



Auctioning

German Auctioning of Emission Allowances Periodical Report: Fourth Quarter 2019

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 2019 and 2020 auction calendars are published on the [EEX website](#).

The following tables summarise the key data of the German auctions on the EEX in 2019 and 2020:

2019		
Auction product	Third trading period EUA spot contracts	Third trading period EUAA spot contracts
Period	01/02/2019 to 13/12/2019	09/10/2019
Auction volume entire year	127,561,500 EUA ¹	801,500 EUAA
Auction volume per auction	February–July: 3,209,000 EUA August: 1,604,500 EUA September–December: 2,834,500 EUA	801,500 EUAA on 09/10/2019
Auction frequency	Weekly (Fridays, 09:00 to 11:00 CET)	On 09/10/2019 (13:00 to 15:00 CET)
Bid volume	500 EUA/EUAA	
Auction mode	Single-round, uniform-price procedure with a closed order book	

2020		
Auction product	Third trading period EUA spot contracts	Third trading period EUAA spot contracts
Period	10/01/2020 to 11/12/2020	07/10/2020
Auction volume entire year	131,266,000 EUA (provisional) ²	752,500 EUAA
Auction volume per auction	January–July: 2,363,000 EUA August: 1,181,500 EUA September–December: 4,182,000 EUA (provisional) ²	752.500 EUAA on 07/10/2020
Auction frequency	Weekly (Fridays, 09:00 to 11:00 CET)	On 09/10/2019 (13:00 to 15:00 CET)
Bid volume	500 EUA/EUAA	
Auction mode	Single-round, uniform-price procedure with a closed order book	

¹ Since the beginning of 2019, the Market Stability Reserve (MSR) has come into effect. The 2019 EUA auction volume is reduced by the MSR scheme until August and includes the volume of the cancelled auctions after 9th November 2018 (21,807,000 EUA). **The MSR reduction for the auction volumes from September 2019 to August 2020 was announced on 15th May 2019 on the [European Commission's website](#).**

² The MSR reduction for the auction volumes from September 2020 to August 2021 is expected to be determined by the European Commission in May 2020.

1 Overview

1.1 Fourth Quarter of 2019

Between October and December, eleven auctions of emission allowances (EUA) of the third trading period were successfully carried out for Germany at the EEX.

Overall about **31 million EUA** with a total value of over **€ 767 million** were auctioned. This results in a volume-weighted average price per allowance of **€ 24.60** (–8 percent compared to the previous quarter). The deviations of the clearing prices from the current prices on the lead market fluctuated between –0.30 and +0.27 percent (see also Chapter 3.3).

Overall, valid bids totalling about 52 million allowances were entered into trading system across the eleven EUA-auction dates. Thus, the average cover ratio in the reporting period was 1.67 (see also Chapter 2.2). The average participation number of 19 bidders was below the level of the previous quarter (23). This also applies to the average number of 15 (17) successful bidders (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 the fourth Quarter of 2019

Date	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
04/10/2019	2,834,500	4,171,500	1.47	19	15	€ 23.41	€ 66,355,645
11/10/2019	2,834,500	4,516,500	1.59	22	17	€ 23.62	€ 66,950,890
18/10/2019	2,834,500	4,343,000	1.53	18	15	€ 25.64	€ 72,676,580
25/10/2019	2,834,500	4,146,000	1.46	18	17	€ 24.86	€ 70,465,670
October	11,338,000	17,177,000	* 1.51	* 19	* 16	€ * 24.38	€ 276,448,785
01/11/2019	2,834,500	5,144,000	1.81	13	9	€ 25.71	€ 72,874,995
08/11/2019	2,834,500	6,297,500	2.22	21	14	€ 24.62	€ 69,785,390
15/11/2019	2,834,500	4,691,000	1.65	22	17	€ 23.41	€ 66,355,645
22/11/2019	2,834,500	4,141,500	1.46	20	17	€ 24.32	€ 68,935,040
29/11/2019	2,834,500	4,833,500	1.71	20	11	€ 25.03	€ 70,947,535
November	14,172,500	25,107,500	* 1.77	* 19	* 14	€ * 24.62	€ 348,898,605
06/12/2019	2,834,500	4,825,000	1.70	20	15	€ 24.70	€ 70,012,150
13/12/2019	2,840,000	4,827,000	1.70	19	14	€ 25.33	€ 71,937,200
December	5,674,500	9,652,000	** 1.70	* 20	* 15	€ ** 25.02	€ 141,949,350
Q4 2019	31,185,000	51,936,500	** 1.67	* 19	* 15	€ ** 24.60	€ 767,296,740

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

In addition, **801,500 aviation allowances (EUAA)** with a total value of almost **€ 18 million** were auctioned for Germany on 9th October 2019. The auction price for the 5 successful bidders was **€ 22.32**. Overall, 9 bidders with valid bids totalling about 2.4 million allowances participated in the auction.

1.2 Overview of the entire year 2019

In 2019 a total of about **128 million EUA and EUAA** with a total value of over **€ 3.16 billion** were auctioned at the EEX for Germany. This results in a volume-weighted average price per allowance of **€ 24.65**.

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

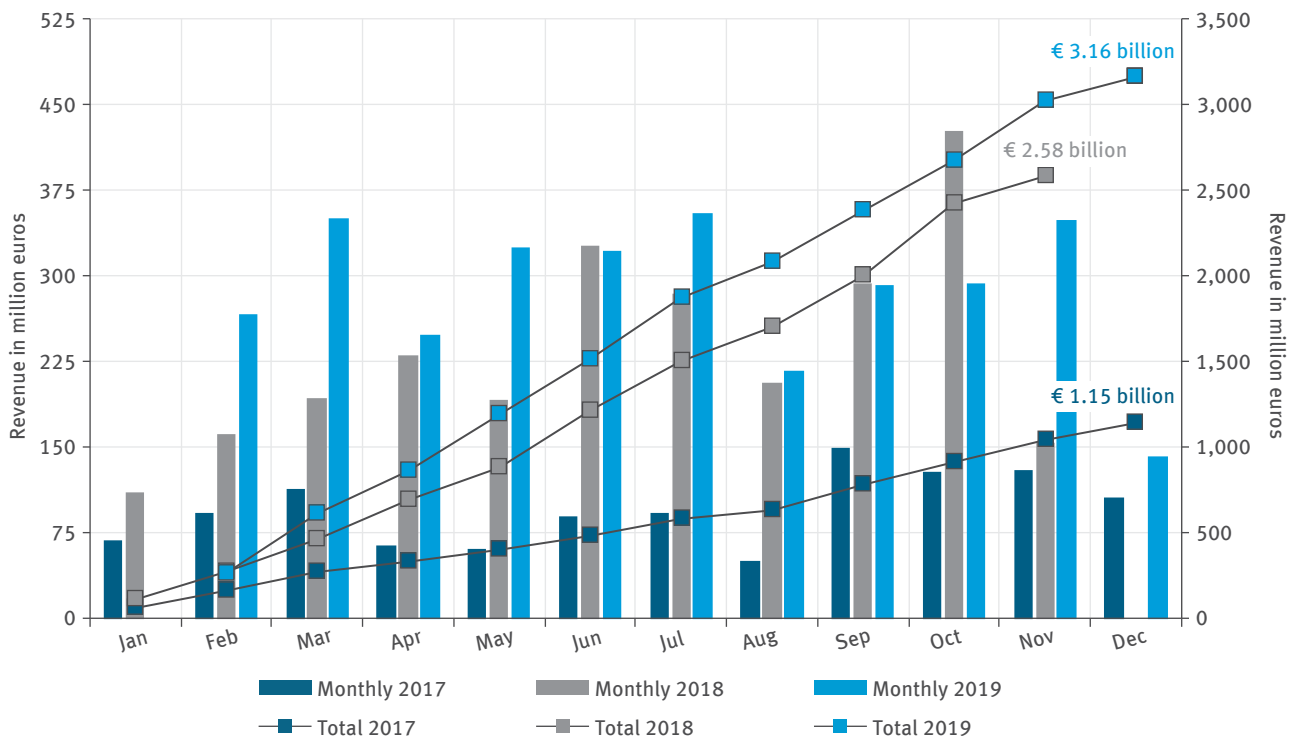
Table 2: Overview of the entire year 2019

Month	Type	Auction volume	Bid volume	Cover ratio	Bidders	Successful bidders	Price	Revenue
February	EUA	12,836,000	26,410,500	*2.06	*27	*22	*€ 20.75	€ 266,347,000
March	EUA	16,045,000	28,360,000	*1.77	*23	*17	*€ 21.89	€ 351,160,870
April	EUA	9,627,000	14,028,500	*1.46	*19	*16	*€ 25.89	€ 249,275,120
May	EUA	12,836,000	21,749,500	*1.70	*25	*20	*€ 25.32	€ 325,039,610
June	EUA	12,836,000	22,891,500	*1.78	*21	*16	*€ 25.05	€ 321,477,620
July	EUA	12,836,000	27,407,000	*2.14	*24	*17	*€ 27.69	€ 355,396,750
August	EUA	8,022,500	19,342,500	*2.41	*23	*16	*€ 27.14	€ 217,762,740
September	EUA	11,338,000	21,900,000	*1.93	*22	*17	*€ 25.79	€ 292,378,675
October	EUA	11,338,000	17,177,000	*1.51	*19	*16	*€ 24.38	€ 276,448,785
	EUAA	801,500	2,377,000	*2.97	*9	*5	*€ 22.32	€ 17,889,480
November	EUA	14,172,500	25,107,500	*1.77	*19	*14	*€ 24.62	€ 348,898,605
December	EUA	5,674,500	9,652,000	** 1.70	* 20	* 15	** 25,02 €	€ 141,949,350
Total		128,363,000	236,403,000	**1.84	*22	*17	**€ 24.65	€ 3,164,024,605

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

The following figure shows the German EUA/EUAA auction revenues in the period since 2017. In addition to the monthly values, the cumulative total revenues of the individual years are also shown in the chart. In 2019, despite lower auction volumes compared with the same period of the previous year (2018: 173 million EUA), total German revenues were about 23 percent above the previous year's figure (2018: 2.58 billion euros). This reflects the steadily rising price level on the European carbon market. **As a result, total revenues in 2019 surpass the 3 billion euro mark for the first time.**

Since 2012 German auction revenues flow entirely into the so-called Energy and Climate Fund (EKF).



Source: EEX, DEHSt

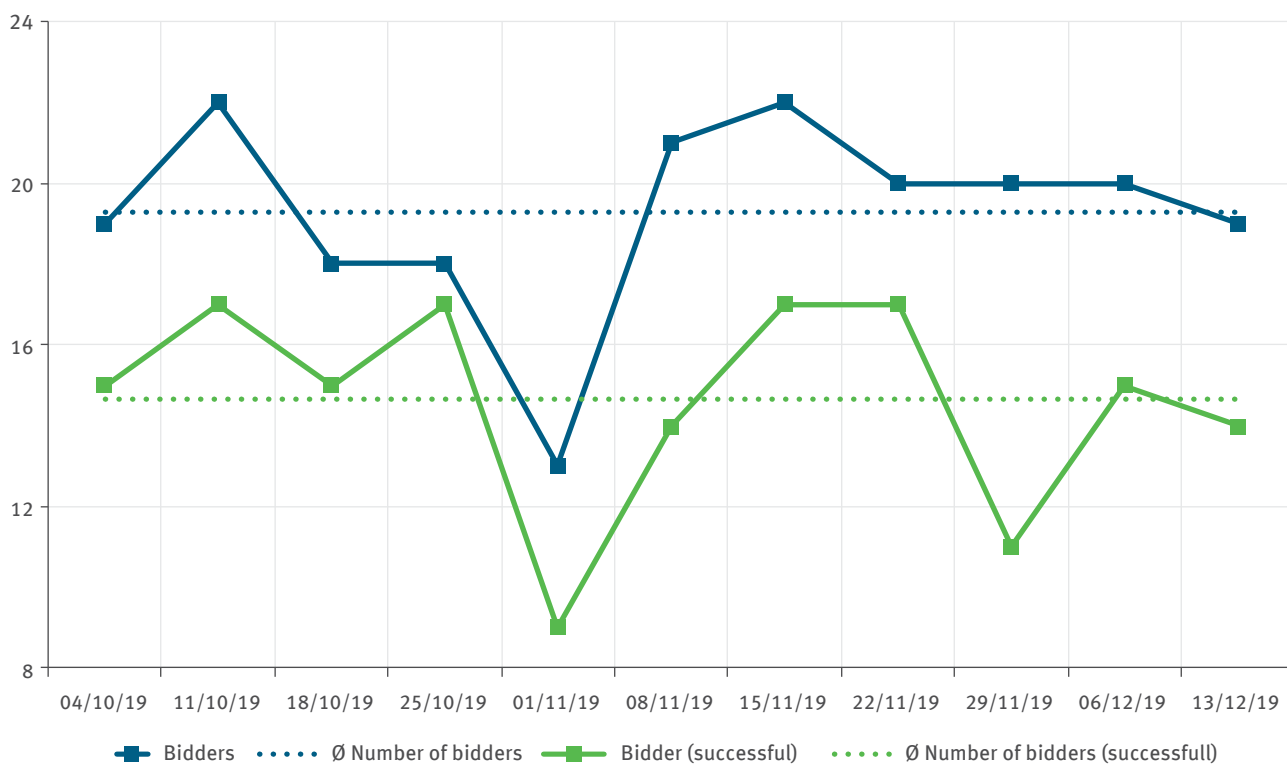
Figure 1: Auction revenues (EUA+EUAA) from 2017 to 2019

2 Bidder Participation

2.1 Participation

The number of participants in the German EUA-auctions in the Fourth Quarter averaged across all dates was about 19 bidders. The average number of successful bidders was about 15. Participation in the auctions fluctuated between 13 and 22 bidders during the reporting period. The number of successful participants ranged from 9 to 17. There was no such auction where all participating bidders were successful.

The following figure illustrates EUA-auction participation over time.



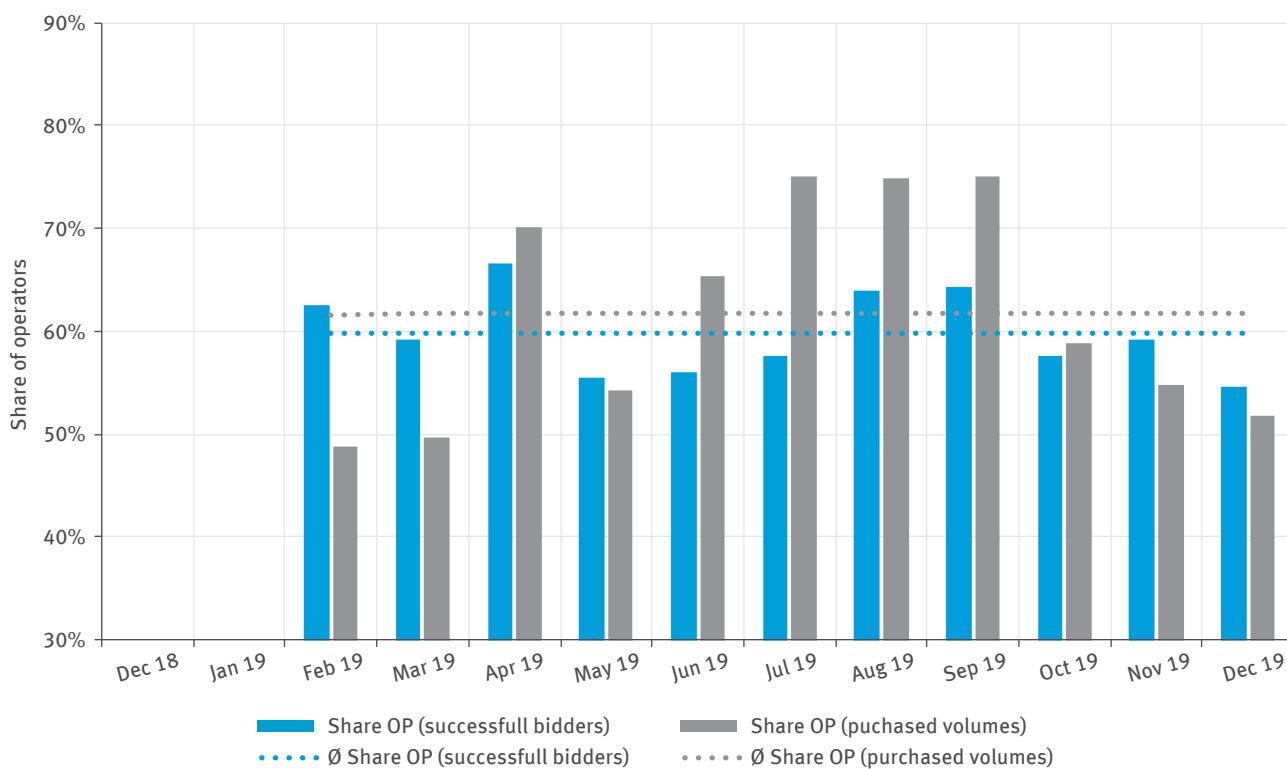
Source: EEX, DEHSt

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

By the end of December 2019, a total of 86 trading members of EEX had been authorized to submit bids in the primary market auctions. In December, a total of 22 different bidders were successful in the German primary market auctions. Out of the 22 of those bidders, 12 were operators (i.e. operators of ETS covered installations or aircraft operators), which accounts for about 55 percent of all successful bidders.³ Overall, operators purchased approximately 52 percent of the auctioned volumes in December 2019. In the months of the preceding year, the operators' share of the purchased auction volumes fluctuated more than the proportion of successful bidders. Nonetheless, the moving averages of the past 12 months for both parameters are close to each other (at around 62 or 60 percent respectively).

³ 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.

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 period.



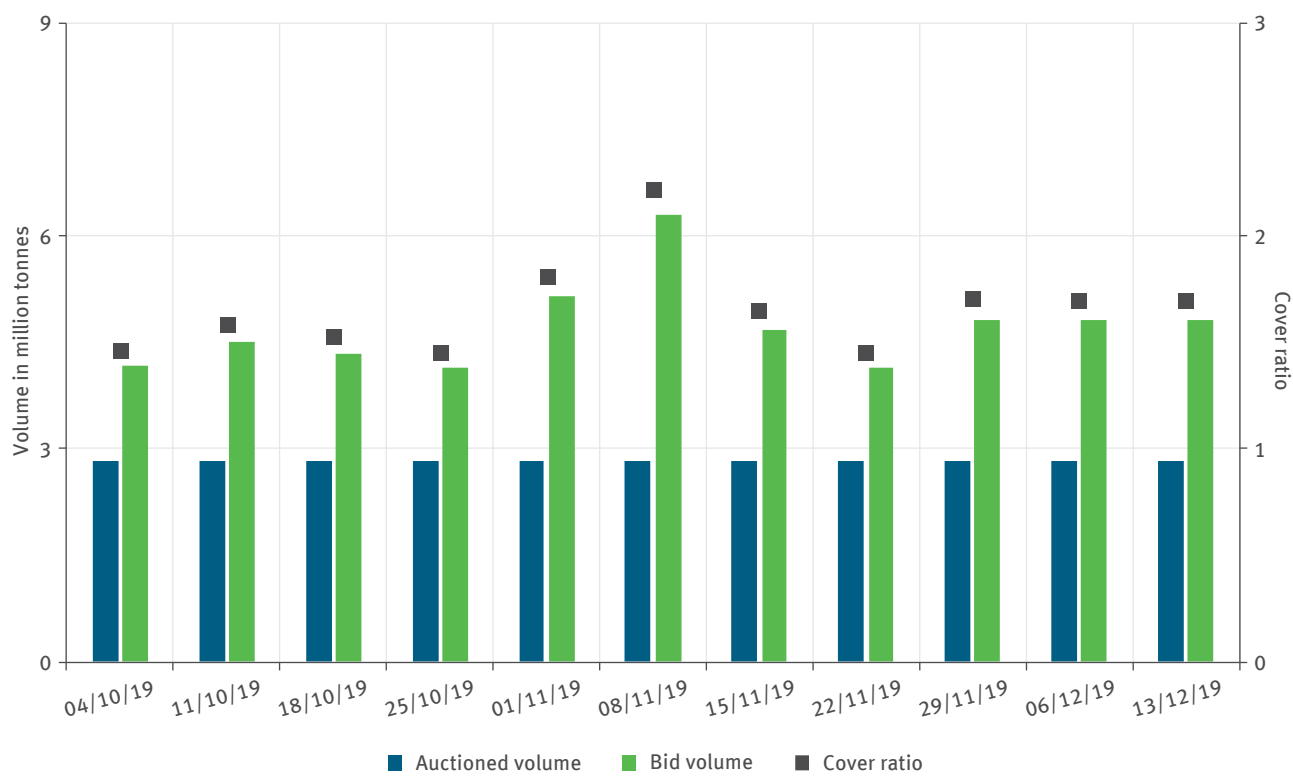
Source: EEX, DEHSt
OP = Operators

Figure 3: 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 4.1 to 6.3 million allowances. Overall, valid bids totalling about 52 million allowances were entered into trading system in the Fourth Quarter. The resulting cover ratios during the reporting period ranged between 1.46 and 2.22 (1.67 on average).

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



Source: EEX, DEHSt

Figure 4: Auctioned and bid volume and cover ratio for each auction date (EUA)

Thus, the average bid volume per EUA-auction participant in the Fourth Quarter was about 245,000 allowances. The average volume awarded to each successful bidder was about 195,000 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. 2.8 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

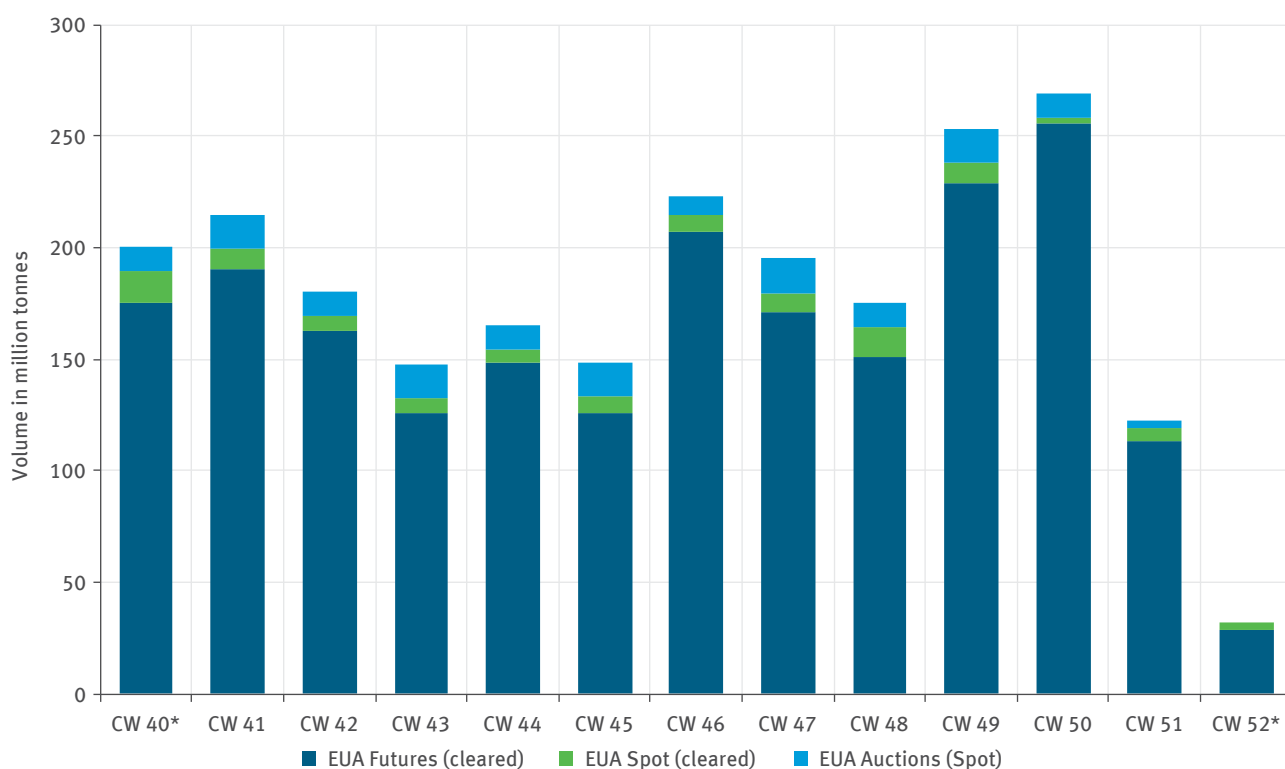
3.1 Trading Volume EUA

In the Fourth Quarter of 2019, a total of about 31 million EUA were auctioned at the EEX for Germany. During the reporting period, the cumulative trading volume in the relevant total market was about 2.33 billion EUA.⁴ This comprises the monthly data of the London Energy Brokers' Association (LEBA) on OTC (see also Figure 7). The inclusion of this data allows for a more complete picture of the entire market volume in EUA trades.⁵

The secondary market trading volume of 2.18 billion EUA was divided into approximately 2.08 billion EUA on the cleared futures market, some 97 million EUA on the cleared spot market and 2 million EUA bilaterally settled through the LEBA-Brokers (OTC).

In the Fourth Quarter of 2019, a total of about 146 million allowances were auctioned by Member States on the primary market as spot contracts. With respect to the relevant total market for EUA, around 6 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.



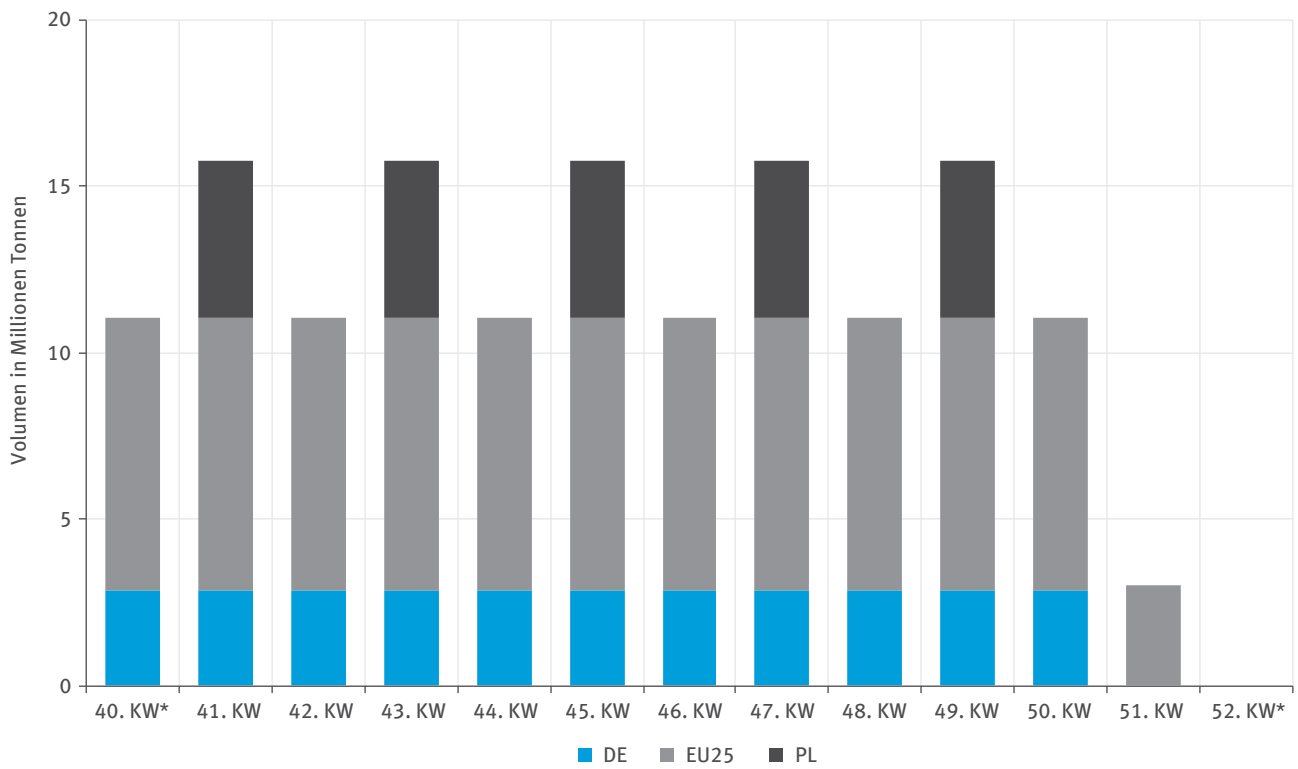
Source: ICE, EEX, Nasdaq OMX, Refinitiv Eikon, DEHSt
 * CW 40: 30/09/2019–04/10/2019; CW 52: 23/12/2019–27/12/2019

Figure 5: Trading volumes on the primary and secondary market in the Fourth Quarter of 2019 (EUA)

4 All emission allowances (EUA) of the third trading period traded on the spot and futures markets on the ICE/ECX, 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 the Fourth Quarter of 2019 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.

5 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 7, but not in Figure 5.

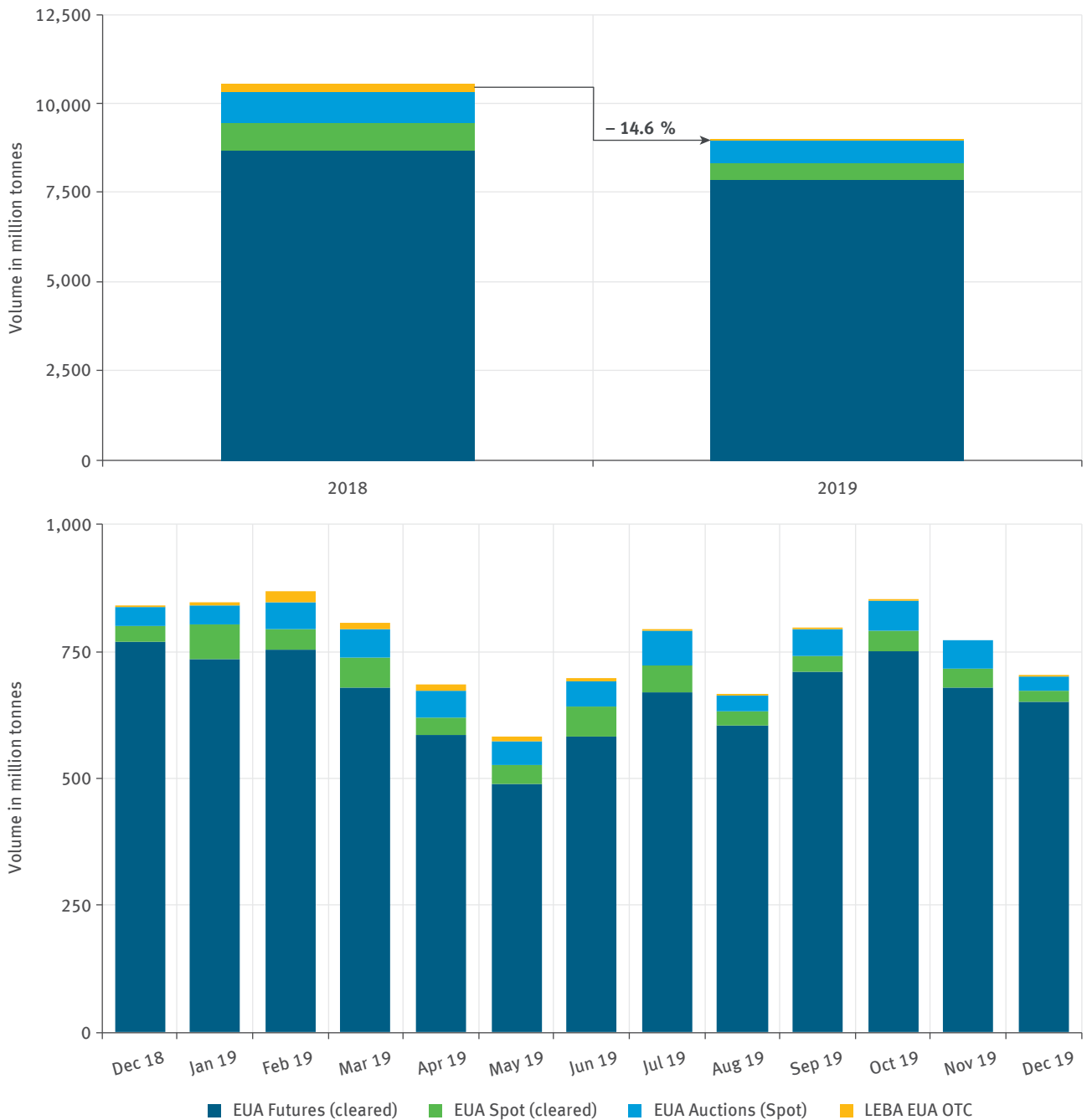
The figure below shows the auction volumes on the primary market per calendar week (CW). In addition to the German auctions, auction volumes of other EU Member States are also included in the figure.



Source: ICE, EEX, Refinitiv Eikon, DEHSt
 DE = Germany, UK = United Kingdom**, PL = Poland, EU25 = EU-Commission on behalf of other member states
 * CW 40: 30/09/2019–04/10/2019; CW 52: 23/12/2019–27/12/2019
 ** UK auctions suspended until further notice

Figure 6: Auction volumes on the primary market in the Fourth Quarter of 2019 (EUA)

The following chart shows the development of the monthly EUA trading volumes on the primary and secondary market over the past 12 months before the current reporting month. In 2019, the total market volume of about 9.1 billion EUA was 15 percent below the previous year's level (2018: 10.6 billion EUA).



Source: ICE, EEX, Nasdaq OMX, Refinitiv Eikon, LEBA⁶, DEHSt

Figure 7: Trading volumes on the primary and secondary market over the past 12 months (EUA)

⁶ The LEBA retroactively adjusted its reported data for the year 2018. This applies in particular to the data reported for April, where the trading volume was corrected from 160 million to 20 million EUA.

Table 3: Market shares of the various trading segments (EUA)

Market segments		Dec 2019	Nov 2019	2019	2018
Primary market	EUA-Auctions (Spot)	4.3%	7.3%	6.5%	8.6%
Secondary market	EUA-Futures (cleared)	92.7%	87.9%	87.1%	82.2%
	EUA-Spot (cleared)	3.0%	4.8%	5.6%	7.2%
	LEBA EUA OTC	< 0.1%	–	0.8%	2.0%

Source: ICE, EEX, Nasdaq OMX, Refinitiv Eikon, LEBA, DEHSt

3.2 Trading Volume EUAA

In the Fourth Quarter of 2019, no aviation allowances (EUAA) were traded on the secondary market⁷. During the reporting period, about 1.7 million EUAA were auctioned by Germany and the EU Member States (EU25) 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.

⁷ 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 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 € -0.07 (-0.30 percent) and € +0.07 (+0.27 percent).

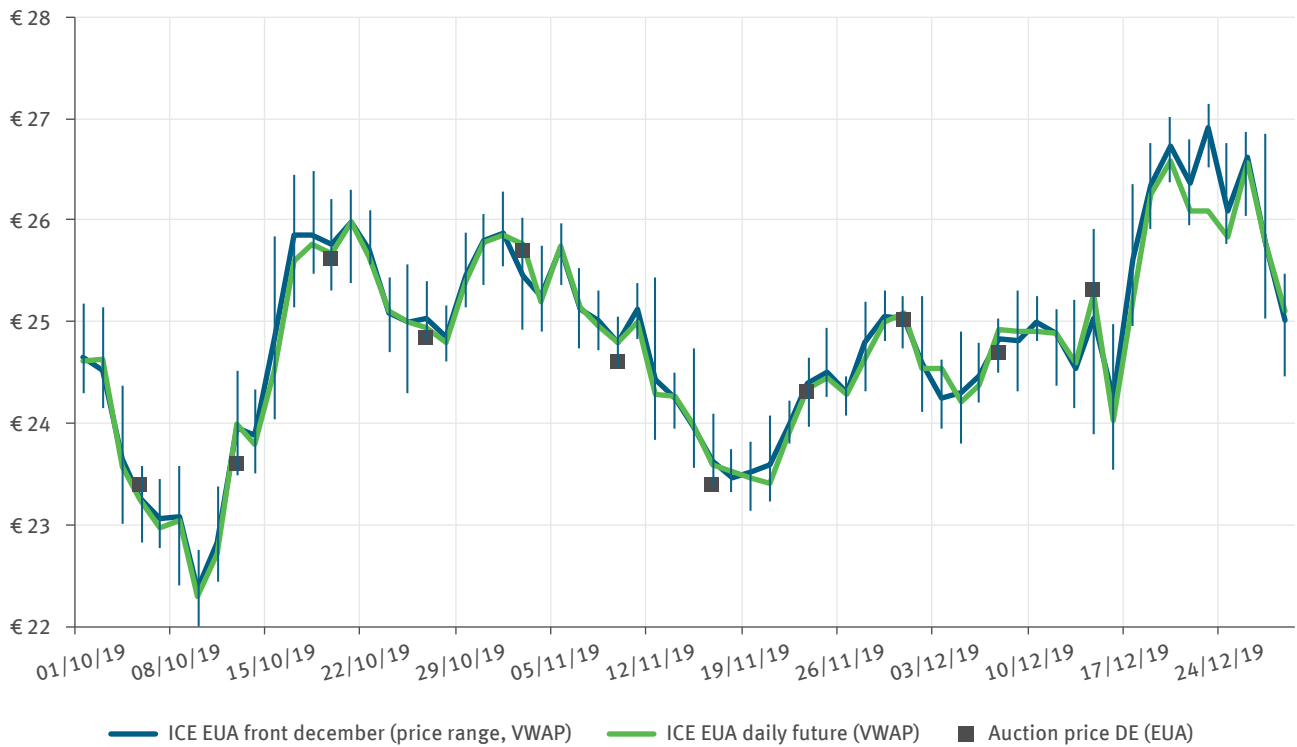
For a mean value analysis, the arithmetic mean of the absolute values of individual deviations over the reporting period is calculated. The average deviation from the last best bid was € 0.05 or 0.20 percent averaged over all dates.

Table 4: Auctions and deviations from secondary market prices in the Fourth Quarter of 2019 (EUA)

Date	Contract	Auction price	Deviation from secondary market	
			Absolute	%
04/10/2019	EUA Spot 3 rd TP	€ 23.41	* € -0.07	* -0.30%
11/10/2019	EUA Spot 3 rd TP	€ 23.62	* € -0.02	* -0.08%
18/10/2019	EUA Spot 3 rd TP	€ 25.64	* € -0.07	* -0.27%
25/10/2019	EUA Spot 3 rd TP	€ 24.86	* € -0.13	* -0.52%
01/11/2019	EUA Spot 3 rd TP	€ 25.71	* € 0.07	* 0.27%
08/11/2019	EUA Spot 3 rd TP	€ 24.62	** € 0.04	** 0.16%
15/11/2019	EUA Spot 3 rd TP	€ 23.41	* € -0.07	* -0.30%
22/11/2019	EUA Spot 3 rd TP	€ 24.32	* € -0.05	* -0.21%
29/11/2019	EUA Spot 3 rd TP	€ 25.03	* € -0.03	* -0.12%
06/12/2019	EUA Spot 3 rd TP	€ 24.70	* € 0.00	* 0.00%
13/12/2019	EUA Spot 3 rd TP	€ 25.33	* € 0.00	* 0.00%
Durchschnittliche betragsmäßige Abweichung			0,05 €	0,20 %

Source: ICE, EEX, Refinitiv Eikon, DEHSt
 * best bid ICE Daily Future
 ** last trade ICE Daily Future

The following figure shows an overview of the price development for emission allowances in the London lead market. In addition to the daily futures the development of futures for December delivery of the current and the following year is also shown (so-called “front-december future”).⁸ Rather than following the common practice of considering only settlement prices, our analysis takes into account all trades completed at the exchanges.⁹ The following graphic is based on volume-weighted daily average trading prices (VWAP). In addition, the daily trading range of the front-december contract is also shown in the chart (vertical price line). In the Fourth Quarter of 2019 the prices fluctuated within an interval between € 22.03 and € 27.14.¹⁰



Source: ICE, EEX, Refinitiv Eikon, DEHSt
DE = Germany

Figure 8: ICE secondary market prices and EEX auction clearing prices (EUA)

8 ICE EUA Dec19 contract expired on 16/12/2019.

9 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.

10 The volume-weighted average prices (VWAP) for the ICE EUA front-December future and the ICE daily future contract is based on data from Refinitiv Eikon.

4 Implementation of Valid Regulations

4.1 Surveillance Report by HÜSt

In order to guarantee above-board market activities are free of manipulation on the EEX continuous surveillance is conducted by an independent Market Surveillance Office (Handelsüberwachungsstelle, HÜSt) as required under German law. HÜSt reports to the DEHSt on the results of its surveillance activities through regular internal reports. HÜSt reported on auctions in the Fourth Quarter of 2019 as follows (excerpt):

“Within their surveillance for the auctioning of emission allowances on behalf of the German Environment Agency at the EEX in the Fourth Quarter of 2019 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 to 18:00 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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