

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

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Christian Nissen, Sabine Gores
(EEA project manager: Stephanie Schilling)

European Environment Agency
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ETC/CME consortium partners: *AETHER*, Interprofessional Technical Centre for Studies on Air Pollution (*CITEPA*), Czech Hydro-meteorological Institute (*CHMI*), Energy and Environmental Studies and Software Development (*EMISIA*), Institute for Applied Ecology (*ÖKO-INSTITUT*), *ÖKO-RECHERCHE*, Norwegian Institute for Air Research (*NILU*), Netherlands Environmental Assessment Agency (*PBL*), National Institute for Public Health and the Environment (*RIVM*), Environment Agency Austria (*UBA*), Flemish Institute for Technological Research (*VITO*)

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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 April 2, 2019 contained 17 384 installations-rows. The dataset used for the ETS data viewer includes 17 367 entities:
 - 15 822 stationary and 1 545 aviation operators
 - 12 742 open and 4 625 (27% of total) closed entities
 - 3 236 entities (19% of total) not operating in the third trading period
- 24 entities entered the trading system between April 2019 and May 2019.
- Total verified emissions 2018 from stationary installations sum up to 1 674 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.
- 23% 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).
- 3 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 May 3, 2019 and provided this extract to the EEA (referred to as “extract for EEA” in the text). The data used for the ETS data viewer¹ is based on this extract.

It contained 17 384 installations-rows with detailed information. After joining the rows for installations from CY and MT it ends up in **17 368 entities** (minus 13 for Cyprus, minus 2 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^{2,3} 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 **17 367** entities.

1.2.2 Results of plausibility checks

No MS-IDs are doubled.

Compared to the dataset of April 2019, no installation is missing and 24 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).

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

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

³ <https://www.aecom.com/hk/projects/electrogas-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
2013	1,343	30	215	0	95	25,715	283,234	0	29,041
2014	1,319	1	203	0	83	6,509	182,016	0	162,216
2015	1,348	2	224	0	25	86	285,713	0	8,046
2016	1,346	0	222	0	19	0	247,310	0	14,293
2017	1,345	0	231	2	28	0	241,327	1,182	6,410
2018	1,238	1	230	2	23	1,304	251,717	644	3,344
Total	7,939	34	1,325	4	273	33,614	1,491,317	1,826	223,350

Source: EUTL extract May 3, 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 website⁴ and the extract for EEA directly provided by the Commission on May 3, 2018 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.

⁴ 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 May 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).

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 17 367.

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 two aviation operators are included in the extract which are doubled (GB 202618 and 202850 and NL 202792 and 202833).

In the most actual dataset it can be seen that GB 202850 has been closed in May 2015 and that only 2012 emissions, allocation and surrendered units have been included. Since July 2017 GB 202618 was no longer included in the extract for EEA.

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, 3909 installations, so 23% of all installations, still report old activity codes (see Table 1-2). These are 9 less than in the dataset of April 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 - April 2019	Number of installations - May 2019
1	3471	3216	2846	2752	2745
2	51	48	41	39	38
3	3	3	3	3	3
4	4	4	4	4	4
5	77	74	49	47	47
6	192	176	133	129	129
7	163	148	112	110	109
8	614	579	563	560	560
9	390	358	284	274	274
Total	4965	4606	4035	3918	3909

Source: EUTL extract April 2, 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 2016⁵). 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.

⁵http://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 April 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	2 745	78 500 603						
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	560	943 991						
9	274	2 338 014						
10	1545	66 934 244	1 545	66 934 244	0	0	0%	0%
20	7336	1 030 710 238	9697	1 100 866 780	2 361	70 156 542	24%	6%
21	138	115 594 753	175	124 617 261	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	294	108 180 808	51	8 240 779	17%	8%
25	245	13 160 472	284	13 349 745	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	245	116 160 518	331	121 029 267	86	4 868 749	26%	4%
30	273	29 826 995	428	32 359 888	155	2 532 893	36%	8%
31	360	16 946 090	463	18 146 740	103	1 200 650	22%	7%
32	1171	13 912 438	1738	14 845 114	567	932 676	33%	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	19 147 471	868	21 867 657	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	345	35 767 071	456	38 274 427	111	2 507 356	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	3 909	103 333 171	-	-				
Group 10-99	13 458	1 637 290 524	17 367	1 740 623 695				
Total	17 367	1 740 623 695	17 367	1 740 623 695	3 909	103 333 171	23%	6%

Note: The total number of translations given in the table (3 909) is not the absolute number of translations

Source: EUTL extract May 3, 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 **1 545**, so there are **15 822 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	02. Apr 19	03. May 19	Difference April 19 - May 19
AT	284	287	290	292	292	295	295	0
BE	473	478	484	488	491	497	498	1
BG	171	172	172	172	172	174	174	0
CY	22	23	24	26	27	27	28	1
CZ	459	462	466	466	468	468	468	0
DE	2639	2659	2674	2689	2725	2765	2768	3
DK	455	456	458	460	460	461	461	0
EE	62	65	65	66	66	66	66	0
ES	1432	1444	1454	1468	1481	1490	1492	2
FI	708	717	726	729	732	737	738	1
FR	1603	1635	1655	1671	1713	1726	1730	4
GB	1686	1737	1772	1838	1927	1984	1985	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	229	231	2
IS	37	38	39	41	44	44	44	0
IT	1544	1563	1581	1593	1610	1624	1626	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	1075	1080	5
PT	356	358	359	361	364	368	369	1
RO	289	293	297	298	300	302	302	0
SE	909	918	935	945	949	961	962	1
SI	104	104	104	104	106	106	106	0
SK	221	221	221	222	222	222	222	0
Total	16325	16539	16713	16892	17151	17343	17367	24

Source: EUTL extract May 3, 2019 and former extracts, own calculation

As shown in Table 1-4, the May 2019 dataset includes 24 more entities than the April 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 May 2019, 12 742 entities have been indicated as open, 4 625 (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 slightly increased (by 5) compared to the dataset of April 2019.

64 of those 3 236 entities no longer active in the 3rd trading period still have open accounts.

1.6.4 Permit identifier

For 3 entities, the permit identifier has been changed. They are all open installations. The activity type codes are 10 (located in France and Iceland) and 20 (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 April 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 April 2019 and May 2019 data / VE (May 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%	1,9%	0,0%	0,0%	0,0%	7,8%
BG	0,0%	0,0%	6,4%	0,0%	0,0%	0,0%	28,3%
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%	0,1%	0,0%	0,0%	0,0%	0,3%
DK	0,0%	0,0%	0,0%	0,0%	0,0%	-0,1%	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%	0,2%	0,0%	0,0%	0,0%	1,0%
FR	0,0%	0,0%	0,6%	0,0%	0,0%	0,0%	2,6%
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%	0,1%	0,0%	0,0%	0,0%	0,3%
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%	1,0%	0,0%	0,0%	0,0%	4,3%
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%	1,7%	0,0%	0,0%	0,0%	9,3%
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%	0,2%
NO		0,0%	0,0%	0,0%	0,0%	-0,2%	0,2%
PL	0,0%	0,0%	1,6%	0,0%	0,0%	0,0%	9,8%
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%
Total	0,0%	0,0%	0,4%	0,0%	0,0%	0,0%	2,5%

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

Source: EUTL extract May 3, 2019 and former extracts, own calculation

There are only changes in the third decimal places for the second trading period in Ireland but higher changes for the third trading period.

For 2018 many emission increases can be observed. This is due to the fact that in many cases the April data was not yet completely available on the key date.

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, 2005-2017) between datasets (calculated as difference between April 2019 and May 2019 data / allowances (May 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%
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%	0,0%	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%	-0,1%	0,0%	-0,1%	-0,1%	-0,2%
FI	0,0%	0,0%	-0,3%	0,0%	0,0%	-0,5%	-1,5%
FR	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	-0,1%
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%	-0,3%
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%	0,0%	0,0%	0,0%	0,0%	0,0%
RO	0,0%	0,0%	-0,1%	0,0%	0,0%	0,0%	-0,4%
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%	-0,1%

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

Source: EUTL extract May 3, 2019 and former extracts, own calculation

For the third trading period, free allowances changed for several countries for the years 2014-2017, but the overall change for the 3rd trading period is insignificant. The only change above 1% is in Finland for 2018.

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 April 2019 and May 2019 data / allowances (May 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 May 3, 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 was a decrease of 0.1% for 2018 and increases of 0.3% of total allocation for 2019 and 2020. Decreases have taken place in Germany, Denmark, Spain, Finland, France, Hungary, Italia, Lithuania, Poland and Slovakia. Increases took place in the United Kingdom and Greece. The most significant changes can be observed for Romania. This is mostly due to changes for the installation RO 44.

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

	2018	2019	2020
AT	0,0%	0,0%	0,0%
BE	0,0%	0,0%	0,0%
BG	0,0%	0,0%	0,0%
CY	0,0%	0,0%	0,0%
CZ	0,0%	0,0%	0,0%
DE	0,0%	-0,1%	-0,1%
DK	0,0%	0,0%	0,0%
EE	0,0%	0,0%	0,0%
ES	-0,2%	-0,2%	-0,2%
FI	-1,3%	-1,3%	-1,4%
FR	-0,1%	-0,3%	-0,3%
GB	0,0%	0,4%	0,4%
GR	0,0%	0,3%	0,3%
HR	0,0%	0,0%	0,0%
HU	0,0%	-0,1%	-0,1%
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	-0,2%	-0,4%	-0,4%
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%	-0,3%	-0,3%
PT	0,0%	0,0%	0,0%
RO	-0,3%	11,7%	14,0%
SE	0,0%	0,3%	0,2%
SI	0,0%	0,0%	0,0%
SK	0,0%	-0,1%	-0,1%
Total	-0,1%	0,3%	0,3%

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

Source: EUTL extract May 3, 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 May 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	25 305 524	170 123	26 825 970	23 813 201	230 688	22 993 688	22 603 286	354 113	19 161 409	21 464 131	408 889	15 329 126	19 899 441	472 696	11 494 886	19 438 537	409 202	7 661 840
DE	167 996 739	1 315 671	-	162 911 922	1 835 458	-	156 414 109	2 060 598	-	151 338 981	2 810 319	-	146 552 624	3 005 047	-	142 019 458	3 062 308	-
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	-	12 482 992	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	-	64 603 371	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	273 465	200 379	5 160 909	267 038	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	44 809 794	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	-	10 438 578	522 304	-	10 223 230	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	809 018	6 222 255	16 385 016	796 783	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	-
Total	861 897 247	11 744 113	139 440 831	814 791 783	15 278 565	109 047 672	773 955 621	18 641 540	85 946 347	750 432 310	22 183 617	65 491 895	716 746 478	23 405 545	46 302 146	688 110 523	23 499 910	33 489 951

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

COUNTRY CODE	Total Allocated Amounts May 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	52 301 617	47 037 577	42 118 808	37 202 146	31 867 023	27 509 579
DE	169 312 410	164 747 380	158 474 707	154 149 300	149 557 671	145 081 766
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	13 960 053
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	67 009 471
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	5 901 440	5 586 869
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	66 017 106
PT	12 517 946	12 124 706	11 476 134	11 213 120	10 960 882	10 743 402
RO	40 037 264	30 362 374	29 687 659	29 511 112	27 240 455	20 960 238
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
Total	1 013 082 191	939 118 020	878 543 508	838 107 822	786 454 169	745 100 384

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

COUNTRY CODE	Comparison 2015 Allocation April 2019 with May 2019 data			Comparison 2016 Allocation April 2019 with May 2019 data			Comparison 2017 Allocation April 2019 with May 2019 data			Comparison 2018 Allocation April 2019 with May 2019 data			Comparison total Free Allocation with data of April 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%	0,9%	-	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%	100,0%	0,0%	0,0%	0,0%	18,8%
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%
DE	0,0%	0,0%	-	0,0%	1,4%	-	0,0%	2,0%	-	0,0%	2,6%	-	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%
EE	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	1,3%
ES	0,0%	1,0%	-	-0,1%	1,8%	-	-0,1%	7,3%	-	-0,2%	11,1%	-	0,0%	0,0%	0,2%	0,4%
FI	0,0%	0,9%	-	0,0%	0,6%	-	-0,5%	2,6%	-	-1,5%	7,1%	-	0,0%	0,0%	-0,3%	-1,1%
FR	0,0%	1,0%	-	0,0%	2,2%	-	0,0%	3,4%	-	-0,1%	4,4%	-	0,0%	0,0%	0,0%	-0,1%
GB	0,0%	0,0%	-	0,0%	0,4%	-	0,0%	2,2%	-	0,0%	2,2%	-	0,0%	0,0%	0,1%	0,1%
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%
HU	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,2%	-	0,0%	1,3%	-	0,0%	0,0%	0,0%	0,1%
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%	-0,1%	-	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%	0,0%	0,0%	0,0%	-0,3%	0,0%	100,0%	0,0%	0,0%	0,0%	2,6%
LU	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	1,5%	-	0,0%	6,0%	-	0,0%	0,0%	0,0%	0,1%
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%	11,4%	0,0%	0,0%	14,3%	0,0%	0,3%	15,2%	0,0%	3,2%	100,0%	5,0%	5,4%	4,5%	28,7%
PT	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,5%	-	0,0%	2,1%	-	0,0%	0,0%	0,0%	0,1%
RO	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	-0,4%	1,2%	100,0%	0,0%	0,0%	0,0%	17,7%
SE	0,0%	0,0%	-	0,0%	0,0%	-	0,0%	0,3%	-	0,0%	5,8%	-	0,0%	0,0%	0,0%	0,2%
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%
Total	0,0%	0,2%	5,8%	0,0%	0,5%	6,9%	0,0%	1,5%	7,0%	-0,1%	2,9%	74,3%	0,6%	0,5%	0,4%	3,4%

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

Sources: EUTL extract May 3, 2019 and former extracts, own calculation

NER allowances increased for some countries, especially in 2017 and 2018. As NER allocation is linked to putting into operation a new plant or a new part of it, high relative changes are not surprising.

In total, NER allowances increased by about 1.5% in 2017 and 2.9% in 2018. NER allowances for Spain increased by 11% in 2018 and 7% in 2017. Other countries with high increases are Belgium, Finland, France, United Kingdom, Hungary, Luxembourg, Lithuania, Poland, Portugal, Romania and Sweden.

10c allowances increased for Bulgaria, Estonia, Lithuania, Poland and Romania.

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.

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

Table 1-10 Changes in VE, free allocation and surrendered units to aviation operators (2012-2017) between datasets (calculated as difference between April 2019 and May 2019 data / allowances (May 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%	-6,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	99,3%
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%	99,8%
BG	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	46,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%
CY	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	52,9%	0,0%	0,0%	0,0%	0%	0%			0,0%	0,0%	0,0%	0%	0%	0%	97%
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%	98,0%
DE	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	3,6%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	94,8%
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%	95,8%
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%	100,0%
ES	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	6,8%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	99,6%
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%	0,0%	0,0%	0,0%	81,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	94,2%
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%	-19,2%	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%	96,0%
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%	100,0%
HU	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	99,4%
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%	100,0%
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%	100,0%
IT	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%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	99,9%
LT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	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%	100,0%
MT	0,0%	0,0%	0,0%	0,0%	0,0%	7,5%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	85,8%
NL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,1%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%
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%	95,1%
PL	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	11,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%
PT	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,4%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%
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%	100,0%
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%	98,3%
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%	100,0%
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%	100,0%
Total	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	6,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	76,8%

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

Sources: EUTL extract May 3, 2019 and former extracts, own calculation

For aviation operators, there are only changes for verified emissions: They slightly increased for Germany, France, Ireland, Hungary and Portugal in 2017. Minor changes can also be observed for the years 2015 on in Italia. Significant changes occurred for Malta, with an increase of 7.5% for to 2017. The large changes in 2018 are due to key date effects and will probably disappear with the next data update in July.

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 April 2019 and May 2019.