



# AUCTIONS BY THE COMMON AUCTION PLATFORM

The world's largest auctioning of emissions allowances

October to December 2017

# Auctions by the *Common Auction Platform*

## October, November, December 2017

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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:*

2, 5, 9, 10, 11(PL)<sup>1</sup>, 12, 16, 17, 19, 23, 24, 25(PL), 26, 30 and 31 October 2017;

2, 6, 7, 8(PL), 9, 13, 14, 16, 20, 21, 22(PL), 23, 27, 28 and 30 November 2017;

4, 5, 6(PL), 7, 11, 12 and 14 December 2017;

*Aviation Allowances:*

25 October 2017;

22 November 2017;

6 December 2017 (PL);

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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 2.8 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*. Two auction platforms are in place. 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. The second auction platform is ICE Futures Europe (ICE) in London, which acts as the United Kingdom's platform. Poland may appoint an opt-out auction platform but is using for the time being the common auction platform.

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, taking into account the free allocation volumes. Up to 2020 ten per cent are allocated to the least wealthy EU Member States and the remaining two per cent is given as a 'Kyoto bonus' to nine EU Member States, which by 2005 had reduced their greenhouse gas emissions by at least 20% of levels in their Kyoto Protocol base year or period.

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<sup>1</sup> Auctions conducted by EEX for Poland.

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: [http://ec.europa.eu/clima/policies/ets/cap/auctioning/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/cap/auctioning/index_en.htm)

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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).

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 contracted EEX to auction its share of allowances to be auctioned. These auctions were held on the Transitional Common Auction Platform between 16 September 2013 and 18 August 2016<sup>2</sup>. Auctioning by CAP2 for Poland started as from 19 March 2017 following the conclusion of a bilateral agreement between EEX and Poland.

The Member States of the European Free Trade Association (EFTA) that are Party to the European Economic Area (EEA)<sup>3</sup> have also stated their intention to make use of the *Common Auction Platform* by aggregating their volumes to those auctioned on behalf of the *participating Member States*. The preparations for this are ongoing.

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<sup>2</sup> Due to the back-loading, no auctions were held for Poland from May to December 2014, the auctions restarted in January 2015. Due to transition between common auction platforms, no auctions were held for Poland between September 2016 and mid-March 2017.

<sup>3</sup> Iceland, Liechtenstein and Norway.

## Executive summary

In the reporting period, EEX, in its capacity as the *Common Auction Platform (CAP2)*, conducted auctions of *general allowances* and *aviation allowances* for the *third 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 2017 auctions at a glance:**

	<b>General Allowances</b>			<b>Aviation Allowances</b>		
	Oct	Nov	Dec	Oct	Nov	Dec
<b>General</b>						
Number of auctions	15	15	7			
Total volume auctioned	65 113 500	65 113 500	30 435 500	1 078 000	1 078 500	95 000
Amount raised from the auctions (€)	47 3 493 315	492 532 545	222 478 410	7 912 520	7 937 760	687 800
Average Auction Clearing Price (€/allowance)	7.3	7.6	7.3	7.3	7.4	7.2
Total bid volume	177 255 000	162 391 500	73 929 500	3 726 000	3 414 000	285 000
Average Cover ratio	2.7	2.5	2.4	3.5	3.2	3.0
Monthly HHI	1 584	1 885	1 877	1 681	2 216	6 122
<b>Participation</b>						
Number of eligible bidders	70	71	72	70	71	72
Number of participating bidders <sup>(1)</sup>	35	32	31	8	8	3
Number of successful bidders <sup>(1)</sup>	28	27	27	7	7	2
Average number of bidders per auction	22.0	21.1	20.7	8	8	3
Average number of successful bidders per auction	14.2	13.9	14.7	7	7	2
<b>Auction data</b>						
Average total volume bid per bidder per auction	538 042	515 073	517 558	465 750	426 750	95 000
Average bid size (volume per bid)	111 259	104 084	106 770	82 800	71 125	28 500
Average volume won per bidder per auction	313 612	316 418	313 651	154 000	154 071	47 500
Average range of bids (€)	3.31	3.90	3.91	0.47	0.47	0.07

(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* and Poland from the start of the *Third trading period* auctions (November 2012) to December 2017 are EUR 14 085 816 735, and of *aviation allowances* EUR 167 338 880. Further data are 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>4</sup>.

Please note that in all parts of this report monthly averages provided are weighted by each auction's auction volume, unless otherwise indicated.

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<sup>4</sup> <https://www.eex.com/en/products/environmental-markets/emissions-auctions/overview>

## 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

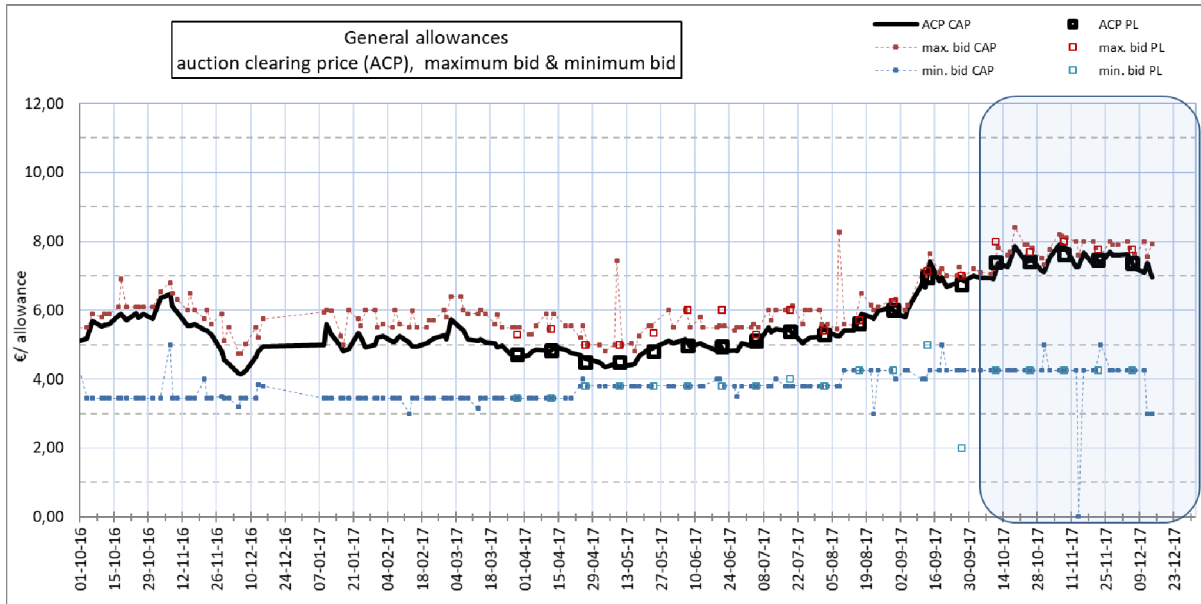
Month	Total auction volume	Total bid volume	Total revenue (€)	Average Cover ratio <sup>5</sup>	Average number of bidders	Average number of successful bidders	Average auction clearing price (€)
December 2017	30 435 500	73 929 500	222 478 410	2.4	20.7	14.7	7.31
November 2017	65 113 500	162 391 500	492 532 545	2.5	21.1	13,9	7.56
October 2017	65 113 500	177 255 000	473 493 315	2.7	22.0	14.2	7.27
September 2017	60 852 000	157 826 500	410 530 020	2.6	23.5	16.8	6.75
August 2017	32 863 500	108 340 500	185 438 370	3.3	20.5	12.1	5.64
July 2017	65 113 500	185 402 000	341 754 690	2.9	20.1	14.1	5.25
June 2017	56 590 500	161 725 000	280 518 420	2.9	23.2	14.8	4.96
May 2017	56 590 500	133 833 000	259 992 315	2.4	20.2	14.8	4.59
April 2017	56 590 500	148 327 000	268 533 180	2.6	21.2	15.3	4.75
March 2017	61 138 000	168 711 500	239 624 145	2.8	21.1	15.6	5.05
February 2017	51 138 000	140 724 500	261 528 255	2.8	19.8	15.0	5.11
January 2017	46 876 500	142 746 000	308 415 180	3.0	19.7	13.1	5.11
December 2016	25 668 500	62 485 500	115 187 920	2.4	17.6	10.7	4.49
November 2016	43 968 000	100 554 000	245 707 840	2.3	17.3	13.6	5.59
October 2016	43 968 000	115 140 000	250 397 760	2.6	18.1	11.3	5.70
<b>2017 total</b>	<b>648 415 500</b>	<b>1 761 212 000</b>	<b>3 744 838 845</b>	<b>2.7</b>	<b>21.2</b>	<b>14.6</b>	<b>5.78</b>
<b>2016 total</b>	<b>474 261 000</b>	<b>1 092 400 000</b>	<b>2 496 870 295</b>	<b>2.3</b>	<b>19.0</b>	<b>13.4</b>	<b>5.26</b>
<b>2015 total</b>	<b>413 874 000</b>	<b>1 337 010 500</b>	<b>3 154 940 925</b>	<b>3.2</b>	<b>18.3</b>	<b>13.3</b>	<b>7.62</b>
<b>2014 total</b>	<b>335 052 000</b>	<b>1 796 711 000</b>	<b>1 977 712 120</b>	<b>5.4</b>	<b>17.6</b>	<b>11.9</b>	<b>5.90</b>
<b>2013 total</b>	<b>530 488 000</b>	<b>1 761 639 500</b>	<b>2 349 853 340</b>	<b>3.3</b>	<b>18.4</b>	<b>13.2</b>	<b>4.43</b>

During October, November, December 2017, 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 - 0.01, - 0.01, - 0.01 respectively, and this difference had a standard deviation of EUR 0.03, 0.06, 0.01 respectively.

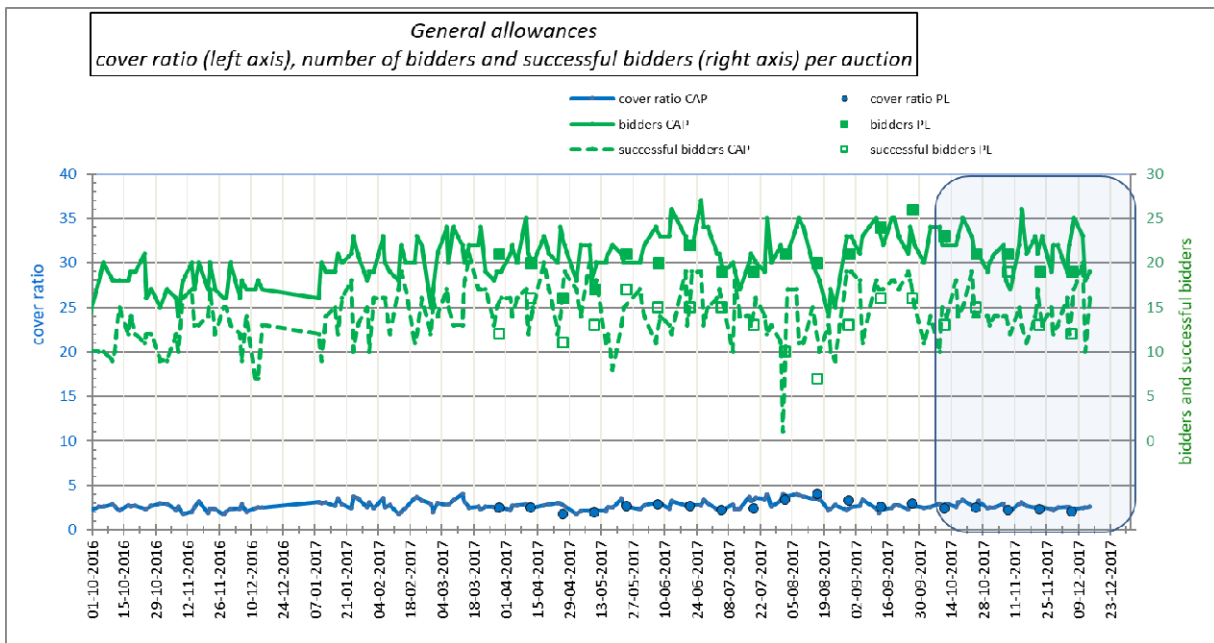
<sup>5</sup> Cover ratio is the ratio between the total bid volume and the auction volume.



**Graph 1: General allowances - auction clearing price (ACP), maximum bid & minimum bid<sup>6</sup>**



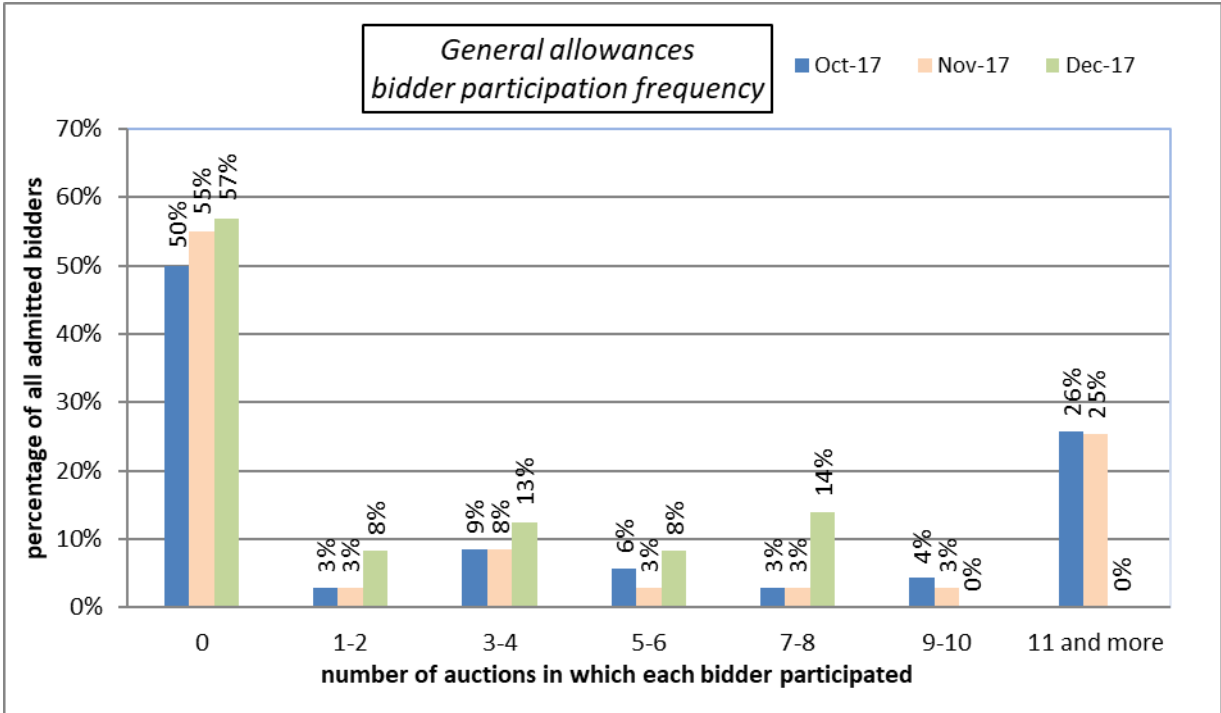
**Graph 2: General allowances - cover ratio (left axis), number of bidders and successful bidders (right axis) per auction**



The number of eligible bidders is provided in Section 2. Out of these, 35, 32 and 31 different bidders participated in the auctions in respectively October, November, December 2017. Graph 3A indicates the participation frequency over these months.

<sup>6</sup> Auctions on behalf of Poland were held on the following days: 29/3/2017, 12/4/2017, 26/4/2017, 10/5/2017, 24/5/2017, 7/6/2017, 21/6/2017, 5/7/2017, 19/7/2017, 2/8/2017, 16/8/2017, 30/8/2017, 13/9/2017, 27/9/2017, 11/10/2017, 25/10/2017, 8/11/2017, 22/11/2017 and 6/12/2017.

**Graph 3A:** 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>7</sup>	Average total volume bid per bidder per auction over the month <sup>8</sup>	standard deviation of total volume bid per bidder per auction over the month <sup>9</sup>	Total monthly nr of bids	Average nr. of bids per bidder per auction <sup>10</sup>	Average bid size <sup>11</sup>
December 2017	7	31	73 929 500	517 558	509 859	676 667	695	4.9 <sup>++</sup>	106 770
November 2017	15	32	162 391 500	515 072	512 276	790 627	1 568	5.0 <sup>++</sup>	104 084
October 2017	15	35	177 255 000	538 042	537 136	760 748	1 599	4.9 <sup>++</sup>	111 259
September 2017	13	33	157 826 500	517 342	517 464	755 314	1 257	4.1 <sup>++</sup>	126 746
August 2017	15	32	108 340 500	357 506	352 901	571 949	1 267	4.2 <sup>++</sup>	86 606
July 2017	15	33	185 402 000	612 288	613 914	931 114	1 179	3.9 <sup>++</sup>	156 480
June 2017	13	31	161 725 000	540 819	535 513	827 231	1 011	3.4 <sup>++</sup>	163 244
May 2017	13	32	133 833 000	512 940	510 813	799 002	999	3.8 <sup>++</sup>	135 663
April 2017	13	34	148 327 000	541 994	539 371	817 874	1 140	4.2 <sup>++</sup>	130 958
March 2017	14	35	168 711 500	576 767	571 903	823 774	1 219	4.1 <sup>++</sup>	139 940
February 2017	12	31	140 724 500	593 065	591 279	860 695	1 138	4.8 <sup>++</sup>	124 050
January 2017	11	27	142 746 000	660 048	657 816	893 912	1 057	4.9 <sup>++</sup>	135 614
December 2016	7	26	62 485 500	509 661	508 012	707 571	531	4.3 <sup>++</sup>	121 257
November 2016	12	31	100 554 000	487 443	483 433	662 613	837	4.0 <sup>++</sup>	120 567
October 2016	12	26	115 140 000	535 857	530 599	788 774	865	4.0 <sup>++</sup>	134 484

++: indicates simple average

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

<sup>7</sup> 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.

<sup>8</sup> 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).

<sup>9</sup> Standard deviation of total volume bid per bidder in each auction over the month.

<sup>10</sup> 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).

<sup>11</sup> 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.

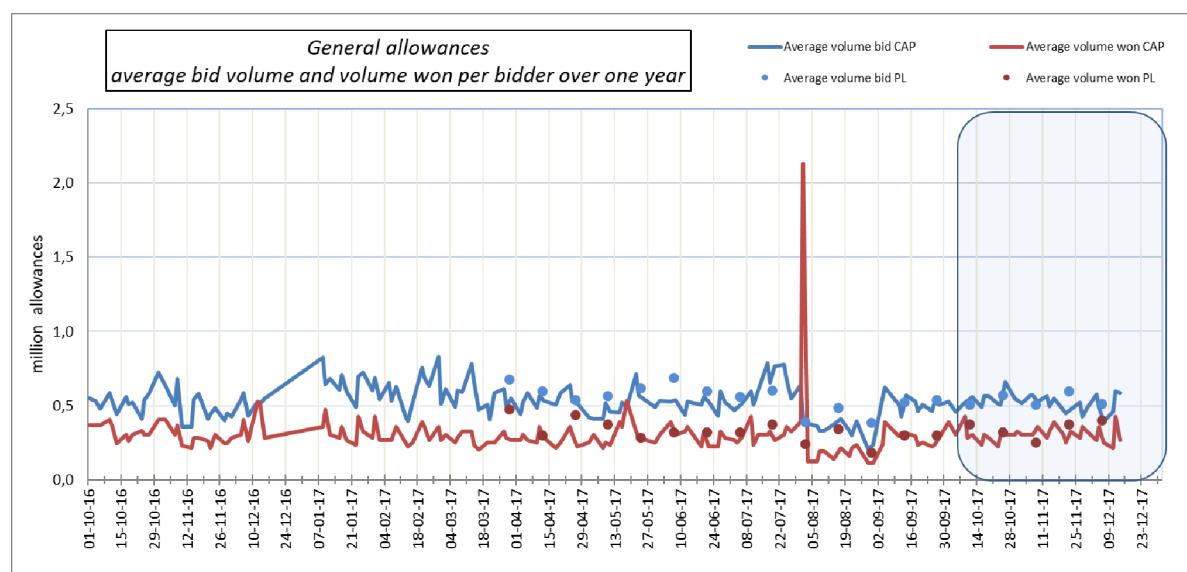
Table 3 provides monthly data on successful bids over 15 months. See also Graph 4.

**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>12</sup>	Average volume won per bidder over the month <sup>13</sup>	Standard deviation of volume won per bidder per auction over the month <sup>14</sup>	Total monthly nr of successful bids
December 2017	7	27	30 435 500	313 651	295 490	412 417	216
November 2017	15	27	65 113 500	316 418	311 548	441 629	438
October 2017	15	28	65 113 500	313 612	305 697	387 758	390
September 2017	13	32	60 852 000	285 160	279 138	354 784	410
August 2017	15	29	32 863 500	314 448	180 569	298 189	304
July 2017	15	29	65 113 500	316 540	308 595	424 080	407
June 2017	13	27	56 590 500	303 461	294 742	386 283	326
May 2017	13	29	56 590 500	312 123	294 742	433 987	361
April 2017	13	32	56 590 500	295 476	284 374	365 324	418
March 2017	14	31	61 138 000	293 359	280 450	344 970	465
February 2017	12	27	51 138 000	292 512	284 100	366 068	455
January 2017	11	24	46 876 500	339 959	325 531	431 829	334
December 2016	7	22	25 668 500	369 401	342 247	514 424	160
November 2016	12	30	43 968 000	279 848	269 742	366 801	353
October 2016	12	23	43 968 000	331 152	323 294	401 178	260

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

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



<sup>12</sup> 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.

<sup>13</sup> 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).

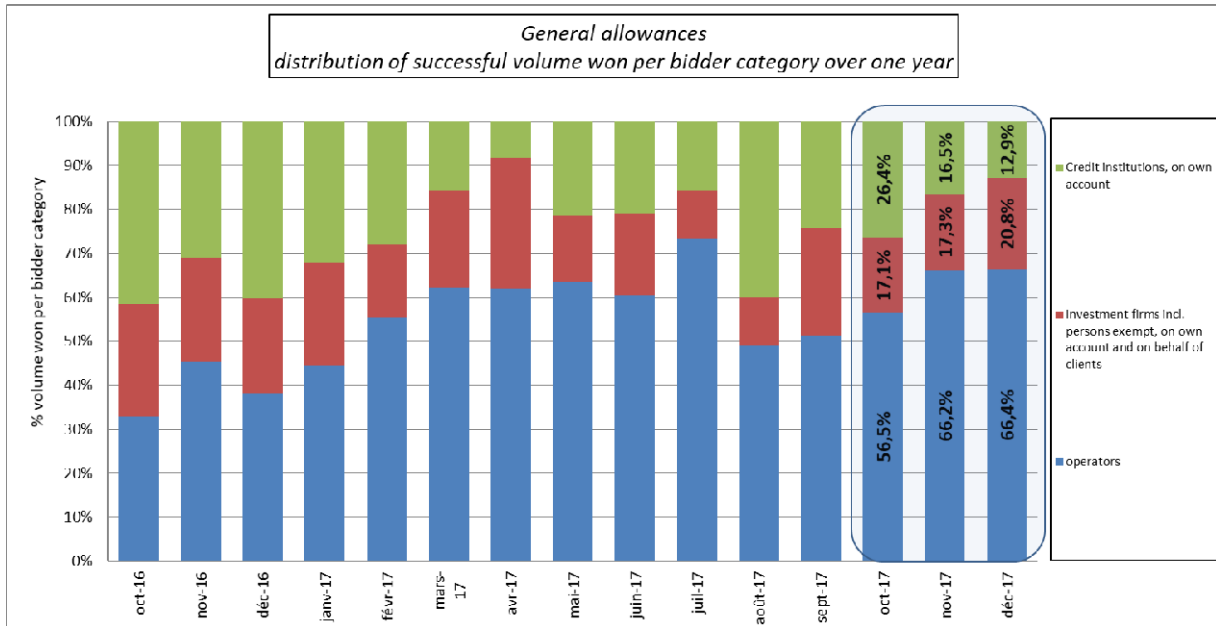
<sup>14</sup> Standard deviation of volume won per bidder in each auction over the month.

<sup>15</sup> Auctions on behalf of Poland were held on the following days: 29/3/2017, 12/4/2017, 26/4/2017, 10/5/2017, 24/5/2017, 7/6/2017, 21/6/2017, 5/7/2017, 19/7/2017, 2/8/2017, 16/8/2017, 30/8/2017, 13/9/2017, 27/9/2017, 11/10/2017, 25/10/2017, 8/11/2017, 22/11/2017 and 6/12/2017.

### 1.1.3. Type of bidders - general allowances

The volume submitted by intermediaries on behalf of a client<sup>16</sup> in October, November and December 2017 was respectively 0.00 %, 0.00 % and 0.01 %, 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

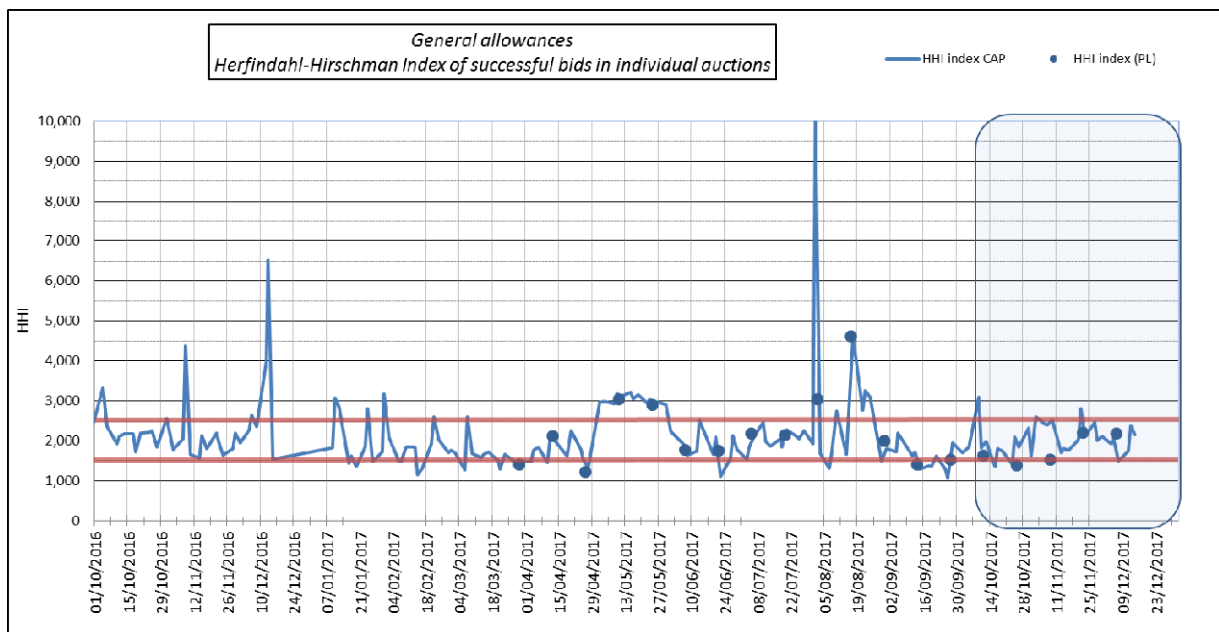
Month	% volume won coming from bidding on behalf of a client	Bidder category	% volume won	Standard deviation of % of volume won
October 2017	0 %	Operators (including Business groupings)	56.5 %	6.2 % points
		Investment firms (including persons exempt)	17.1 %	6.2 % points
		Credit institutions	26.4 %	9.5 % points
November 2017	0 %	Operators (including Business groupings)	66.1 %	7.0 % points
		Investment firms (including persons exempt)	17.3 %	5.8 % points
		Credit institutions	16.5 %	7.9 % points
December 2017	0.02 %	Operators (including Business groupings)	66.4 %	5.8 % points
		Investment firms (including persons exempt)	20.8 %	3.1 % points
		Credit institutions	12.9 %	4.2 % points

<sup>16</sup> The data related to bidding on behalf of clients reflects the self-assessment of the respective trader.

### 1.1.4. Concentration - general allowances

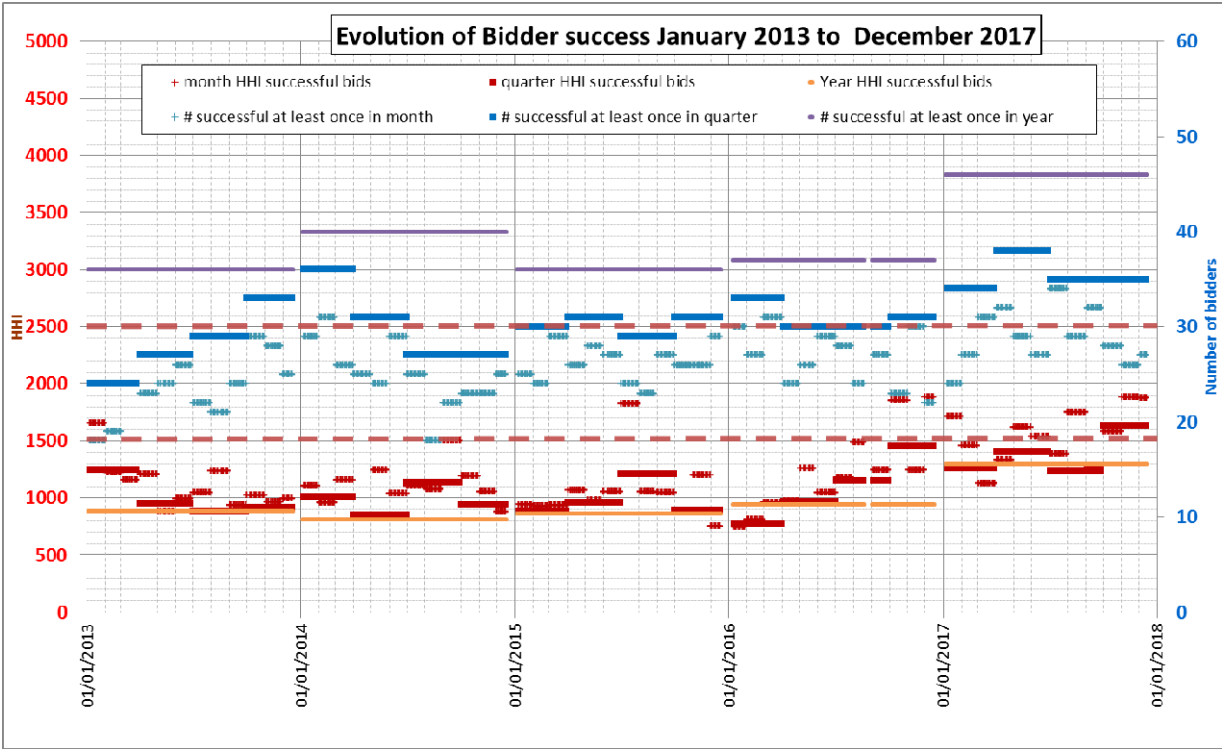
The Herfindahl-Hirschman Index (HHI) of successful bids is used to measure market concentration<sup>17</sup>. The HHI ranges from a value of 0 (perfect competition) to 10 000 (a single buyer). A common interpretation of the HHI is that a score below 1 500 is 'not-concentrated,' between 1 500 and 2 500 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>17</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>18</sup>. Pursuant to the published *auction calendar*, only *aviation allowances* for the calendar year 2012 were auctioned in 2014<sup>19</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 <sup>20</sup>	Average number of bidders	Average number of successful bidders	Average auction clearing price (€)
December 2017	95 000	285 000	687 800	3.0	3	2	7.24
November 2017	1 078 500	3 414 000	7 937 760	3.2	8	7	7.36
October 2017	1 078 000	3 726 000	7 912 520	3.5	8	7	7.34
September 2017	1 078 000	2 875 000	7 233 380	2.7	7	6	6.71
August 2017	-	-	-	-	-	-	-
July 2017	-	-	-	-	-	-	-
June 2017	-	-	-	-	-	-	-
May 2017	-	-	-	-	-	-	-
April 2017	-	-	-	-	-	-	-
March 2017	-	-	-	-	-	-	-
February 2017	-	-	-	-	-	-	-
January 2017	-	-	-	-	-	-	-
December 2016	-	-	-	-	-	-	-
November 2016	681 500	2 146 500	3 720 990	3.2	10.0	6.0	5.46
October 2016	-	-	-	-	-	-	-
<b>2017 total</b>	<b>3 329 500</b>	<b>10 300 000</b>	<b>23 771 460</b>	<b>3.1</b>	<b>7.5</b>	<b>6.5</b>	<b>7.14</b>
<b>2016 total</b>	<b>4 219 000</b>	<b>17 973 500</b>	<b>22 266 205</b>	<b>4.3</b>	<b>10.4</b>	<b>4.6</b>	<b>5.28</b>
<b>2015 total</b>	<b>11 641 000</b>	<b>39 026 000</b>	<b>81 846 705</b>	<b>3.4</b>	<b>11.0</b>	<b>7.5</b>	<b>7.03</b>
<b>2014 total</b>	<b>6 570 500</b>	<b>28 201 500</b>	<b>39 454 510</b>	<b>4.3</b>	<b>13.0</b>	<b>8.0</b>	<b>6.00</b>

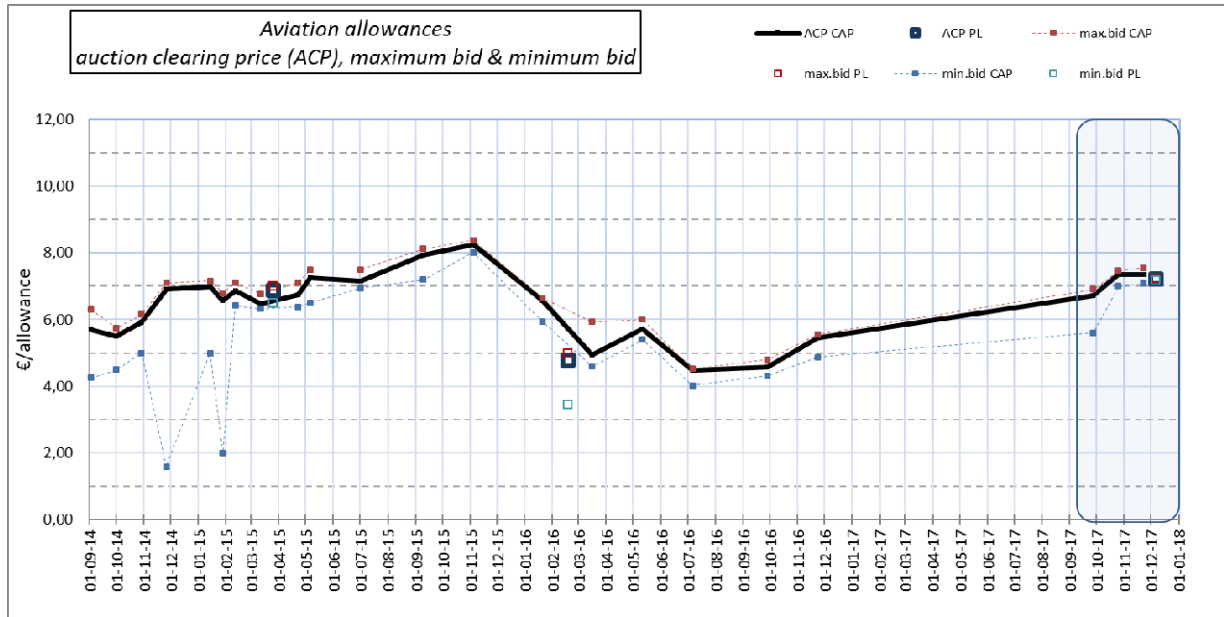
<sup>18</sup> The auctions were suspended end 2012, see the Regulatory update published by the Commission on 16 November 2012 [http://ec.europa.eu/clima/news/articles/news\\_2012111601\\_en.htm](http://ec.europa.eu/clima/news/articles/news_2012111601_en.htm).

<sup>19</sup> See also the regulatory update published by the Commission on 29 July 2014: [http://ec.europa.eu/clima/news/articles/news\\_2014072901\\_en.htm](http://ec.europa.eu/clima/news/articles/news_2014072901_en.htm).

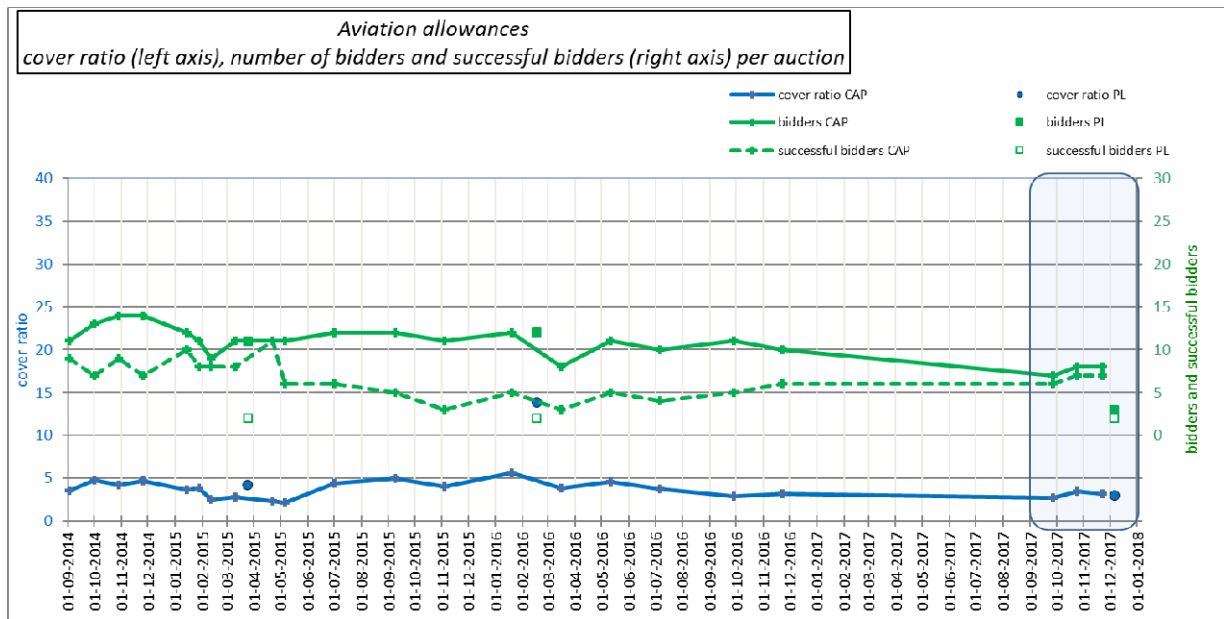
<sup>20</sup> The cover ratio is the ratio between the total bid volume and the auction volume.



**Graph 8: Aviation allowances - auction clearing price (ACP) & maximum prices bid & minimum prices bid<sup>21</sup>**



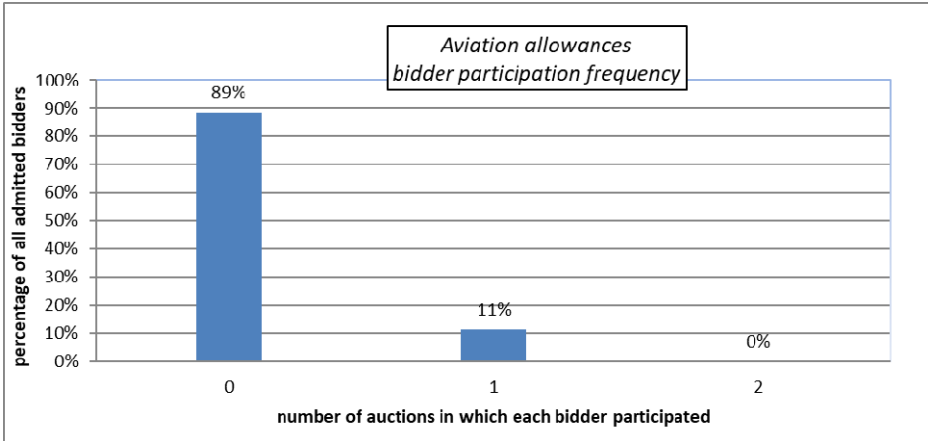
**Graph 9: Aviation allowances - cover ratio (left axis), number of bidders and successful bidders (right axis) per auction**



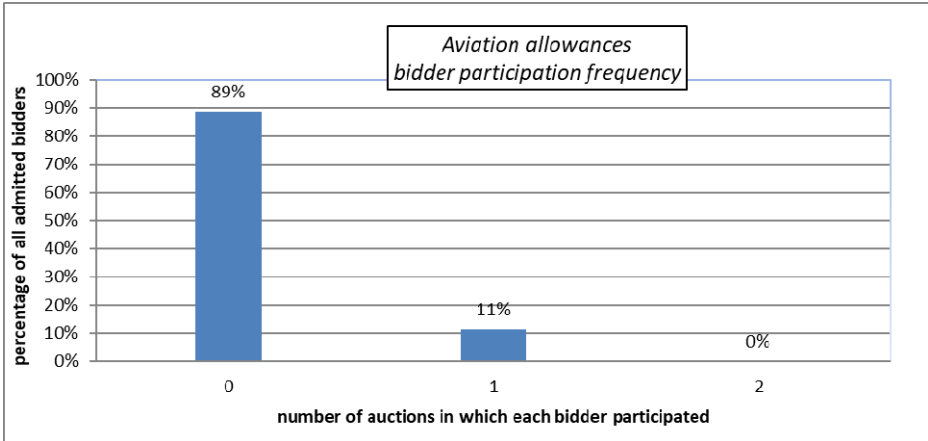
<sup>21</sup> Auctions on behalf of Poland were held on the following days: 25/3/2015, 17/2/2016 and 6/12/2017.

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

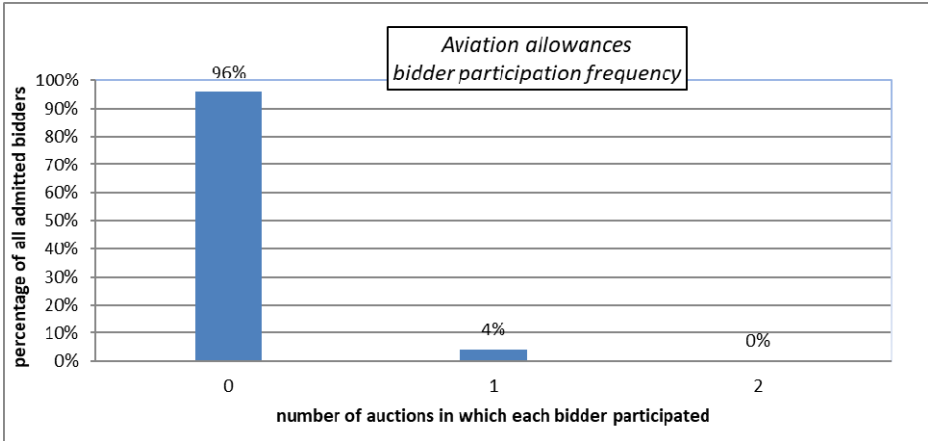
October



November



December



### 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 <sup>22</sup>	Average total volume bid per bidder per auction over the month <sup>23</sup>	standard deviation of total volume bid per bidder per auction over the month <sup>24</sup>	Total monthly nr of bids	Average nr. of bids per bidder per auction <sup>25</sup>	Average bid size <sup>26</sup>
December 2017	1	3	285 000	95 000	95 000	0	10	3.3	28 500
November 2017	1	8	3 414 000	426 750	426 750	360 364	48	6.0	71 125
October 2017	1	8	3 726 000	465 750	465 750	374 869	45	5.6	82 800
September 2017	1	7	2 875 000	410 714	410 714	419 578	44	6.3	65 341
August 2017	-	-	-	-	-	-	-	-	-
July 2017	-	-	-	-	-	-	-	-	-
June 2017	-	-	-	-	-	-	-	-	-
May 2017	-	-	-	-	-	-	-	-	-
April 2017	-	-	-	-	-	-	-	-	-
March 2017	-	-	-	-	-	-	-	-	-
February 2017	-	-	-	-	-	-	-	-	-
January 2017	-	-	-	-	-	-	-	-	-
December 2016	-	-	-	-	-	-	-	-	-
November 2016	1	10	2 146 500	214 650	214 650	245 137	44	4.4 <sup>++</sup>	48 784
October 2016	-	-	-	-	-	-	-	-	-

++: indicates simple average

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

<sup>22</sup> 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.

<sup>23</sup> 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 the whole month of number of bidders present in each auction).

<sup>24</sup> Standard deviation of total volume bid per bidder in each auction over the month.

<sup>25</sup> 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).

<sup>26</sup> 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.

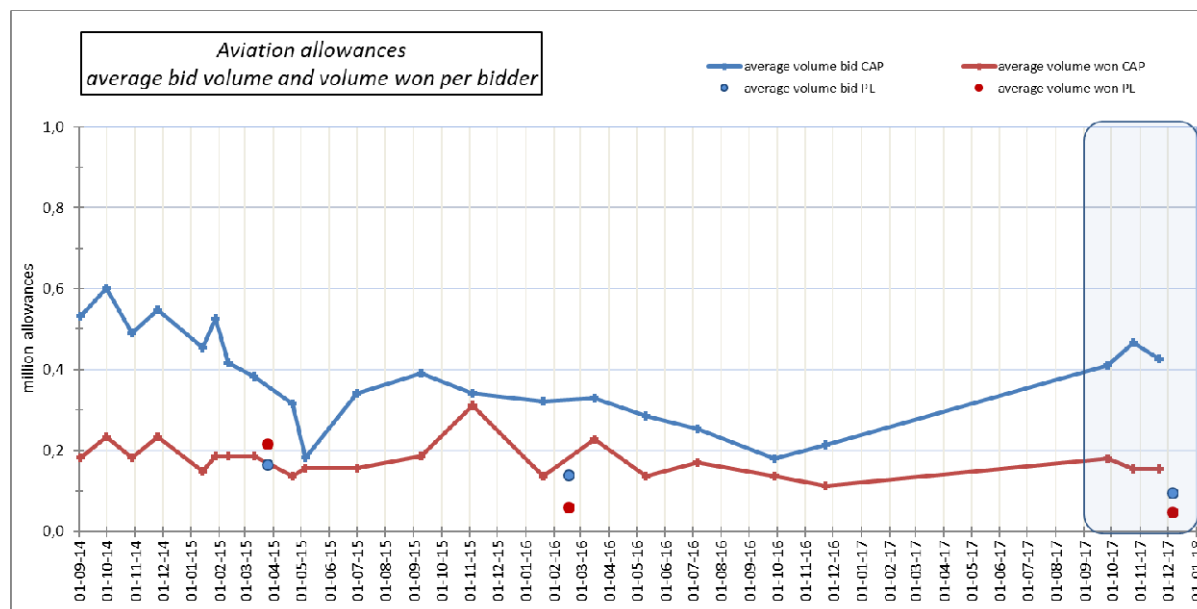
Table 7 provides monthly data on successful bids over 15 months. See also Graph 11.

**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>27</sup>	Average volume won per bidder per auction over the month <sup>28</sup>	Standard deviation of volume won per bidder per auction over the month <sup>29</sup>	Total monthly nr of successful bids
December 2017	1	2	95 000	47 500	47 500	22 500	4
November 2017	1	7	1 078 500	154 071	154 071	114 369	16
October 2017	1	7	1 078 000	154 000	154 000	64 717	16
September 2017	1	6	1 078 000	179 667	179 667	71 825	17
August 2017	-	-	-	-	-	-	-
July 2017	-	-	-	-	-	-	-
June 2017	-	-	-	-	-	-	-
May 2017	-	-	-	-	-	-	-
April 2017	-	-	-	-	-	-	-
March 2017	-	-	-	-	-	-	-
February 2017	-	-	-	-	-	-	-
January 2017	-	-	-	-	-	-	-
December 2016	-	-	-	-	-	-	-
November 2016	1	6	681 500	113 583	113 583	83 332	8
October 2016	-	-	-	-	-	-	-

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

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



<sup>27</sup> 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.

<sup>28</sup> 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 the whole month of number of bidders present in each auction).

<sup>29</sup> Standard deviation of volume won per bidder in each auction over the month.

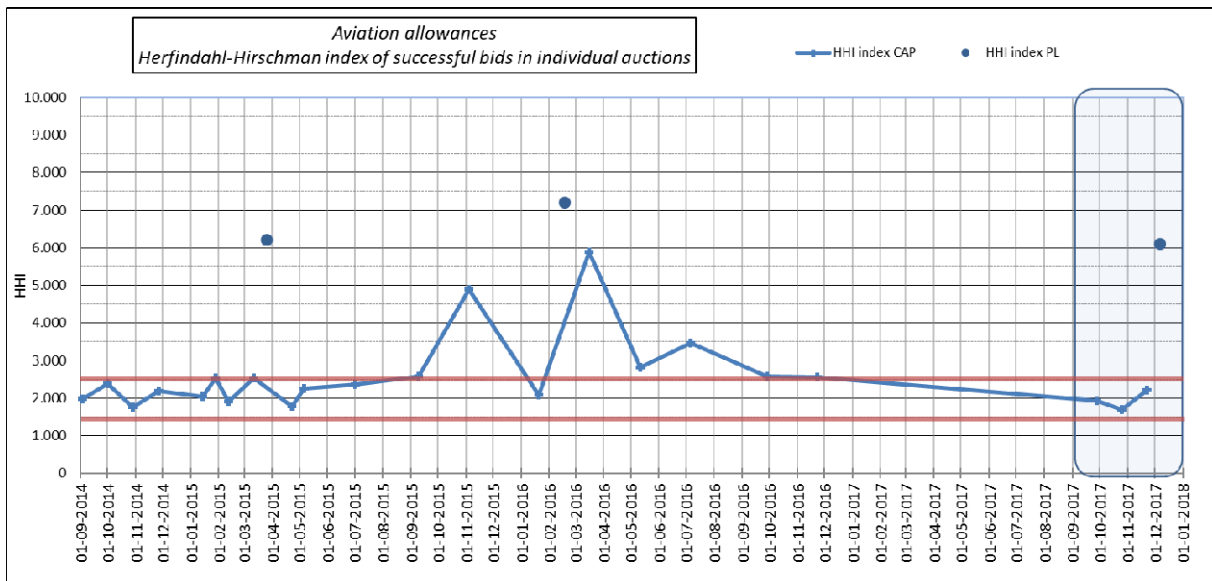
### 1.2.3 Type of bidders – aviation allowances

In October, November and December, all 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>30</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>30</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.

## 2. 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>31</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 2017							112
	Nov 2017							113
	Dec 2017							
Participants eligible to bid in the auctions	Oct 2017	51						70
	Nov 2017	52	1	8	5	0	5	71
	Dec 2017	53						72
(Of which:) Participants eligible to bid in the auctions on behalf of clients	Oct 2017							
	Nov 2017	-	-	1	2	-	2	5
	Dec 2017							
(Of which:) Auction-only access	Oct 2017							
	Nov 2017	2	0	1	0	0	1	4
	Dec 2017							

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.

<sup>31</sup> This assessment is based on the auction participants' activity in EEX's secondary market and general market knowledge of EEX.

### 3. 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: 28/01/2019**

## 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> .
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> .



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, Poland and the UK, 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> .
Common auction platform	Auction platform appointed pursuant to Article 26(1) or (2) of the <i>Auctioning Regulation</i> . The common auction platform appointed pursuant to Article 26(2) of the <i>Auctioning Regulation</i> (also referred to as transitional common auction platform or TCAP) conducted auctions until 18 August 2016. The <i>common auction platform</i> referred to as CAP2 the second common auction platform or CAP2 was appointed, pursuant to Article 26(1) of the <i>Auctioning Regulation</i> , on 13 July 2016 until July 2021.

## Annex 1 Auction revenues per Member State from 12 November 2012 until December 2017 (reported in euros)

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

	General allowances	Aviation allowances	General and aviation allowances
Austria	332,755,560	4,874,100	337,629,660
Belgium	599,640,585	6,269,625	605,910,210
Bulgaria	447,097,790	1,650,520	448,748,310
Croatia	133,458,970	832,665	134,291,635
Cyprus	8,509,990	2,524,190	11,034,180
Czech Republic	563,281,280	2,340,580	565,621,860
Denmark	296,543,205	5,411,850	301,955,055
Estonia	109,484,355	281,005	109,765,360
Finland	399,838,030	4,147,390	403,985,420
France	1,309,127,045	29,131,085	1,338,258,130
Greece	825,858,795	8,923,795	834,782,590
Hungary	325,436,065	1,841,430	327,277,495
Ireland	220,573,465	4,236,540	224,810,005
Italy	2,304,400,555	27,830,720	2,332,231,275
Latvia	64,356,060	971,550	65,327,610
Lithuania	120,861,695	506,600	121,368,295
Luxemburg	28,735,055	984,250	29,719,305
Malta	24,255,370	992,500	25,247,870
The Netherlands	800,273,605	11,237,155	811,510,760
Poland	1,092,745,215	4,246,280	1,096,991,495
Portugal	419,372,725	5,801,780	425,174,505
Romania	907,479,485	2,823,780	910,303,265
Slovak Republic	367,797,290	354,910	368,152,200
Slovenia	105,874,375	264,345	106,138,720
Spain	2,065,129,870	32,142,075	2,097,271,945
Sweden	212,930,300	6,718,160	219,648,460
<b>TOTAL</b>	<b>14,085,816,735</b>	<b>167,338,880</b>	<b>14,253,155,615</b>

## Annex 2 Results of individual auctions on behalf of participating Member States and Poland in October – December 2017

(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 2017																			
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
02/10/2017	7	4.25	7.2	6.56	6.92	4,261,500	10,584,000	2.48	20	11	29 830 500	89	22	4.45	118 921	529 200	774 872	387 409	361 204
05/10/2017	6.92	4.25	7.1	6.51	6.85	4,261,500	10,958,000	2.57	24	14	29 489 580	108	25	4.5	101 463	456 583	632 456	304 393	381 881
09/10/2017	6.92	4.25	7.05	6.52	6.82	4,261,500	12,525,000	2.94	24	10	29 489 580	113	18	4.71	110 841	521 875	815 886	426 150	617 122
10/10/2017	6.9	4.25	7.2	6.53	6.86	4,261,500	11,772,000	2.76	22	15	29 404 350	101	30	4.59	116 554	535 091	677 842	284 100	376 213
11/10/2017	7.4	4.25	8.0	6.95	7.35	4,857,000	11,703,000	2.41	23	13	35 941 800	104	26	4.52	112 529	508 826	661 858	373 615	393 837
12/10/2017	7.37	4.25	7.8	6.9	7.28	4,261,500	12,344,000	2.9	22	14	31 407 255	102	22	4.64	121 020	561 091	933 079	304 393	406 173
16/10/2017	7.25	4.25	7.6	6.82	7.22	4,261,500	10,843,000	2.54	22	18	30 895 875	98	34	4.45	110 643	492 864	583 979	236 750	284 464
17/10/2017	7.45	4.25	7.7	6.95	7.35	4,261,500	12,942,000	3.04	23	14	31 748 175	110	18	4.78	117 655	562 696	756 850	304 393	376 879
19/10/2017	7.86	4.25	8.4	7.39	7.8	4,261,500	14,135,000	3.32	25	15	33 495 390	131	27	5.24	107 901	565 400	861 347	284 100	360 658
23/10/2017	7.43	4.25	7.9	7.0	7.39	4,261,500	11,762,500	2.76	23	19	31 662 945	112	35	4.87	105 022	511 413	662 610	224 289	293 165
24/10/2017	7.41	4.25	7.89	7.0	7.35	4,261,500	10,613,000	2.49	21	14	31 577 715	119	31	5.67	891 85	505 381	703 129	304 393	424 145
25/10/2017	7.41	4.25	7.7	6.95	7.37	4,857,000	12,064,000	2.48	21	15	35 990 370	105	30	5.0	114 895	574 476	701 186	323 800	338 286
26/10/2017	7.46	4.25	7.8	6.99	7.36	4,261,500	13,887,000	3.26	21	14	31 790 790	116	22	5.52	119 716	661 286	1 024 932	304 393	382 757
30/10/2017	7.15	4.25	7.5	6.73	7.11	4,261,500	10,380,500	2.44	19	14	30 469 725	100	28	5.26	103 805	546 342	772 105	304 393	455 165
31/10/2017	7.11	5.00	7.32	7.01	7.05	4,261,500	70,742,000	2.52	20	13	30 299 265	91	22	4.55	118 044	537 100	706 421	327 808	346 452

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.

General Allowances – November 2017

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
02/11/2017	7.52	4.25	7.77	6.99	7.44	4,261,500	10,798,500	2.53	21	14	32 046 480	100	23	4.76	107 985	514 214	807 423	304393	495 238
06/11/2017	7.91	4.25	8.2	7.4	7.87	4,261,500	12,541,000	2.94	22	14	33 708 465	113	35	5.14	110 982	570 045	1 059 025	304393	469 430
07/11/2017	7.89	4.25	8.15	7.29	7.84	4,261,500	10,217,500	2.4	18	14	33 623 235	97	32	5.39	105 335	567 639	883 587	304393	466 953
08/11/2017	7.62	4.25	8	7.18	7.59	4,857,000	10,731,000	2.21	21	19	37 010 340	111	43	5.29	96 676	511 000	723 828	255632	353 014
09/11/2017	7.79	4.25	8.1	7.23	7.76	4,261,500	8,927,500	2.09	17	12	33 197 085	90	31	5.29	99 194	525 147	806 722	355125	506 217
13/11/2017	7.26	4.25	8	6.87	7.19	4,261,500	12,439,500	2.92	22	15	30 938 490	116	26	5.27	107 237	565 432	745 639	284100	355 156
14/11/2017	7.26	0.01	7.6	6.7	7.18	4,261,500	12,947,000	3.04	26	13	30 938 490	127	26	4.88	101 945	497 962	736 277	327808	381 828
16/11/2017	7.68	4.25	8	7.1	7.6	4,261,500	11,557,000	2.71	21	11	32 728 320	98	22	4.67	117 929	550 333	853 535	387409	375 605
20/11/2017	7.32	4.25	8	6.9	7.23	4,261,500	10,730,500	2.52	23	14	31 194 180	118	24	5.13	90 936	466 543	733 370	304393	412 815
21/11/2017	7.51	4.25	7.8	7.06	7.46	4,261,500	9,355,000	2.2	21	17	32 003 865	113	36	5.38	82 788	445 476	806 092	250676	487 182
22/11/2017	7.46	4.25	7.77	6.93	7.36	4,857,000	11,334,000	2.33	19	13	36 233 220	100	29	5.26	113 340	596 526	879 778	373615	510 348
23/11/2017	7.37	5	7.6	7.27	7.31	4,261,500	10,865,000	2.55	23	13	31 407 255	90	24	3.91	120 722	472 391	775 922	327808	434 594
27/11/2017	7.69	4.25	8	7.19	7.64	4,261,500	9,933,500	2.33	19	15	32 770 935	107	33	5.63	92 836	522 816	830 012	284100	467 113
28/11/2017	7.59	4.25	7.9	7.02	7.51	4,261,500	9,331,000	2.19	22	12	32 344 785	95	25	4.32	98 221	424 136	521 054	355125	421 440
30/11/2017	7.6	4.25	7.9	7.06	7.56	4,261,500	10,683,500	2.51	22	13	32 387 400	93	29	4.23	114 876	485 614	590 930	327808	431 971

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.

General Allowances – December 2017

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
04/12/2017	7.63	4.25	8	7.16	7.56	4,261,500	10,901,500	2.56	19	16	32 515 245	111	31	5.84	98 212	573 763	804 755	266 344	383 753
05/12/2017	7.49	4.25	7.8	6.98	7.43	4,261,500	10,841,500	2.54	22	12	31 918 635	100	26	4.55	108 415	492 795	557 285	355 125	429 027
06/12/2017	7.38	4.25	7.77	6.91	7.35	4,855,000	9,786,000	2.02	19	12	35 829 900	89	31	4.68	109 955	515 053	603 471	404 583	516 246
07/12/2017	7.23	4.25	7.6	6.83	7.2	4,261,500	9,863,000	2.31	25	17	30 810 645	96	34	3.84	102 740	394 520	463 284	250 676	312 962
11/12/2017	7.1	4.25	8	6.7	7.07	4,261,500	10,603,500	2.49	23	20	30 256 650	102	37	4.43	103 956	461 022	679 646	213 075	334 827
12/12/2017	7.37	3	7.55	6.79	7.28	4,261,500	10,769,500	2.53	18	10	31 407 255	91	24	5.06	118 346	598 306	781 804	426 150	499 599
14/12/2017	6.96	3	7.93	6.51	6.91	4,273,000	11,164,500	2.61	19	16	29 740 080	106	33	5.58	105 325	58 7605	814 864	267 063	418 328

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.

**Aviation Allowances – October 2017**

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
25/10/2017	7.34	7	7.47	7.27	7.3	1,078,000	3,726,000	3.46	8	7	7 912 520	45	16	5.63	82 800	465 750	374 869	154 000	64 717

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.

**Aviation Allowances – November 2017**

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
22/11/2017	7.36	7.08	7.55	7.31	7.33	1,078,500	3,414,000	3.17	8	7	7 937 760	48	16	6	71 125	426 750	360 364	154 071	114 369

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.

Aviation Allowances – December 2017																			
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
06/12/2017	7.24	7.19	7.26	7.23	7.24	95,000	285,000	3	3	2	687 800	10	4	3.33	28 500	95 000	0	47 500	22 500

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.

The data for previous auctions can be downloaded from EEX's website: <https://www.eex.com/en/products/environmental-markets/emissions-auctions/overview>



