the monthly EUA trading volumes on the primary and secondary market over the past 12 month. The sharp rise in OTC volumes in the current year, which is highly disproportionate compared to the overall market, is remarkable. This is reflected in a growing share of this segment in the total market volume (see also Table 3).



Source: ICE, EEX, Thomson Reuters Eikon, LEBA, DEHSt

Figure 5: 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		Mar 2017	Feb 2017	Jan-Mar 2017	Jan-Mar 2016
Primary market	EUA-Auctions (Spot)	16.1 %	16.8 %	14.8 %	10.6 %
	EUA-Futures (cleared)	74.1 %	62.3 %	68.7 %	82.3 %
Secondary market	EUA-Spot (cleared)	4.4 %	2.8 %	3.3 %	3.4 %
	LEBA EUA OTC	5.4 %	18.1 %	13.3 %	3.7 %

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

3.2 Trading Volume EUAA

In the first Quarter of 2017 50,000 aviation allowances (EUAA) were traded on the secondary market⁴, the only transaction took place in the CW 12. 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](#).

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 -€ 0.04 (-0.82 percent) and +€ 0.06 (+1.20 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 € 0.03 or 0.54 percent averaged over all dates.

Table 4: Auctions and deviations from secondary market prices in the first Quarter of 2017 (EUA)

Date	Contract	Auction price	Deviation from secondary market*	
			Absolute	%
13.01.2017	EUA Spot 3 rd TP	€ 5.06	€ 0.06	1.20 %
20.01.2017	EUA Spot 3 rd TP	€ 5.16	€ -0.03	-0.58 %
27.01.2017	EUA Spot 3 rd TP	€ 5.05	€ 0.05	1.00 %
03.02.2017	EUA Spot 3 rd TP	€ 5.22	€ 0.05	0.97 %
10.02.2017	EUA Spot 3 rd TP	€ 5.30	€ 0.01	0.19 %
17.02.2017	EUA Spot 3 rd TP	€ 4.85	€ -0.04	-0.82 %
24.02.2017	EUA Spot 3 rd TP	€ 5.31	€ -0.01	-0.19 %
03.03.2017	EUA Spot 3 rd TP	€ 5.55	€ -0.01	-0.18 %

⁴ 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.

10.03.2017	EUA Spot 3 rd TP	€ 5.08	€ 0.02	0.40 %
17.03.2017	EUA Spot 3 rd TP	€ 5.13	€ 0.03	0.59 %
24.03.2017	EUA Spot 3 rd TP	€ 4.88	€ -0.02	-0.41 %
31.03.2017	EUA Spot 3 rd TP	€ 4.85	€ 0.00	0.00 %

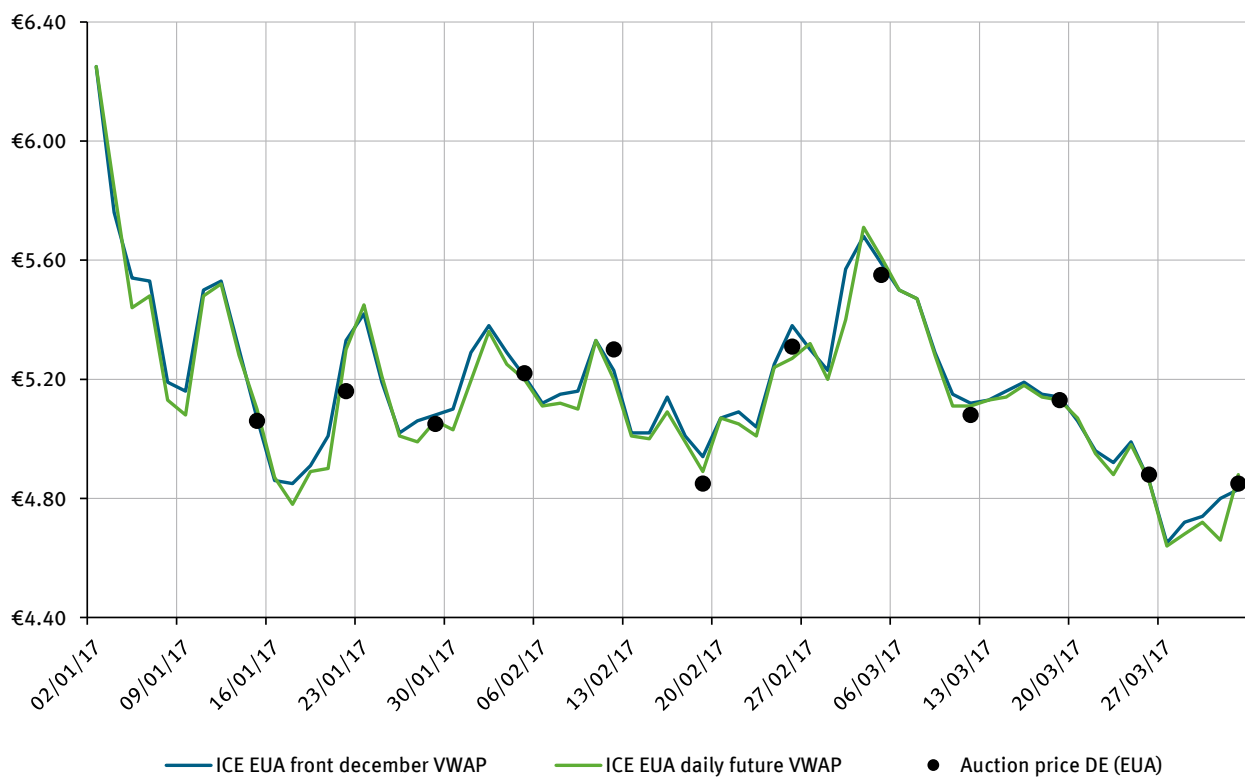
Mean absolute deviation

€ 0.03

0.54 %

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 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.⁵ The following graphic is based on volume-weighted average trading prices (VWAP), which fluctuated in an interval between around € 4.60 to € 6.30⁶ in the first Quarter of 2017.



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

Figure 6: ICE secondary market prices and EEX auction clearing prices (EUA)

⁵ 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.

⁶ 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 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 February 2017 as follows (excerpt):

“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in February 2017 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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