

# Auctions by the *Common Auction Platform*

## October, November, December 2022

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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:*

*3, 4, 6, 10, 11, 12(PL), 12, 13, 17, 18, 20, 24, 25, 26(PL), 26, 27, 31 October 2022;*

*1, 3, 7, 8, 9(PL), 9, 10, 14, 15, 17, 21, 22, 23(PL), 23, 24, 28, 29 November 2022;*

*1, 5, 6, 7(PL), 7, 8, 12, 13, 15, 19 December 2022;*

*Aviation Allowances:*

*No auctions in October 2022;*

*16 November 2022;*

*No auctions in December 2022;*

*Cancelled auctions:*

*No auctions in October 2022;*

*No auctions in November 2022;*

*No auctions in December 2022;*

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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 October, November, December 2022 auctions at a glance:***

	<b>General Allowances</b>			<b>Aviation Allowances</b>		
	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>General</b>						
Number of auctions	15	15	9	-	1	-
Total volume auctioned	38,839,500	38,839,500	23,244,500	-	602,000	-
Amount raised from the auctions (€)	2,687,470,070	2,931,027,595	2,016,605,305	-	44,698,500	-
Average Auction Clearing Price (€/allowance)	69.19	75.47	86.76	-	74.25	-
Total bid volume	86,400,000	78,824,500	42,657,500	-	954,000	-
Average Cover ratio	2.2	2.0	1.8	-	1.6	-
Monthly HHI	1,968	1,913	1,452	-	0	-
<b>Participation</b>						
Number of eligible bidders	92	92	93	92	92	93
Number of participating bidders <sup>(1)</sup>	30	33	27	-	7	-
Number of successful bidders <sup>(1)</sup>	23	28	25	-	5	-
Average number of bidders per auction	18.0	19.4	18.9	-	7.0	-

Average number of successful bidders per auction	12.5	13.8	15.3	-	5.0	-
<b>Auction data</b>						
Average total volume bid per bidder per auction	323,939	272,710	249,014	-	136,286	-
Average bid size (volume per bid)	76,579	69,821	62,034	-	27,257	-
Average volume won per bidder per auction	212,128	198,271	170,697	-	120,400	-
Average range of bids (€)	21.13	28.29	39.00	-	2.73	-
<b>Cancelled Auctions</b>	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 December 2022 are EUR 106,361,203,755, and of aviation allowances EUR 902,976,205. Looking exclusively at the Fourth trading period (January 2021 - December 2022) the total revenues from the auctions of general allowances are EUR 57,277,468,400 and of aviation allowances EUR 422,587,865. 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]
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	19.4	13.8	75.47
Oct 22	38,839,500	86,400,000	2,687,470,070	2.2	18	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	81.4
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
Apr 22	34,216,500	74,920,000	2,736,312,345	2.2	23	15.7	79.97
Mar 22	41,277,000	92,255,000	3,076,655,035	2.2	21.7	16	74.54

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

<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>Dec 21</b>	26,358,000	37,589,000	2,127,412,425	1.4	19.5	16.8	80.71
<b>Nov 21</b>	43,483,000	63,439,500	2,843,456,625	1.5	20.7	17.4	65.39
<b>Oct 21</b>	38,452,000	62,101,000	2,284,052,960	1.6	21.9	17.5	59.4
<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	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

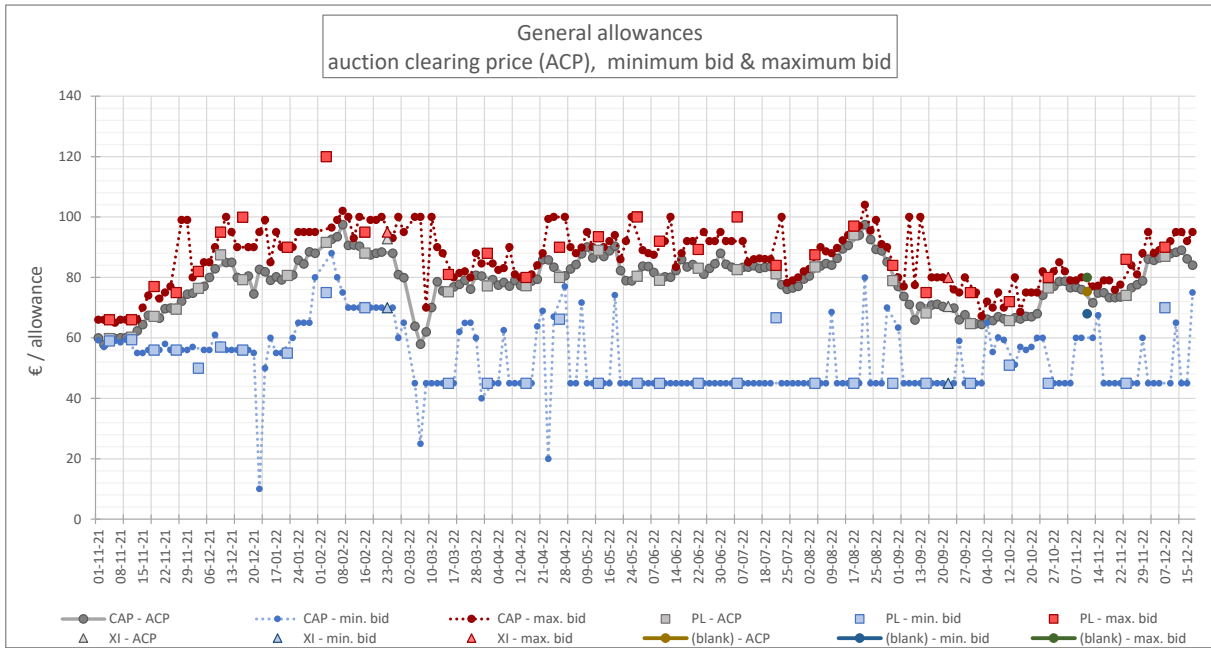
During October, November and December 2022, the difference between the Auction Clearing Prices and the mean of the best-ask and best-bid prices on the EEX spot secondary market for general allowances at the closure of the auction bidding window was on average EUR -0.04, -0.04, -0.44 respectively, and this difference had a standard deviation of EUR 0.28, 0.42, 0.45 respectively.

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

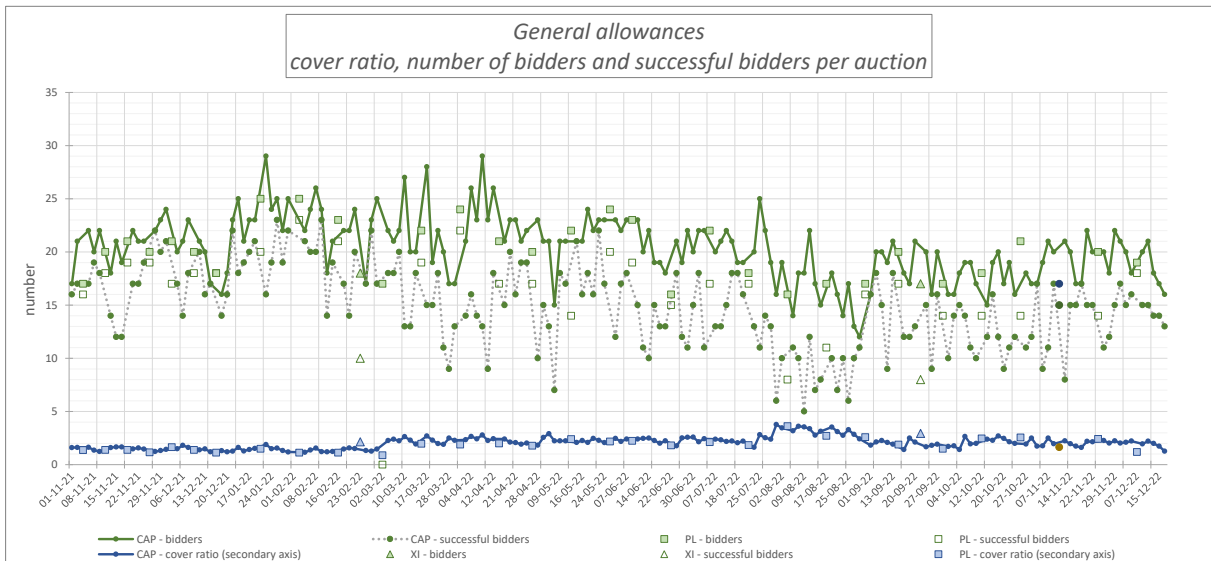
[2] The average auction clearing price is weighted by the volumes of the respective auctions.



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

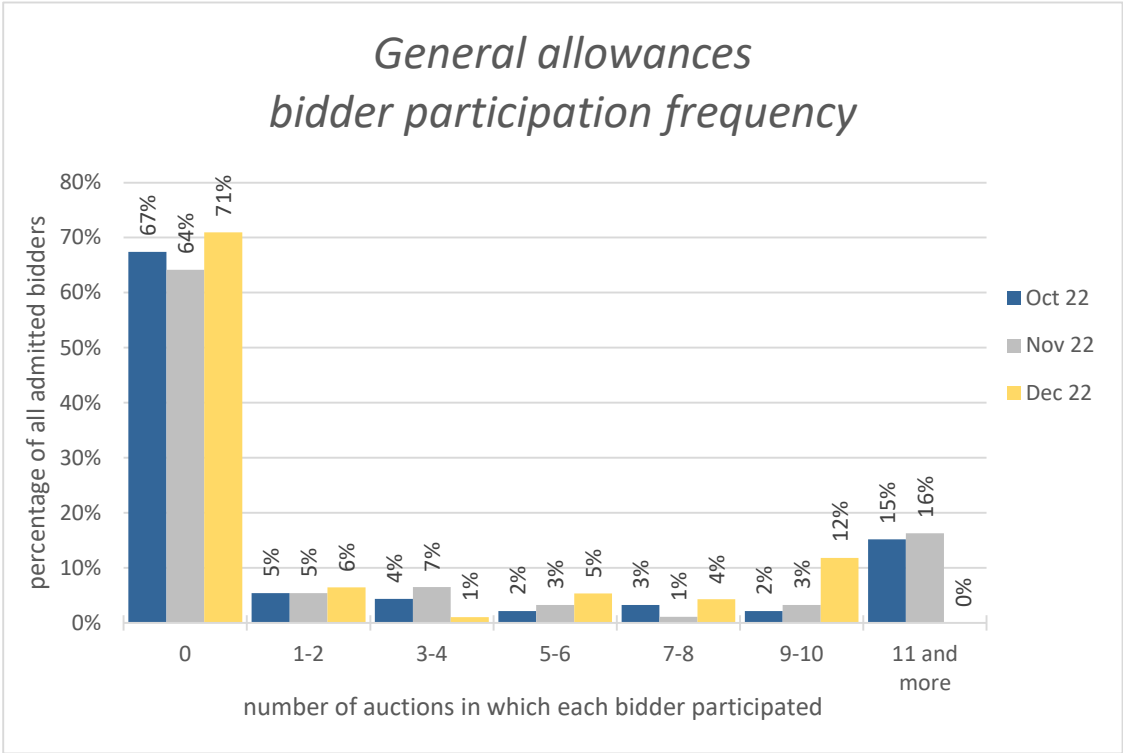


**Graph 2: General allowances - cover ratio (left axis), number of bidders and successful bidders (right axis) per auction**



The number of eligible bidders is provided in Section 2. Out of these 30, 33 and 27 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[1]	Average total volume bid per bidder per auction over the month[2]	Standard deviation of total volume 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]
Dec 22	9	27	42,657,500	249014	250926	389053	693	4.1	62,034
Nov 22	15	33	78,824,500	272710	270875	440787	1136	3.9	69,821
Oct 22	15	30	86,400,000	323939	321190	540112	1135	4.2	76,579
Sep 22	15	30	71,870,500	264361	258527	403897	1150	4.1	63,503
Aug 22	17	29	63,544,000	230907	227756	439575	1043	3.7	61,754
Jul 22	14	34	73,215,500	251452	250738	459989	1161	4	63,396
Jun 22	13	36	69,774,000	265331	263298	465003	1091	4.1	64,157
May 22	15	34	87,512,000	273166	270099	480515	1283	4	68,583
Apr 22	13	36	74,920,000	252763	248904	448783	1154	3.8	65,407
Mar 22	17	41	92,255,000	264682	253448	459116	1362	3.7	68,754
Feb 22	15	37	48,004,000	157110	155353	246505	1044	3.4	46,580
Jan 22	11	33	39,669,000	149589	149694	207912	979	3.7	40,751
Dec 21	11	32	37,589,000	176366	174833	231424	830	3.9	45,502
Nov 21	18	33	63,439,500	173816	170996	268268	1424	3.8	45,101
Oct 21	16	32	62,101,000	179,384	177,431	257,777	1,211	3.5	51,746

(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 <sup>[1]</sup>	Average volume won per bidder per auction over the month <sup>[2]</sup>	Standard deviation of volume won per bidder per auction over the month <sup>[3]</sup>	Total monthly nr of successful bids
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
Dec 21	11	31	26,358,000	145,810	142,476	218,273	424
Nov 21	18	32	43,483,000	144,139	138,923	230,916	675
Oct 21	16	29	38,452,000	140,606	136,840	216,414	537

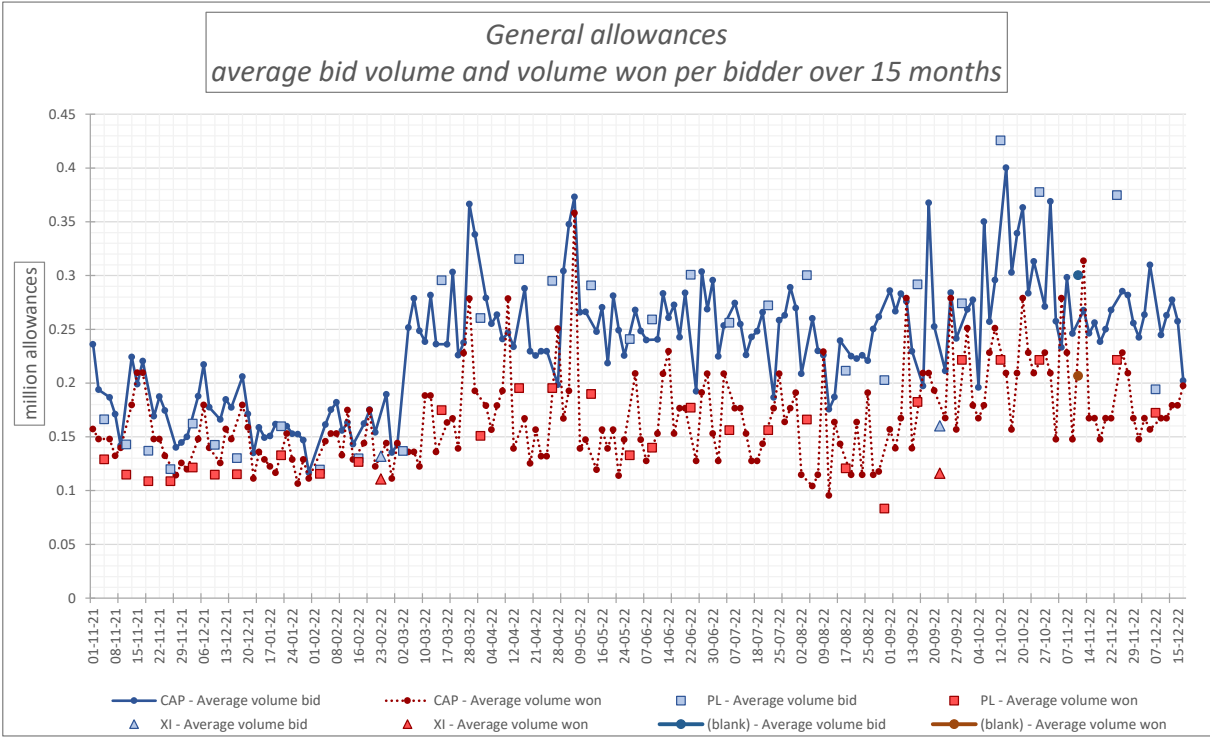
(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[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

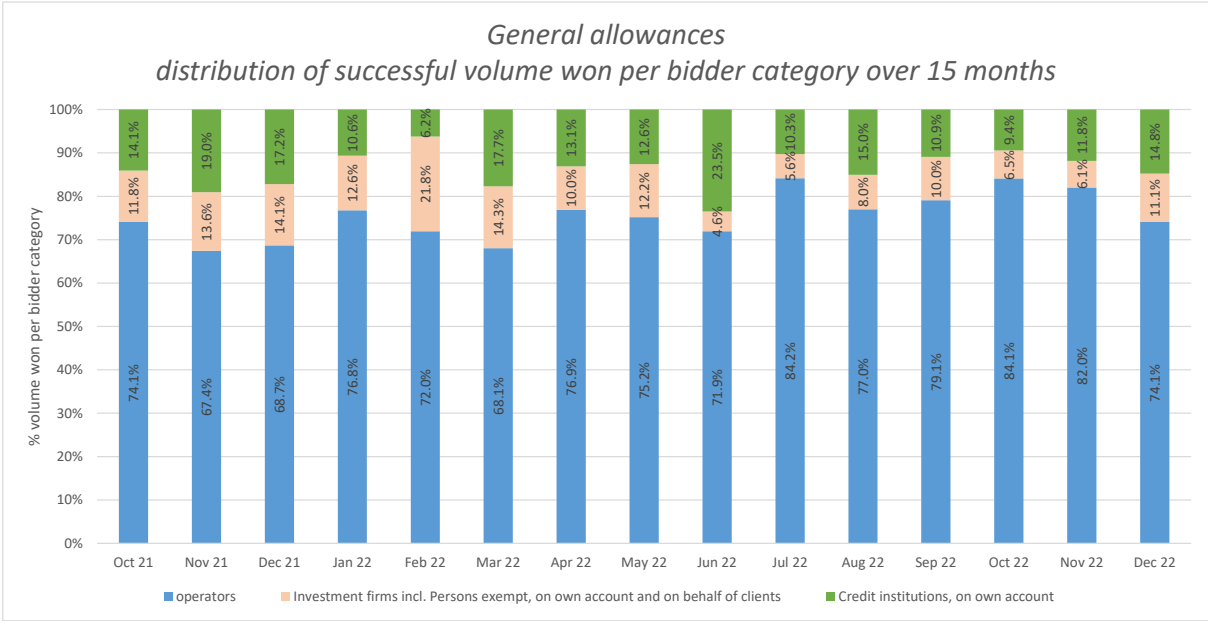


**1.1.3. Type of bidders - general allowances**

The volume of successful bids submitted by intermediaries on behalf of a client<sup>3</sup> during the reporting period was 0.15 % in November 2022, the remaining successful bids were done on own account. The shares in the total successful bid volume per bidder category are indicated in Graph 5 and in Table 4.

<sup>3</sup> The data related to bidding on behalf of clients reflects the self-assessment of the respective trader.

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



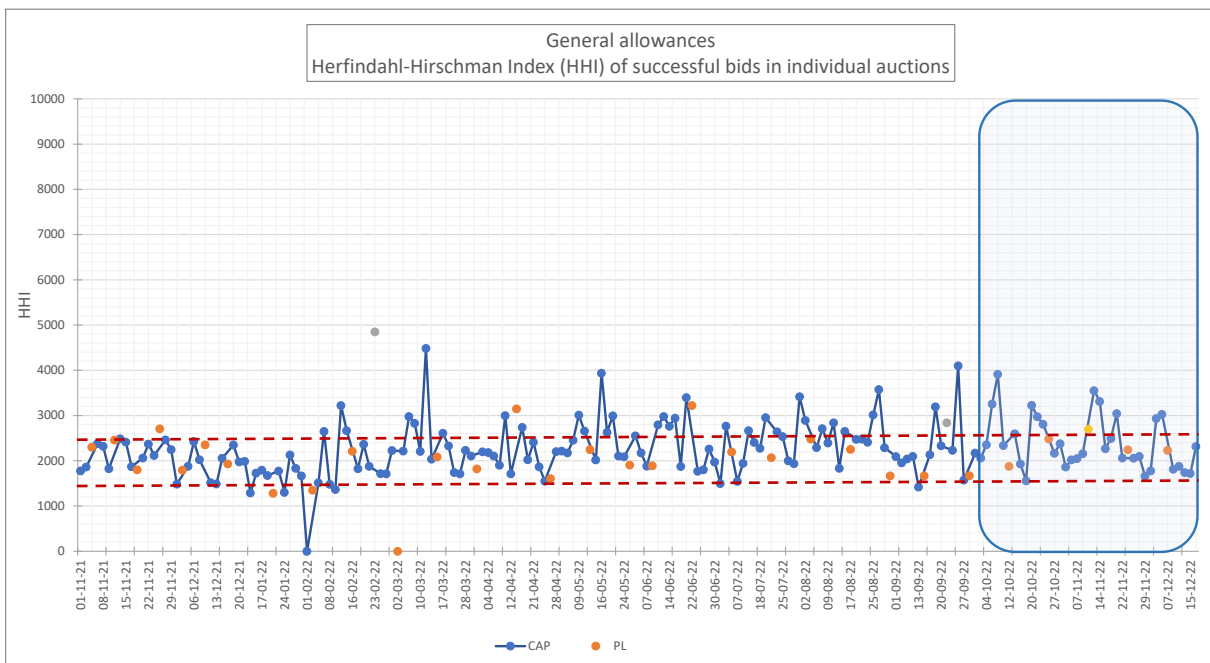
**Table 4: General allowances – distribution of volume won per bidder category and their standard deviations**

Month	% volume won coming from bidding on behalf of a client	Bidder category	% volume won	Standard deviation of % of volume won
Oct 22	0.00%	Operators (including Business groupings)	84.10%	11.8% points
		Investment firms (including persons exempt)	6.45%	4.5% points
		Credit institutions	9.44%	9.9% points
Nov 22	0.15%	Operators (including Business groupings)	82.02%	12.5% points
		Investment firms (including persons exempt)	6.14%	4.5% points
		Credit institutions	11.84%	10.2% points
Dec 22	0.00%	Operators (including Business groupings)	74.09%	14.9% points
		Investment firms (including persons exempt)	11.15%	8.0% points
		Credit institutions	14.76%	10.8% points

### 1.1.4. Concentration - general allowances

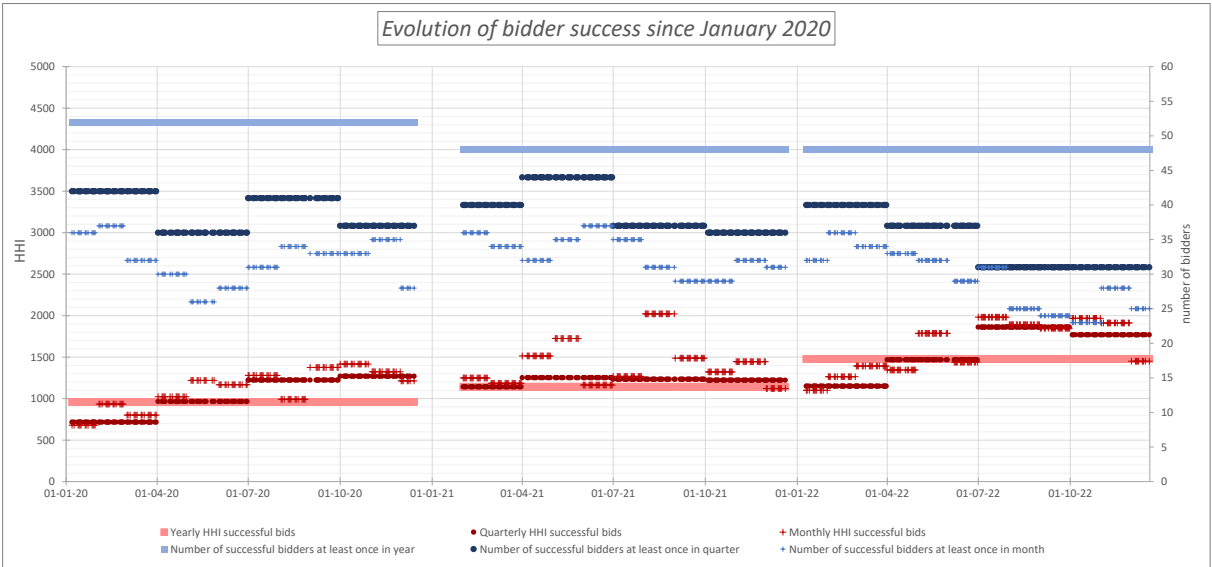
The Herfindahl-Hirschman Index (HHI) of successful bids is used to measure market concentration<sup>4</sup>. The HHI ranges from a value of 0 (perfect competition) to 10 000 (a single buyer). A common interpretation of the HHI is that a score below 1 500 is 'not-concentrated,' between 1 500 and 2 500 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>4</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>5</sup>. Pursuant to the published *auction calendar*, only *aviation allowances* for the calendar year 2012 were auctioned in 2014<sup>6</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 (€)
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	-	-	-	-	-	-	-
Dec 21	-	-	-	-	-	-	-
Nov 21	613,500	1,370,500	37,748,655	2.2	7.0	5.0	61.53

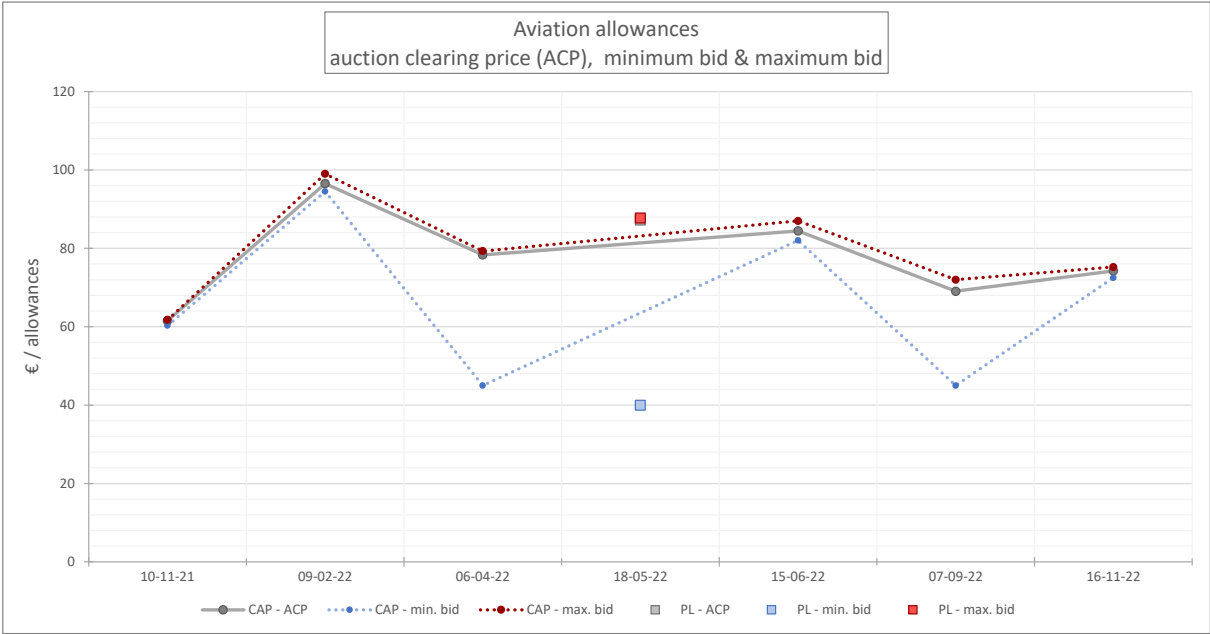
<sup>5</sup> The auctions were suspended end 2012, see the Regulatory update published by the Commission on 16 November 2012: [https://ec.europa.eu/clima/news-your-voice/news/auctions-2012-aviation-allowances-put-hold-2012-11-16\\_en](https://ec.europa.eu/clima/news-your-voice/news/auctions-2012-aviation-allowances-put-hold-2012-11-16_en)

<sup>6</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)

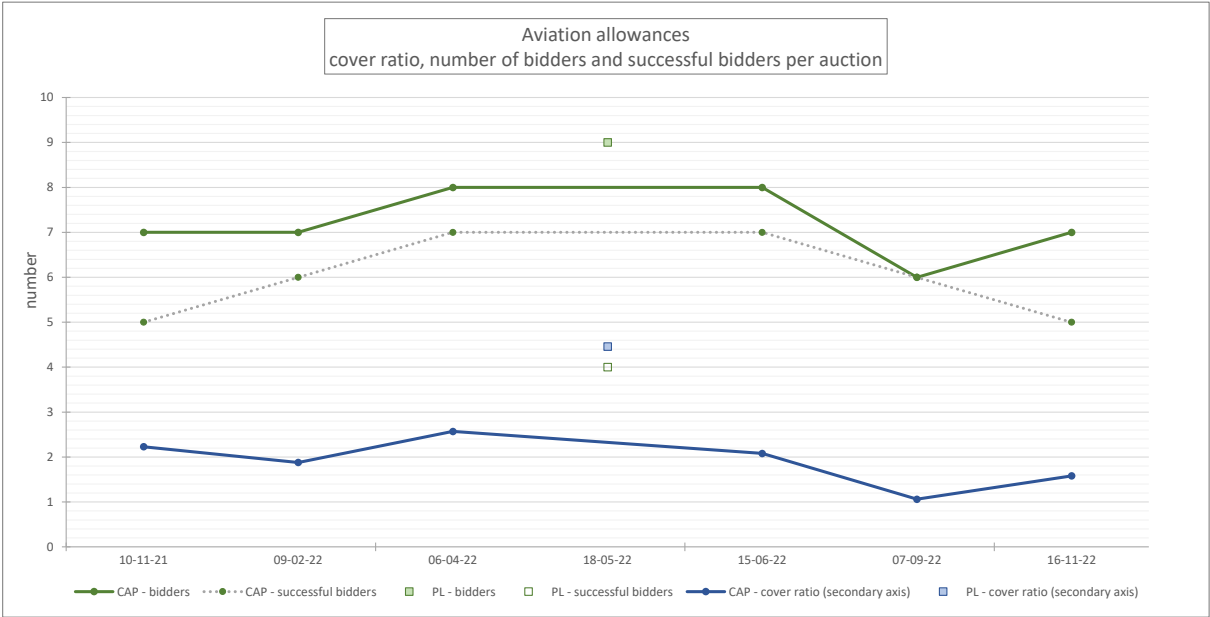
<b>Oct 21</b>	-	-	-	-	-	-	-
<b>2022 total</b>	3,111,500	5,998,000	251,280,375	2.3	7.5	5.8	80.76
<b>2021 total</b>	3,185,500	7,463,000	171,307,490	2.6	6.5	4.5	53.78
<b>2020 total</b>	5,049,500	13,474,500	119,509,185	2.7	8.0	5.0	23.67
<b>2019 total</b>	4,701,000	13,172,500	119,584,255	2.8	8.7	5.9	25.44
<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.

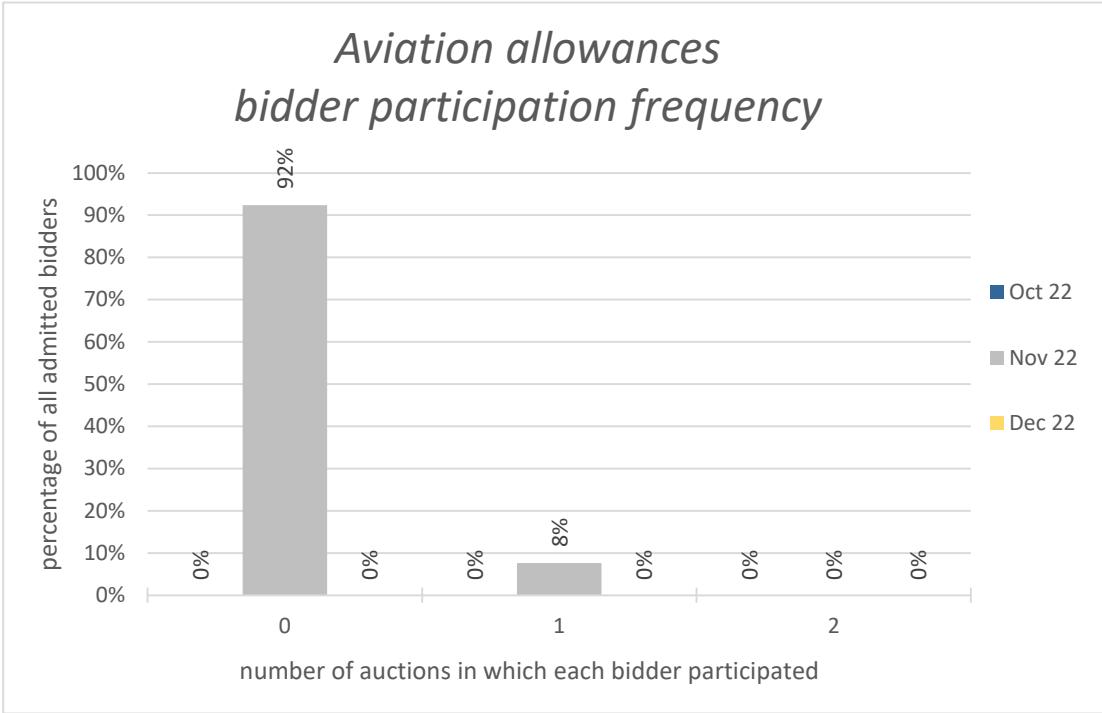
**Graph 8:** Aviation allowances - auction clearing price (ACP) & maximum prices bid & minimum prices bid



**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]
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	-	-	-	-	-	-	-	-	-
Dec 21	-	-	-	-	-	-	-	-	-
Nov 21	1	7	1,370,500	195,786	195,786	210,922	27	3.9	50,759
Oct 21	-	-	-	-	-	-	-	-	-

(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 <sup>[1]</sup>	Average volume won per bidder per auction over the month <sup>[2]</sup>	Standard deviation of volume won per bidder per auction over the month <sup>[3]</sup>	Total monthly nr of successful bids
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	-	-	-	-	-	-	-
Dec 21	-	-	-	-	-	-	-
Nov 21	1	5	613,500	122,700	122,700	123,118	9
Oct 21	-	-	-	-	-	-	-

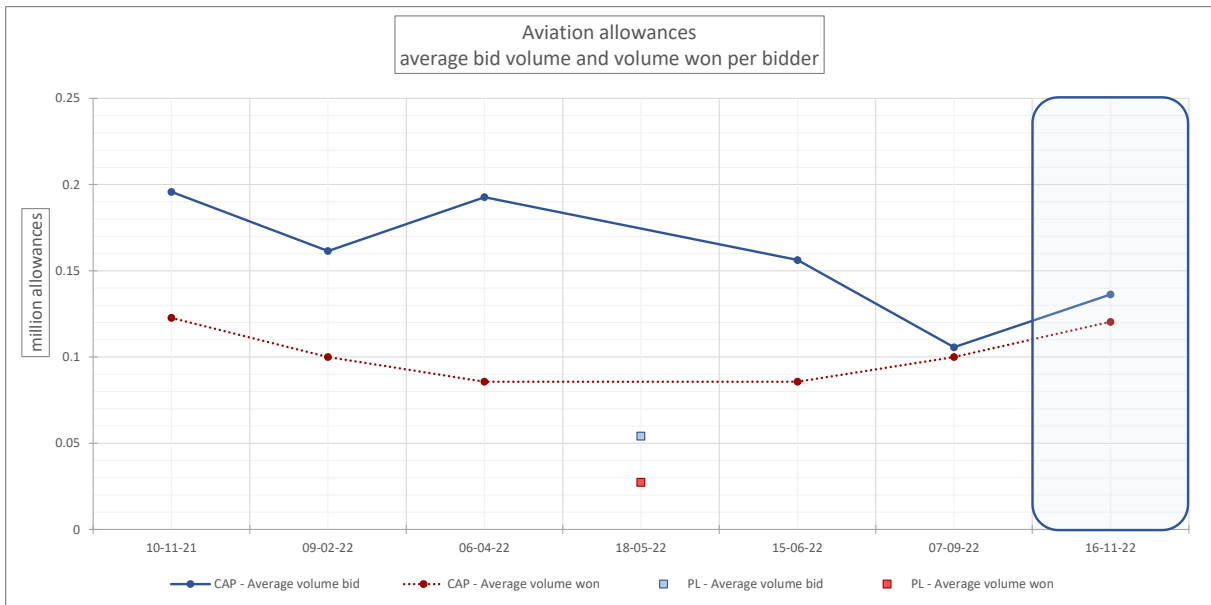
(1): Number of unique individual bidders or unique successful bidders present in a whole month.

[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**





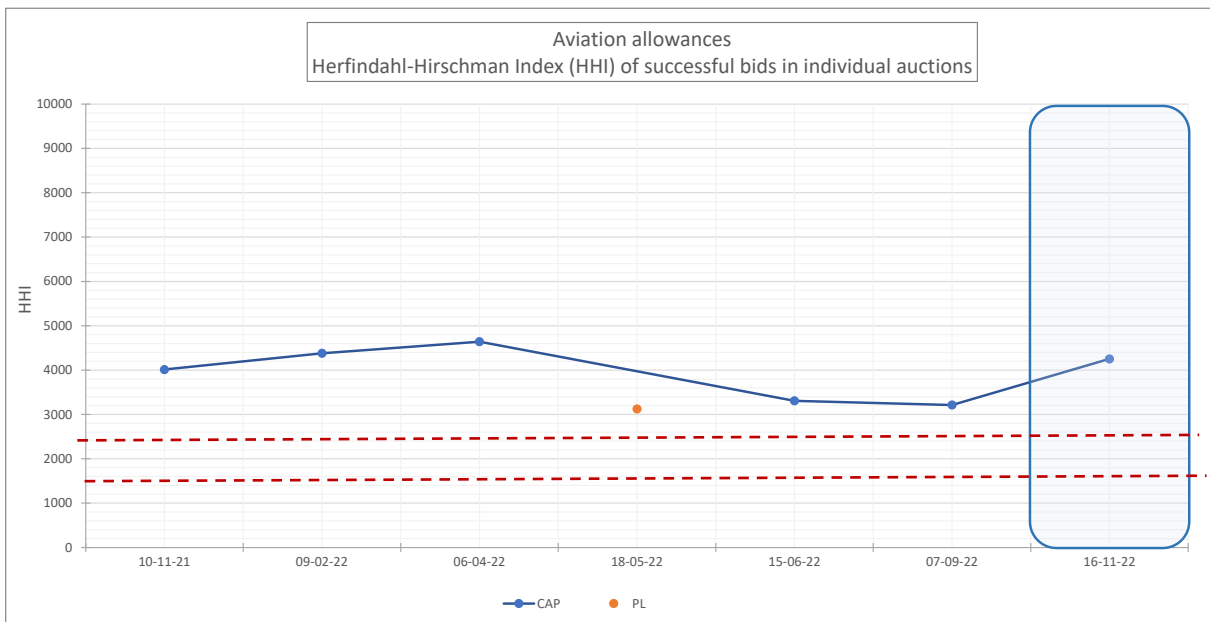
### 1.2.3 Type of bidders – aviation allowances

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>7</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>7</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>8</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	Oct 22	-	-	-	-	-	-	169
	Nov 22	-	-	-	-	-	-	169
	Dec 22	-	-	-	-	-	-	171
Participants eligible to bid in the auctions	Oct 22	67	1	11	5	-	8	92
	Nov 22	66	1	11	6	-	8	92
	Dec 22	66	1	11	6	1	8	93
(Of which:) Participants eligible to bid in the auctions on behalf of clients	Oct 22	-	-	3	2	-	1	6
	Nov 22	-	-	3	2	-	1	6
	Dec 22	-	-	3	2	-	1	6
(Of which:) Auction-only access	Oct 22	2	-	2	-	-	1	5
	Nov	2	-	2	1	-	1	6

<sup>8</sup> This assessment is based on the auction participants' activity in EEX's secondary market and general market knowledge of EEX.

	22							
	Dec 22	2	-	2	1	-	1	6

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

**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: 28/02/2023**

## 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>EUAA</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 4 2022  
(reported in euros)**

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

<b>Cumulated Revenues since November 2012 (start of Phase III)</b>	<b>General allowances</b>	<b>Aviation allowances</b>	<b>General and aviation allowances</b>
<b>Austria</b>	1,585,488,050	23,200,745	1,608,688,795
<b>Belgium</b>	2,861,597,840	29,493,980	2,891,091,820
<b>Bulgaria</b>	3,623,428,220	9,424,300	3,632,852,520
<b>Croatia</b>	599,662,920	6,639,355	606,302,275
<b>Cyprus</b>	273,860,080	10,647,000	284,507,080
<b>Czech Republic</b>	3,766,115,750	11,339,840	3,777,455,590
<b>Denmark</b>	1,452,168,515	27,235,630	1,479,404,145
<b>Estonia</b>	1,115,598,570	2,130,445	1,117,729,015
<b>Finland</b>	1,994,542,775	21,821,665	2,016,364,440
<b>France</b>	6,834,452,535	125,361,940	6,959,814,475
<b>Greece</b>	4,667,219,300	51,371,985	4,718,591,285
<b>Hungary</b>	1,750,160,495	9,923,720	1,760,084,215
<b>Iceland</b>	73,947,340	9,297,390	83,244,730
<b>Innovation Fund</b>	6,689,101,280	-	6,689,101,280
<b>Ireland</b>	959,669,380	20,916,795	980,586,175
<b>Italy</b>	11,952,221,715	136,459,015	12,088,680,730

<b>Latvia</b>	332,162,885	5,423,960	337,586,845
<b>Liechtenstein</b>	1,824,850	-	1,824,850
<b>Lithuania</b>	558,637,705	3,674,480	562,312,185
<b>Luxembourg</b>	117,334,170	3,491,705	120,825,875
<b>Malta</b>	137,669,395	5,839,200	143,508,595
<b>Modernisation Fund</b>	9,198,143,405	-	9,198,143,405
<b>The Netherlands</b>	4,182,380,905	44,736,895	4,227,117,800
<b>Northern Ireland</b>	168,261,110	-	168,261,110
<b>Norway</b>	1,585,582,115	66,625,865	1,652,207,980
<b>Poland</b>	18,559,188,440	25,427,790	18,584,616,230
<b>Portugal</b>	2,356,069,695	34,726,900	2,390,796,595
<b>Romania</b>	4,136,849,380	17,383,180	4,154,232,560
<b>Slovak Republic</b>	1,702,089,860	1,795,985	1,703,885,845
<b>Slovenia</b>	602,348,220	1,342,155	603,690,375
<b>Spain</b>	11,442,928,350	160,016,380	11,602,944,730
<b>Sweden</b>	1,080,498,505	37,227,905	1,117,726,410
<b>TOTAL</b>	<b>106,361,203,755</b>	<b>902,976,205</b>	<b>107,264,179,960</b>



## Annex 1b Auction revenues per Member State and for Poland from January 2021 to the end of Quarter 4 2022

(reported in euros)

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

<b><i>Cumulated Revenues since January 2021 (start of Phase IV)</i></b>	<b>General allowances</b>	<b>Aviation allowances</b>	<b>General and aviation allowances</b>
<b>Austria</b>	681,964,930	10,678,580	692,643,510
<b>Belgium</b>	1,176,419,540	14,478,365	1,190,897,905
<b>Bulgaria</b>	1,922,251,345	4,825,005	1,927,076,350
<b>Croatia</b>	251,746,860	3,851,985	255,598,845
<b>Cyprus</b>	177,788,455	3,515,270	181,303,725
<b>Czech Republic</b>	1,272,453,410	5,124,595	1,277,578,005
<b>Denmark</b>	642,054,115	13,035,585	655,089,700
<b>Estonia</b>	581,313,665	1,340,500	582,654,165
<b>Finland</b>	909,291,065	10,762,160	920,053,225
<b>France</b>	3,280,640,005	56,711,475	3,337,351,480
<b>Greece</b>	2,317,899,135	26,234,980	2,344,134,115
<b>Hungary</b>	748,225,110	4,862,130	753,087,240
<b>Iceland</b>	13,755,195	4,608,995	18,364,190
<b>Innovation Fund</b>	5,355,278,275	-	5,355,278,275
<b>Ireland</b>	355,188,645	9,721,250	364,909,895
<b>Italy</b>	5,661,815,570	61,823,730	5,723,639,300

<b>Latvia</b>	143,965,230	2,724,485	146,689,715
<b>Liechtenstein</b>	512,585	-	512,585
<b>Lithuania</b>	187,674,625	2,251,990	189,926,615
<b>Luxembourg</b>	36,973,125	1,782,230	38,755,355
<b>Malta</b>	67,888,480	2,993,310	70,881,790
<b>Modernisation Fund</b>	9,198,143,405	-	9,198,143,405
<b>The Netherlands</b>	2,008,290,625	21,558,095	2,029,848,720
<b>Northern Ireland</b>	168,261,110	-	168,261,110
<b>Norway</b>	388,227,180	21,190,615	409,417,795
<b>Poland</b>	10,555,079,670	14,516,295	10,569,595,965
<b>Portugal</b>	1,167,548,400	19,559,855	1,187,108,255
<b>Romania</b>	962,513,105	9,384,535	971,897,640
<b>Slovak Republic</b>	618,219,785	809,210	619,028,995
<b>Slovenia</b>	300,267,685	636,305	300,903,990
<b>Spain</b>	5,639,208,305	74,890,080	5,714,098,385
<b>Sweden</b>	486,609,765	18,716,255	505,326,020
<b>TOTAL</b>	<b>57,277,468,400</b>	<b>422,587,865</b>	<b>57,700,056,265</b>

## Annex 2 Results of individual auctions on behalf of participating Member States and Poland in October, November, and December 2022

(The data used in the highlighted subsection of the tables presented in this annex can also be obtained directly from the EEX website.)

General Allowances - October 2022																			
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
03-10-22	64.45	45.00	67.19	64.21	64.63	2,510,500	4,440,500	1.77	16	14	161,801,725	71	42	4.44	62,542	277,531	305,481	179,321	246,335
04-10-22	66.17	64.94	72.00	66.24	65.98	2,510,500	3,528,500	1.41	18	15	166,119,785	73	27	4.06	48,336	196,028	286,908	167,367	266,264
06-10-22	65.76	55.35	70.00	65.35	65.54	2,510,500	6,652,500	2.65	19	14	165,090,480	73	26	3.84	91,130	350,132	643,859	179,321	338,012
10-10-22	67.01	60.12	75.00	66.62	66.51	2,510,500	4,884,000	1.95	19	11	168,228,605	77	15	4.05	63,429	257,053	399,926	228,227	414,652
11-10-22	66.34	59.35	70.00	65.86	65.83	2,510,500	5,030,500	2.00	17	10	166,546,570	68	17	4.00	73,978	295,912	350,520	251,050	290,359
12-10-22	65.76	51.00	72.00	65.86	65.70	3,101,500	7,662,500	2.47	18	14	203,954,640	101	46	5.61	75,866	425,694	681,887	221,536	282,685
13-10-22	66.65	51.15	80.00	66.54	66.43	2,510,500	6,003,500	2.39	15	12	167,324,825	64	25	4.27	93,805	400,233	644,127	209,208	304,321
17-10-22	66.25	57.00	68.60	66.10	66.32	2,510,500	5,754,000	2.29	19	16	166,320,625	85	47	4.47	67,694	302,842	544,157	156,906	226,847
18-10-22	67.11	56.00	75.00	66.36	66.50	2,510,500	6,788,500	2.70	20	12	168,479,655	75	19	3.75	90,513	339,425	466,138	209,208	194,749
20-10-22	67.01	57.00	75.00	66.49	66.53	2,510,500	6,175,500	2.46	17	9	168,228,605	80	21	4.71	77,194	363,265	593,651	278,944	384,801
24-10-22	68.02	60.00	75.00	67.72	67.55	2,510,500	5,385,500	2.15	19	11	170,764,210	71	22	3.74	75,852	283,447	431,640	228,227	343,924
25-10-22	74.17	60.00	82.00	74.06	74.01	2,510,500	5,010,500	2.00	16	12	186,203,785	64	27	4.00	78,289	313,156	438,447	209,208	322,153
26-10-22	76.51	45.00	80.00	75.78	76.31	3,101,500	7,930,500	2.56	21	14	237,295,765	91	35	4.33	87,148	377,643	761,956	221,536	348,642
27-10-22	77.10	45.00	82.00	76.32	76.56	2,510,500	4,882,000	1.94	18	11	193,559,550	78	25	4.33	62,590	271,222	390,819	228,227	268,231
31-10-22	78.69	45.00	85.00	77.89	78.57	2,510,500	6,271,500	2.50	17	12	197,551,245	64	29	3.76	97,992	368,912	745,631	209,208	284,809

General Allowances - November 2022

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
01-11-22	78.76	45.00	82.00	78.46	78.88	2,510,500	4,376,500	1.74	17	17	197,726,980	63	37	3.71	69,468	257,441	373,441	147,676	217,253
03-11-22	76.63	45.00	79.00	75.49	76.08	2,510,500	4,429,000	1.76	19	9	192,379,615	68	15	3.58	65,132	233,105	271,143	278,944	252,110
07-11-22	76.75	60.00	79.00	76.09	76.28	2,510,500	6,263,500	2.49	21	11	192,680,875	88	23	4.19	71,176	298,262	539,582	228,227	255,269
08-11-22	76.02	60.00	80.00	76.01	76.13	2,510,500	4,924,000	1.96	20	17	190,848,210	72	41	3.60	68,389	246,200	372,981	147,676	241,130
09-11-22	75.35	68.02	80.00	75.53	75.35	3,101,500	5,108,000	1.65	17	15	233,698,025	76	39	4.47	67,211	300,471	468,830	206,767	361,064
10-11-22	71.62	60.00	77.00	70.74	70.70	2,510,500	5,622,000	2.24	21	8	179,802,010	74	14	3.52	75,973	267,714	436,486	313,813	425,868
14-11-22	74.85	67.48	77.30	74.69	74.65	2,510,500	4,926,000	1.96	20	15	187,910,925	79	29	3.95	62,354	246,300	423,501	167,367	333,330
15-11-22	74.93	45.00	79.00	74.76	75.12	2,510,500	4,354,000	1.73	17	15	188,111,765	69	44	4.06	63,101	256,118	388,914	167,367	259,294
17-11-22	73.31	45.00	79.00	73.37	73.71	2,510,500	4,054,500	1.62	17	17	184,044,755	65	50	3.82	62,377	238,500	410,980	147,676	265,935
21-11-22	73.36	45.00	75.90	72.73	73.16	2,510,500	5,503,000	2.19	22	15	184,170,280	85	32	3.86	64,741	250,136	403,422	167,367	315,875
22-11-22	73.54	45.00	77.60	72.93	73.26	2,510,500	5,360,500	2.14	20	15	184,622,170	76	29	3.80	70,533	268,025	380,852	167,367	242,173
23-11-22	74.08	45.00	86.00	74.44	73.90	3,101,500	7,498,500	2.42	20	14	229,759,120	79	34	3.95	94,918	374,925	775,599	221,536	323,935
24-11-22	76.64	45.00	84.00	76.05	76.19	2,510,500	5,707,000	2.27	20	11	192,404,720	83	26	4.15	68,759	285,350	385,430	228,227	256,325
28-11-22	77.61	45.00	81.00	76.80	77.39	2,510,500	5,072,000	2.02	18	12	194,839,905	65	25	3.61	78,031	281,778	385,424	209,208	257,757
29-11-22	78.88	60.00	88.00	78.42	78.48	2,510,500	5,626,000	2.24	22	15	198,028,240	94	31	4.27	59,851	255,727	344,183	167,367	204,599

General Allowances - December 2022

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
01-12-22	86.11	45.00	95.00	85.06	86.25	2,510,500	5,094,000	2.03	21	17	216,179,155	73	40	3.48	69,781	242,571	347,570	147,676	209,970
05-12-22	85.69	45.00	88.00	84.65	85.56	2,510,500	5,270,000	2.10	20	15	215,124,745	76	32	3.80	69,342	263,500	403,820	167,367	308,706
06-12-22	86.48	45.00	89.00	85.50	86.34	2,510,500	5,577,500	2.22	18	16	217,108,040	65	29	3.61	85,808	309,861	612,950	156,906	307,654
07-12-22	87.00	70.00	90.00	87.46	87.98	3,102,500	3,691,000	1.19	19	18	269,917,500	72	60	3.79	51,264	194,263	296,921	172,361	299,141
08-12-22	87.91	45.00	92.00	86.72	87.51	2,510,500	4,895,000	1.95	20	15	220,698,055	92	33	4.60	53,207	244,750	360,524	167,367	219,384
12-12-22	88.35	65.00	95.00	87.70	87.99	2,510,500	5,522,500	2.20	21	15	221,802,675	104	39	4.95	53,101	262,976	365,700	167,367	225,472
13-12-22	89.01	45.00	95.00	88.13	89.02	2,510,500	4,993,500	1.99	18	14	223,459,605	82	42	4.56	60,896	277,417	360,612	179,321	214,991
15-12-22	86.16	45.00	92.01	85.59	86.15	2,510,500	4,378,500	1.74	17	14	216,304,680	66	31	3.88	66,341	257,559	370,674	179,321	212,582
19-12-22	84.10	75.00	95.00	85.95	85.24	2,568,500	3,235,500	1.26	16	13	216,010,850	63	57	3.94	51,357	202,219	276,989	197,577	280,314

*Aviation Allowances - October 2022*

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 - November 2022*

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
16-11-22	74.25	72.50	75.23	74.34	74.36	602,000	954,000	1.58	7	5	44,698,500	35	21	5.00	27,257	136,286	195,404	120,400	127,820

*Aviation Allowances - December 2022*

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
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: volume variables reported in tCO2, 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.