

# Data quality checks for the update of the EEA's EU ETS data viewer

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## Content

<i>Content</i> .....	2
<i>List of tables</i> .....	3
<b>1 Data quality checks of the new EUTL data used for the update of the EEA's EU ETS data viewer</b> .....	<b>4</b>
<b>1.1 Key findings</b> .....	<b>4</b>
<b>1.2 Preparation of the data</b> .....	<b>5</b>
1.2.1 Data capture from Commission Excel file.....	5
1.2.2 Results of plausibility checks .....	5
1.2.3 Changes within the dataset .....	5
<b>1.3 Comparison of the dataset provided by the Commission and the Excel file published on the Commission's website</b> .....	<b>6</b>
1.3.1 Comparison of installation-IDs.....	6
<b>1.4 Consistency checks within the dataset</b> .....	<b>7</b>
<b>1.5 Update of the disaggregated database (installation level)</b> .....	<b>7</b>
1.5.1 Integration of missing installations .....	7
1.5.2 Deletion of double installations .....	8
1.5.3 Adjustment of free allowances for aviation operators for the year 2012 .....	8
1.5.4 Consistency check of surrendered units.....	8
1.5.5 Reallocation of main activity codes.....	8
1.5.6 Information on active installations .....	11
<b>1.6 Main changes in EU ETS viewer data between April 2019 and May 2019</b> .....	<b>12</b>
1.6.1 Number of entities included in the scheme.....	12
1.6.2 Account closures.....	13
1.6.3 Active installation in 3 TP .....	13
1.6.4 Permit identifier .....	13
1.6.5 Verified emissions (stationary installations).....	13
1.6.6 Free allocation to existing installations from 2005 to 2018 (stationary installations) .....	15
1.6.7 Surrendered units from 2005 to 2017 (stationary installations).....	16
1.6.8 Free allocation from 2018 to 2020 (stationary installations) .....	17
1.6.9 Comparison of allocated amounts under Article 10a(1), 10a(7)and 10c for the years 2013 to 2018	19
1.6.10 Aviation.....	23
<b>2 Aggregated database</b> .....	<b>25</b>
<b>3 Auctioning</b> .....	<b>25</b>

## List of tables

Table 1-2	Overview of excluded and therefore deleted verified emissions and allocations from 2013 to 2018 .....	6
Table 1-3	Number of installations with old activity type codes .....	9
Table 1-4	Allocation of new activity codes to installation with old codes.....	11
Table 1-5	Number of entities by country.....	12
Table 1-6	Changes in VE between datasets (calculated as difference between July 2019 and May 2019 data / VE (July 2019)).....	14
Table 1-7	Changes in free allocation to existing installations (10a, 2005-2018) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019)).....	15
Table 1-8	Changes in surrendered units between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019)).....	16
Table 1-9	Changes in free allocation to existing installations (10a, 2018-2020) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019)).....	18
Table 1-10	Allocated amounts for the years 2013 to 2018 for stationary installations .....	20
Table 1-11	Changes in VE, free allocation and surrendered units to aviation operators (2012-2017) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019)).....	24

# 1 Data quality checks of the new EUTL data used for the update of the EEA's EU ETS data viewer

## 1.1 Key findings

- The EUTL extract provided by the European Commission on July 1st, 2019 contained 17 394 installations-rows. The dataset used for the ETS data viewer includes 17 377 entities:
  - 15 829 stationary and 1 548 aviation operators
  - 12 680 open and 4 697 (27% of total) closed entities
  - 3 236 entities (19% of total) not operating in the third trading period
  - 11 956 stationary installations are currently active
- 10 entities entered the trading system between May 2019 and July 2019.
- Total verified emissions 2018 from stationary installations sum up to 1 682 Mt in the actual dataset.
- To align the dataset with the EU ETS registry, the information on excluded emissions provided since April 2018 has been used: For excluded entities, verified emissions and allocation have been deleted in the year of exclusion. For details see section 1.2.3.
- One permit ID in Malta (MT-3) for a new power plant (included since April 2018) had been allocated to two installation identifiers. One of those has been deleted (MT 210138) as it seems to be additional without intention.
- One aviation operator seems to be included twice and has been deleted (**NL 202792**) (section 1.5.2).
- Comparison of the dataset provided by the European Commission to EEA with the public extract published on the Commission's website:
  - There is a discrepancy between the dataset and the public extract: in the dataset, **DE 200696** (Croatia Airlines hrvatska zrakoplovna tvrtka d.d.) belongs to Germany, while it belongs to Croatia in the public extract and on the EUTL website (see section 0). Ronald Velghe states that the country code of the address seems to be wrong as the contact is located in Croatia. Therefore, this entity has been reallocated to Croatia in the dataset for the ETS data viewer.
- 22% of the operators report outdated activity type codes, which correspond to the second trading phase and which have been translated to new activity type codes. The resulting percentage changes in some activity type codes are still high but have been reduced compared to last year (see Table 1-3).
- 4 permit identifiers seem to have changed compared to the previous extract (see section 1.6.4).

## 1.2 Preparation of the data

### 1.2.1 Data capture from Commission Excel file

The European Commission extracted data from the EUTL on July 1, 2019 and provided this extract to the EEA (referred to as “extract for EEA” in the text). The data used for the ETS data viewer<sup>1</sup> is based on this extract.

It contained 17 394 installations-rows with detailed information. After joining the rows for installations from CY and MT it ends up in **17 378 entities** (minus 13 for Cyprus, minus 3 for Malta).

In processes before, only two installations have been deleted for Malta (two power stations that are part of the ETS since its start in 2005). Since April 2018, there are two additional LNG fuelled power plants<sup>2,3</sup> with activity codes 20 that entered the ETS in 2017. Both use the same permit identifier MT-3 but they have different installation IDs: MT 209863 and MT 210138. It seems like the plant is included twice with two different permit identifiers. That is why the latter has been deleted since no additional information is given compared to the first, verified emissions and surrendered allowances are reported only for the first installation mentioned.

There is also one aircraft operator which seems to be included twice and which has been deleted (NL 202792, see section 1.5.2)

The dataset used for the ETS data viewer hence includes **17 377** entities.

### 1.2.2 Results of plausibility checks

No MS-IDs are doubled.

Compared to the dataset of May 2019, no installation is missing and 10 new installations were added to EUTL.

In Austria, Germany, France, Italy, Sweden, United Kingdom “Permit Entry dates” are partly showing the start year of the installation operation and not the entry date into the EU ETS.

### 1.2.3 Changes within the dataset

In April 2018 new columns were inserted into the extract for EEA: From 2013 onwards a column per year states if an entity was excluded from the ETS in that particular year. A reason for annual exclusion of entities can e.g. be low production / emissions or a small number of flights in the scope of the EU ETS. An entity that was excluded in one year can be part of the ETS again in following year(s).

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<sup>1</sup> <https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1>

<sup>2</sup> <https://www.wartsila.com/twentyfour7/energy/malta-prepares-for-an-lng-powered-future>

<sup>3</sup> <https://www.aecom.com/hk/projects/electroqas-malta/?qI%5B0%5D=260&qP=&qT=12>

The information on annual exclusion is not directly linked to account status. Most of the entities with closed accounts are marked as "included" which does not seem completely consistent.

Furthermore, there are entities which show ETS information (verified emissions, allocations or surrendered units) in the database provided to EEA by the Commission although these entities have been excluded in that year. In the EU ETS registry, these entities do not show verified emissions if they are excluded in a year. To harmonize the EEA data viewer with the EU ETS registry it has been decided by EEA in May 2018 to delete verified emissions and allocations of all excluded entities. Surrendered units are kept for excluded entities because these units can also be used to cover emissions from earlier years. The amount of deleted verified emissions and allocations can be seen in Table 1-1. Entities with an indication of zero for any ETS information have not been counted here.

*Table 1-1 Overview of excluded and therefore deleted verified emissions and allocations from 2013 to 2018*

	Number of excluded entities in single years	of which with				Deleted amounts			NOT deleted amounts
		of which with VE	Allocations	Allocated Reserve	Surrendered units	VE	Allocations	Allocated Reserve	Surrendered units
<b>2013</b>	1.343	30	215	0	95	25.715	283.234	0	29.041
<b>2014</b>	1.319	1	203	0	83	6.509	182.016	0	162.216
<b>2015</b>	1.348	2	224	0	25	86	285.713	0	8.046
<b>2016</b>	1.346	0	222	0	19	0	247.310	0	14.293
<b>2017</b>	1.345	0	230	2	28	0	241.053	1.182	6.410
<b>2018</b>	1.356	0	236	2	26	0	250.675	644	6.535
<b>Total</b>	<b>8.057</b>	<b>33</b>	<b>1.330</b>	<b>4</b>	<b>276</b>	<b>32.310</b>	<b>1.490.001</b>	<b>1.826</b>	<b>226.541</b>

Source: EUTL extract July 1, 2019, own calculation; Entities with an indication of zero for any ETS information have not been counted here.

### 1.3 Comparison of the dataset provided by the Commission and the Excel file published on the Commission's website

A quick comparison between ETS data from the registry as published on the Commission's website<sup>4</sup> and the extract for EEA directly provided by the Commission on July 1, 2019 was performed but not as deeply as in April 2019.

#### 1.3.1 Comparison of installation-IDs

The first check concerns the included installations. In the extract for EEA, the aircraft operator with the ID "DE 200696" (Croatia Airlines hrvatska zrakoplovna tvrtka d.d.) is allocated to Germany, while it belongs to Croatia in the Excel file published on the Commission's website. As hence the country code of the address seems to be wrong, this entity has been reallocated to Croatia in the EEA dataset for the ETS data viewer.

<sup>4</sup> [https://ec.europa.eu/clima/sites/clima/files/ets/registry/docs/verified\\_emissions\\_2017\\_en.xlsx](https://ec.europa.eu/clima/sites/clima/files/ets/registry/docs/verified_emissions_2017_en.xlsx)

## 1.4 Consistency checks within the dataset

These checks have not been performed for the July 2018 dataset.

## 1.5 Update of the disaggregated database (installation level)

Some changes have been implemented in the disaggregated database (to be used for the EEA EU ETS data viewer), compared to the extract provided by the Commission:

### Rows

- One aviation operator has been deleted (NL 202792) (see 1.5.2).

### Columns

The following four columns were added to the EUTL extract:

- "MS-ID" as a combination of Country Code and Installation Identifier
- "Entry Year" with only the year of "Permit Entry Date"
- "Closure date" with either only the year of "Account closure" or the note "open"
- "Active installation in 3 TP" with the values yes or no where yes indicates that the given year of last emissions of an entity is either 2013 or after or an empty cell, no indicates that the given year of last emissions is between 2005 and 2012 (see 1.5.6).

The following columns were changed:

- "ALLOCATION\_2010" in column "DE" has been changed to "ALLOCATION\_2020" as it appears twice and is most probably meant to be 2020 due to its location in the extract and in comparison to older datasets.
- The extract contains 7 times a column with the name "EXC". These are the annual "Excluded" values. These were provided therefore with the appropriate year number. Excluded for 2019 was deleted because this column is not yet needed.
- Columns with the expression "ALLOCATION" changed to "ALLOCATED" to be consistent with old datasets

### Content

- Due to information in the public dataset, one aviation operator (DE 200696) has been allocated to Croatia instead of Germany (see 0).
- Main activity codes 1-9 have been translated to new codes (see 1.5.5).

The total amount of installations included in Access is now 17 377.

### 1.5.1 Integration of missing installations

Not necessary.

### **1.5.2 Deletion of double installations**

Due to the comparison of information on returned allowances from aviation operators for the year 2012, which has been conducted in the April 2015, it became obvious, that one aviation operator is included in the extract which is doubled (NL 202792 and 202833).

NL 202792 has a closure date in 2013 and does not include any ETS information at all but has the same operator name as NL 202833. For the latter ETS information is given including emissions in 2012. Therefore, NL 202792 has been deleted.

One Maltese installation (MT 210138) that is included since the April 2018 dataset has been deleted because it was included twice, see chapter 1.2.1.

### **1.5.3 Adjustment of free allowances for aviation operators for the year 2012**

Free allowances for the year 2012 had to be returned by aviation operators if they chose to account for the reduced scope of the stop the clock decision.

The amount which had to be returned is publicly available on operator level. In addition, the Commission sent an excel file with details on amounts which finally had been returned and on the partial adjustment of the numbers in EUTL ("Aviation return before and after deadline.xlsx").

With information in this file, the adjustment of free allowances for 2012 takes place for the update of the EEA data viewer because it seems necessary to reflect the reduced amount of free allowances for the comparison with verified emissions.

The calculation of corrections has been conducted in April 2015.

As there have been no changes to free allocation for aviation in 2012 (see Table 1-10), no update of this correction has to be done.

### **1.5.4 Consistency check of surrendered units**

There is no longer an inconsistency related to the sums of total ERU, CER and EUA compared with total units surrendered, as it has been revealed in the 2013 dataset.

### **1.5.5 Reallocation of main activity codes**

New activity codes from 10-47 are in place since the start of the third trading period, but a lot of installations which already have been part of the EU ETS in the former trading periods did not change their activity codes.

In total, 3900 installations, so 22% of all installations, still report old activity codes (see Table 1-2). These are 9 less than in the dataset of May 2019.



Table 1-2 Number of installations with old activity type codes

MAIN_ACTIVITY_TYPE_CODE	Number of installations - September 2016	Number of installations - July 2017	Number of installations - July 2018	Number of installations - May 2019	Number of installations - July 2019
<b>1</b>	3471	3216	2846	2745	<b>2739</b>
<b>2</b>	51	48	41	38	<b>38</b>
<b>3</b>	3	3	3	3	<b>3</b>
<b>4</b>	4	4	4	4	<b>4</b>
<b>5</b>	77	74	49	47	<b>47</b>
<b>6</b>	192	176	133	129	<b>129</b>
<b>7</b>	163	148	112	109	<b>109</b>
<b>8</b>	614	579	563	560	<b>557</b>
<b>9</b>	390	358	284	274	<b>274</b>
<b>Total</b>	4965	4606	4035	3909	<b>3900</b>

Source: EUTL extract July 1, 2019 and former extracts, own calculation

Since 2015 the EU ETS data viewer no longer includes old activity codes except for code 99 which will remain as it is, if no other country specific information is available. For the installations reporting an old code, a correction will be made. Since 2015 the translation procedure follows the methodology explained in the ETC/ACM document "Attribution of new activity codes for installations with old codes in the EEA's EU ETS data viewer" (latest version as of April 2016<sup>5</sup>). The result of this methodology has been amended with country specific information. The translation table will be made publicly available to make the translation of activity codes as transparent as possible.

As highlighted in the methodology document, there is a risk that the number of installations allocated to activity codes 38 to 41 (Production of specific chemicals) are underestimated, because the allocation to these codes is not possible without further detailed knowledge of the activity of single installations. Consequently, there is also a risk that the number of installations allocated to activity code 42 (Production of bulk chemicals) is overestimated.

Looking at verified emissions 2018 (see Table 1-3), emissions of installations with code 42 still increased because of the allocation to new codes (from 36 to 38 Mt). But it can be considered that due to the inclusion of Member State specific information allocated verified emissions due to the translation process have decreased by a high amount of emissions: With the translation of September 2015, verified emissions of sector 42 has been 23 Mt before and 43 Mt after the translation (+20 Mt), whereas the difference has now been reduced to 2.5 Mt for the year 2018.

<sup>5</sup>[http://acm.eionet.europa.eu/docs/ETCACM\\_EU-ETS\\_translation\\_of\\_activity\\_codes\\_April\\_2016\\_for\\_publication.pdf](http://acm.eionet.europa.eu/docs/ETCACM_EU-ETS_translation_of_activity_codes_April_2016_for_publication.pdf)

Similarly, it is not possible to differentiate between the production of primary (code 26) and secondary aluminium (code 27) without more information on single installations. NACE code 24.42 (Aluminium production) has now been completely translated to code 26, leading to possible overestimation and an underestimation in code 27.

In September 2015 11 installations have been translated to code 26, whereas the number of installations which was translated in July was reduced to 7 (code 26).

Since the April 2018 dataset, there are two installations with activity code 45 (Capture of greenhouse gases under Directive 2009/31/EC) which did not occur in ETS before. These are installations in the United Kingdom which entered the ETS in 2017.

With the dataset of April 2019, an installation with activity code 46 appeared for the first time (Transport of greenhouse gases under Directive 2009/31/EC).

In September 2018 three installations (FR 956, SK 150, IT 515) have been reallocated from code 20 to code 24 after an exchange with Member States and their agreement, that these plants are foremost steel plants. This reallocation has been done again with the May 2019 update since the installations FR 956 and SK 150 were still allocated to the activity code 20. The installation IT 515 was allocated to activity code 24 between the April and May update 2019.

For further details, see Table 1-3:

Table 1-3 Allocation of new activity codes to installation with old codes

MAIN_ACTIV ITY_TYPE_C ODE	Before Translation		After Translation		Conducted Translation		Percentage of translation to total	
	No of installations	VE 2018	No of installations	VE 2018	No of installations	VE 2018	No of installations	VE 2018
1	2.739	78.299.602						
2	38	9.022.508						
3	3	-						
4	4	-						
5	47	5.326.369						
6	129	5.938.976						
7	109	1.262.710						
8	557	922.788						
9	274	2.338.014						
10	1548	67.001.190	1.548	67.001.190	0	0	0%	0%
20	7348	1.039.250.237	9702	1.095.190.975	2.354	55.940.738	24%	5%
21	138	115.597.379	175	124.619.887	37	9.022.508	21%	7%
22	19	11.096.868	29	11.216.715	10	119.847	34%	1%
23	12	2.660.547	12	2.660.547	0	0	0%	0%
24	243	99.940.029	296	122.202.811	53	22.262.782	18%	18%
25	245	13.156.746	284	13.346.019	39	189.273	14%	1%
26	33	8.903.493	40	8.903.493	7	0	18%	0%
27	34	1.310.735	35	1.310.735	1	0	3%	0%
28	92	7.706.109	99	7.706.109	7	0	7%	0%
29	246	116.443.620	332	121.312.369	86	4.868.749	26%	4%
30	271	29.457.447	426	31.990.340	155	2.532.893	36%	8%
31	360	16.946.090	463	18.146.740	103	1.200.650	22%	7%
32	1175	13.933.641	1739	14.845.114	564	911.473	32%	6%
33	43	1.933.202	65	2.295.858	22	362.656	34%	16%
34	42	1.201.180	42	1.201.180	0	0	0%	0%
35	174	5.258.069	194	5.562.576	20	304.507	10%	5%
36	549	19.135.583	868	21.855.769	319	2.720.186	37%	12%
37	18	1.688.557	18	1.688.557	0	0	0%	0%
38	34	3.741.561	37	4.305.748	3	564.187	8%	13%
39	3	111.662	3	111.662	0	0	0%	0%
40	1	10.833	1	10.833	0	0	0%	0%
41	29	20.614.322	30	20.614.322	1	0	3%	0%
42	346	35.861.078	456	38.361.234	110	2.500.156	24%	7%
43	41	8.047.919	46	8.389.121	5	341.202	11%	4%
44	14	2.987.903	14	2.987.903	0	0	0%	0%
45	2	337	2	337	0	0	0%	0%
46	1	1.428	1	1.428	0	0	0%	0%
99	416	1.915.480	420	1.184.640	4	-730.840	1%	-62%
Group 1-9	3.900	103.110.967	-	-				
Group 10-99	13.477	1.645.913.245	17.377	1.749.024.212				
<b>Total</b>	<b>17.377</b>	<b>1.749.024.212</b>	<b>17.377</b>	<b>1.749.024.212</b>	<b>3.900</b>	<b>103.110.967</b>	<b>22%</b>	<b>6%</b>

**Note:** The total number of translations given in the table (3 900) is not the absolute number of translations

Source: EUTL extract July 1, 2019, own calculation

The EU ETS data viewer separates between stationary installations and aviation. The total number of **aviation operators** (activity type code 10) is **1 548**, so there are **15 829 stationary installations** included in the data viewer.

### 1.5.6 Information on active installations

The indicator “Active installation in 3 TP” has been included in the EU ETS data viewer since 2015. It indicates installations and operators which operate in the third trading period. This indicator is included by the ETC/CME. If the given year of last emission is

between 2005 and 2012, the indicator is “no”, if the given year of last emission is higher or equal 2013 or an empty cell, the indicator is “yes”.

This is to give the possibility to align the analysis of data from the EEA data viewer with the dataset published by the Commission.

## 1.6 Main changes in EU ETS viewer data between April 2019 and May 2019

### 1.6.1 Number of entities included in the scheme

The number of stationary installations and aviation operators by country is shown in the following table:

Table 1-4 Number of entities by country

MS	19. Aug 14	01. Sep 15	13. Sep 16	20. July 17	10. Jul 18	03. May 19	01. Jul 19	Difference May 19 - July 19
AT	284	287	290	292	292	295	295	0
BE	473	478	484	488	491	498	498	0
BG	171	172	172	172	172	174	174	0
CY	22	23	24	26	27	28	28	0
CZ	459	462	466	466	468	468	468	0
DE	2639	2659	2674	2689	2725	2768	2768	0
DK	455	456	458	460	460	461	462	1
EE	62	65	65	66	66	66	66	0
ES	1432	1444	1454	1468	1481	1492	1495	3
FI	708	717	726	729	732	738	738	0
FR	1603	1635	1655	1671	1713	1730	1733	3
GB	1686	1737	1772	1838	1927	1985	1986	1
GR	206	208	211	211	212	215	215	0
HR	58	59	59	59	59	59	59	0
HU	287	290	293	296	298	301	301	0
IE	208	216	221	223	228	231	231	0
IS	37	38	39	41	44	44	44	0
IT	1544	1563	1581	1593	1610	1626	1628	2
LI	2	2	2	2	2	2	2	0
LT	121	124	124	125	126	126	126	0
LU	27	30	31	31	33	34	34	0
LV	117	117	118	118	120	120	120	0
MT	6	7	8	8	13	16	16	0
NL	636	644	647	653	660	663	663	0
NO	170	173	176	179	183	186	186	0
PL	1033	1039	1047	1058	1068	1080	1080	0
PT	356	358	359	361	364	369	369	0
RO	289	293	297	298	300	302	302	0
SE	909	918	935	945	949	962	962	0
SI	104	104	104	104	106	106	106	0
SK	221	221	221	222	222	222	222	0
<b>Total</b>	<b>16325</b>	<b>16539</b>	<b>16713</b>	<b>16892</b>	<b>17151</b>	<b>17367</b>	<b>17377</b>	<b>10</b>

Source: EUTL extract July 1, 2019 and former extracts, own calculation

As shown in Table 1-4, the July 2019 dataset includes 10 more entities than the May 2019 dataset.

Furthermore, as discussed in chapter 0, one entity has been transferred from Germany to Croatia.

### **1.6.2 Account closures**

The indicator “account closure” is included in the dataset since May 2015. In July 2019, 12 680 entities have been indicated as open, 4 697 (27% of total) have a closure date that lies before the extraction date of the ETS dataset.

### **1.6.3 Active installation in 3 TP**

3 236 entities – 19% of total – indicated that they are not operating in the third trading period. This number did not change to the dataset of May 2019.

63 of those 3 236 entities no longer active in the 3<sup>rd</sup> trading period still have open accounts.

### **1.6.4 Permit identifier**

For 4 entities, the permit identifier has been changed. They are all open installations. The activity type codes are 10 (located in Iceland), 20 (located in Slovakia and the United Kingdom) and 32 (located in the United Kingdom).

### **1.6.5 Verified emissions (stationary installations)**

In the following table, data on verified emission is compared between the datasets from May 2019 and July 2019, just for stationary data. Differences are shown as percentages, calculated from the difference related to latest data.

Table 1-5 Changes in VE between datasets (calculated as difference between July 2019 and May 2019 data / VE (July 2019))

MS	Percentages related to last available data (+ => increase)						
	total 1st trading period	total 2nd trading period	total 3rd trading period	2015	2016	2017	2018
AT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BG	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CZ	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
ES	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GB	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IS	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LV	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
MT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%
PL	0,0%	0,0%	0,7%	0,0%	0,0%	0,0%	4,2%
PT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
<b>Total</b>	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,5%

Purple: increase, light orange: decrease, green: zero difference

Source: EUTL extract July 1, 2019 and former extracts, own calculation

There are no changes for the first and second trading period but minor changes for the third trading period.

For 2018 some minor emission increases and decreases can be observed for France, Italy and Norway. Poland has the biggest increase compared to the May update with

4%. This is due to two installations (PL 5 & PL 298) that had not yet reported any emissions this year.

### 1.6.6 Free allocation to existing installations from 2005 to 2018 (stationary installations)

In the same structure, the data on free allowances to existing installations allocated under Article 10a(1) has been compared:

Table 1-6 Changes in free allocation to existing installations (10a, 2005-2018) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019))

MS	Percentages related to last available data (+ => increase)						
	total 1st trading period	total 2nd trading period	total 3rd trading period	2015	2016	2017	2018
AT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BG		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CZ	0,0%	0,0%	-0,1%	-0,1%	-0,1%	-0,1%	-0,1%
DE	0,0%	0,0%	0,1%	0,1%	0,1%	0,1%	0,1%
DK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
ES	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GB	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HR			0,0%	0,0%	0,0%	0,0%	0,0%
HU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IS			0,0%	0,0%	0,0%	0,0%	0,0%
IT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LI		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LV	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
MT	0,0%	0,0%					
NL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NO		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PT	0,0%	0,0%	-0,1%	0,0%	0,0%	-0,2%	-0,2%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Total	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Purple: increase, light orange: decrease, green: zero difference

Source: EUTL extract July 1, 2019 and former extracts, own calculation

There are no changes in total free allowances for the first and second trading period.

For the third trading period, free allowances changed for the Czech Republic, Germany, Greece, Italy, Poland and Portugal for the years 2014-2018, but the overall change for the 3<sup>rd</sup> trading period is insignificant. There are no free allowances for Malta in the third trading period.

### 1.6.7 Surrendered units from 2005 to 2017 (stationary installations)

The changes in surrendered units are shown in Table 1-7.

Table 1-7 Changes in surrendered units between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019))

MS	Percentages related to last available data (+ => increase)							
	total 1st trading period	total 2nd trading period	total 3rd trading period	2013	2014	2015	2016	2017
AT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BG		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CZ	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
ES	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GB	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HR			0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IS			0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LI		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LV	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
MT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NO		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Total	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Purple: increase, light orange: decrease, green: zero difference



*Source: EUTL extract July 1, 2019 and former extracts, own calculation*

There are no changes in surrendered units for all trading periods.

#### **1.6.8 Free allocation from 2018 to 2020 (stationary installations)**

The comparison of free allocation in the years 2018-2020 shows that there were minor changes for all years. Very minor decreases have taken place in Bulgaria, the Czech Republic, Denmark, Spain, the United Kingdom, Greece, Hungary, Ireland, Italia, Poland, Portugal and Sweden. Increases took only place in Germany.

Table 1-8 Changes in free allocation to existing installations (10a, 2018-2020) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019))

	2018	2019	2020
AT	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%
BG	0,0%	-0,2%	-0,2%
CY	0,0%	0,0%	0,0%
CZ	-0,1%	-0,3%	-0,4%
DE	0,1%	0,1%	0,1%
DK	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%
ES	0,0%	-0,5%	-0,5%
FI	0,0%	0,0%	0,0%
FR	0,0%	0,0%	0,0%
GB	0,0%	-0,1%	-0,1%
GR	0,0%	0,0%	0,0%
HR	0,0%	0,0%	-0,1%
HU	0,0%	0,0%	0,0%
IE	0,0%	0,0%	0,0%
IS	0,0%	0,0%	0,0%
IT	0,0%	0,0%	0,0%
LI	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%
LU	0,0%	0,0%	0,0%
LV	0,0%	0,0%	0,0%
MT			
NL	0,0%	0,0%	0,0%
NO	0,0%	0,0%	0,0%
PL	0,0%	0,0%	0,0%
PT	-0,2%	-0,2%	-0,1%
RO	0,0%	0,0%	0,0%
SE	0,0%	0,0%	0,0%
SI	0,0%	0,0%	0,0%
SK	0,0%	0,0%	0,0%
<b>Total</b>	<b>0,0%</b>	<b>0,0%</b>	<b>-0,1%</b>

Purple: increase, light orange: decrease, green: zero difference

Source: EUTL extract July 1, 2019 and former extracts, own calculation

### **1.6.9 Comparison of allocated amounts under Article 10a(1), 10a(7) and 10c for the years 2013 to 2018**

Both prior comparisons of allocated amounts focussed only on those allocated under Article 10a. With the data sets from 2015 on, allocated amounts for new entrants (also called NER – new entrants reserve or just “reserve”; see Article 10a(7)) / and the transitional free allocation (10c) are separately shown by installations for the years from 2013 onwards.

Data quality checks for the dataset used for the EEA's EU ETS data viewer

Table 1-9 Allocated amounts for the years 2013 to 2018 for stationary installations

COUNTRY CODE	2019 July data																	
	SummevonALLO CATED_2013	SummevonALL OCATED_RESE RVE_2013	SummevonALLO ATED_TRANSITIO NAL_2013	SummevonALLO CATED_2014	SummevonALL OCATED_RESE RVE_2014	SummevonALLO CATED_TRANSIT IONAL_2014	SummevonALLO CATED_2015	SummevonALL OCATED_RESE RVE_2015	SummevonALL OCATED_TRAN SITIONAL_2015	SummevonALLO CATED_2016	SummevonALL OCATED_RESE RVE_2016	SummevonALL OCATED_TRAN SITIONAL_2016	SummevonALL OCATED_2017	SummevonALL OCATED_RESE RVE_2017	SummevonALL OCATED_TRAN SITIONAL_2017	SummevonALL OCATED_2018	SummevonALL OCATED_RESE RVE_2018	SummevonALL OCATED_TRAN SITIONAL_2018
AT	22.314.317	139.836	-	21.729.285	179.283	-	20.897.099	193.648	-	20.304.382	187.197	-	19.705.989	218.764	-	19.121.357	215.589	-
BE	36.987.881	100.607	-	35.749.766	362.331	-	33.857.606	496.651	-	33.277.664	869.398	-	32.431.977	896.957	-	31.184.209	890.443	-
BG	10.477.130	156.115	11.173.278	9.640.429	234.593	9.779.243	9.169.919	327.179	8.160.589	9.097.819	649.662	6.528.467	8.685.511	700.809	3.812.436	8.275.447	686.850	2.075.525
CY	895.638	317.509	2.519.077	852.370	311.984	2.195.195	837.126	306.460	1.907.302	818.441	300.935	1.583.420	808.569	295.410	1.259.538	803.998	289.886	935.657
CZ	25.276.664	170.123	26.825.970	23.784.842	230.688	22.993.688	22.575.435	354.113	19.161.409	21.436.791	408.889	15.329.126	19.872.619	472.726	11.494.886	19.412.240	409.353	7.661.840
DE	168.267.548	1.315.671	-	163.180.504	1.835.458	-	156.586.335	2.269.088	-	151.507.364	3.013.931	-	146.661.618	3.209.159	-	142.130.312	3.299.801	-
DK	12.180.767	45.561	-	10.969.069	103.798	-	9.762.685	111.906	-	9.013.995	135.692	-	8.353.580	161.541	-	7.727.993	177.064	-
EE	3.076.541	584.403	5.135.166	2.892.984	754.632	4.401.568	2.323.042	1.068.346	3.667.975	1.837.300	1.135.181	2.934.380	1.692.417	1.122.364	2.055.614	1.910.786	1.129.506	38.939
ES	65.202.365	2.061.111	-	58.964.220	2.241.383	-	57.955.380	2.398.030	-	57.473.804	2.499.672	-	55.981.755	2.714.418	-	54.312.963	2.761.616	-
FI	22.559.971	336.611	-	21.223.073	383.485	-	19.488.364	601.654	-	18.070.605	817.927	-	17.002.249	798.024	-	15.970.403	797.954	-
FR	82.289.971	236.101	-	80.094.031	367.389	-	77.105.781	486.365	-	74.973.769	505.874	-	70.491.707	548.203	-	67.150.794	530.933	-
GB	65.686.609	1.078.837	-	63.907.084	1.333.729	-	59.608.812	1.492.789	-	57.911.378	1.785.017	-	51.092.832	1.875.615	-	49.467.832	1.849.406	-
GR	13.885.293	1.144.800	-	13.128.239	1.527.223	-	13.012.422	1.578.709	-	12.745.427	1.552.657	-	12.703.676	1.514.317	-	12.482.319	1.477.061	-
HR	5.268.253	-	-	5.079.562	9.319	-	4.826.293	13.638	-	4.698.559	13.392	-	4.580.337	-	-	4.434.782	-	-
HU	11.498.851	396.306	6.134.625	9.553.664	420.907	-	9.870.048	488.582	-	9.636.553	549.614	-	9.405.400	622.989	-	9.124.116	696.052	-
IE	5.222.237	42.219	-	4.682.891	51.290	-	5.269.356	51.326	-	5.140.237	131.265	-	5.003.118	121.723	-	4.867.278	118.831	-
IS	1.462.844	-	-	1.437.438	-	-	1.411.731	-	-	1.385.754	-	-	1.359.499	-	-	1.332.989	-	-
IT	86.309.051	505.043	-	77.323.438	990.997	-	70.277.550	1.940.667	-	68.424.364	2.131.238	-	66.291.853	2.326.908	-	64.600.852	2.406.100	-
LI	2.077	-	-	1.859	-	-	1.647	-	-	1.441	-	-	1.241	-	-	1.048	-	-
LT	6.532.876	27.407	322.449	6.224.962	46.479	297.113	5.954.919	139.918	269.475	5.687.632	233.725	237.230	5.427.596	273.864	200.379	5.160.909	279.533	158.922
LU	1.352.075	20.589	-	1.278.011	27.062	-	1.281.921	25.958	-	1.251.578	26.070	-	1.221.259	24.794	-	1.190.993	24.731	-
LV	2.567.577	107.118	-	2.313.591	106.363	-	2.014.186	64.003	-	1.832.360	58.861	-	1.699.597	54.030	-	1.555.393	47.708	-
MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	48.996.953	466.474	-	47.584.924	571.745	-	45.994.256	751.826	-	44.421.226	748.796	-	43.837.832	574.412	-	42.793.783	691.402	-
NO	17.470.929	90.411	-	17.048.615	210.874	-	16.661.072	333.895	-	16.355.948	660.231	-	15.966.266	340.273	-	15.580.043	304.591	-
PL	63.394.350	723.669	71.582.255	58.976.684	897.471	60.789.404	54.673.748	1.308.622	43.568.800	51.110.701	1.724.408	31.689.311	48.115.296	2.385.193	21.257.038	44.795.858	2.366.683	18.840.629
PT	11.867.317	650.629	-	11.479.980	644.726	-	10.956.532	519.602	-	10.687.623	525.497	-	10.414.614	522.304	-	10.202.996	520.172	-
RO	23.746.568	542.685	15.748.011	21.089.328	681.585	8.591.461	19.682.179	794.683	9.210.797	21.485.966	835.185	7.189.961	20.209.182	817.233	6.222.255	16.385.016	822.652	3.778.439
SE	28.676.640	403.288	-	26.799.517	606.678	-	25.003.713	607.139	-	23.657.387	793.581	-	22.273.376	889.778	-	20.911.876	861.123	-
SI	2.284.557	-	-	2.367.424	-	-	2.136.638	-	-	1.893.352	524	-	1.794.445	6.055	-	1.725.765	5.942	-
SK	16.385.346	80.990	-	15.674.222	147.093	-	14.904.201	125.233	-	14.433.933	92.810	-	13.719.276	130.438	-	13.543.368	114.936	-
<b>Total</b>	<b>862.139.196</b>	<b>11.744.113</b>	<b>139.440.831</b>	<b>815.032.006</b>	<b>15.278.565</b>	<b>109.047.672</b>	<b>774.099.996</b>	<b>18.850.030</b>	<b>85.946.347</b>	<b>750.573.353</b>	<b>22.387.229</b>	<b>65.491.895</b>	<b>716.804.686</b>	<b>23.618.301</b>	<b>46.302.146</b>	<b>688.157.718</b>	<b>23.775.918</b>	<b>33.489.951</b>

Data quality checks for the dataset used for the EEA's EU ETS data viewer

COUNTRY CODE	Total Allocated Amounts July 2019 data					
	2013	2014	2015	2016	2017	2018
AT	22.454.153	21.908.568	21.090.747	20.491.579	19.924.753	19.336.946
BE	37.088.488	36.112.097	34.354.257	34.147.062	33.328.934	32.074.652
BG	21.806.523	19.654.265	17.657.687	16.275.948	13.198.756	11.037.822
CY	3.732.224	3.359.549	3.050.888	2.702.796	2.363.517	2.029.541
CZ	52.272.757	47.009.218	42.090.957	37.174.806	31.840.231	27.483.433
DE	169.583.219	165.015.962	158.855.423	154.521.295	149.870.777	145.430.113
DK	12.226.328	11.072.867	9.874.591	9.149.687	8.515.121	7.905.057
EE	8.796.110	8.049.184	7.059.363	5.906.861	4.870.395	3.079.231
ES	67.263.476	61.205.603	60.353.410	59.973.476	58.696.173	57.074.579
FI	22.896.582	21.606.558	20.090.018	18.888.532	17.800.273	16.768.357
FR	82.526.072	80.461.420	77.592.146	75.479.643	71.039.910	67.681.727
GB	66.765.446	65.240.813	61.101.601	59.696.395	52.968.447	51.317.238
GR	15.030.093	14.655.462	14.591.131	14.298.084	14.217.993	13.959.380
HR	5.268.253	5.088.881	4.839.931	4.711.951	4.580.337	4.434.782
HU	18.029.782	9.974.571	10.358.630	10.186.167	10.028.389	9.820.168
IE	5.264.456	4.734.181	5.320.682	5.271.502	5.124.841	4.986.109
IS	1.462.844	1.437.438	1.411.731	1.385.754	1.359.499	1.332.989
IT	86.814.094	78.314.435	72.218.217	70.555.602	68.618.761	67.006.952
LI	2.077	1.859	1.647	1.441	1.241	1.048
LT	6.882.732	6.568.554	6.364.312	6.158.587	5.901.839	5.599.364
LU	1.372.664	1.305.073	1.307.879	1.277.648	1.246.053	1.215.724
LV	2.674.695	2.419.954	2.078.189	1.891.221	1.753.627	1.603.101
MT	-	-	-	-	-	-
NL	49.463.427	48.156.669	46.746.082	45.170.022	44.412.244	43.485.185
NO	17.561.340	17.259.489	16.994.967	17.016.179	16.306.539	15.884.634
PL	135.700.274	120.663.559	99.551.170	84.524.420	71.757.527	66.003.170
PT	12.517.946	12.124.706	11.476.134	11.213.120	10.936.918	10.723.168
RO	40.037.264	30.362.374	29.687.659	29.511.112	27.248.670	20.986.107
SE	29.079.928	27.406.195	25.610.852	24.450.968	23.163.154	21.772.999
SI	2.284.557	2.367.424	2.136.638	1.893.876	1.800.500	1.731.707
SK	16.466.336	15.821.315	15.029.434	14.526.743	13.849.714	13.658.304
<b>Total</b>	<b>1.013.324.140</b>	<b>939.358.243</b>	<b>878.896.373</b>	<b>838.452.477</b>	<b>786.725.133</b>	<b>745.423.587</b>

Data quality checks for the dataset used for the EEA's EU ETS data viewer

COUNTRY CODE	Comparison 2015 Allocation May 2019 with July 2019 data			Comparison 2016 Allocation May 2019 with July 2019 data			Comparison 2017 Allocation May 2019 with July 2019 data			Comparison 2018 Allocation May 2019 with July 2019 data			Comparison total Free Allocation with data of May 2019			
	ALLOCATED	ALLOCATED _RESERVE	ALLOCATED _TRANSITI ONAL	ALLOCATED	ALLOCATED _RESERVE	ALLOCATED _TRANSITI ONAL	ALLOCATED	ALLOCATED _RESERVE	ALLOCATED _TRANSITI ONAL	ALLOCATED	ALLOCATED _RESERVE	ALLOCATED _TRANSITI ONAL	2015	2016	2017	2018
AT	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
BE	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
BG	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CZ	-0,1%	0,0%	0,0%	-0,1%	0,0%	0,0%	-0,1%	0,0%	0,0%	-0,1%	0,0%	0,0%	-0,1%	-0,1%	-0,1%	-0,1%
DE	0,1%	9,2%	-	0,1%	6,8%	-	0,1%	6,4%	-	0,1%	7,2%	-	0,2%	0,2%	0,2%	0,2%
DK	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
ES	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
FI	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
FR	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
GB	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
GR	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
HR	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
HU	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
IE	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
IS	0,0%	-	-	0,0%	-	-	0,0%	-	-	0,0%	-	-	0,0%	0,0%	0,0%	0,0%
IT	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
LI	0,0%	-	-	0,0%	-	-	0,0%	-	-	0,0%	-	-	0,0%	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	4,5%	0,0%	0,0%	0,0%	0,0%	0,2%
LU	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
LV	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NL	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
NO	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
PL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PT	0,0%	0,0%	-	0,0%	0,0%	-	-0,2%	0,0%	-	-0,2%	0,0%	-	0,0%	0,0%	-0,2%	-0,2%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1,0%	0,0%	0,0%	3,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%
SE	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
SI	0,0%	-	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
SK	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,0%	0,0%	0,0%
<b>Total</b>	<b>0,0%</b>	<b>1,1%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,9%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,9%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>1,2%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>	<b>0,0%</b>

Purple: increase, light orange: decrease, green: zero difference

Sources: EUTL extract July 1, 2019 and former extracts, own calculation

In total, NER allowances (Column: "Allocated\_Reserve") increased by about 1.1% in 2015, 0.9% in 2016 and 2017 and 1.2% in 2018. NER allowances for Germany increased by 9.2% in 2015, 6.8% in 2016, 6.4% in 2017 and 7.2% in 2018. Other countries with high increases are Lithuania and Romania in 2018.

#### **1.6.10 Aviation**

For aviation a comparison of verified emissions, free allocation and surrendered units has been conducted together for the years 2012-2017.

Table 1-10 Changes in VE, free allocation and surrendered units to aviation operators (2012-2017) between datasets (calculated as difference between July 2019 and May 2019 data / allowances (July 2019))

MS	Percentages related to last available data (+ => increase)																				
	VERIFIED_E MISSIONS_2012	VERIFIED_E MISSIONS_2013	VERIFIED_E MISSIONS_2014	VERIFIED_E MISSIONS_2015	VERIFIED_E MISSIONS_2016	VERIFIED_E MISSIONS_2017	VERIFIED_E MISSIONS_2018	Allocation 2012	Allocation 2013	Allocation 2014	Allocation 2015	Allocation 2016	Allocation 2017	Allocation 2018	SURRENDED_UNITS_2012	SURRENDED_UNITS_2013	SURRENDED_UNITS_2014	SURRENDED_UNITS_2015	SURRENDED_UNITS_2016	SURRENDED_UNITS_2017	SURRENDED_UNITS_2018
AT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
BG	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0%	0%			0,0%	0,0%	0,0%	0%	0%	0%	0%
CZ	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
DK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%				0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
ES	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
FR	0,0%	0,0%	0,0%	-0,1%	-0,2%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GB	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
GR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,5%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
HU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IS	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
IT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
LV	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
MT	0,0%	0,0%	0,0%	0,0%	6,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
NO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
PT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	-0,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SI	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
SK	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Total	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Purple: increase, light orange: decrease, green: zero difference

Sources: EUTL extract July 1, 2019 and former extracts, own calculation



For aviation operators, there are only very small changes for verified emissions: They slightly decreased for France from 2015 to 2017 and in the United Kingdom in 2012. Significant increases can also be observed in Malta for the years 2016 and Lithuania for 2018. The change of 100% for Lithuania is due to a key date effect, as no verified emissions were reported in the May update.

## **2 Aggregated database**

Updated data for 2005 to 2020 on free allowances, for 2005-2018 on verified emissions and for 2005-2018 on surrendered units for all installations has been aggregated and integrated in the aggregated database.

## **3 Auctioning**

Auctioning data has not changed qualitatively between May 2019 and July 2019.