



# Auctioning

**German Auctioning of Emission Allowances  
Periodical Report: Annual Report 2016**

## Impressum

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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 and 2017 auction calendars are published on the [EEX website](#).

The following tables summarise the key data of the German auctions on the EEX in 2016 and 2017:

2016		
<b>Auction product</b>	Third trading period <b>EUA spot contracts</b>	Third trading period <b>EUAA spot contracts</b>
<b>Period</b>	15/01/2016 to 16/12/2016	13/04/2016
<b>Auction volume entire year</b>	160,770,500 EUA	857,500 EUAA
<b>Auction volume per auction</b>	<b>3.495 million EUA</b> (1.7475 million EUA in August)	<b>857,500 EUAA on 13/04/2016</b>
<b>Auction frequency</b>	Weekly (Fridays, 09:00 to 11:00 a.m. CET)	On 13/04/2016 (09:00 to 11:00 a.m. CET)
<b>Bid volume</b>	500 EUA/EUAA	
<b>Auction mode</b>	Single-round, uniform-price procedure with a closed order book	

2017	
<b>Auction product</b>	Third trading period <b>EUA spot contracts</b> <sup>1</sup>
<b>Period</b>	13/01/2017 to 15/12/2017
<b>Auction volume entire year</b>	196,820,000 EUA
<b>Auction volume per auction</b>	<b>4.473 million EUA</b> (2.2375 million EUA in August)
<b>Auction frequency</b>	Weekly (Fridays, 09:00 to 11:00 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 2016

In 2016 a total of **161,628,000 EUA and EUAA** (2015: 146,122,500 EUA/EUAA) of the third trading period with a total value of **€ 850,387,520** (2015: € 1,110,180,180) were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 5.26** (2015: € 7.60). These overall figures are subdivided into 160,770,500 EUA with a total value of € 845,739,870 (average price € 5.26) and 857,500 EUAA with a total value of € 4,647,650 (€ 5.42).

<sup>1</sup> 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.

The highest price in 2016 (€ 6.71) was reached at the EUA-auction on 15<sup>th</sup> January. Due to last year's market price developments, the 2016 average auction clearing price leveled around 30 percent below the previous year's average. Despite the increased auction volumes, the total revenues in 2016 declined by around 23 percent compared to the previous year.

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

**Table 1: 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
	EUA	857,500	3,362,500	3.92	10	6	€ 5.42	€ 4,647,650
May	EUA	13,980,000	28,628,000	*2.05	*16	*13	*€ 5.93	€ 82,936,350
June	EUA	13,980,000	30,030,000	*2.15	*18	*15	*€ 5.63	€ 78,742,350
July	EUA	17,475,000	36,267,000	*2.08	*16	*13	*€ 4.49	€ 78,392,850
August	EUA	6,990,000	25,743,500	*3.69	*16	*7	*€ 4.76	€ 33,254,925
September	EUA	17,475,000	32,973,000	*1.89	*18	*11	*€ 4.41	€ 76,994,850
October	EUA	13,980,000	34,431,500	*2.46	*18	*12	*€ 5.64	€ 78,812,250
November	EUA	13,980,000	30,018,500	*2.15	*17	*13	*€ 5.79	€ 80,979,150
December	EUA	10,485,500	24,637,000	**2.35	*16	*12	**€ 4.46	€ 46,800,345
<b>EUA</b>		<b>160,770,500</b>	<b>358,232,500</b>	<b>**2.23</b>	<b>*18</b>	<b>*13</b>	<b>**€ 5.26</b>	<b>€ 845,739,870</b>
<b>EUA</b>		<b>857,500</b>	<b>3,362,500</b>	<b>3.92</b>	<b>10</b>	<b>6</b>	<b>€ 5.42</b>	<b>€ 4,647,650</b>
<b>Total</b>		<b>161,628,000</b>	<b>361,595,000</b>	<b>**2.24</b>	<b>*18</b>	<b>*12</b>	<b>**€ 5.26</b>	<b>€ 850,387,520</b>

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

The deviations of the EUA-clearing prices from the reference prices on the lead markets in London and Leipzig were mainly in the range of parts per thousand. The average deviation just before the end of the bidding period (11:00 a.m. CET) was 0.57 percent or € 0.03 (see also Section 3.4). A major factor behind this development was the robust demand on the primary market.

Overall, valid bids totaling about 362 million allowances were entered in the trading system across the 48 EUA-auction dates. Thus the average cover ratio in the reporting period was 2.23 (see also Section 2.2). In 2016 the average number of participants in the German auctions was 18, the average number of successful bidders amounted to 13. The participation number was thus roughly at the level of the previous year. From a bidder's perspective, the average success rate over all auction dates was about 71 percent (see also Section 2.1).

Overall, last year's auctions were fully implemented in accordance with the applicable national and European regulations (see also Chapter 4).

## 1.2 Third Trading Period

In current third trading period, a total of about **644 million EUA and EUAA** with a total value of around **€ 3.69 billion** were auctioned at the EEX for Germany in **200 single auctions**. This results in a volume-weighted average price per allowance of **€ 5.73**.

The following table summarizes the auction results of the current trading period on a yearly basis. The development of the auction volumes was substantially affected by the so-called „backloading“-decision.

Accordingly, between 2014 and 2016, 900 million emission allowances less have been auctioned EU-wide compared to the original planing.<sup>2</sup> In line with this decision, German auction volumes were also reduced by some 174 million EUA over the same period.

In addition to „backloading“, the EUA-price development on the lead markets had a major effect on the revenue development of the individual years. In 2013, the average revenue of € 4.33 per allowances was significantly below the previous year’s figure (referred to so-called „early auctions“<sup>3</sup>). In April and May 2013, the so far lowest auction price at a German EUA-auction was reached at € 2.95. In the following years, EUA-prices recovered steadily and reached the highest average yearly value of the current trading period at € 7.60 in 2015. The new record values were thereby achieved in October and November 2015 at € 8.59 respectively. Driven by the market price developments, the average revenue per allowances of € 5.26 fell again sharply in the previous year.

The auctions of aviation allowances (EUAA) were significantly influenced by the adjustment of the scope of the Emissions Trading Directive in relation to aviation emissions. Firstly, the scope has been substantially reduced by the EU’s so-called „stop-the-clock“ decision in 2012. Furthermore an additional restriction was made for the period from 2013 to 2016 („reduced scope“). As a result, EU-wide EUAA-auction volumes for the period from 2012 to 2016 were noticeable lower than originally planned. In line with the European requirements, Germany carried out a total of four EUAA-auctions in 2012, 2015 and 2016.

**Table 2: Overview of the third trading period including early auctions in 2012**

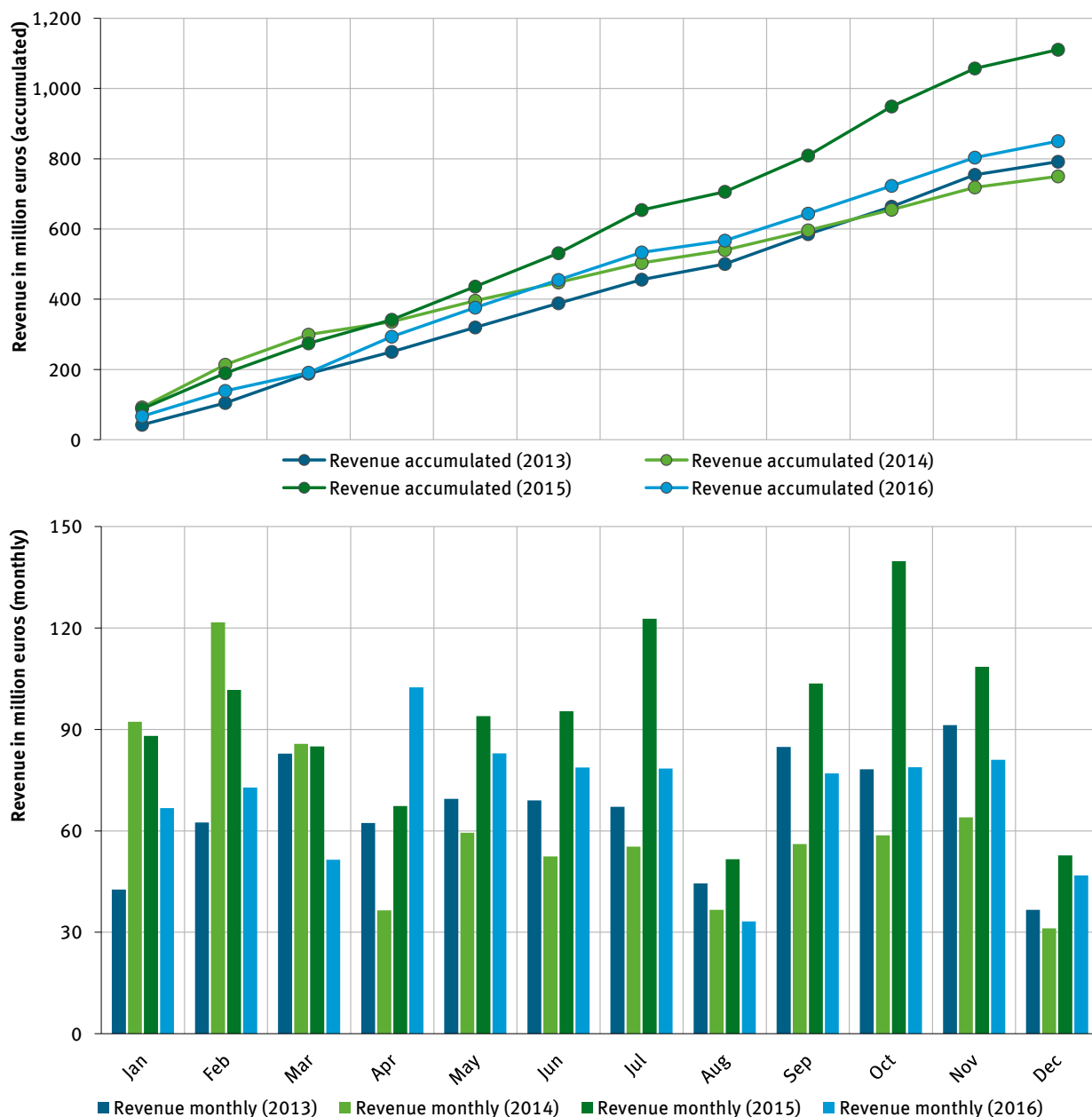
Year	Type	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
2012	EUA	23,531,000	86,799,000	**3.69	*14	*7	**€ 7.06	€ 166,178,670
	EUAA	2,500,000	4,552,000	1.82	6	5	€ 7.01	€ 17,525,000
2013	EUA	182,560,500	529,511,500	**2.90	*18	*14	**€ 4.33	€ 791,253,420
2014	EUA	127,127,500	614,996,000	**4.84	*16	*11	**€ 5.90	€ 749,973,880
2015	EUA	143,893,500	412,946,500	**2.87	*17	*13	**€ 7.60	€ 1,093,312,500
	EUAA	2,229,000	7,665,500	**3.44	*12	*6	**€ 7.57	€ 16,867,680
2016	EUA	160,770,500	358,232,500	**2.23	*18	*13	**€ 5.26	€ 845,739,870
	EUAA	857,500	3,362,500	3.92	10	6	€ 5.42	€ 4,647,650
<b>EUA</b>		<b>637,883,000</b>	<b>2,002,485,500</b>	<b>**3.14</b>	<b>*17</b>	<b>*12</b>	<b>**€ 5.72</b>	<b>€ 3,646,458,340</b>
<b>EUAA</b>		<b>5,586,500</b>	<b>15,580,000</b>	<b>**2.79</b>	<b>*10</b>	<b>*6</b>	<b>**€ 6.99</b>	<b>€ 39,040,330</b>
<b>Gesamt</b>		<b>643,469,500</b>	<b>2,018,065,500</b>	<b>**3.14</b>	<b>*17</b>	<b>*12</b>	<b>**€ 5.73</b>	<b>€ 3,685,498,670</b>

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

The following figure shows the German EUA/EUAA auction revenues in the period from 2013 to 2016. In addition to the monthly values (lower part of Fig. 1), the cumulative total revenues of the individual years (upper part of Fig. 1) are also shown in the chart. The highest monthly auction revenues were reached at around € 140 million in October 2015 (five EUA and one EUAA auction, average price € 8.33). The lowest monthly revenues since the beginning of the third trading period were reached in December 2014 with around € 31 million (two EUA auctions, average price € 6.65).

2 The auction volumes were reduced as follows: 400 million EUA in 2014, 300 million EUA in 2015 and 200 million EUA in 2016. The overall backloading volume of 900 million EUA should be transferred to the Market Stability Reserve (MSR) in 2019.

3 In the fourth quarter of 2012, some 90 million EUA of the third trading period were auctioned in the EU. These amounts have been deducted proportionately from the planned auction volumes of 2013 and 2014.



Source: EEX, DEHSt

Figure 1: Auction revenues (EUA+EUA) from 2013 to 2016

## 2 Bidder Participation

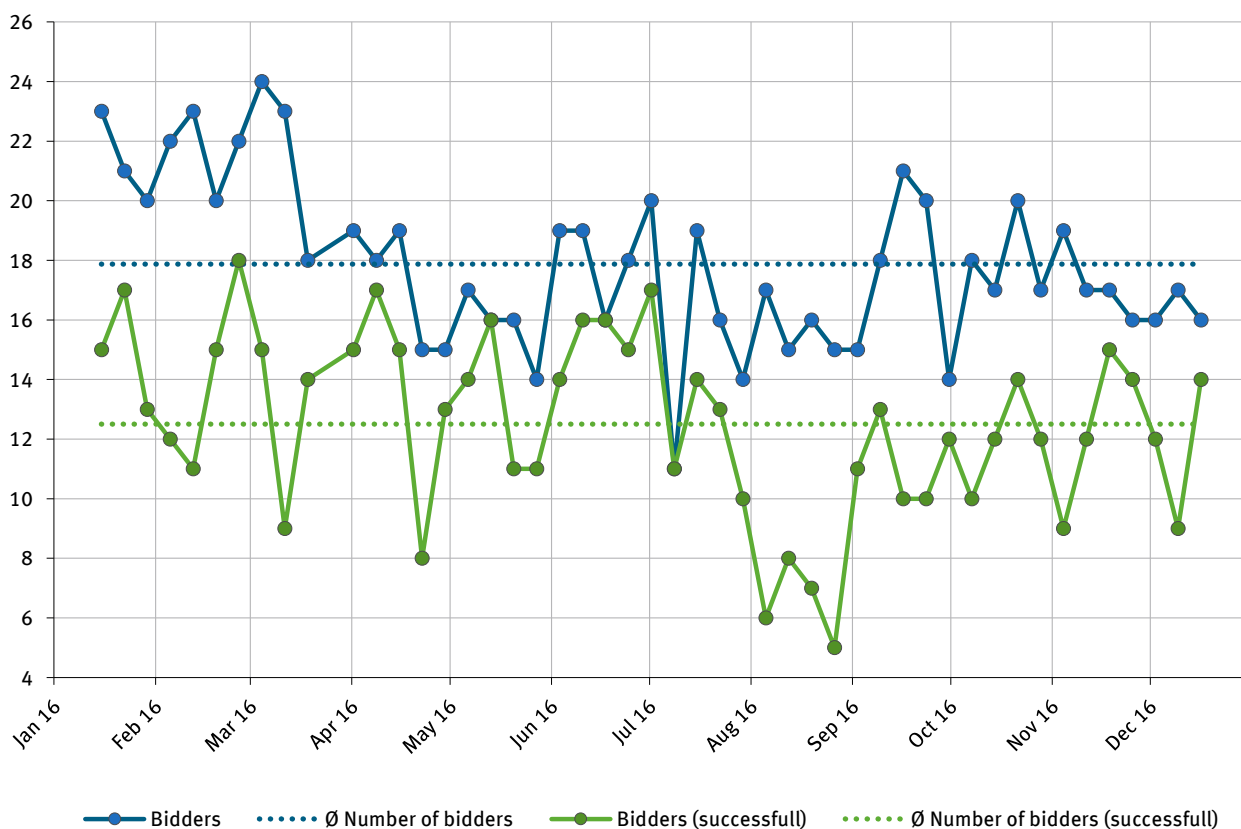
### 2.1 Participation

By the end of December 2016, a total of 67 trading members of EEX had been authorized to submit bids in the primary market auctions (December 2015: 69). In 2016 a total of 37 different bidders were successful in the German primary market auctions, including 24 operators/companies of ETS covered installations. The 24 operators purchased a total of approximately half of the auctioned volumes. Participation in the **EUA-auctions** fluctuated during the reported period between 11 and 24 bidders (2015: 12 to 22). Thus, never all approved bidders were simultaneously active in one auction. The number of successful participants varied between 5 and 18 bidders (2015: 8 to 17). All participants were successful in the auctions on 13<sup>th</sup> May, 17<sup>th</sup> June and 8<sup>th</sup> July.

The average number of participants in the German EUA-auctions in 2016 was around 18 bidders (2015: 17). The bidder participation rate in the first quarter was significantly higher with an average of 22, compared to the annual average. The average number of successful bidders averaged around 13 (2015: 13). The average ratio of successful to participating bidders was thus around 71 percent (2015: 78 percent). Therefore, on an annual average, about 3 out of 4 auction participants were awarded allowances in a German EUA-auction. With the exception of eight auction dates, the ratio of successful to participating bidders was above a level of 50 percent. The probability of successfully being awarded emission allowances in an auction was therefore relatively high from the average bidder's perspective.

With 10 bidders (2015: 12), the participation in the single **aviation allowances auction** in April 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.

The following figure illustrates EUA-auction participation over time for the year 2016.



Source: EEX, DEHSt

Figure 2: Number of participating and successful bidders per EUA-auction date

## 2.2 Volume Demand

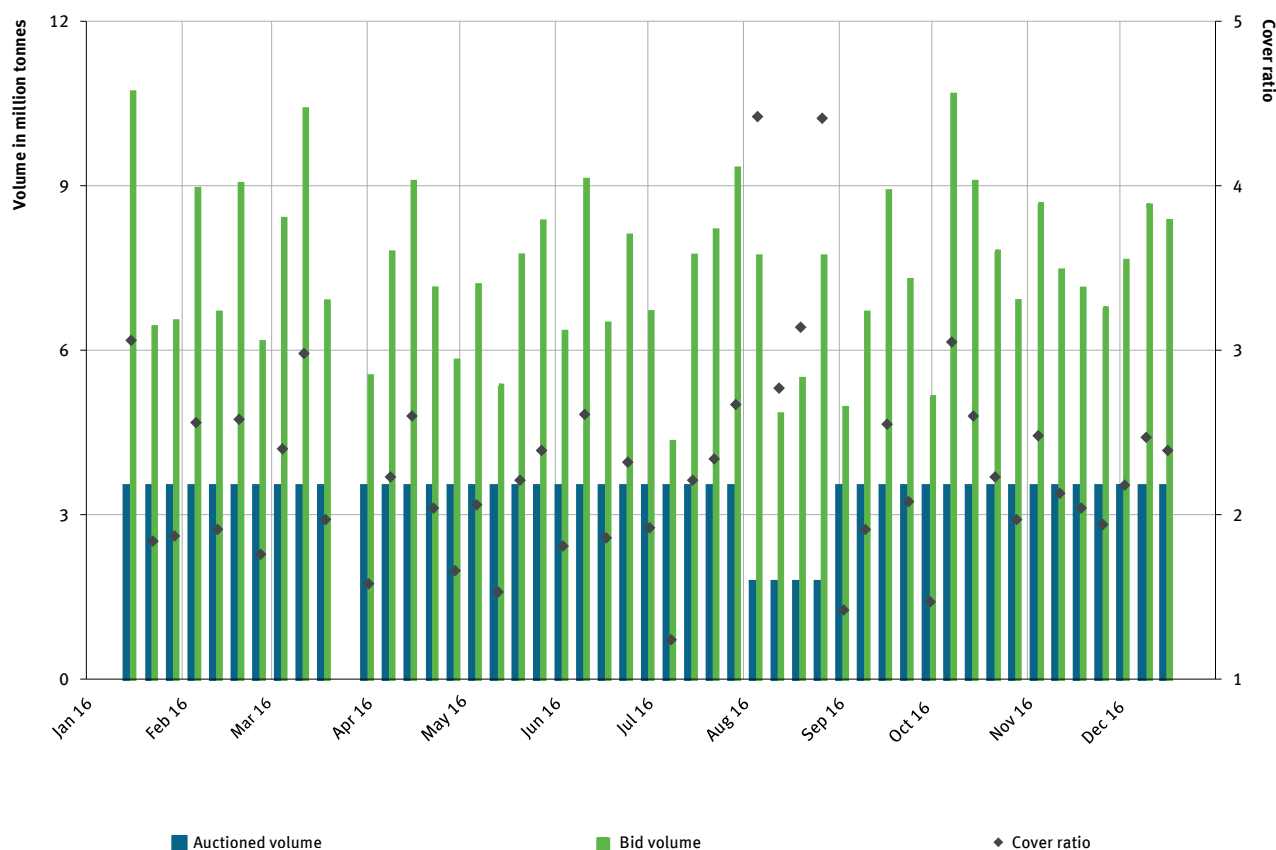
In 2016, a total of valid bids amounting to some 362 million allowances were made in the German EUA-auctions (2015: 413 million). In relation to the total auctioned volume, this determines an average cover ratio of 2.23 (2015: 2.87). The average cover ratios were below the respective previous year's figures in all months except from August. Thus, it should be noted that the primary market in 2016 was characterized by a parallel development of falling bids (-14 %) with a simultaneous increase in supply volumes (+10 %), see also Table 2. Nevertheless, deviations of the clearing prices from the reference prices on the lead markets remains marginal and were mainly in the range of parts per thousand (see also Section 3.3). Despite declining levels of bid volumes, the demand situation on the primary market can therefore be described as robust.



The aggregated bid volumes for each EUA-auction date fluctuated during the reporting period from 4.3 to 10.7 million allowances (2015: 2.9 to 19.7 million). The resulting cover ratio for each auction date varied within a range of 1.24 to 4.42 (2015: 1.58 to 6.17). It should be noted that bid volumes in the individual auctions varied to some extent. 3.495 million EUAs were regularly offered per auction date. In accordance with the requirements of the EU Auctioning Regulation, the auction volumes were halved in the four August auction dates to 1.7475 million EUAs. The remaining 3.495 million EUAs of the total budget were finally auctioned in the year-end auction.

The cover ratio at the EUAA auction was 3.92 (2015: 3.44), in line with the fluctuation range of the cover ratios in EUA-auctions.

The following figure summarizes the main findings for each EUA-auction date.



Source: EEX, DEHSt

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

The average bid volume per auction participant, averaged over all dates, was approximately 420,000 allowances (2015: 520,000 EUA). The average award volume was around 270,000 allowances per successful bidder (2015: 240,000 EUA).

In the EUAA-auction the 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 the 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.

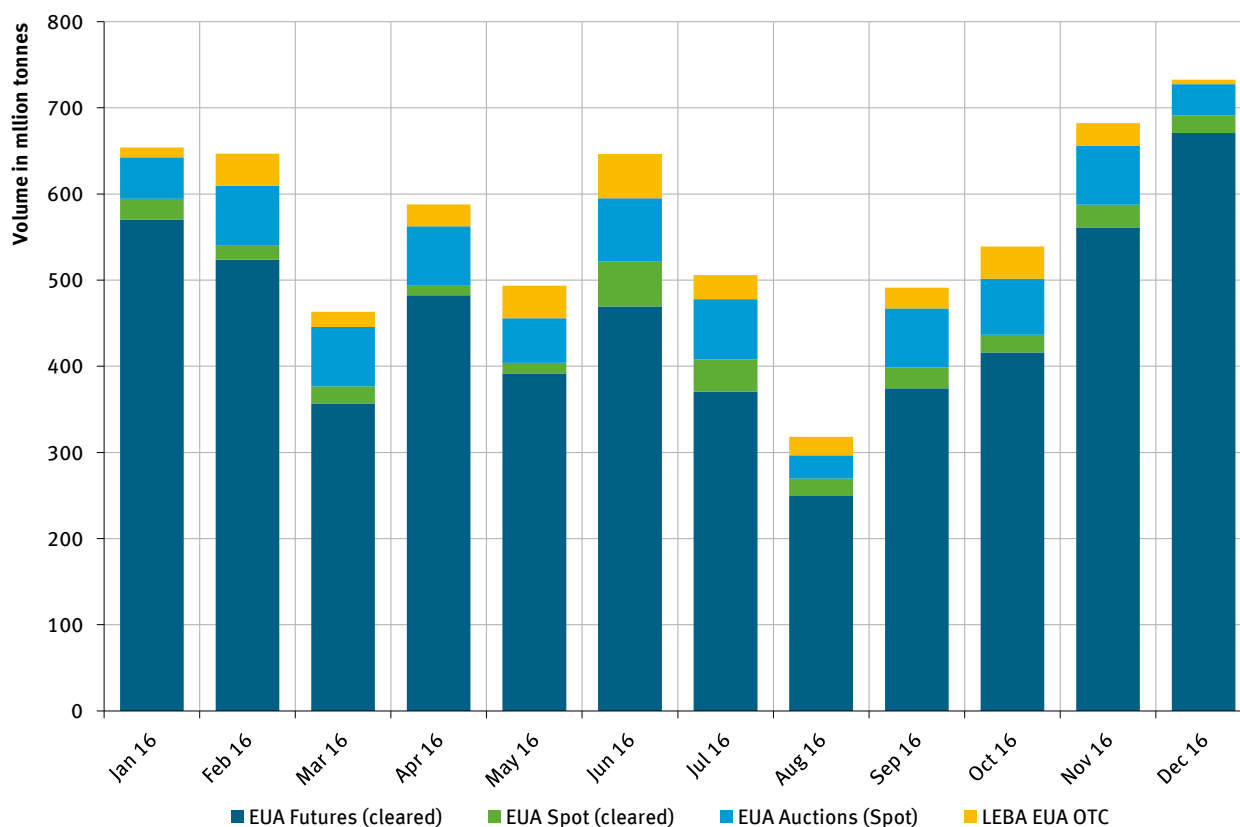
## 3 Auctions and the Secondary Market

### 3.1 Trading Volume EUA in 2016

In 2016, a total of roughly 161 million EUA of the third trading period were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market<sup>4</sup> was about **6.74 billion EUA** (2015: 6.32 billion). In addition to the market segments previously presented in our annual reports, the monthly data of the London Energy Brokers' Association (LEBA) on OTC transactions is considered in this report for the first time as well. The inclusion of this data allows for a more complete picture of the entire market volume in EUA trades.<sup>5</sup> The figure below illustrates the monthly trading volumes separately for different market segments.

<sup>4</sup> 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. Option contracts are not involved. The EUA spot contracts auctioned in 2016 on the EEX and ICE/ECX 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.

<sup>5</sup> 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 available as monthly aggregated values and are not broken down into futures-/spot-contracts.



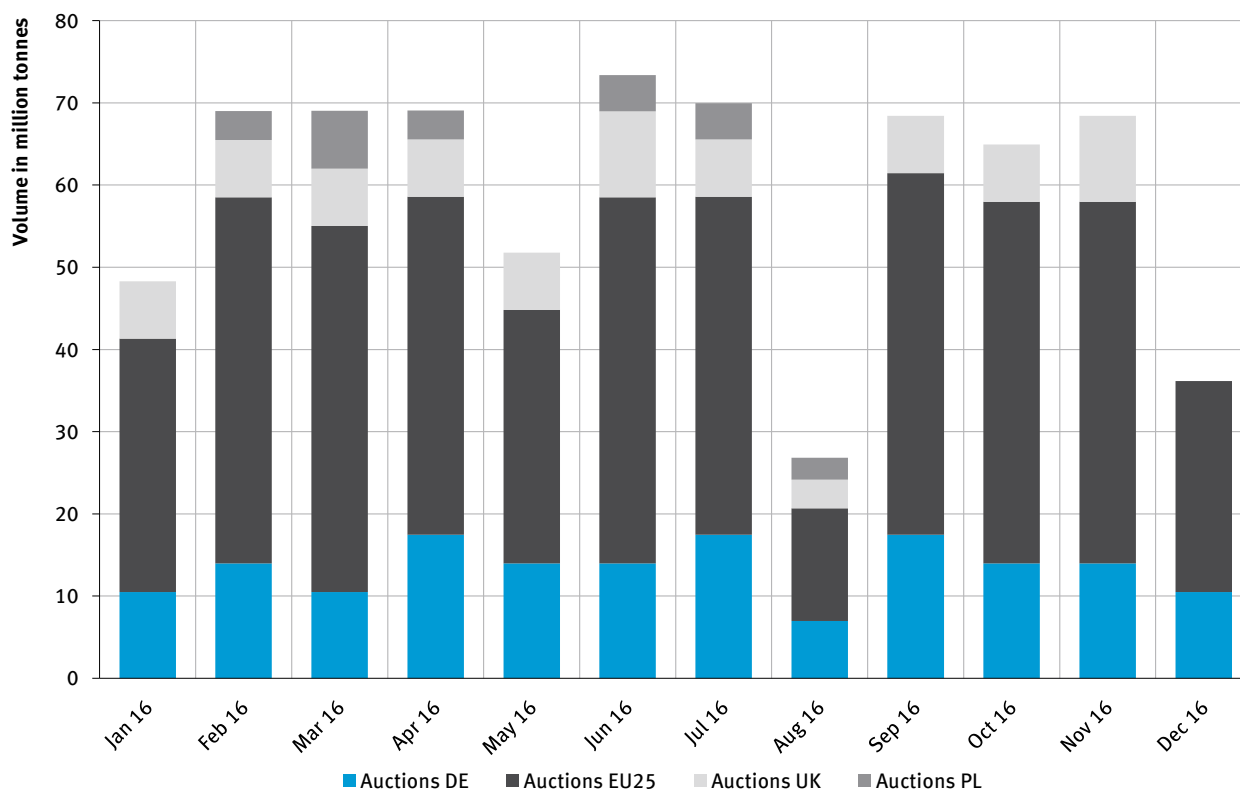
Source: ICE, EEX, CME, Nasdaq OMX, Thomson Reuters Eikon, LEBA, DEHSt

Figure 4: Trading volumes on the primary and secondary market in 2016 (EUA)

The secondary market trading volume of 6.05 billion EUA (2015: 5.69 billion) was divided into approximately 5.44 billion EUA (2015: 5.37 billion) on the cleared futures market, some 286 million EUA (2015: 248 million) on the cleared spot market and about 323 million EUA (2015: 70 million) bilaterally settled through the LEBA-Brokers. The trading volume on the secondary market in 2016 registered a slight increase for the first time in two years.

In 2016, a total of about 715 million allowances (2015: 633 million) were auctioned by Member States on the primary market as spot contracts. Thereof, about 23 percent of the EU-wide auction volume was auctioned by Germany. The EU-wide auction volume was evenly distributed over the entire year. However in August, the auction volumes were halved compared to the other months as provided by the Regulation. Auctioning of allowances only stopped for the two weeks over Christmas and New Year. Based on the total relevant market for emission allowances, about 11 percent of the volume traded can be attributed to the auctions (2015: 10 percent).

The figure below shows the monthly auction volumes on the primary market. In addition to the German auctions, auction volumes of the other EU Member States are also included in the figure.

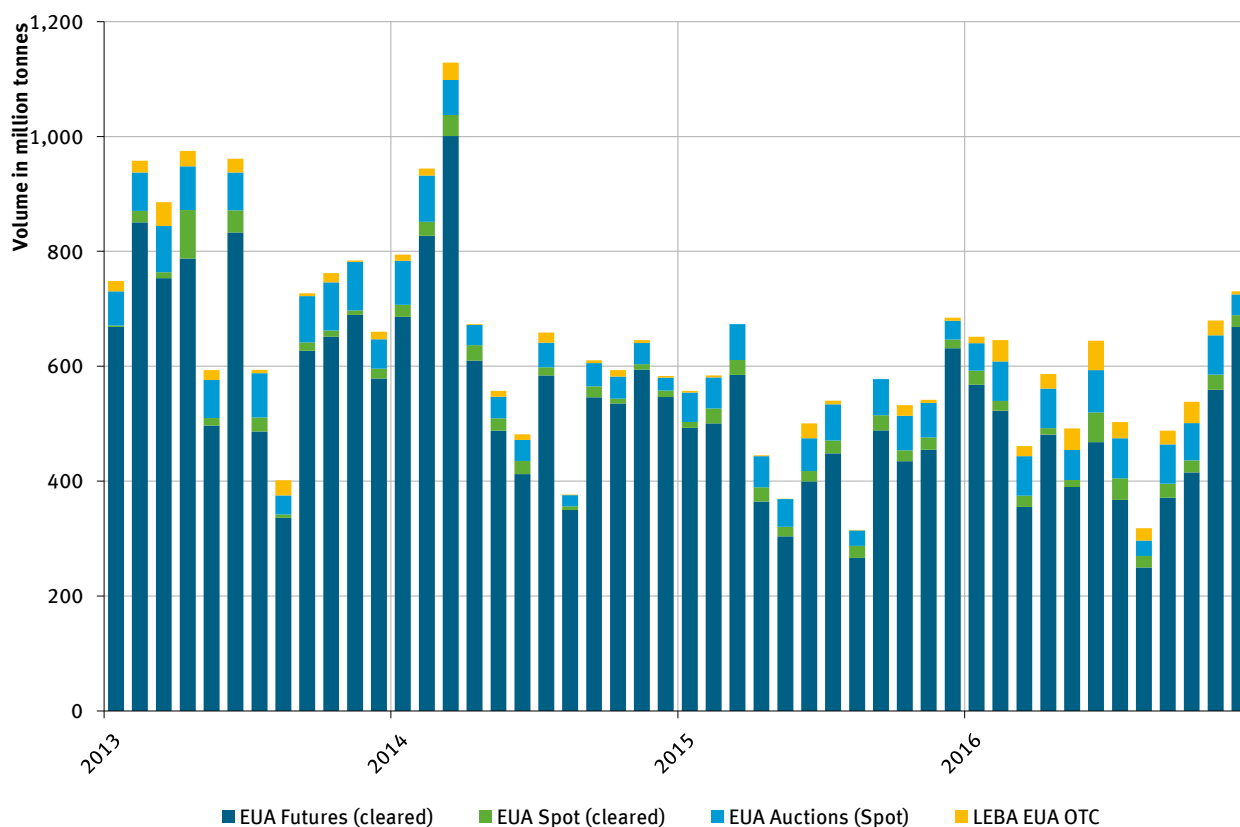


Source: ICE, EEX, Thomson Reuters Eikon, DEHSt  
 DE = Germany, UK = United Kingdom, PL = Poland, EU25 = EU-Commission on behalf of other member states

Figure 5: Auction volumes on the primary market in 2016 (EUA)

### 3.2 Trading Volume EUA in the third trading period

The following chart shows the monthly EUA trading volumes since the beginning of the third trading period in 2013. The highest trading activity was observed in March 2014, as the monthly EUA trading volumes exceeded the mark of one billion for the first time, with a total of 1.13 billion tonnes. The lowest volumes were achieved during the „holiday month“ in August, when the auction volumes were halved according to the EU auction regulation. With a market share of 4.8 percent in 2016 (2015: 1.1 percent), the bilateral transactions carried out by the LEBA members (OTC) have reached a new peak value since the beginning of the third trading period.



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

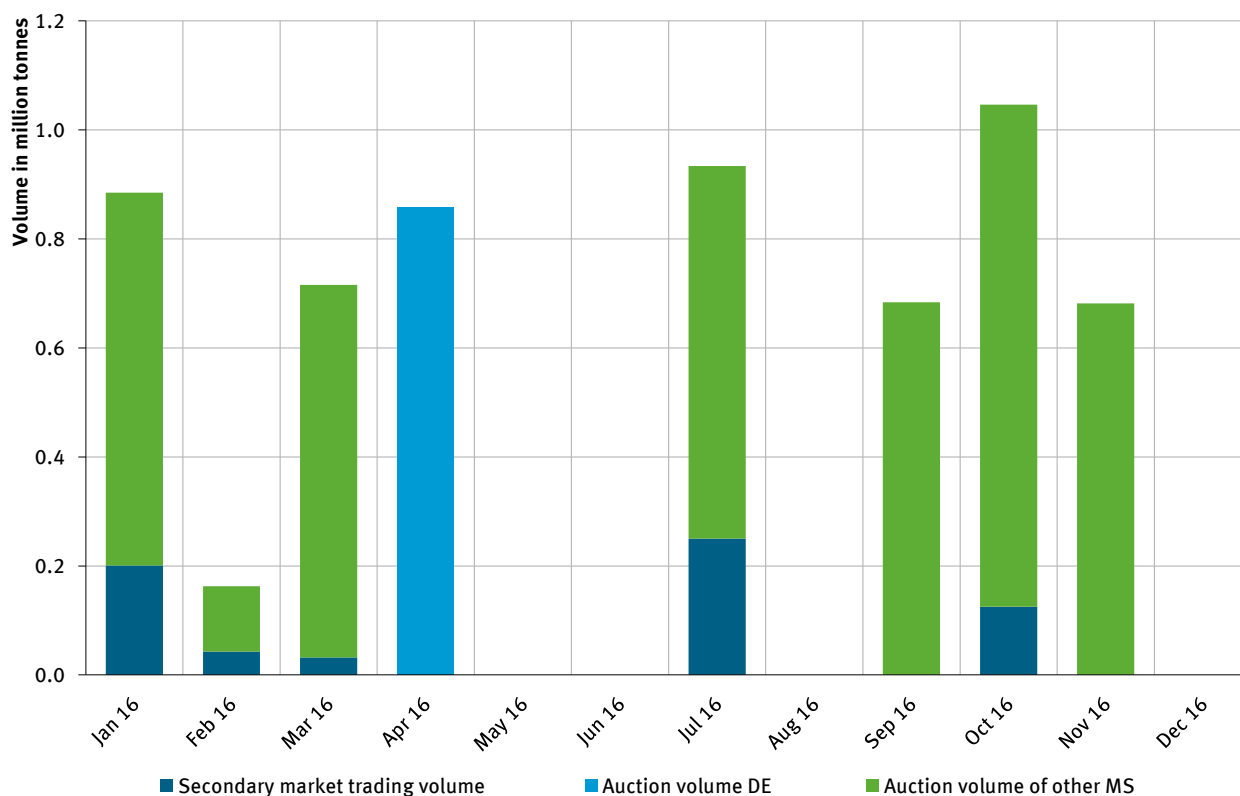
Figure 6: Trading volumes on the primary and secondary market since 2013 (EUA)

### 3.3 Trading Volume EUAA

In 2016, a total of 0.7 million aviation allowances (EUAA)<sup>6</sup> were traded on the secondary market (2015: 5.8 million), significantly less than in the previous year. Compared to the EUA secondary market, liquidity remained very low. During the reporting period, a total of about 5.3 million EUAA (2015: 16.4 million) were auctioned by Member States on the primary market as spot contracts. Further information on the distribution of EUAA auction volumes between calendar years is available on the website of the [European Commission](#).

The figure below shows the monthly trading volume in the secondary market and the auction volumes on the primary market.

<sup>6</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.



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

Figure 7: Trading volume on the secondary market and volume of auctions conducted in 2016 (EUAA)

### 3.4 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).

Due to the very low liquidity on the benchmark secondary market for EUAA (see Section 3.3) no clearing price evaluation of the EUAA-auction is made in this report.

#### 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 3 shows the relative deviations of the clearing price from the EUA lead markets based on monthly averages. For a mean value analysis, the arithmetic mean of the absolute values of individual deviations per auction date is calculated. This prevents positive and negative deviations balancing each other when averaged, thus, the resulting values correspond to the average absolute deviations per month.

The monthly average deviation from the ICE daily future / EEX Spot observed immediately before the end of the bidding period (11:00 a.m. CET), varied during the reporting period between € 0.02 and € 0.05 (2015: € 0.01-€ 0.04). The relative deviations ranged between 0.27 percent and 1.12 percent (2015: 0.13-0.49 percent). The average deviation over the full year was € 0.03 or 0.57 percent (2015: € 0.02 or 0.26 percent).

**Table 3: EUA-Auctions and deviations from secondary market prices in 2016**

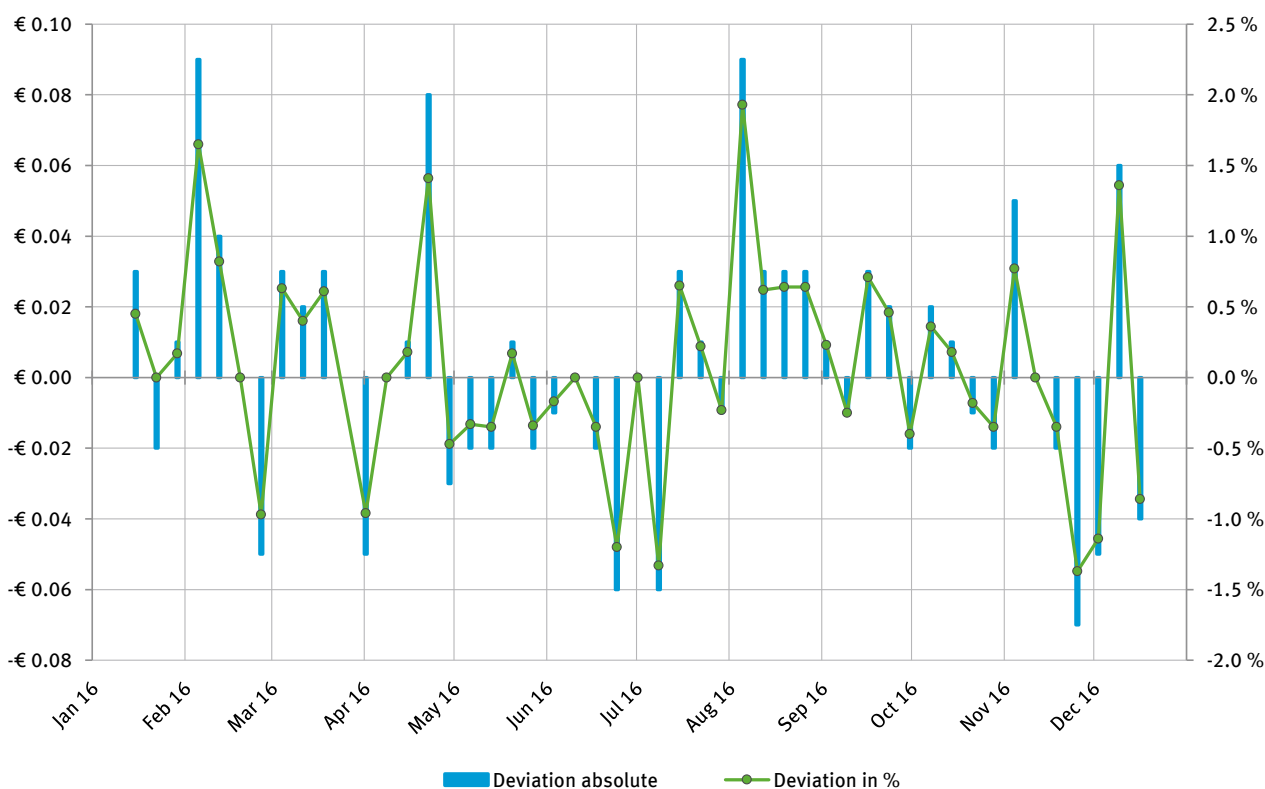
Date	Contract	Clearing price	Deviation from secondary market***	
			Absolute*	%*
January	EUA Spot 3 <sup>rd</sup> TP	*€ 6.37	€ 0.02	0.31 %
February	EUA Spot 3 <sup>rd</sup> TP	*€ 5.21	€ 0.04	0.86 %
March	EUA Spot 3 <sup>rd</sup> TP	*€ 4.91	€ 0.03	0.55 %
April	EUA Spot 3 <sup>rd</sup> TP	*€ 5.60	€ 0.03	0.60 %
May	EUA Spot 3 <sup>rd</sup> TP	*€ 5.93	€ 0.02	0.29 %
June	EUA Spot 3 <sup>rd</sup> TP	*€ 5.63	€ 0.02	0.43 %
July	EUA Spot 3 <sup>rd</sup> TP	*€ 4.49	€ 0.02	0.49 %
August	EUA Spot 3 <sup>rd</sup> TP	*€ 4.76	€ 0.05	0.96 %
September	EUA Spot 3 <sup>rd</sup> TP	*€ 4.41	€ 0.02	0.41 %
October	EUA Spot 3 <sup>rd</sup> TP	*€ 5.64	€ 0.02	0.27 %
November	EUA Spot 3 <sup>rd</sup> TP	*€ 5.79	€ 0.03	0.62 %
December	EUA Spot 3 <sup>rd</sup> TP	**€ 4.46	€ 0.05	1.12 %
<b>Mean absolute deviation</b>			<b>€ 0.03</b>	<b>0.57 %</b>

Source: ICE, EEX, Thomson Reuters Eikon, DEHSt  
 \* Average  
 \*\* Volume-weighted average  
 \*\*\* ICE EUA Daily Future/EEX EUA Spot

In addition to the table above, the following figure illustrates the actual deviations of the clearing prices from the secondary spot market for each of the 48 EUA-auction dates. A statistical arithmetic mean assessment has not been carried out here, so the difference between positive and negative deviations can be seen. Clearing prices that were below the respective last trade or best bid, lead to a negative deviation. However, if the clearing prices were above the reference price in the secondary market, the figure shows a positive deviation.

Over the year, deviations fluctuated within the range of -€ 0.07 and +€ 0.09 (blue bars). Depending on the particular price level, this resulted in a relative deviation interval of -1.37 percent to +1.93 percent (green line). In a total of 23 auctions, the auction price was above the secondary market price and in 20 auctions it was below. In 5 auctions, both prices were identical.

The absolute deviation averaged over all 48 dates was around +€ 0.003 (+0.07 percent). Positive and negative deviations almost cancelled each other out over the full year.



Source: ICE, EEX, Thomson Reuters Eikon, DEHSt

**Figure 8: Deviations of the clearing price from secondary market price in 2016**

The following figure shows an overview of the price development for emission allowances of the third trading period on 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>7</sup>. Rather than following the common practice of just looking at settlement prices, our analysis takes into account all trades completed at the exchanges during the reporting period.<sup>8</sup> The following graphic is based on volume-weighted average trading prices (VWAP), which fluctuated in 2016 in an interval between around € 4 to € 8.20 (2015: € 6.40-€ 8.70).<sup>9</sup> The highest daily value was reached during the first trading day on 4<sup>th</sup> January.

Overall, the EUA-price trend in 2016 was characterized by a downward move and high volatility. In the first quarter of 2016, the EUA reference contract initially lost up to 45 percent of its value. In April, the EUA-price recovered and climbed briefly about the level of 7 euros. This was followed by a longer downward phase, between the end of April and the beginning of September the EUA-price fell by around 45 percent and reached the lowest level in 2.5 years at € 3.87. Until the end of the year, the EUA reference contract recorded a fluctuation between around € 4 to € 6.60 and closed on 31<sup>st</sup> December at € 6.57, representing a loss of around 21 percent over the year.

In addition to the secondary market prices, the following figure also shows the German auction clearing prices. In principle, the auction clearing prices followed the prevailing prices on the secondary market. The relevant deviations between auction clearing price and the secondary market price per auction date are shown in Figure 8.<sup>10</sup>

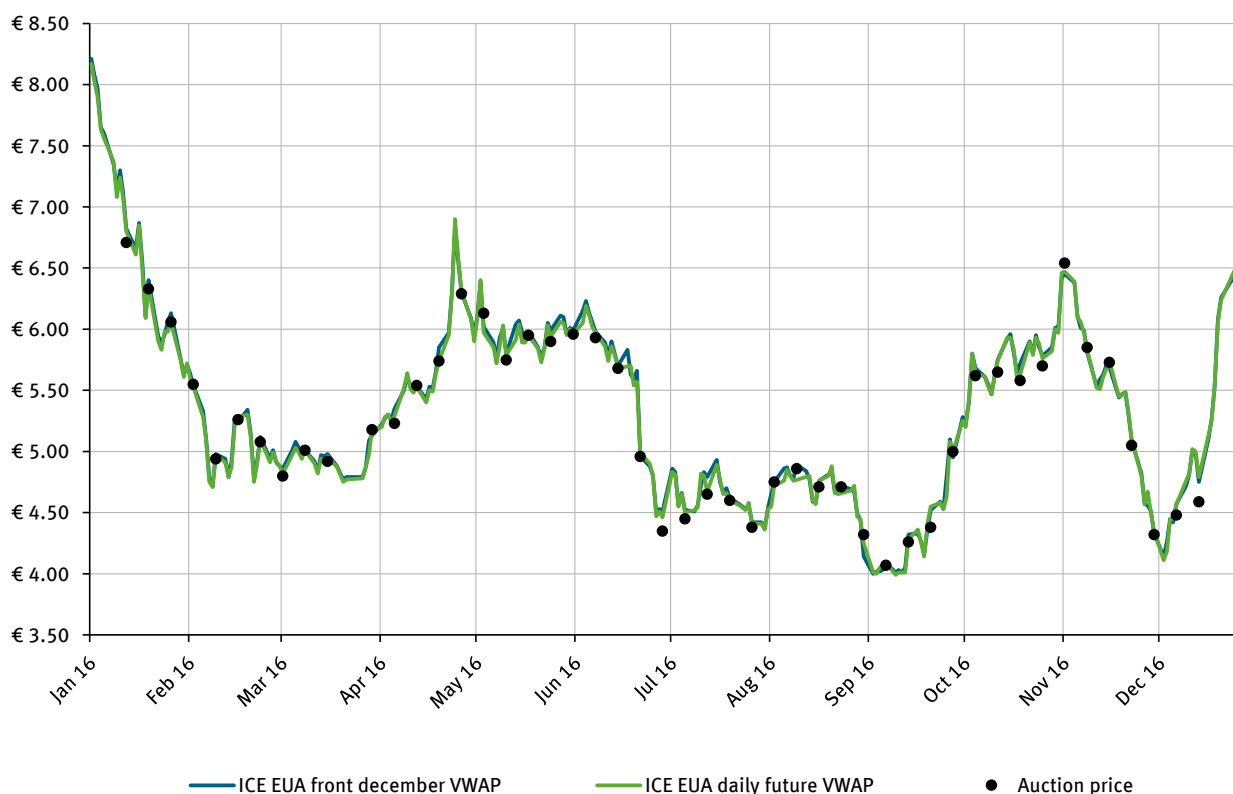
<sup>7</sup> ICE EUA Dec16 contract expired on 19/12/2016.

<sup>8</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>9</sup> 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.

<sup>10</sup> It should be noted that the VWAP takes into account all trades completed at the exchanges during the full trading day (green, blue lines), while the auctioning price only reflects the trade activity at a particular time of the day (black dots). Deviations between the two variables are therefore usually attributed to price movements within the trading day.





Source: ICE, EEX, Thomson Reuters Eikon, DEHSt

Figure 9: ICE secondary market prices and EEX auction clearing prices (EUA) in 2016

## 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 2016 as follows (excerpt):

*“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in 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](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 \(2016 auction results\)](#).

## 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 \(Regulations\)](#).

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