

# Auctions by the *Common Auction Platform*

## January, February, March 2023

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**Auction platform:** European Energy Exchange (EEX)

**Member States:** This report has been prepared on behalf of the following Member States participating in the joint action: Austria, Belgium, Bulgaria, Republic of Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden (participating Member States), and Poland.

**Auction dates/reporting period:**

*General Allowances:*

*9, 10, 12, 16, 17, 18(PL), 19, 23, 24, 26, 30, 31 January 2023;*

*1(PL), 2, 6, 7, 9, 13, 14, 15(PL), 16, 20, 21, 23, 27, 28 February 2023;*

*1(PL), 2, 6, 7, 9, 13, 14, 15(PL), 16, 20, 21, 23, 27, 28, 29(PL), 30 March 2023;*

*Aviation Allowances:*

*25 January 2023;*

*No auctions in February 2023;*

*22 March 2023;*

*Cancelled auctions:*

*No auctions in January 2023;*

*No auctions in February 2023;*

*No auctions in March 2023;*

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Auctioning is the default method of allocating allowances within the EU emissions trading system (EU ETS). Since the start of the *Third trading period* in 2013, over 6 billion allowances allocated under the EU ETS have been auctioned. Auctioning of emission allowances at that scale is unprecedented and delivers valuable experience for auction design in other carbon markets and for other environmental assets.

Auctioning is the most transparent and efficient method of allocating allowances and puts into practice the principle that the polluter should pay.

The auctions are conducted pursuant to the modalities stipulated in the *Auctioning Regulation*. The European Energy Exchange (EEX) in Leipzig is the common platform for the large majority of countries participating in the EU ETS. EEX also acts as Germany's auction platform. Poland may appoint an opt-out auction platform but is using for the time being the common auction platform. Allowances for Northern Ireland are also auctioned on EEX.

The numbers of *General Allowances* to be auctioned by each State on behalf of which they are auctioned are determined on the basis of their historical share of emissions from installations covered by the EU ETS.

At least half of auctioning revenues, or the equivalent in financial value, and all of the revenues from auctioning allowances to the aviation sector, should be used by the Member States to combat climate change in Europe or other countries.

For further information: [https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/auctioning\\_en](https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets/auctioning_en)

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**Editor's note:**

This report has been prepared by the Commission on behalf of the participating Member States and Poland assembling for publication the information provided by the common auction platform on a monthly basis for those Member States, in accordance with Article 10(4) of the ETS Directive.

**Methodology:** For reasons of confidentiality and proper enforcement of the applicable rules, the report refers to reporting on the auctions held based on information provided by EEX. EEX is consulted before each publication. Any data not directly related to the auctions is based only on public reports.

The report is in accordance with the template agreed with the participating Member States.

**Disclaimer:** The authors have made every effort to ensure that the information provided is complete, correct and precise for the reporting period. Nevertheless, the report is based on limited information available to the authors in a market context where much information has to remain confidential. The authors did not actively verify the information and EEX's compliance with the specific rules and provisions applicable under European or national law. Therefore, the authors and the Member States on whose behalf this report was drafted deny any responsibility or liability whatsoever for its contents, regardless of the nature of such contents. Any reliance by any person or entity on the information provided in this report is solely at that person's or entity's own risk. Monthly averages provided are weighted by each auction's auction volume, unless otherwise indicated.

**Glossary:** terms and expressions written in *italics* are included in the glossary.

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## Introduction

The reports include data on the auctions performed by the *common auction platforms* on behalf of the *participating Member States* and Poland.

The auctions for the *participating Member States* were conducted by EEX in its capacity as *Common Auction Platform* appointed pursuant to Article 26(2) of the Auctioning Regulation (also referred to as transitional common auction platform or TCAP) until 18 August 2016 and since then by EEX appointed as *Common Auction Platform* pursuant to Article 26(1) of the Auctioning Regulation (also referred to as second common auction platform or CAP2). On 4 November 2020, the European Commission signed a five-year contract with EEX and its clearing system for the services of the third common auction platform (CAP3) under the EU Emissions Trading System (EU ETS).

In accordance with the second subparagraph of Article 30(7) of the Auctioning Regulation, pending the procurement, appointment and listing of its opt-out auction platform, Poland concluded in December 2020 an agreement with EEX to make use of the common auction platform to auction its share of allowances in the absence of listing of its auction platform.

The member states of the European Free Trade Association (EFTA) that are Party to the European Economic Area (EEA)<sup>1</sup> started on 3 June 2019 making use of the *Common Auction Platform* by aggregating their volumes to those auctioned on behalf of the *participating Member States*.

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<sup>1</sup> Iceland, Liechtenstein and Norway.

## Executive summary

In the reporting period, EEX, in its capacity as the *Common Auction Platform (CAP3)*, conducted auctions of *general allowances* and *aviation allowances* for the *fourth trading period* on behalf of the *participating Member States*. During this period, EEX held auctions for *general allowances* and *aviation allowances* on behalf of Poland.

All auctions were held successfully, in line with the Auctioning Regulation. No irregularities or deviations from the requirements were observed. The table below contains a summary of the information concerning the conducted auctions.

### ***The January, February, March 2023 auctions at a glance:***

	<b>General Allowances</b>			<b>Aviation Allowances</b>		
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>
<b>General</b>						
Number of auctions	12	14	16	1	-	1
Total volume auctioned	29,175,000	34,260,000	39,346,500	775,500	-	775,500
Amount raised from the auctions (€)	2,325,458,580	3,144,208,740	3,521,771,655	60,713,895	-	66,801,570
Average Auction Clearing Price (€/allowance)	79.71	91.77	89.51	78.29	-	86.14
Total bid volume	60,749,500	68,040,000	72,309,000	1,160,000	-	1,894,000
Average Cover ratio	2.1	2.0	1.8	1.5	-	2.4
Monthly HHI	1,111	1,276	1,275	2,137	-	2,273
<b>Participation</b>						
Number of eligible bidders	94	94	94	94	94	94
Number of participating bidders <sup>(1)</sup>	33	30	28	10	-	10
Number of successful bidders <sup>(1)</sup>	29	27	24	10	-	8
Average number of bidders per auction	23.2	20.2	19.3	10.0	-	10.0

Average number of successful bidders per auction	18.1	16.4	15.8	10.0	-	8.0
<b>Auction data</b>						
Average total volume bid per bidder per auction	219,518	241,622	236,297	116,000	-	189,400
Average bid size (volume per bid)	46,263	52,788	50,115	30,526	-	35,074
Average volume won per bidder per auction	135,948	150,878	158,032	77,550	-	96,938
Average range of bids (€)	29.09	31.41	23.65	3.37	-	9.80
<b>Cancelled Auctions</b>	0	0	0	0	-	0

(1): Number of unique individual bidders or unique successful bidders present in a whole month.

## 1. Results of the auctions

The total revenues from the auctions of general allowances accrued to the participating Member States, Poland and Northern Ireland from the start of the third trading period auctions (November 2012) to March 2023 are EUR 115,352,642,730, and of aviation allowances EUR 1,030,491,670. Looking exclusively at the fourth trading period (January 2021 - March 2023) the total revenues from the auctions of general allowances are EUR 66,268,907,375 and of aviation allowances EUR 550,103,330. Further data is provided in Annex 1.

Information on *general allowances'* auctions is provided in section 1.1, and on *aviation allowances* in section 1.2 hereafter. Detailed information per auction covered by the present report is available in the EEX website<sup>2</sup>.

### 1.1. General allowances auctions

#### 1.1.1. Clearing prices and participation - general allowances

An overview of the auction results for the *participating Member States* and Poland is provided in Table 1.

**Table 1:** General allowances - main statistics on the results of the auctions per month

Month	Total auction volume	Total bid volume	Total revenue (€)	Average Cover ratio[1]	Average number of bidders	Average number of successful bidders	Average auction clearing price (€)[2]
Mar 23	39,346,500	72,309,000	3,521,771,655	1.8	19.3	15.8	89.51
Feb 23	34,260,000	68,040,000	3,144,208,740	2.0	20.2	16.4	91.77
Jan 23	29,175,000	60,749,500	2,325,458,580	2.1	23.2	18.1	79.71
Dec 22	23,244,500	42,657,500	2,016,605,305	1.8	18.9	15.3	86.76
Nov 22	38,839,500	78,824,500	2,931,027,595	2.0	19.4	13.8	75.47
Oct 22	38,839,500	86,400,000	2,687,470,070	2.2	18.0	12.5	69.19
Sep 22	37,259,000	71,870,500	2,583,969,930	1.9	18.6	13.8	69.35
Aug 22	20,192,500	63,544,000	1,759,853,265	3.1	16.4	9.4	87.15
Jul 22	32,862,000	73,215,500	2,674,980,145	2.2	20.8	14.8	81.40
Jun 22	30,567,500	69,774,000	2,530,757,385	2.3	20.4	14.3	82.79
May 22	37,900,500	87,512,000	3,220,253,025	2.3	21.6	16.2	84.97

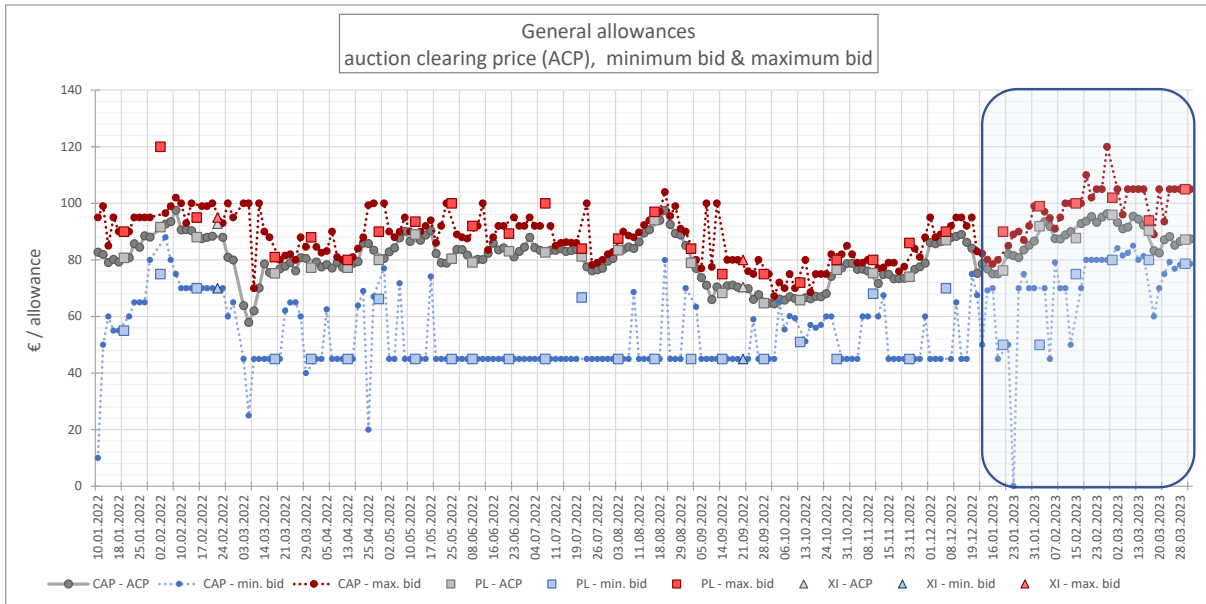
<sup>2</sup> <https://www.eex.com/en/market-data/environmental-markets/auction-market>

<b>Apr 22</b>	34,216,500	74,920,000	2,736,312,345	2.2	23.0	15.7	79.97
<b>Mar 22</b>	41,277,000	92,255,000	3,076,655,035	2.2	21.7	16.0	74.54
<b>Feb 22</b>	35,812,500	48,004,000	3,229,534,010	1.3	22.4	19.2	90.18
<b>Jan 22</b>	27,148,000	39,669,000	2,248,786,940	1.5	24.1	19.9	82.83
<b>2022 total</b>	398,159,000	828,646,000	31,696,205,050	2.1	20.4	15.1	79.61
<b>2021 total</b>	482,490,000	775,121,500	25,581,263,350	1.6	23.4	17.9	53.02
<b>2020 total</b>	560,046,500	951,992,500	13,723,091,055	1.7	24.3	18.2	24.50
<b>2019 total</b>	460,978,500	906,546,500	11,357,236,835	2.0	24.1	17.2	24.64
<b>2018 total</b>	642,477,000	1,662,693,000	9,917,590,730	2.6	25.6	18.0	15.44
<b>2017 total</b>	648,415,500	1,761,212,000	3,744,838,845	2.7	21.2	14.6	5.78
<b>2016 total</b>	474,261,000	1,092,400,000	2,496,870,295	2.3	19.0	13.4	5.26
<b>2015 total</b>	413,874,000	1,337,010,500	3,154,940,925	3.2	18.3	13.3	7.62
<b>2014 total</b>	335,052,000	1,796,711,000	1,977,712,120	5.4	17.6	11.9	5.90

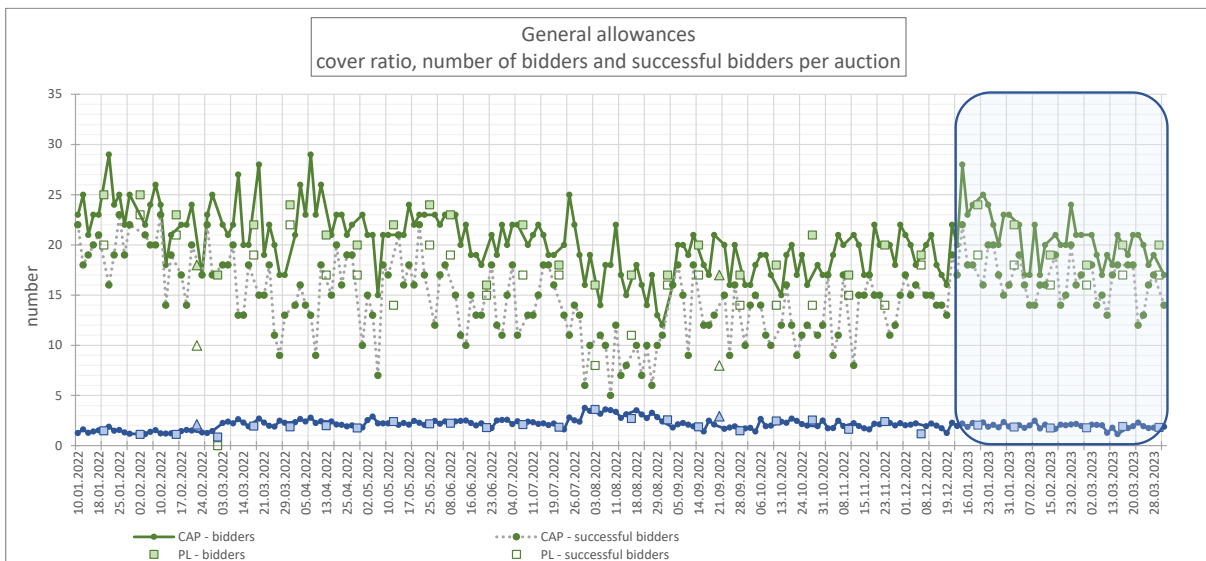
During January, February, March 2023, the difference between the Auction Clearing Prices and the mean of the best-ask and best-bid prices on the EEX spot secondary market for general allowances at the closure of the auction bidding window was on average EUR -0.39, -0.18, -0.38 respectively, and this difference had a standard deviation of EUR 0.27, 0.41, 0.61 respectively.



**Graph 1: General allowances - auction clearing price (ACP), maximum bid & minimum bid**

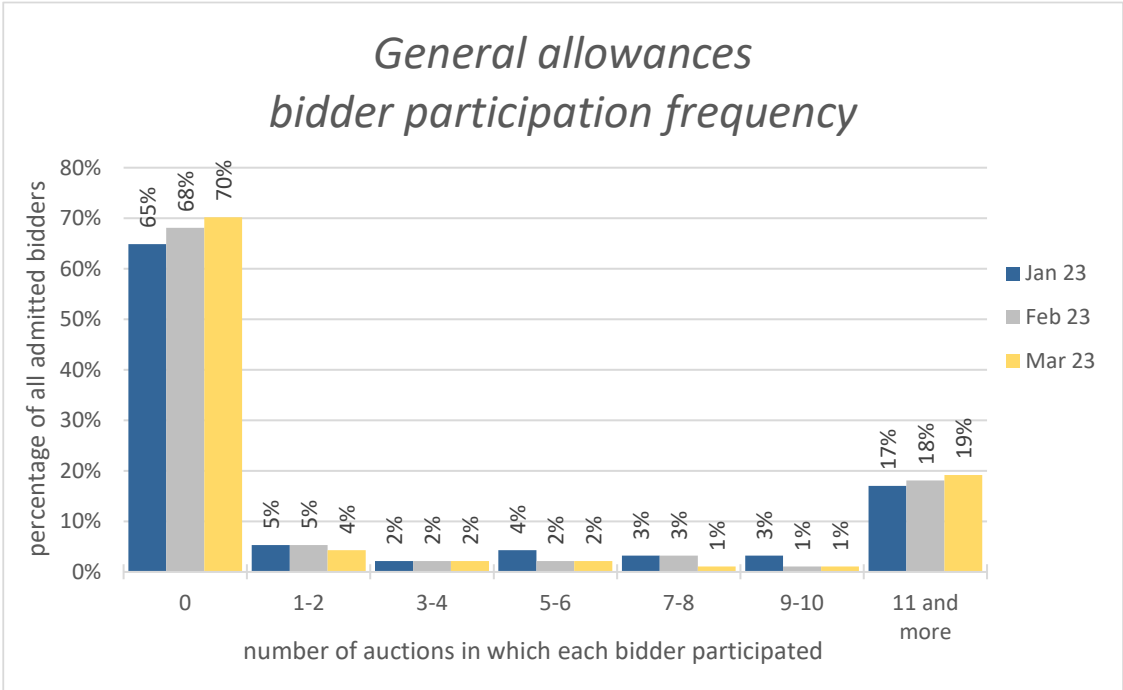


**Graph 2: General allowances - cover ratio (left axis), number of bidders and successful bidders (right axis) per auction**



The number of eligible bidders is provided in Section 2. Out of these 33, 30 and 28 different bidders participated in the auctions in respectively during the reporting period. Graph 3 indicates the participation frequency over these months.

**Graph 3: General allowances -bidder participation frequency**



### 1.1.2. Bidding behaviour - general allowances

Table 2 provides monthly data on the bids submitted over 15 months. See also Graph 4.

**Table 2: General Allowances - monthly statistics on the submitted bids**

Month	Nr of auctions	Nr of bidders <sup>(1)</sup>	Total volume of bids	Average total volume bid per bidder per auction <sup>[1]</sup>	Average total volume bid per bidder per auction over the month <sup>[2]</sup>	Standard deviation of total volume per bidder per auction over the month <sup>[3]</sup>	Total monthly nr of bids	Average nr. of bids per bidder per auction <sup>[4]</sup>	Average bid size <sup>[5]</sup>
Mar 23	16	28	72,309,000	236,297	234,769	350,777	1,450	4.7	50,115
Feb 23	14	30	68,040,000	241,622	240,424	364,634	1,300	4.6	52,788
Jan 23	12	33	60,749,500	219,518	218,523	314,965	1,321	4.8	46,263
Dec 22	9	27	42,657,500	249,014	250,926	389,053	693	4.1	62,034
Nov 22	15	33	78,824,500	272,710	270,875	440,787	1,136	3.9	69,821
Oct 22	15	30	86,400,000	323,939	321,190	540,112	1,135	4.2	76,579
Sep 22	15	30	71,870,500	264,361	258,527	403,897	1,150	4.1	63,503
Aug 22	17	29	63,544,000	230,907	227,756	439,575	1,043	3.7	61,754
Jul 22	14	34	73,215,500	251,452	250,738	459,989	1,161	4.0	63,396
Jun 22	13	36	69,774,000	265,331	263,298	465,003	1,091	4.1	64,157
May 22	15	34	87,512,000	273,166	270,099	480,515	1,283	4.0	68,583
Apr 22	13	36	74,920,000	252,763	248,904	448,783	1,154	3.8	65,407
Mar 22	17	41	92,255,000	264,682	253,448	459,116	1,362	3.7	68,754
Feb 22	15	37	48,004,000	157,110	155,353	246,505	1,044	3.4	46,580
Jan 22	11	33	39,669,000	149,589	149,694	207,912	979	3.7	40,751

(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[1] Monthly weighted average of the average bid volume per bidder in each auction (total bid volume in each auction divided by number of bidders participating in that auction), weighted by volume auctioned in each auction.

[2] Average over the whole month of the volume bid by bidders each time they are present in an auction (computed as total volume bid for the month / sum over whole month of number of bidders present in each auction).

[3] Standard deviation of total volume bid per bidder in each auction over the month

[4] Monthly simple average of the average number of bids per bidder in each auction (total number of bids in each auction divided by number of bidders participating in that auction).

[5] Monthly weighted average of the average bid size per bidder in each auction (total bid volume in each auction divided by number of bids in that auction), weighted by volume auctioned in each auction

Table 3 provides monthly data on successful bids over 15 months. See also Graph 4.

**Table 3: General Allowances - monthly statistics on successful bids**

Month	Nr of auctions	Nr of successful bidders <sup>(1)</sup>	Total auction volume	Average volume won per bidder per auction[1]	Average volume won per bidder per auction over the month[2]	Standard deviation of volume won per bidder per auction over the month[3]	Total monthly nr of successful bids
Mar 23	16	24	39,346,500	158,032	155,520	231,259	777
Feb 23	14	27	34,260,000	150,878	148,957	239,198	600
Jan 23	12	29	29,175,000	135,948	134,447	195,200	583
Dec 22	9	25	23,244,500	170,697	169,668	257,923	363
Nov 22	15	28	38,839,500	198,271	188,541	285,020	469
Oct 22	15	23	38,839,500	212,128	207,698	303,925	423
Sep 22	15	24	37,259,000	194,737	184,450	261,447	485
Aug 22	17	25	20,192,500	137,299	127,801	149,570	351
Jul 22	14	31	32,862,000	162,674	158,754	241,835	478
Jun 22	13	29	30,567,500	170,683	165,230	259,834	399
May 22	15	32	37,900,500	167,751	155,969	270,326	591
Apr 22	13	33	34,216,500	177,858	168,554	266,019	448
Mar 22	17	34	41,277,000	170,244	163,150	268,614	524
Feb 22	15	36	35,812,500	139,838	137,213	231,500	560
Jan 22	11	32	27,148,000	125,231	123,963	189,178	457

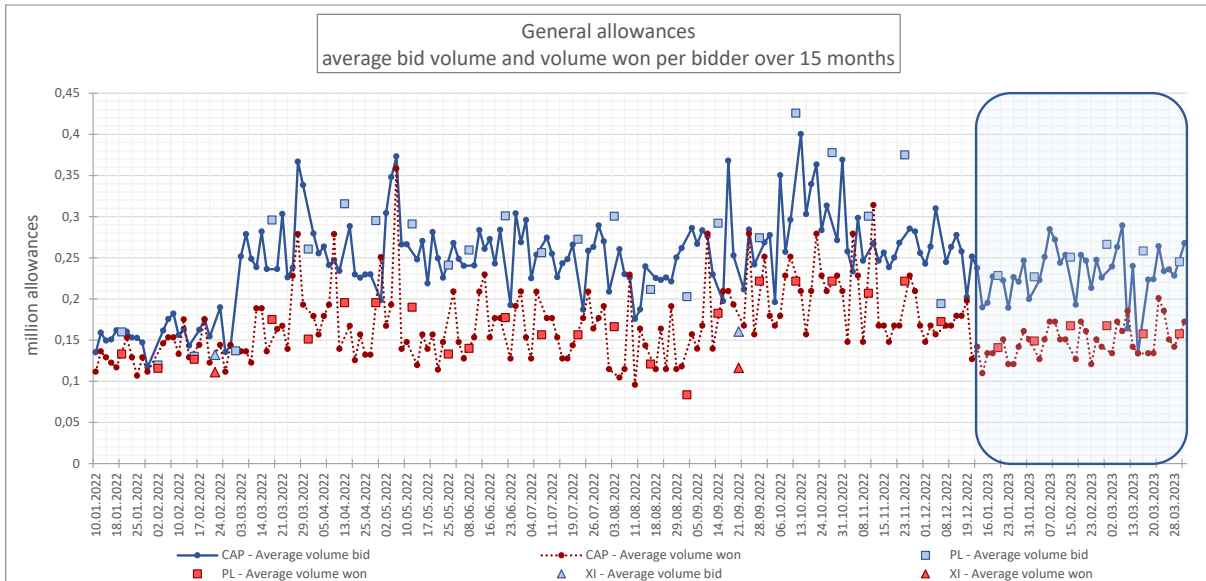
(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[1] Monthly weighted average of the average volume won per bidder in each auction (total volume won in each auction divided by the number of successful bidders in that auction), weighted by volume auctioned in each auction.

[2] Average over the whole month of the volume won per bidder each time they are successful in an auction (computed as total volume auctioned for the month / sum over whole month of number of bidders successful in each auction).

[3] Standard deviation of volume won per bidder in each auction over the month

**Graph 4: General allowances - average bid volume and volume won per bidder over 15 months**

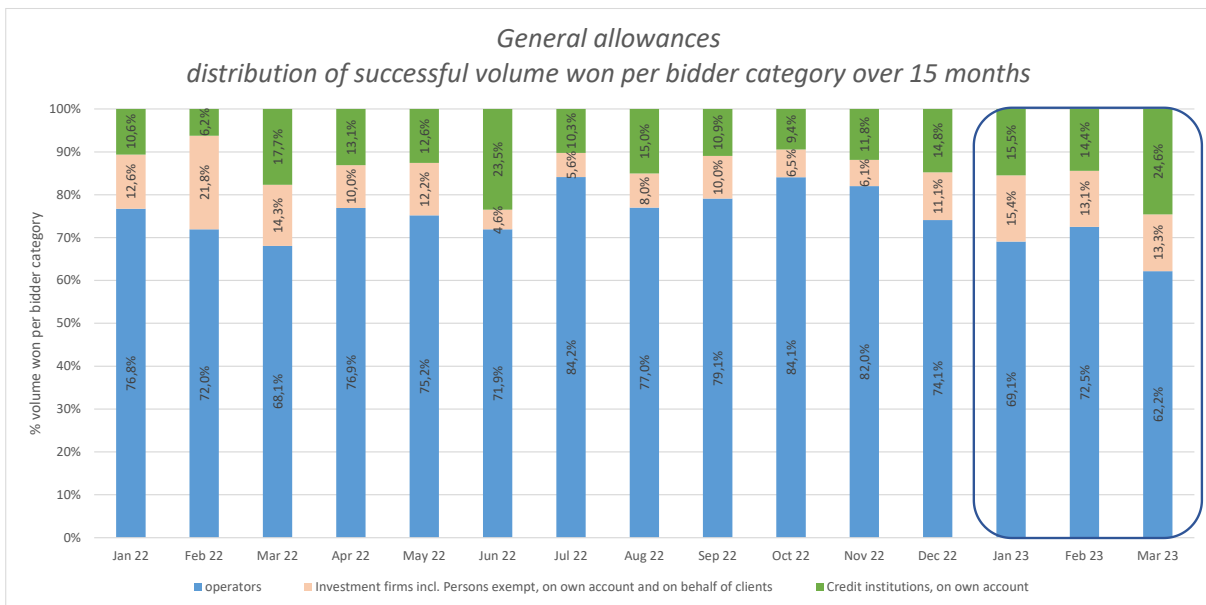


**1.1.3. Type of bidders - general allowances**

No successful bids for aviation allowances were submitted by intermediaries, the remaining volume bid was done on own account.

The shares in the total successful bid volume per bidder category are indicated in Graph 5 and in Table 4.

**Graph 5: General allowances - distribution of successful won volume per bidder category over 15 months**



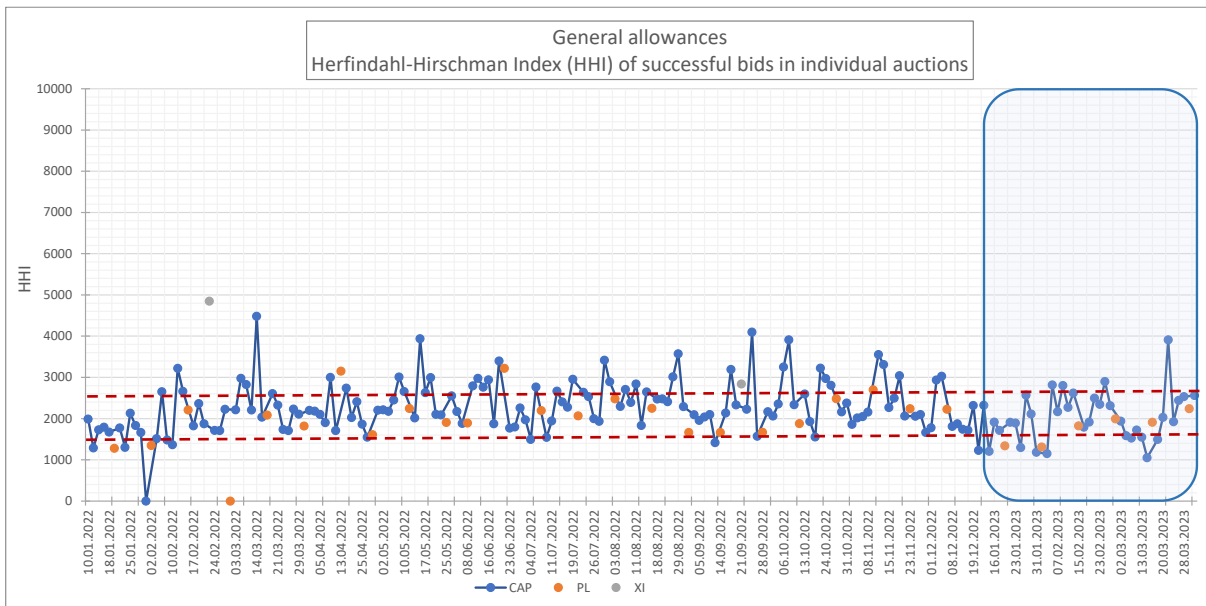
**Table 4:** General allowances – distribution of volume won per bidder category and their standard deviations

Month	% volume won coming from bidding on behalf of a client	Bidder category	% volume won	Standard deviation of % of volume won
Jan 23	0.00%	Operators (including Business groupings)	69.07%	11.3% points
		Investment firms (including persons exempt)	15.45%	5.2% points
		Credit institutions	15.48%	10.8% points
Feb 23	0.00%	Operators (including Business groupings)	72.51%	9.7% points
		Investment firms (including persons exempt)	13.09%	6.1% points
		Credit institutions	14.40%	8.7% points
Mar 23	0.00%	Operators (including Business groupings)	62.17%	12.4% points
		Investment firms (including persons exempt)	13.27%	5.9% points
		Credit institutions	24.56%	15.0% points

### 1.1.4. Concentration - general allowances

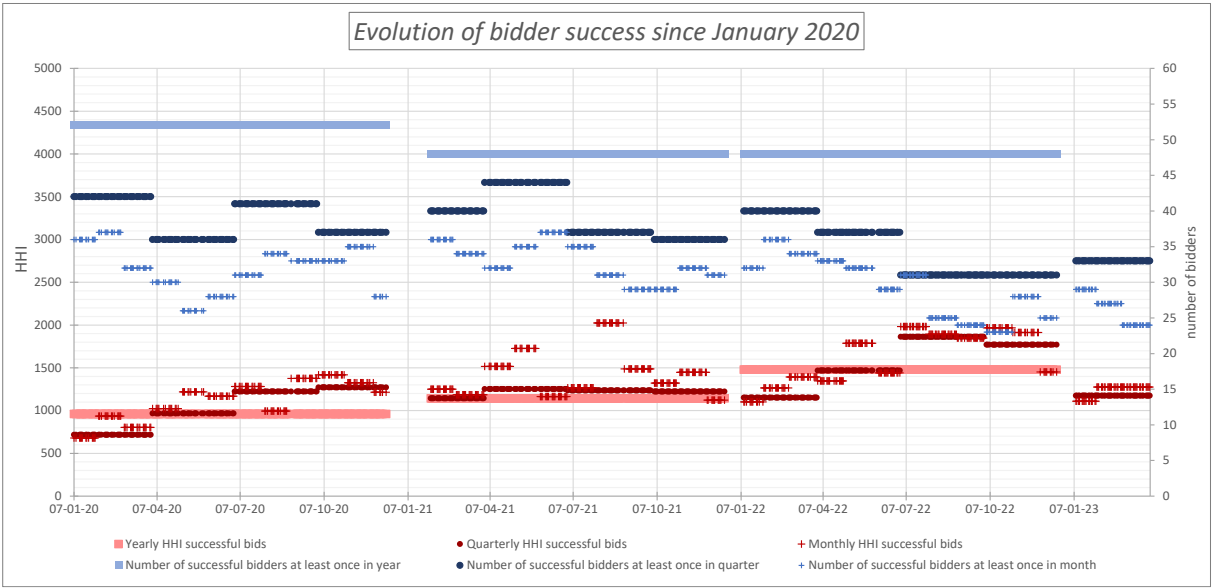
The Herfindahl-Hirschman Index (HHI) of successful bids is used to measure market concentration<sup>3</sup>. The HHI ranges from a value of 0 (perfect competition) to 10 000 (a single buyer). A common interpretation of the HHI is that a score below 1 500 is 'not-concentrated,' between 1 500 and 2 500 is 'moderately concentrated,' and above 2 500 is 'highly concentrated' – these thresholds are indicated in Graphs 6 and 7. Graph 6 indicates the HHI of the individual auctions. Graph 7 indicates the monthly and quarterly HHI and successful bidder participation (number of bidders successful at least once in the period of interest) so as to show the variation over different periods, due to the turnover of participants in the auctions.

**Graph 6:** General allowances - Herfindahl-Hirschman Index of successful bids in individual auctions over 15 months



<sup>3</sup> The HHI is calculated as the sum of the squares of all successful bidders' shares (in percentage points) of the total auctioned volume over the period of interest.

**Graph 7: General allowances - Herfindahl-Hirschman Index of successful bids and successful bidder participation at monthly, quarterly and yearly level**





## 1.2 Aviation allowances auctions

The auctioning of *aviation allowances* restarted as of November 2014<sup>4</sup>. Pursuant to the published *auction calendar*, only *aviation allowances* for the calendar year 2012 were auctioned in 2014<sup>5</sup>; the *aviation allowances* for the calendar years 2013-2015 were auctioned in 2015, in accordance with the published 2015 *auction calendar*. Poland decided to aggregate the *aviation allowances* for the calendar years 2012 to 2015 in a single auction held in May 2015.

### 1.2.1 Clearing prices and participation – aviation allowances

An overview of the auction results is provided in Table 5.

**Table 5:** Aviation allowances – main statistics on the results of the auctions per month

Month	Total auction volume	Total bid volume	Total revenue (€)	Average Cover ratio[1]	Average number of bidders	Average number of successful bidders	Average auction clearing price (€)[2]
Mar 23	775,500	1,894,000	66,801,570	2.4	10.0	8.0	86.14
Feb 23	-	-	-	-	-	-	-
Jan 23	775,500	1,160,000	60,713,895	1.5	10.0	10.0	78.29
Dec 22	-	-	-	-	-	-	-
Nov 22	602,000	954,000	44,698,500	1.6	7.0	5.0	74.25
Oct 22	-	-	-	-	-	-	-
Sep 22	600,000	634,000	41,436,000	1.1	6.0	6.0	69.06
Aug 22	-	-	-	-	-	-	-
Jul 22	-	-	-	-	-	-	-
Jun 22	600,000	1,250,000	50,670,000	2.1	8.0	7.0	84.45
May 22	109,500	488,000	9,553,875	4.5	9.0	4.0	87.25
Apr 22	600,000	1,541,500	47,004,000	2.6	8.0	7.0	78.34
Mar 22	-	-	-	-	-	-	-
Feb 22	600,000	1,130,500	57,918,000	1.9	7.0	6.0	96.53
Jan 22	-	-	-	-	-	-	-

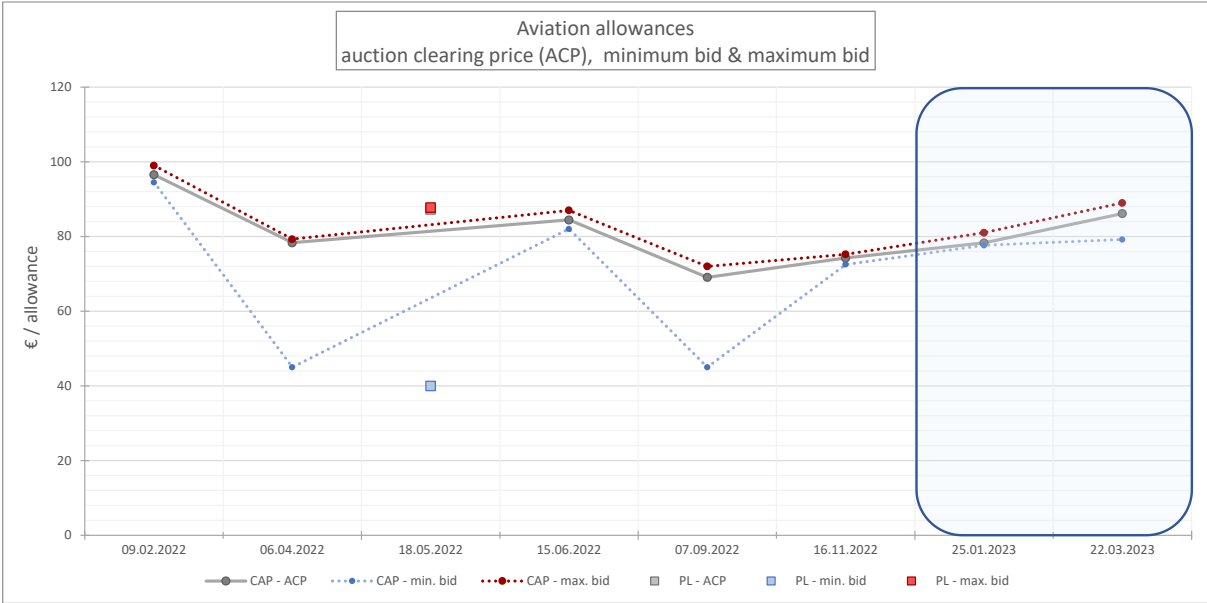
<sup>4</sup> The auctions were suspended end 2012, see the Regulatory update published by the Commission on 16 November 2012: [https://ec.europa.eu/clima/news-your-voice/news/auctions-2012-aviation-allowances-put-hold-2012-11-16\\_en](https://ec.europa.eu/clima/news-your-voice/news/auctions-2012-aviation-allowances-put-hold-2012-11-16_en)

<sup>5</sup> See also the regulatory update published by the Commission on 29 July 2014: [https://ec.europa.eu/clima/news-your-voice/news/2014-aviation-auction-calendars-published-2014-07-29\\_en](https://ec.europa.eu/clima/news-your-voice/news/2014-aviation-auction-calendars-published-2014-07-29_en)

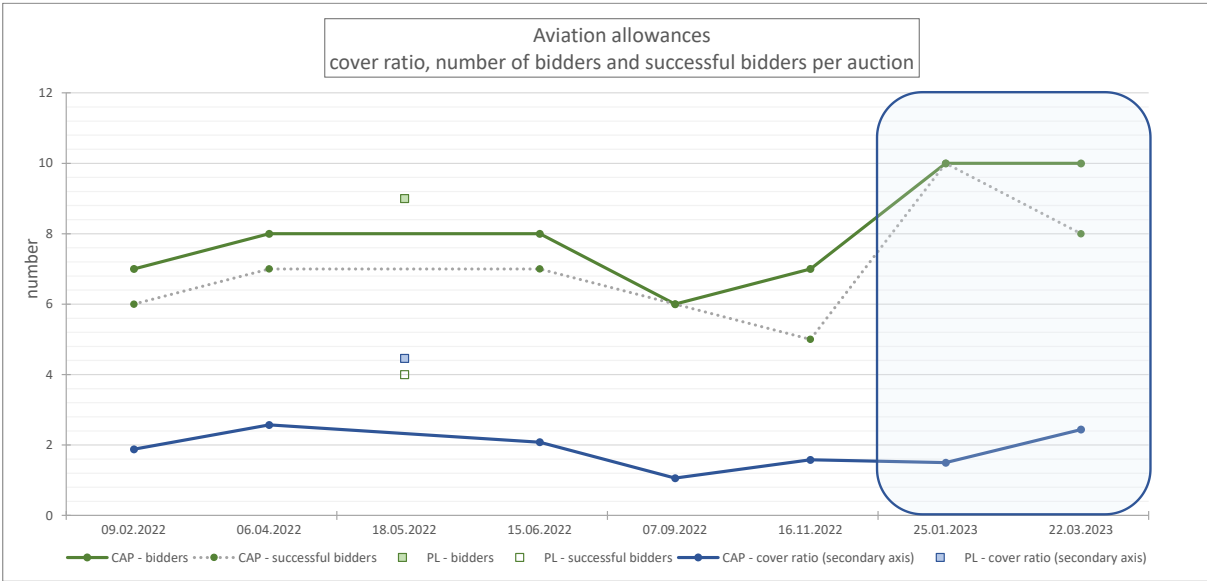
<b>2022 total</b>	3,111,500	5,998,000	251,280,375	2.3	7.5	5.8	80.76
<b>2021 total</b>	3,185,500	7,463,000	171,307,490	2.6	6.5	4.5	53.78
<b>2020 total</b>	5,049,500	13,474,500	119,509,185	2.7	8.0	5.0	23.67
<b>2019 total</b>	4,701,000	13,172,500	119,584,255	2.8	8.7	5.9	25.44
<b>2018 total</b>	3,941,000	10,830,000	73,956,020	2.7	8.8	6.1	18.77
<b>2017 total</b>	3,329,500	10,300,000	23,771,460	3.1	7.5	6.5	7.14
<b>2016 total</b>	4,219,000	17,973,500	22,266,205	4.3	10.4	4.6	5.28
<b>2015 total</b>	11,641,000	39,026,000	81,846,705	3.4	11.0	7.5	7.03

[1] The cover ratio is the ratio between the total bid volume and the auction volume.

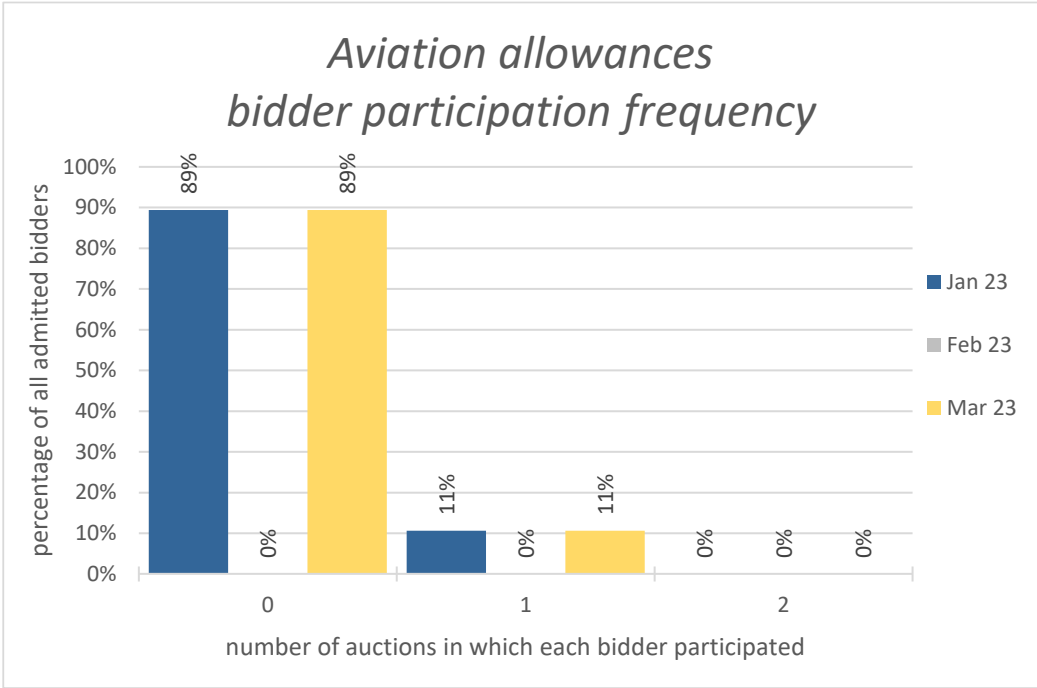
**Graph 8: Aviation allowances - auction clearing price (ACP) & maximum prices bid & minimum prices bid**



**Graph 9: Aviation allowances - cover ratio (left axis), number of bidders and successful bidders (right axis) per auction**



**Graph 10:** Aviation allowances – bidder participation frequency



### 1.2.2 Bidding behaviour – aviation allowances

Table 6 provides monthly data on the bids submitted over 15 months. See also Graph 11.

**Table 6:** Aviation allowances – monthly statistics on the submitted bids

Month	Nr of auctions	Nr of bidders <sup>(1)</sup>	Total volume of bids	Average total volume bid per bidder per auction[1]	Average total volume bid per bidder per auction over the month[2]	standard deviation of total volume bid per bidder per auction over the month[3]	Total monthly nr of bids	Average nr. of bids per bidder per auction[4]	Average bid size[5]
Mar 23	1	10	1,894,000	189,400	189,400	228,597	54	5.4	35,074
Feb 23	-	-	-	-	-	-	-	-	-
Jan 23	1	10	1,160,000	116,000	116,000	108,312	38	3.8	30,526
Dec 22	-	-	-	-	-	-	-	-	-
Nov 22	1	7	954,000	136,286	136,286	195,404	35	5.0	27,257
Oct 22	-	-	-	-	-	-	-	-	-
Sep 22	1	6	634,000	105,667	105,667	96,965	23	3.8	27,565
Aug 22	-	-	-	-	-	-	-	-	-
Jul 22	-	-	-	-	-	-	-	-	-
Jun 22	1	8	1,250,000	156,250	156,250	175,619	34	4.3	36,765
May 22	1	9	488,000	54,222	54,222	39,075	29	3.2	16,828
Apr 22	1	8	1,541,500	192,688	192,688	231,790	37	4.6	41,662
Mar 22	-	-	-	-	-	-	-	-	-
Feb 22	1	7	1,130,500	161,500	161,500	215,120	24	3.4	47,104
Jan 22	-	-	-	-	-	-	-	-	-

(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[1] Monthly weighted average of the average bid volume per bidder in each auction (total bid volume in each auction divided by number of bidders participating in that auction), weighted by volume auctioned in each auction.

[2] Average over the whole month of the volume bid by bidders each time they are present in an auction (computed as total volume bid for the month / sum over whole month of number of bidders present in each auction).

[3] Standard deviation of total volume bid per bidder in each auction over the month

[4] Monthly simple average of the average number of bids per bidder in each auction (total number of bids in each auction divided by number of bidders participating in that auction).

[5] Monthly weighted average of the average bid size per bidder in each auction (total bid volume in each auction divided by number of bids in that auction), weighted by volume auctioned in each auction

Table 7 provides monthly data on successful bids over 15 months. See also Graph 11.

**Table 7: Aviation Allowances – Monthly statistics on successful bids**

Month	Nr of auctions	Nr of successful bidders <sup>(1)</sup>	Total auction volume	Average volume won per bidder per auction[1]	Average volume won per bidder per auction over the month[2]	Standard deviation of volume won per bidder per auction over the month[3]	Total monthly nr of successful bids
Mar 23	1	8	775,500	96,938	96,938	87,683	20
Feb 23	-	-	-	-	-	-	-
Jan 23	1	10	775,500	77,550	77,550	82,704	30
Dec 22	-	-	-	-	-	-	-
Nov 22	1	5	602,000	120,400	120,400	127,820	21
Oct 22	-	-	-	-	-	-	-
Sep 22	1	6	600,000	100,000	100,000	96,334	22
Aug 22	-	-	-	-	-	-	-
Jul 22	-	-	-	-	-	-	-
Jun 22	1	7	600,000	85,714	85,714	98,321	17
May 22	1	4	109,500	27,375	27,375	13,681	6
Apr 22	1	7	600,000	85,714	85,714	128,544	24
Mar 22	-	-	-	-	-	-	-
Feb 22	1	6	600,000	100,000	100,000	127,577	10
Jan 22	-	-	-	-	-	-	-

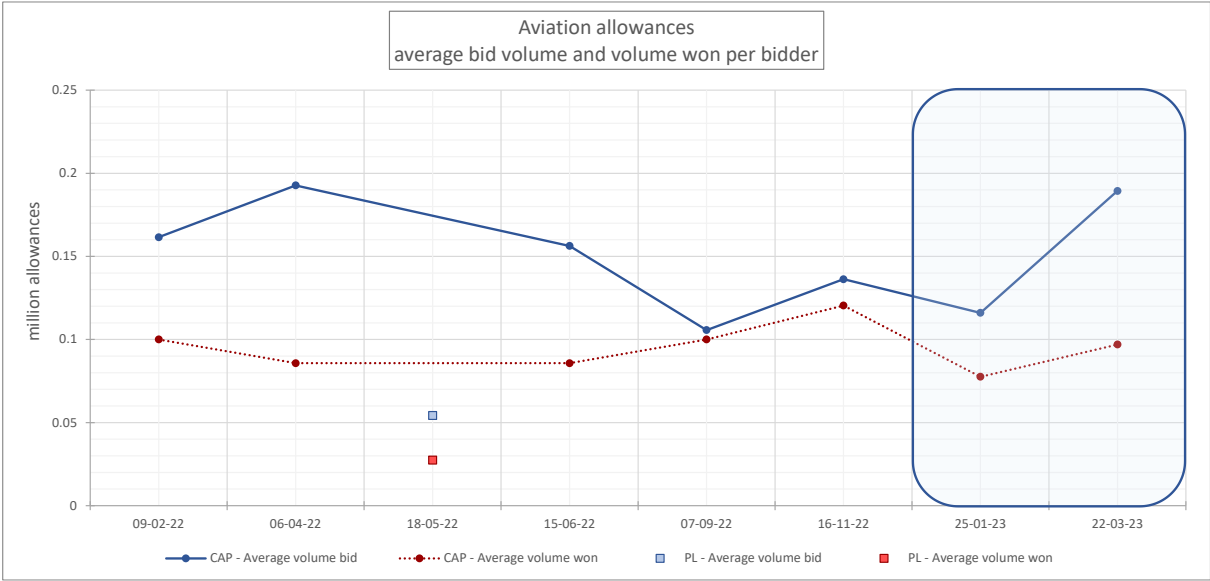
(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[1] Monthly weighted average of the average volume won per bidder in each auction (total volume won in each auction divided by the number of successful bidders in that auction), weighted by volume auctioned in each auction.

[2] Average over the whole month of the volume won per bidder each time they are successful in an auction (computed as total volume auctioned for the month / sum over whole month of number of bidders successful in each auction).

[3] Standard deviation of volume won per bidder in each auction over the month

**Graph 11: Aviation allowances - average bid volume and volume won per bidder**



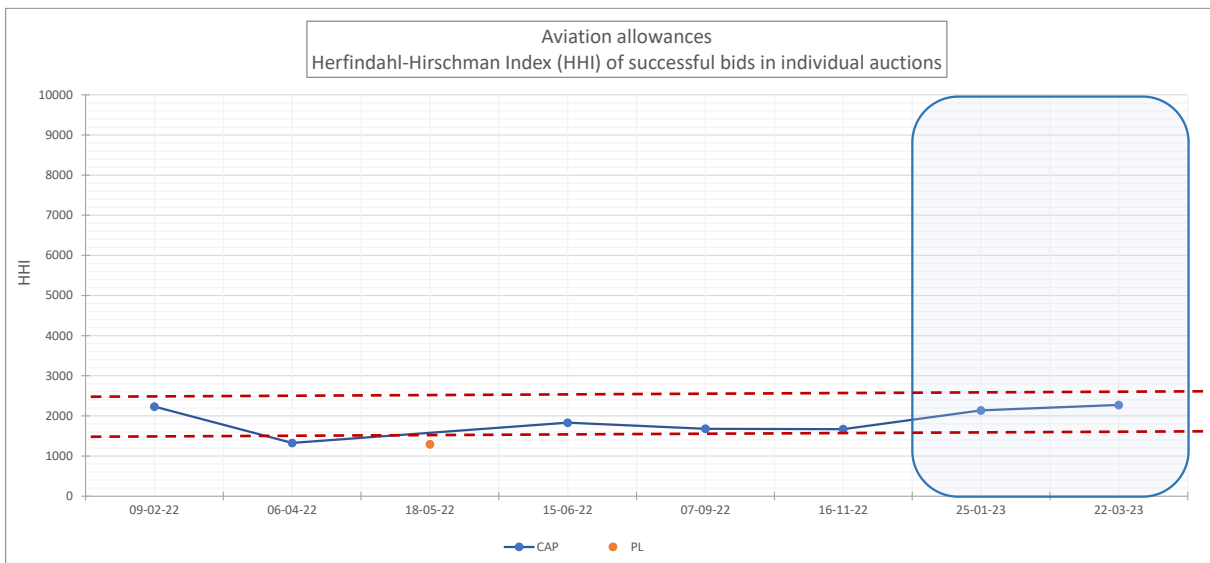
### 1.2.3 Type of bidders – aviation allowances

No bids for aviation allowances were submitted by intermediaries, the remaining volume bid was done on own account.

### 1.2.4 Concentration – aviation allowances

The HHI of successful bids is used to measure market concentration<sup>6</sup>. The HHI ranges from a value of 0 (perfect competition) to 10 000 (a single buyer). A common interpretation of the HHI is that a score below 1 500 is 'not-concentrated', between 1 500 and 2 500 is 'moderately concentrated,' and above 2 500 is 'highly concentrated'. Graph 12 indicates the HHI of the individual auctions.

**Graph 12:** Aviation allowances - Herfindahl-Hirschman index of successful bids in individual auctions



<sup>6</sup> The HHI is calculated as the sum of the squares of all successful bidders' shares (in percentage points) of the total auctioned volume over the period of interest.



## Implementation of and compliance with the applicable rules

### Fair and open access

EEX verified that each auction participant belonged to one of the categories of eligible bidders set out in Article 18 of the *Auctioning Regulation*. Table 9 presents the number of eligible bidders under each category in the reporting months. Most of the active participants in the secondary carbon market are assumed to also have been admitted to bid in the auctions<sup>7</sup>.

**Table 8:** Eligible participants to the auctions by category

Number of participants		Operator		Investment firm	Credit Institution	Business grouping	Person exempt from MiFID requirements	Total
		Stationary	Aircraft					
Participants admitted to EEX's emissions spot secondary market	Jan 23	-	-	-	-	-	-	171
	Feb 23	-	-	-	-	-	-	171
	Mar 23	-	-	-	-	-	-	169
Participants eligible to bid in the auctions	Jan 23	66	1	11	6	1	9	94
	Feb 23	67	1	11	6	1	8	94
	Mar 23	67	1	11	6	1	8	94
(Of which:) Participants eligible to bid in the auctions on behalf of clients	Jan 23	-	-	3	2	-	1	6
	Feb 23	-	-	3	2	-	1	6
	Mar 23	-	-	3	2	-	1	6
(Of which:) Auction-only access	Jan 23	2	-	2	1	-	1	6
	Feb 23	2	-	2	1	-	1	6
	Mar 23	2	-	2	1	-	1	6

No irregularities or deviations from the admission and access requirements were found.

<sup>7</sup> This assessment is based on the auction participants' activity in EEX's secondary market and general market knowledge of EEX.

### **Transparency**

Information on the auctions was published by EEX in accordance with Chapter XVI of the *Auctioning Regulation*.

No infringements of the confidentiality requirements were identified.

### **Technical and operational aspects**

With regard to the operational performance of the auctions, no irregularities or deviations from the requirements were found.

EEX's Market Surveillance department surveyed all auctions with a view to detecting any *market abuse*, money laundering, terrorist financing or other criminal activities. No such wrongdoing was publicly reported.

### **Other aspects**

No other problems or issues were identified.

## 2. Overview of, and any updates on breaches of provisions or ongoing proceedings

No breaches or problems of non-conformity were reported. There were no proceedings on such breaches or problems of non-conformity dating from before the reporting period.

### **Comments of the auction platform on the draft of this report**

EEX reviewed the auction data presented in the report.

**Date of publication: 30/05/2023**

## Glossary

Auction calendar	Document setting out the <i>bidding windows</i> , individual volumes and auction dates of the auctions in a given calendar year. See Articles 11, 13 and 32 of the <i>Auctioning Regulation</i> .
Auction Clearing Price	Price determined upon closure of the <i>bidding window</i> .
Auction-only access	Access to the auctions without becoming a member of or participant in other markets organised by the auction platform.
Auctioning Regulation	Commission Regulation (EU) No 1031/2010 — Timing, administration and other aspects of auctioning of greenhouse gas emission allowances pursuant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community, Official Journal L 302, 18.11.2010, p. 1, as subsequently amended. See: <a href="http://ec.europa.eu/clima/policies/ets/cap/auctioning/documentation_en.htm">http://ec.europa.eu/clima/policies/ets/cap/auctioning/documentation_en.htm</a> .
Auctioneer	Entity appointed by a Member State that offers the allowances to be auctioned to the auction platform and receives the auction proceeds due to the appointing Member State. See Articles 22 and 23 of the <i>Auctioning Regulation</i> .
Best-bid and best-ask prices	The best-bid price is the highest price any buyer is willing to pay and the best-ask price is the lowest price any seller is willing to accept.
Business groupings	Groupings of operators or aircraft operators. See Article 18(1)(d) of the <i>Auctioning Regulation</i> .
Bidding window	Time during which bidders can submit bids. See Article 8(1) of the <i>Auctioning Regulation</i> .
Clearing	Processes preceding the opening of the <i>Bidding window</i> , during the <i>Bidding window</i> and following the closure of the <i>Bidding window</i> until <i>Settlement</i> , involving the management of any risks arising during that interval including margining, netting or novation or any other services carried out possibly by a <i>Clearing</i> or <i>Settlement</i> system. See Article 3(31) of the <i>Auctioning Regulation</i> .
Common auction platform	The auction platform appointed pursuant to Article 26(1) of the <i>Auctioning Regulation</i> . The <i>common auction platform</i> referred to as the third common auction platform, or CAP3, was appointed pursuant to Article 26(1) of the <i>Auctioning Regulation</i> , on 4 November 2020 for a period of 5 years.
Cover ratio	Total bid volume divided by the available volume in the auction.
Credit institution	Credit institution as defined in EU legislation on credit institutions (Article 4(1) of Directive 2006/48/EC).

ETS Directive	Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, OJ L 275, 25.10.2003, p. 32, as subsequently amended. See: <a href="http://ec.europa.eu/clima/policies/ets/documentation_en.htm">http://ec.europa.eu/clima/policies/ets/documentation_en.htm</a> .
Fourth trading period	The period 2021-2030.
General Allowance	Allowance to emit one tonne of CO <sub>2</sub> -equivalent, see Article 3(a) of the <i>ETS Directive</i> , also referred to as <i>EUA</i> .
Aviation Allowance	Allowance to emit one tonne of CO <sub>2</sub> -equivalent that can be used by aircraft operators, also referred to as <i>EUA</i> . See Article 12(2a) and (3) of the <i>ETS Directive</i> .
Investment firms	Investment firms as defined in EU financial markets legislation (point (1) of Article 4(1) of Directive 2004/39/EC).
Market abuse	Insider dealing and market manipulation. See Article 36 of the <i>Auctioning Regulation</i> and Article 1 of Directive 2003/6/EC ('Market Abuse Directive').
Participating Member States	All EU Member States except Germany and Poland, which decided to opt out from the joint procurement of a common auction platform pursuant to Article 30 of the <i>Auctioning Regulation</i> .
Persons exempt from MiFID	Natural or legal persons exempt from the authorisation requirements in EU financial law because their trading and investment services activities are only ancillary to their main business (Article 2(1)(i) of Directive 2004/39/EC) and that have been authorised under national legislation implementing the rules laid down in the <i>Auctioning Regulation</i> to bid for allowances in the auctions. See Article 18(2) of the <i>Auctioning Regulation</i> .
Secondary market	Market in which persons buy or sell allowances either before or after they are allocated, either free of charge or through auctioning. To be distinguished from the 'primary market', consisting of the auctions of allowances.
Settlement	Payment on delivery of the allowances. See Article 3(34) of the <i>Auctioning Regulation</i> .
Spot secondary market	<i>Secondary market</i> for allowances with delivery within 5 days from the transaction.
Third trading period	The period 2013-2020, including the allowances referred to in Article 10(1) of the <i>Auctioning Regulation</i> auctioned in 2012. Allowances are valid during a given period without distinction as regards the year within that period. See Article 13 of the <i>ETS Directive</i> .

## Annex 1a Auction revenues per Member State and for Poland from 12 November 2012 to the end of Quarter 1 2023 (reported in euros)

(The data used in this annex can also be obtained directly from the EEX website.)

Cumulated Revenues since November 2012 (start of Phase III)	General allowances	Aviation allowances	General and aviation allowances
<b>Austria</b>	1,693,971,575	26,571,560	1,720,543,135
<b>Belgium</b>	3,050,264,840	34,015,805	3,084,280,645
<b>Bulgaria</b>	3,934,728,770	10,904,170	3,945,632,940
<b>Croatia</b>	638,968,545	7,872,580	646,841,125
<b>Cyprus</b>	302,160,130	11,715,795	313,875,925
<b>Czech Republic</b>	3,954,782,750	12,984,140	3,967,766,890
<b>Denmark</b>	1,554,363,140	31,264,165	1,585,627,305
<b>Estonia</b>	1,209,932,070	2,541,520	1,212,473,590
<b>Finland</b>	2,140,759,700	25,192,480	2,165,952,180
<b>France</b>	7,365,864,585	143,038,165	7,508,902,750
<b>Greece</b>	5,044,553,300	59,593,485	5,104,146,785
<b>Hungary</b>	1,861,788,470	11,485,805	1,873,274,275
<b>Iceland</b>	73,947,340	10,695,045	84,642,385
<b>Innovation Fund</b>	7,613,569,580	-	7,613,569,580
<b>Ireland</b>	994,258,330	23,958,750	1,018,217,080

<b>Italy</b>	12,868,828,890	155,779,540	13,024,608,430
<b>Latvia</b>	355,746,260	6,246,110	361,992,370
<b>Liechtenstein</b>	1,957,255	-	1,957,255
<b>Lithuania</b>	586,937,755	4,332,200	591,269,955
<b>Luxembourg</b>	117,334,170	4,067,210	121,401,380
<b>Malta</b>	148,674,970	6,825,780	155,500,750
<b>Modernisation Fund</b>	10,749,929,480	-	10,749,929,480
<b>The Netherlands</b>	4,507,831,480	51,478,525	4,559,310,005
<b>Northern Ireland</b>	168,261,110	-	168,261,110
<b>Norway</b>	1,646,898,890	73,285,280	1,720,184,170
<b>Poland</b>	19,975,514,960	25,427,790	20,000,942,750
<b>Portugal</b>	2,546,308,920	40,810,810	2,587,119,730
<b>Romania</b>	4,275,205,180	20,342,920	4,295,548,100
<b>Slovak Republic</b>	1,799,567,810	2,042,630	1,801,610,440
<b>Slovenia</b>	651,087,195	1,588,800	652,675,995
<b>Spain</b>	12,359,535,525	183,365,440	12,542,900,965
<b>Sweden</b>	1,159,109,755	43,065,170	1,202,174,925
<b>TOTAL</b>	<b>115,352,642,730</b>	<b>1,030,491,670</b>	<b>116,383,134,400</b>

## Annex 1b Auction revenues per Member State and for Poland from January 2021 to the end of Quarter 1 2023 (reported in euros)

(The data used in this annex can also be obtained directly from the EEX website.)

<b>Cumulated Revenues since January 2021 (start of Phase IV)</b>	<b>General allowances</b>	<b>Aviation allowances</b>	<b>General and aviation allowances</b>
<b>Austria</b>	790,448,455	14,049,395	804,497,850
<b>Belgium</b>	1,365,086,540	19,000,190	1,384,086,730
<b>Bulgaria</b>	2,233,551,895	6,304,875	2,239,856,770
<b>Croatia</b>	291,052,485	5,085,210	296,137,695
<b>Cyprus</b>	206,088,505	4,584,065	210,672,570
<b>Czech Republic</b>	1,461,120,410	6,768,895	1,467,889,305
<b>Denmark</b>	744,248,740	17,064,120	761,312,860
<b>Estonia</b>	675,647,165	1,751,575	677,398,740
<b>Finland</b>	1,055,507,990	14,132,975	1,069,640,965
<b>France</b>	3,812,052,055	74,387,700	3,886,439,755
<b>Greece</b>	2,695,233,135	34,456,480	2,729,689,615
<b>Hungary</b>	859,853,085	6,424,215	866,277,300
<b>Iceland</b>	13,755,195	6,006,650	19,761,845
<b>Innovation Fund</b>	6,279,746,575	-	6,279,746,575
<b>Ireland</b>	389,777,595	12,763,205	402,540,800
<b>Italy</b>	6,578,422,745	81,144,255	6,659,567,000
<b>Latvia</b>	167,548,605	3,546,635	171,095,240



<b>Liechtenstein</b>	644,990	-	644,990
<b>Lithuania</b>	215,974,675	2,909,710	218,884,385
<b>Luxembourg</b>	36,973,125	2,357,735	39,330,860
<b>Malta</b>	78,894,055	3,979,890	82,873,945
<b>Modernisation Fund</b>	10,749,929,480	-	10,749,929,480
<b>The Netherlands</b>	2,333,741,200	28,299,725	2,362,040,925
<b>Northern Ireland</b>	168,261,110	-	168,261,110
<b>Norway</b>	449,543,955	27,850,030	477,393,985
<b>Poland</b>	11,971,406,190	14,516,295	11,985,922,485
<b>Portugal</b>	1,357,787,625	25,643,765	1,383,431,390
<b>Romania</b>	1,100,868,905	12,344,275	1,113,213,180
<b>Slovak Republic</b>	715,697,735	1,055,855	716,753,590
<b>Slovenia</b>	349,006,660	882,950	349,889,610
<b>Spain</b>	6,555,815,480	98,239,140	6,654,054,620
<b>Sweden</b>	565,221,015	24,553,520	589,774,535
<b>TOTAL</b>	<b>66,268,907,375</b>	<b>550,103,330</b>	<b>66,819,010,705</b>

## Annex 2 Results of individual auctions on behalf of participating Member States, Poland and Northern Ireland in January - March 2023

General Allowances - January 2023																			
Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
09-01-23	75.27	67.53	83.00	75.53	75.25	2,409,000	5,528,000	2.29	22	19	181,325,430	123	60	5.59	44,943	251,273	324,171	126,789	146,428
10-01-23	78.61	50.00	82.25	78.26	78.78	2,409,000	4,746,000	1.97	20	17	189,371,490	87	53	4.35	54,552	237,300	365,544	141,706	243,501
12-01-23	76.80	69.18	80.02	76.72	76.70	2,409,000	5,310,500	2.20	28	22	185,011,200	115	54	4.11	46,178	189,661	289,308	109,500	140,700
16-01-23	75.05	70.00	78.50	75.05	74.90	2,409,000	4,485,000	1.86	23	18	180,795,450	104	42	4.52	43,125	195,000	231,267	133,833	209,398
17-01-23	75.04	45.00	80.00	74.39	74.69	2,409,000	5,445,000	2.26	24	18	180,771,360	126	46	5.25	43,214	226,875	321,551	133,833	193,372
18-01-23	76.25	50.00	90.00	76.08	76.12	2,676,000	5,482,500	2.05	24	19	204,045,000	129	56	5.38	42,500	228,438	309,344	140,842	175,080
19-01-23	82.06	50.00	85.00	80.92	81.36	2,409,000	5,558,000	2.31	25	16	197,682,540	110	29	4.40	50,527	222,320	333,074	150,563	215,947
23-01-23	81.52	0.01	89.00	81.32	81.75	2,409,000	4,537,500	1.88	24	20	196,381,680	110	65	4.58	41,250	189,063	329,454	120,450	201,068
24-01-23	80.88	70.00	90.00	80.99	80.88	2,409,000	4,976,500	2.07	22	20	194,839,920	97	49	4.41	51,304	226,205	319,080	120,450	152,109
26-01-23	83.51	75.00	87.00	83.42	83.52	2,409,000	4,418,000	1.83	20	17	201,175,590	96	50	4.80	46,021	220,900	371,978	141,706	260,109
30-01-23	85.20	70.00	92.00	85.08	84.88	2,409,000	5,670,000	2.35	23	15	205,246,800	109	41	4.74	52,018	246,522	354,983	160,600	236,355
31-01-23	86.68	70.00	99.00	86.13	86.11	2,409,000	4,592,500	1.91	23	16	208,812,120	115	38	5.00	39,935	199,674	190,960	150,563	142,164

**General Allowances - February 2023**

Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
01-02-23	91.91	50.00	99.00	91.28	91.96	2,676,000	4,989,000	1.86	22	18	245,951,160	114	58	5.18	43,763	226,773	328,021	148,667	173,570
02-02-23	93.50	70.00	97.01	92.74	93.24	2,409,000	4,896,000	2.03	22	19	225,241,500	98	41	4.45	49,959	222,545	313,481	126,789	138,220
06-02-23	91.78	45.00	94.80	90.93	92.25	2,409,000	4,265,500	1.77	17	16	221,098,020	76	48	4.47	56,125	250,912	406,552	150,563	282,019
07-02-23	87.52	79.11	91.00	87.56	87.71	2,409,000	4,837,500	2.01	17	14	210,835,680	79	45	4.65	61,234	284,559	384,298	172,071	245,353
09-02-23	87.36	70.00	95.00	86.59	86.84	2,409,000	5,984,000	2.48	22	14	210,450,240	105	27	4.77	56,990	272,000	377,313	172,071	294,142
13-02-23	88.86	70.00	100.00	88.90	89.09	2,409,000	4,145,000	1.72	17	16	214,063,740	70	42	4.12	59,214	243,824	389,043	150,563	244,475
14-02-23	89.96	50.00	100.00	88.71	89.44	2,409,000	5,068,000	2.10	20	16	216,713,640	91	27	4.55	55,692	253,400	382,013	150,563	269,169
15-02-23	87.75	75.00	100.00	88.00	88.00	2,676,000	4,761,500	1.78	19	16	234,819,000	85	47	4.47	56,018	250,605	359,200	167,250	231,691
16-02-23	92.85	70.00	100.00	92.72	93.10	2,409,000	4,047,000	1.68	21	19	223,675,650	80	52	3.81	50,588	192,714	336,883	126,789	196,726
20-02-23	93.73	80.00	110.00	93.29	93.19	2,409,000	5,066,500	2.10	20	14	225,795,570	110	40	5.50	46,059	253,325	360,193	172,071	223,313
21-02-23	95.35	80.00	102.00	94.52	94.76	2,409,000	4,925,500	2.04	20	15	229,698,150	95	31	4.75	51,847	246,275	377,111	160,600	265,996
23-02-23	93.26	80.00	105.00	93.52	93.49	2,409,000	5,116,000	2.12	24	20	224,663,340	104	57	4.33	49,192	213,167	348,797	120,450	231,473
27-02-23	95.12	80.00	105.00	95.15	95.15	2,409,000	5,194,500	2.16	21	16	229,144,080	101	54	4.81	51,431	247,357	382,166	150,563	287,302
28-02-23	96.33	80.00	120.00	95.95	95.83	2,409,000	4,744,000	1.97	21	17	232,058,970	92	31	4.38	51,565	225,905	361,502	141,706	242,585

**General Allowances - March 2023**

Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
01-03-23	95.89	80.00	102.00	95.64	95.92	2,676,000	4,793,000	1.79	18	16	256,601,640	80	41	4.44	59,913	266,278	374,662	167,250	247,532
02-03-23	93.25	84.14	105.00	93.54	93.30	2,409,000	5,023,000	2.09	21	18	224,639,250	97	51	4.62	51,784	239,190	349,838	133,833	211,292
06-03-23	91.01	81.55	96.00	90.71	90.78	2,409,000	4,995,000	2.07	19	14	219,243,090	84	37	4.42	59,464	262,895	339,262	172,071	190,259
07-03-23	91.56	82.44	105.00	92.01	91.57	2,409,000	4,914,500	2.04	17	15	220,568,040	92	47	5.41	53,418	289,088	347,791	160,600	182,296
09-03-23	95.43	85.00	105.00	95.20	95.40	2,409,000	3,113,000	1.29	19	13	229,890,870	83	41	4.37	37,506	163,842	195,458	185,308	206,189
13-03-23	94.36	80.00	105.00	94.63	94.69	2,409,000	4,318,500	1.79	18	17	227,313,240	82	50	4.56	52,665	239,917	351,227	141,706	181,132
14-03-23	92.34	81.30	105.00	92.79	92.72	2,409,000	2,806,000	1.16	21	18	222,447,060	88	67	4.19	31,886	133,619	125,068	133,833	126,442
15-03-23	90.31	80.00	93.90	90.45	90.52	2,676,000	5,163,000	1.93	20	17	241,669,560	96	57	4.80	53,781	258,150	360,000	157,412	236,039
16-03-23	83.25	60.00	89.00	84.63	85.17	2,409,000	4,241,000	1.76	19	18	200,549,250	77	67	4.05	55,078	223,211	343,424	133,833	174,198
20-03-23	82.46	70.00	105.00	83.09	82.48	2,409,000	4,699,000	1.95	21	18	198,646,140	96	49	4.57	48,948	223,762	369,004	133,833	217,920
21-03-23	87.14	75.00	93.50	86.48	86.53	2,409,000	5,542,000	2.30	21	12	209,920,260	105	35	5.00	52,781	263,905	408,412	200,750	385,658
23-03-23	88.27	79.28	105.00	88.17	88.02	2,410,500	4,671,500	1.94	20	13	212,774,835	94	36	4.70	49,697	233,575	351,594	185,423	227,091
27-03-23	85.18	76.86	105.00	85.54	85.36	2,409,000	4,242,500	1.76	18	16	205,198,620	82	49	4.56	51,738	235,694	390,851	150,563	256,868
28-03-23	86.54	78.22	105.00	87.43	86.70	2,409,000	4,332,500	1.80	19	17	208,474,860	81	49	4.26	53,488	228,026	383,476	141,706	257,664
29-03-23	87.16	78.63	105.00	87.70	87.13	2,676,000	4,904,000	1.83	20	17	233,240,160	114	56	5.70	43,018	245,200	381,258	157,412	263,959
30-03-23	87.42	78.60	105.00	87.72	87.20	2,409,000	4,550,500	1.89	17	14	210,594,780	99	45	5.82	45,965	267,676	399,619	172,071	276,735

Aviation Allowances - January 2023

Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
25-01-23	78.29	77.63	81.00	78.71	78.59	775,500	1,160,000	1.50	10	10	60,713,895	38	30	3.80	30,526	116,000	108,312	77,550	82,704

Aviation Allowances - February 2023

Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Aviation Allowances - March 2023

Date	Auction Clearing Price	Minimum Bid price	Maximum Bid price	Mean Bid price	Median Bid price	Total Auction Volume	Total Bid Volume	Cover ratio	Nr of Bidders	Nr of Successful Bidders	Total Revenue	Nr of Bids	Nr of Successful Bids	Avg nr of bids per bidder	Average bid size	Avg total volume bid per bidder	standard deviation of total volume bid per bidder	Average volume won per bidder	Standard deviation of volume won per bidder
22-03-23	86.14	79.20	89.00	85.28	85.95	775,500	1,894,000	2.44	10	8	66,801,570	54	20	5.40	35,074	189,400	228,597	96,938	87,683

Note: volume variables reported in tCO<sub>2</sub>, monetary variables reported in €

(1): Number of unique individual bidders or unique successful bidders present in a whole month. (2): Average number of bids submitted over the whole month by each bidder in each auction. Computed as total number of bids for the month / sum over whole month of number of bidders present in each auction. (3): Average size of all bids submitted in all auctions over the month. Computed as total bid volume for the month / number of bids for the month. (4): Average over the whole month of the volume bid by bidders each time they are present in an auction. Computed as total volume bid for the month / sum over whole month of number of bidders present in each auction. (5): Standard deviation of the total volume bid, by each bidder in each auction, over the whole month. (6): Average over the whole month of the volume won by bidders each time they are successful in an auction. Computed as total auction volume for the month / sum over whole month of number of bidders successful in each auction. (7): Standard deviation of the total volume won by each bidder in each auction, over the whole month, (8): HHI Monthly value is computed considering successful bidder's market share over whole month.