



Auctioning

German Auctioning of Emission Allowances
Periodical Report: April 2016

Umwelt 
Bundesamt

DEHSt
Deutsche
Emissionshandelsstelle

Impressum

Publisher

German Emissions Trading Authority (DEHSt)
at the German Environment Agency
Bismarckplatz 1
D-14193 Berlin
Phone: +49 (0) 30 89 03-50 50
Fax: +49 (0) 30 89 03-50 10
emissionshandel@dehst.de
Internet: www.dehst.de

Status: May 2016

Responsible Editors: Section E 2.3

Cover image: Tkemot/ Shutterstock.com

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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 [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 (1.7475 million EUA in August)	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 Overview

1.1 April 2016

In April, five auctions of emission allowances (EUA) of the third trading period and one auction of aviation allowances (EUAA) were carried out for Germany at the EEX.

In the five EUA-auctions **17,475,000 EUA** with a total value of **€ 97,790,100** were auctioned. This results in a volume-weighted average price per allowance of **€ 5.60** (+14 percent compared to the previous month). The deviations of the clearing prices from the current prices on the lead market fluctuated between -0.96 and +1.41 percent (see also Section 3.3).

Overall, valid bids totalling about 35 million allowances were entered into trading system across the five EUA-auction dates. Thus the average cover ratio in the reporting period was 2.02 (see also Section 2.2). The average participation number of 17 bidders was well below the level of the previous month (22). The average number of successful bidders was however slightly above at the previous month level at 14 (13), (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 April 2016

Date	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
01/04/2016	3,495,000	5,528,000	1.58	19	15	€ 5.18	€ 18,104,100
08/04/2016	3,495,000	7,788,000	2.23	18	17	€ 5.23	€ 18,278,850
15/04/2016	3,495,000	9,072,000	2.60	19	15	€ 5.54	€ 19,362,300
22/04/2016	3,495,000	7,130,000	2.04	15	8	€ 5.74	€ 20,061,300
29/04/2016	3,495,000	5,814,000	1.66	15	13	€ 6.29	€ 21,983,550
April	17,475,000	35,332,000	*2.02	*17	*14	*€ 5.60	€ 97,790,100

Source: EEX, DEHSt
* Average

In addition, **857,500 aviation allowances (EUAA)** with a total value of € 4,647,650 were auctioned for Germany on 13/04/2016. The auction price for the 6 successful bidders was € 5.42. Overall, 10 bidders with valid bids totaling about 3.4 million allowances participated in the auction.

1.2 Overview of the entire year 2016

In the first four month of the current year a total of **53,282,500 EUA and EUAA** with a total value of € **293,474,450** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of € **5.51**. These overall figures are subdivided into 52,425,000 EUA with a total value of € 288,826,800 (average price € 5.51) 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 33 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

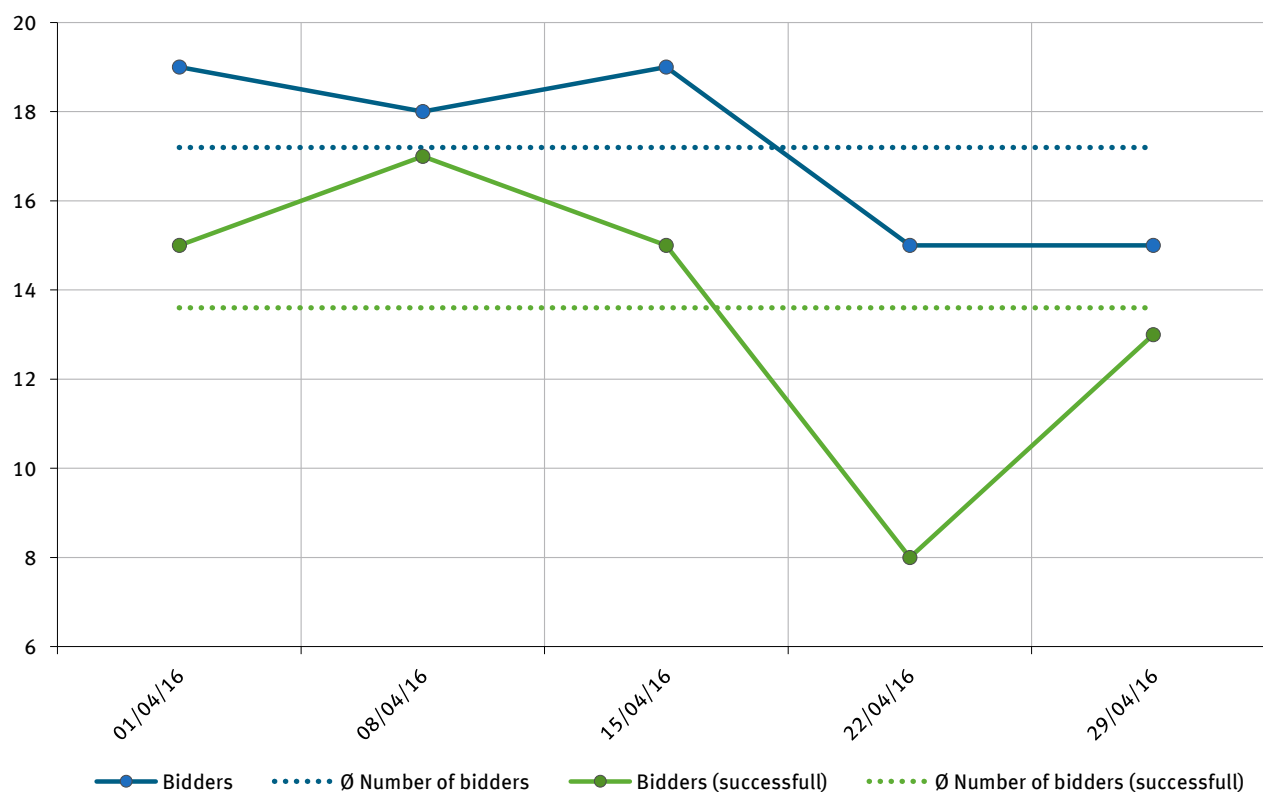
Month	Type	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
January	EUA	10,485,000	23,660,500	*2.26	*21	*15	*€ 6.37	€ 66,754,500
February	EUA	13,980,000	30,818,500	*2.20	*22	*14	*€ 5.21	€ 72,800,850
March	EUA	10,485,000	25,693,000	*2.45	*22	*13	*€ 4.91	€ 51,481,350
April	EUA	17,475,000	35,332,000	*2.02	*17	*14	*€ 5.60	€ 97,790,100
	EUAA	857,500	3,362,500	3.92	10	6	€ 5.42	€ 4,647,650
EUA		52,425,000	115,504,000	*2.20	*20	*14	*€ 5.51	€ 288,826,800
EUAA		857,500	3,362,500	3.92	10	6	€ 5.42	€ 4,647,650
Total		53,282,500	118,866,500	**2.23	*20	*13	**€ 5.51	€ 293,474,450

Source: EEX, DEHSt
* Average
** Volume-weighted average

2 Bidder Participation

2.1 Participation

The number of participants in the German EUA-auctions in April averaged across all dates was 17 bidders. The average number of successful bidders was 14. Participation in the auctions fluctuated between 15 and 19 bidders during the reporting period. The number of successful participants ranged from 8 to 17. There was no such auction where all participating bidders were successful. The following figure illustrates EUA-auction participation over time.



Source: EEX, DEHSt

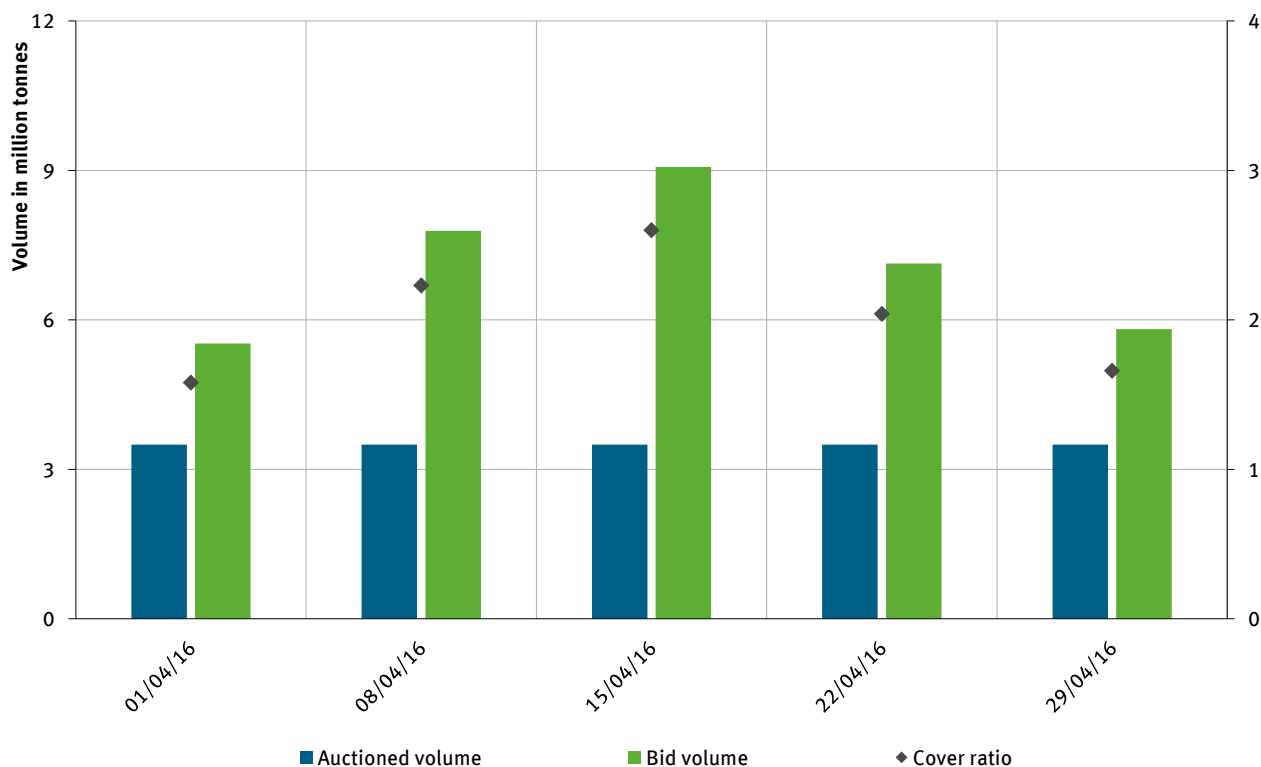
Figure 1: Number of participating and successful bidders per auction date (EUA)

With 10 bidders, the participation in the aviation allowances auction on 13/04/2016 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.

2.2 Volume Demand

During the reporting period, the aggregated bid volumes per EUA-auction date fluctuated from 5.5 to 9.1 million allowances. Overall, valid bids totalling about 35 million allowances were entered into trading system in April. The resulting cover ratios during the reporting period ranged between 1.58 and 2.60 (2.02 on average). The cover ratio in the EUAA auction on 13/04/2016 was 3.92, above the fluctuation range of the cover ratios in EUA auctions.

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



Source: EEX, DEHSt

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

Thus, the average bid volume per EUA-auction participant in April was about 410,000 allowances. The average volume awarded to each successful bidder was about 260,000 allowances. In the EUAA auction on 13/04/2016 the average bid volume per auction participant was about 340,000 allowances. The average volume awarded to each successful bidder was about 140,000 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.

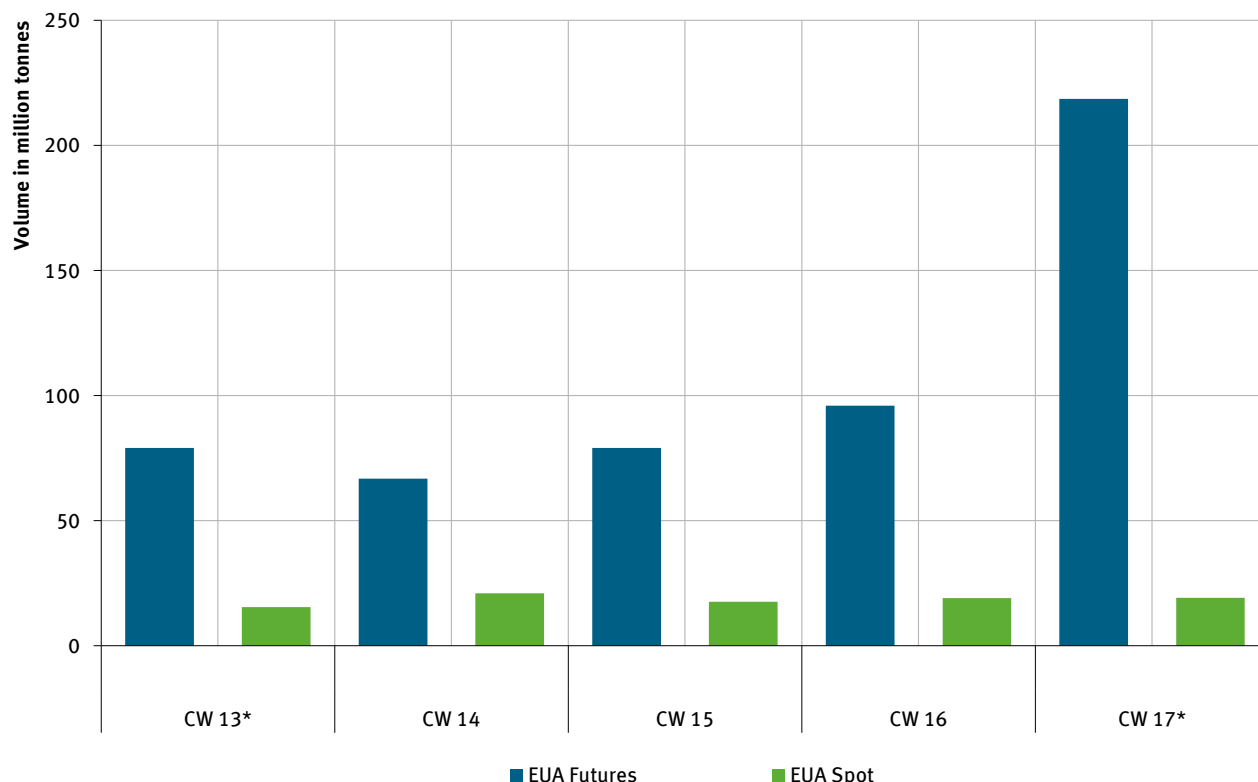
In the event of equal bids, the bids are sorted by a random process. The bid volumes are aggregated starting with the highest bid until the volume of emission allowances on offer (e.g. 3.495 million EUA) is reached. The bid price at which the aggregate volume of bids reaches or exceeds the offered volume 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.

3 Auctions and the Secondary Market

3.1 Trading Volume EUA

In April 2016, a total of about 17.5 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 563 million EUA.¹ Thus, the total market trading volume was 26 percent above the level of the previous month. This market volume was divided into approximately 80 million allowances which were completed as contracts for immediate delivery (spot) and about 483 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).



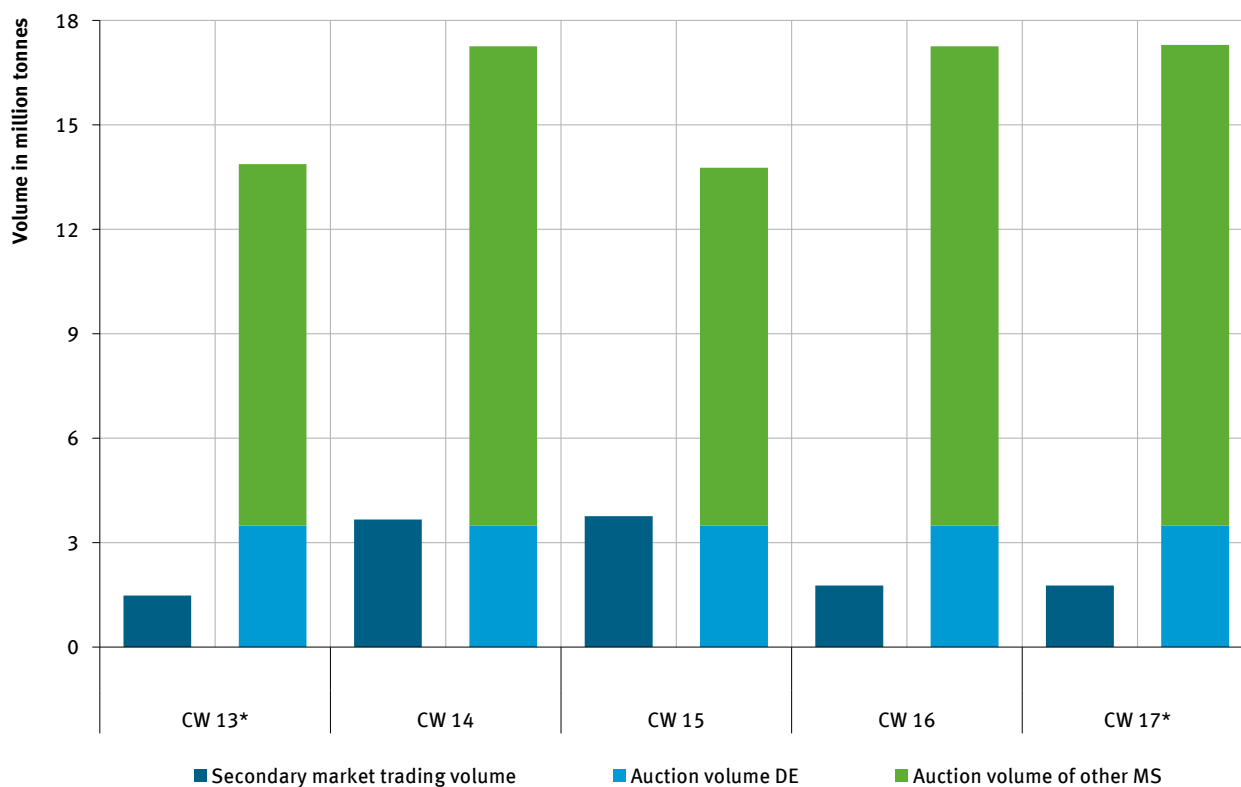
Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters, DEHSt
 * CW13: 28/03/2016-01/04/2016; CW17: 25/04/2016-29/04/2016

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

In April 2016, a total of about 69 million allowances were auctioned by Member States on the primary market as spot contracts. On the spot secondary market about 11 million allowances were traded. This means that around 86 percent of traded spot contracts have been purchased in primary market auctions. With respect to the relevant total market for EUA, around 12 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 April 2016 are also considered. Option contracts are not involved.



Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters, DEHSt
MS = EU Member State

* CW13: 28/03/2016-01/04/2016; CW17: 25/04/2016-29/04/2016

Figure 4: Trading volume on the secondary market (spot) and volume of auctions conducted in April 2016 (EUA)

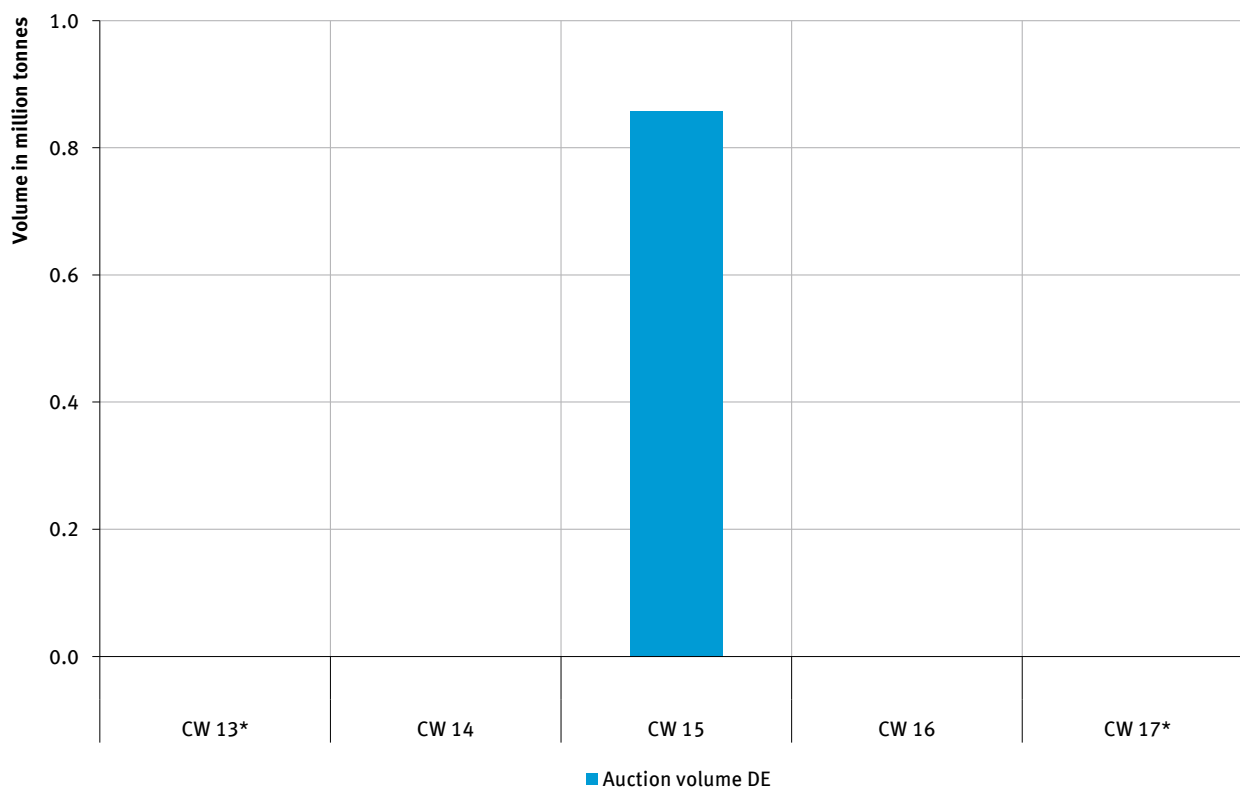
3.2 Trading Volume EUAA

In April 2016, no aviation allowances (EUAA) were traded on the secondary market². During the reporting period, a total of about 0.86 million EUAA were auctioned by Germany on the primary market as spot contracts.

Further information on the EUAA auction calendars is available on the website of the [European Commission](#).

Figure 5 shows the trading volume in the secondary market and the auction volumes on the primary market per calendar week (CW).

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.



Source: ICE, EEX, Thomson Reuters, DEHSt
MS = EU Member State

* CW13: 28/03/2016-01/04/2016; CW17: 25/04/2016-29/04/2016

Figure 5: Trading volume on the secondary market and volume of auctions conducted in April 2016 (EUAA)

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.

Due to the very low liquidity on the benchmark secondary market for EUAA (see Section 3.2) no evaluation of the EUAA auction price on 13/04/2016 is made in this report.

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 -€ 0.05 (-0.96 percent) and +€ 0.08 (+1.41 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 0.60 percent averaged over all dates.

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

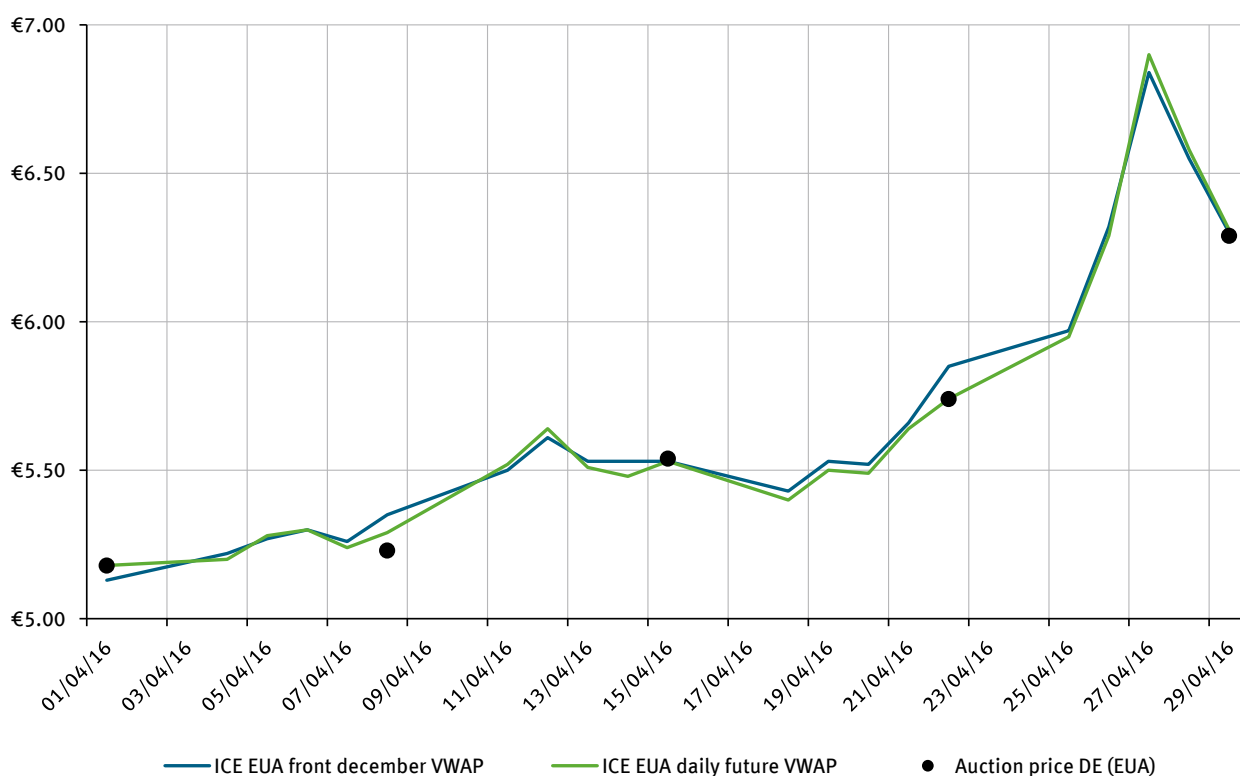
Date	Contract	Clearing price	Deviation from ICE Daily Future	
			Absolute	%
01/04/2016	EUA Spot 3rd TP	€ 5.18	**€ -0.05	** -0.96 %
08/04/2016	EUA Spot 3rd TP	€ 5.23	*€ 0.00	* 0.00 %
15/04/2016	EUA Spot 3rd TP	€ 5.54	***€ 0.01	*** 0.18 %
22/04/2016	EUA Spot 3rd TP	€ 5.74	*€ 0.08	* 1.41 %
29/04/2016	EUA Spot 3rd TP	€ 6.29	*€ -0.03	* -0.47 %
Mean absolute deviation			€ 0.03	0.60 %

Source: ICE, EEX, Thomson Reuters, DEHSt
 * best bid ICE Daily Future
 ** last trade EEX Spot
 *** 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 € 5.10 to € 6.90⁴ in April 2016.

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.



Source: ICE, EEX, Thomson Reuters, DEHSt

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

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 April 2016 as follows (excerpt):

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

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 \(2016 auction results\)](#).

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 \(Regulations\)](#).

German Emissions Trading Authority (DEHSt) at the German Environment Agency
Bismarckplatz 1
D-14193 Berlin

www.dehst.de/EN | emissionstrading@dehst.de