



EU Emissions Trading System data viewer

User manual and background note

Version: 7

Date: 15 November 2016

**Acknowledgments**

The EU ETS data viewer is prepared by the European Environment Agency (EEA), with support from the European Topic Centre for Air pollution and Climate change Mitigation (ETC/ACM).

The EEA acknowledges in particular, the input from Sabine Gores, Verena Graichen, Johanna Cludius and Carina Zell-Ziegler from the Öko-Institut, Germany (as ETC/ACM partner).

ENQUIRIES

For questions and feedback to the EU ETS data viewer please send a message at www.eea.europa.eu/enquiries/ including “EU ETS data viewer” in the subject line.

DISCLAIMER

The EEA accepts no responsibility or liability whatsoever with regard to any use of the EU ETS data viewer nor the use, accuracy or completeness of the EUTL data. Please also note the general disclaimer which applies for all information on the EEA website at <http://www.eea.europa.eu/legal/disclaimer>.



Contents

Contents	3
1 Introduction	4
2 Data viewer description	4
3 Data sources	5
3.1 EUTL	5
3.2 Other sources	6
3.2.1 Main activity of individual entities	6
3.2.2 Corrections to freely allocated allowances	6
3.2.3 Auctions	6
3.2.4 Estimates for 2008–2012 to reflect the current scope of the EU ETS.....	7
4 Regional disaggregation	7
5 Temporal disaggregation	8
6 ETS information	9
7 Activity	10
8 Size of entities	13
9 Active entities and number of entities.....	13
10 Measures	13
11 Gases	14
Annex 1 – Correction of freely allocated allowances	15
1 Stationary installations	15
2 Aviation	15
Annex 2 – Auctioning	17
Annex 3 – Estimates to reflect current ETS scope for stationary installations	20

List of figures

Figure 2.1 Main elements and functionalities of the EU ETS data viewer.	5
Figure A3.1 Scope of the EU ETS since 2005	20

List of tables

Table 4.1 Countries and country groups	7
Table 6.1 ETS information	9
Table 7.1 EUTL activity types.....	10
Table 7.2 Allocation of new activity codes to installation with old codes.....	12
Table 8.1 Size definitions.....	13
Table A1.1 Corrections to freely allocated allowances for stationary installations	15
Table A1.2 Adjustment to freely allocated allowances for aviation operators in the year 2012	16



1 Introduction

The European Union (EU) Emissions Trading System (ETS) is one of the main and most prominent measures introduced by the EU to reduce its greenhouse gas emissions and reach its reduction target under the Kyoto Protocol, the internal EU-target for 2020. The main source of information on the system at EU level is the European Union Transaction Log (EUTL), formerly called Community Independent Transaction Log (CITL) ⁽¹⁾. The EUTL, which is run by the European Commission, checks and records all transactions carried out under the EU ETS. It contains information on each entity covered by the system, including its main activity type, the quantity of allocated allowances and verified emissions on an annual basis. However, the data is not easily accessible in a user-friendly format.

The European Environment Agency (EEA) ⁽²⁾ and its European Topic Centre on Air pollution and Climate change Mitigation (ETC/ACM) ⁽³⁾ developed the EU ETS data viewer, a tool to facilitate access to the information contained in the EUTL, as well as relevant additional information related to the EU ETS. The EEA's EU ETS data viewer aims to support governments, market players and other stakeholders in their assessment of the EU ETS. The EU ETS data viewer is accessible on EEA website at: www.eea.europa.eu/data-and-maps/data/data-viewers/emissions-trading-viewer.

This viewer enables users to assess the data concerning stationary installations and aircraft operators and emissions contained in the EUTL by country or country grouping, activity, size and year. While entity-level data are available from the EUTL, the EU ETS data viewer provides aggregated data at national level.

In the first and second trading period (2005–2007 and 2008–2012) the EUTL contained information for the nine categories of activities for stationary installations mentioned in Annex I of the Emission Trading Directive ⁽⁴⁾ and an additional category for opt-in installations. For the third trading period (2013–2020) new activity categories have been introduced. In total, there are now 28 categories of activities for stationary installations, some of which correspond to old categories while others pertain to new activities covered by the scheme from the third trading period onwards (see Chapter 7). Information on aviation operators (ETS activity type 10) is also included in the EU ETS data viewer

This manual describes the functionalities and underlying data of the EU ETS data viewer. The latest version of the EU ETS data viewer is based on data accessed from the EUTL on 13 September 2016.

2 Data viewer description

This chapter explains the requirements and usage of the tool. For a more thorough explanation of the content of the different sheets and on their interpretation please refer to the following sections. The diagram below presents some of the main elements and functionalities of the EU ETS data viewer.

⁽¹⁾ <http://ec.europa.eu/environment/ets>

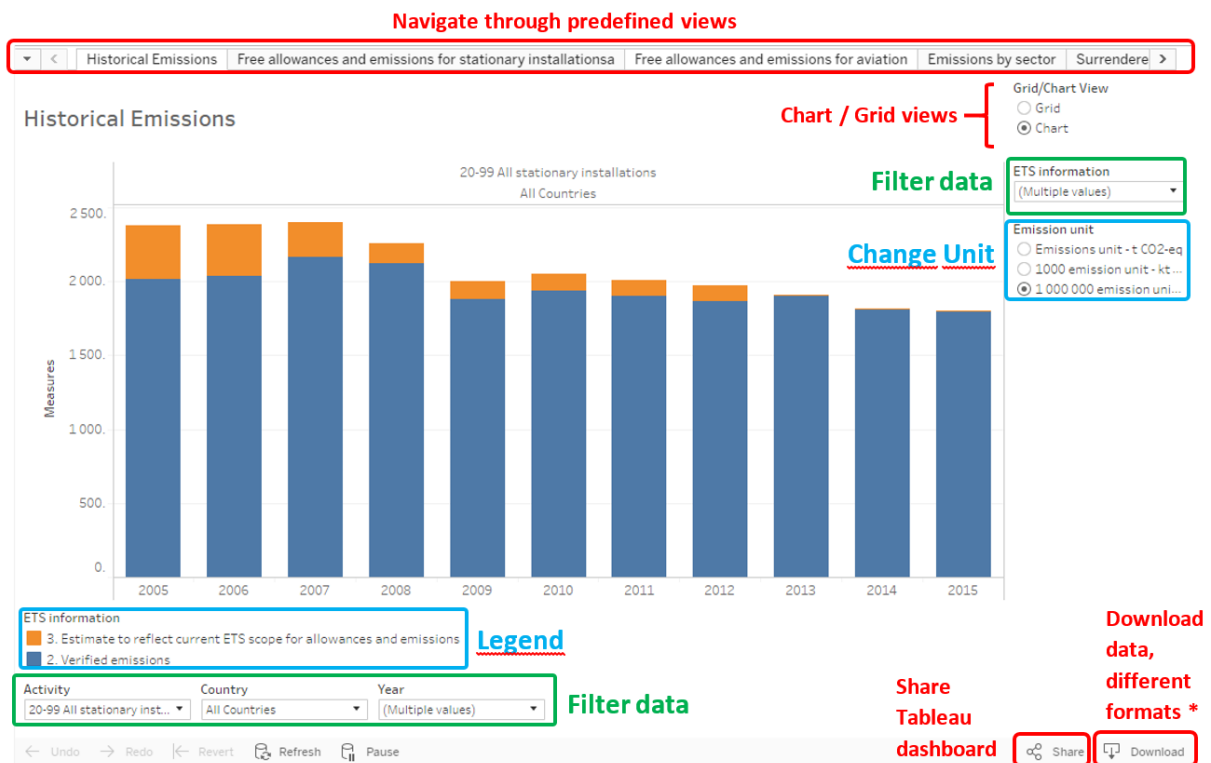
⁽²⁾ <http://www.eea.europa.eu>

⁽³⁾ <http://air-climate.eionet.europa.eu>

⁽⁴⁾ Directive 2009/29/EC of the European Parliament and of the council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, Official Journal of the European Union, 5.6.2009



Figure 2.1 Main elements and functionalities of the EU ETS data viewer.



Predefined views:

The "Predefined views" tab menu allows switching between default predefined views. Predefined views are also selectable from the dropdown button on the left side. Several predefined views are available from the menu.

Filters:

It's possible to filter the data in the views to show a more detailed or broader set of data.

Chart/Grid buttons:

The "Chart/Grid" buttons allow easy switching between chart view and grid view.

Data Download:

We can choose different formats to download the data. If we want the tabular data we can either choose "Crosstab" or "Data". **If these two options are disabled**, we'll have to select the desired data to be downloaded by using the mouse.

3 Data sources

The EU ETS data viewer contains information for all stationary installations included in the EU ETS since 2005, as well as for aircraft operators covered by the EU ETS.

3.1 EUTL

Most of the data included in the EU ETS data viewer originate from the EUTL. The following elements of the data viewer are based on entity-level data available from the EUTL (see Chapter 6 for further explanation):

- the quantity of allowances allocated to each entity for the years 2005 to 2015;
- the quantity of verified emissions of that entity for the years 2005 to 2015;
- the amount of total units surrendered: the amounts of EU Allowances (EUAs or EUAAs) surrendered; for 2008–2012: the amounts of certified reduction units (CERs) and emission



reduction units (ERUs) surrendered (in the third trading period CERs and ERUs are exchanged for EUAs and EUAAs before being surrendered); and

- the information on active entities in third trading period, basing on information reported by operators on the year of last emissions. An entity is indicated as not active if its year of last emission is reported to be 2012 or before (no) or active (yes) if the year of last emission is 2013 or later or not reported.

The data contained in the EUTL is undergoing constant changes, for examples due to:

- entities entering or leaving the EU ETS;
- addition of missing information, e.g. late verified emission reports;
- correction of emission reports or inaccurate data in national registries; and
- changes of allocated amounts following legal proceedings.

The EU ETS data viewer reflects data as available from the EUTL, including for those entities for which data may still be incomplete (e.g. in case of missing reports on verified emissions, on-going legal proceedings on allocation, etc.).

3.2 Other sources

3.2.1 Main activity of individual entities

Main activity type codes are generally available from EUTL.

With the start of the third trading period of the EU ETS (2013-2020) new activity codes (codes 20-47) have been introduced. All new entities entering the scheme are automatically assigned a new activity code. However, not all installations that were already part of the scheme before the start of the third trading period have changed to the new activity codes, but kept the old codes. The ETC/ACM applied a methodology to map those old codes (1-9) to new codes (20-43) in order to facilitate analysis of the different activities. The methodology is mainly based on information on NACE codes which have been published by the European Commission as part of the preparation of the carbon leakage list for 2015-2019⁽⁵⁾. Details on the translation of activity codes are available in an ETC/ACM technical paper ⁽⁶⁾. The translation is regularly updated to include country specific information. The most actual translation table is available as download from the EEA Data Service (file: [Translation of activity codes April 2016.xlsx](#)).

3.2.2 Corrections to freely allocated allowances

For stationary installations, corrections to freely allocated allowances are provided in the EU ETS data viewer on country level. These corrections are reflecting information provided directly by countries in the course of MS consultation cycles for the annual EEA Trends and Projections Reports of last years.

For aviation-related information, a correction for freely allocated allowances in the year 2012 is provided. As some aviation operators choose to comply only with the reduced aviation scope due to the "stop the clock decision", freely allocated allowances exceeding this reduced scope had to be returned. To a large extent these returns are not reflected in the EUTL. The corrections to freely allocated allowances due to the change in scope have been provided by the European Commission ⁽⁷⁾.

Further detailed information on these corrections is provided in Annex I.

3.2.3 Auctions

Information on EUAs and EUAAs auctioned or sold by governments has been gathered from various sources and is available on the country level. For the first and second trading period the number of EUAs auctioned or sold by governments has been collected from publications from the

⁽⁵⁾ http://ec.europa.eu/clima/policies/ets/cap/leakage/docs/installation_nace_rev2_matching_en.xls as of 23 March 2015.

⁽⁶⁾ http://acm.eionet.europa.eu/docs/ETCACM_EU-ETS_translation_of_activity_codes_April_2016_for_publication.pdf

⁽⁷⁾ http://ec.europa.eu/clima/policies/transport/aviation/docs/20130926_returns_en.pdf



respective countries, as well as auction reports published by the trading platforms on which the auctions are carried out, details on these sources are given in .

From the third trading period onwards, auctioned volumes are derived from auction calendars and auction reports published by the two exchanges that carry out auctions of allowances for the third trading period: The European Energy Exchange (EEX) and the Intercontinental Exchange (ICE)⁽⁸⁾.

Further detailed information on auctioned amounts is provided in Annex II.

3.2.4 Estimates for 2008–2012 to reflect the current scope of the EU ETS

An estimate to reflect current EU ETS scope is necessary in order to compare ETS data on a stable basis across years and trading periods. Using information from a range of data sources, including the EUTL, national GHG inventories and EU ETS documentation, an estimate to reflect current ETS scope for stationary installations has been calculated by the EEA for each year and for each participating country. This estimate is applied both to verified emissions and allocated allowances. It does not address changes related to the inclusion or exclusion of individual entities within trading periods (e.g. new entrants and closures). No estimate was quantified for aviation. The methodology applied by EEA for such estimates is documented in detail in an ETC/ACM technical paper ⁽⁹⁾.

A short explanation of the estimates to reflect current ETS scope provided in the EU ETS data viewer is provided in Annex III.

4 Regional disaggregation

The EU ETS data viewer includes data for all countries participating in the EU ETS. The user can select individual countries or country groups. Countries are sorted alphabetically followed by the country groups. Table 4.1 lists all participating countries and indicates to which groups they belong.

Table 4.1 *Countries and country groups*

	EU-28	All countries
Austria	x	x
Belgium	x	x
Bulgaria	x	x
Croatia	x	x
Cyprus	x	x
Czech Republic	x	x
Denmark	x	x
Estonia	x	x
Finland	x	x
France	x	x
Germany	x	x
Greece	x	x
Hungary	x	x
Iceland		x
Ireland	x	x
Italy	x	x
Latvia	x	x

⁽⁸⁾ www.eex.com; www.theice.com

⁽⁹⁾ http://acm.eionet.europa.eu/reports/ETCACM_TP_2016_1_Estimates_reflect_current_scope_ETS



	EU-28	All countries
Liechtenstein		x
Lithuania	x	x
Luxembourg	x	x
Malta	x	x
Netherlands	x	x
Norway		x
Poland	x	x
Portugal	x	x
Romania	x	x
Slovak Republic	x	x
Slovenia	x	x
Spain	x	x
Sweden	x	x
United Kingdom	x	x

In addition, the auctioning of a number of allowances at EU level only, as part of the NER300 program, made it necessary to include an additional item “NER 300” in the list of countries.

5 Temporal disaggregation

Emission caps under the EU ETS are determined for multiannual trading periods, and operators must comply with their obligations on an annual basis. The nature of the entities covered under the EU ETS, as well as allocation rules might differ between trading periods. The first trading period (also called supplementary program commitment period) covered three years (2005-2007); the second trading period covered five years (2008-2012), while the third trading period (2013-2020) covers eight years. No ‘banking’ (carry-over) of EUAs was possible between the first and the second trading period.

The user can choose the following settings in the category 'year':

- 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 or 2015: data for an individual year.
- total 1st trading period (2005–2007): sum of the three years (2005 to 2007) of the first trading period.
- total 2nd trading period (2008–2012): sum of the five years (2008 to 2012) of the second trading period.
- total 3rd trading period (2013–2015): sum of the first three years (2013 to 2015) of the third trading period

As illustrated in Chapter 4, the number of countries participating in the EU ETS has increased over time. For example Bulgaria and Romania only entered the EU ETS in 2007. If 2005 or 2006 is selected, no data is shown for these two countries. The same applies to the selection of the years 2005, 2006 or 2007 for Norway and Liechtenstein who joined the EU ETS in 2008. For Iceland, no data is shown for the years 2005 to 2011 and for Croatia no data is shown for the years 2005 to 2012.



6 ETS information

The EU ETS data viewer gives the possibility to visualise data related to one or several types of information related to the EU ETS (See Table 6.1).

Table 6.1 ETS information

Item	Description
1. Total allocated allowances (EUAs and EUAAs)	Total number of allocated allowances.
1.1. Freely allocated allowances	Total number of allowances received free of charge. This does not include allowances bought, e.g. through auctioning.
1.1.1 Free allocation to existing entities (Art. 10a(1))	Number of allowances received free of charge by existing entities under Art. 10a(1) of the ETS Directive.
1.1.2 Free allocation from the new entrants reserve (Art. 10 a(7))	Number of allowances received free of charge by new entities under Art. 10a(7) of the ETS Directive.
1.1.3 Free allocation for modernisation of electricity generation (Art. 10c)	Number of allowances received free of charge for a transitional period by electricity generators under Art. 10c of the ETS Directive to help modernise production.
1.2. Correction to freely allocated allowances (not reflected in EUTL)	<p>Correction of the number of allowances allocated free of charge, due to:</p> <ul style="list-style-type: none"> transfers of allowances in six countries; adjustment of free allocation for aviation operators in the year 2012 due to the 'stop the clock' decision. <p>These transfers and adjustments are not reflected in the EUTL (see further details in Annex I).</p>
1.3 Allowances auctioned or sold (EUAs and EUAAs)	Number of EUAs and EUAAs auctioned or sold by participating countries (see further details in Annex II).
2. Verified emissions	Emissions of installations and aviation operators which have been verified by an independent third party.
3. Estimates to reflect current scope for allowances and emissions	Estimates to reflect current ETS scope since 2005 to be added to allowances and verified emissions for a consistent comparison between years and trading periods (see further details in Annex III).
4. Total surrendered units	Total number of emission trading units (allowances, aviation allowances and Kyoto project credits) surrendered by operators to their authorities for compliance under the EU ETS. Each unit represents one tonne of CO ₂ -eq. In the third trading period, only the total number of surrendered units is publicly available (no detail on the type of unit surrendered is publicly available).
4.1 Surrendered EU allowances (EUAs and EUAAs)	Allowances surrendered by operators of stationary installations, or allowances and aviation allowances surrendered by aviation operators.



4.2 Surrendered certified emission reductions (CERs)	CERs (Certified Emission Reductions) originating from Clean Development Mechanism projects under the Kyoto Protocol, i.e. emission reduction projects in non-Annex 1 countries (countries without an emission reduction target under the Kyoto-Protocol).
4.3 Surrendered emission reduction units (ERUs)	ERUs (Emission Reduction Units) originating from Joint Implementation projects under the Kyoto Protocol, i.e. emission reduction projects in Annex 1 countries (countries with an emission reduction target under the Kyoto Protocol).

7 Activity

All entities included in the EUTL are grouped by activity type as shown in Table 7.1.

Table 7.1 EUTL activity types

Activity type code	Activity
10	Aviation
20	Combustion of fuels
21	Refining of mineral oil
22	Production of coke
23	Metal ore roasting or sintering
24	Production of pig iron or steel
25	Production or processing of ferrous metals
26	Production of primary aluminium
27	Production of secondary aluminium
28	Production or processing of non-ferrous metals
29	Production of cement clinker
30	Production of lime, or calcination of dolomite/magnesite
31	Manufacture of glass
32	Manufacture of ceramics
33	Manufacture of mineral wool
34	Production or processing of gypsum or plasterboard
35	Production of pulp
36	Production of paper or cardboard
37	Production of carbon black
38	Production of nitric acid
39	Production of adipic acid
40	Production of glyoxal and glyoxylic acid
41	Production of ammonia
42	Production of bulk chemicals
43	Production of hydrogen and synthesis gas
44	Production of soda ash and sodium bicarbonate
45	Capture of greenhouse gases under Directive 2009/31/EC
46	Transport of greenhouse gases under Directive 2009/31/EC
47	Storage of greenhouse gases under Directive 2009/31/EC
99	Other activity opted-in pursuant to Article 24 of Directive 2003/87/EC
20-99	All stationary installations
21-99	All industrial installations



Table 7.1 shows the new activity type codes (codes 20-47) introduced for the third trading period of the EU ETS (2013-2020). All new entities entering the scheme are automatically assigned a new activity code. However, not all installations that were already part of the scheme before the start of the third trading period have changed to the new activity codes, but kept the old codes.

ETC/ACM applied a methodology to map those old codes (1-9) to new codes (20-43) in order to facilitate analysis of the different activities. The methodology is mainly based on information on NACE codes which have been published by the European Commission as part of the preparation of the carbon leakage list for 2015-2019 ⁽¹⁰⁾. These NACE codes were attributed to installations based on operator information on NACE rev.1.1 and rev. 2 codes in the National Implementation Measures (NIMs), ETS activity code and benchmarks used for allocation. Within the carbon leakage list exercise all codes have been checked for plausibility. Details on the translation of activity codes are available in an ETC/ACM technical paper ⁽¹¹⁾. The translation is regularly updated to include country specific information.

This mapping from old to new codes is carried out for all activity codes except code 99 “Other activity opted-in under Art. 24”, if not indicated otherwise by Member States. The reason for keeping this activity separate is due to the fact that the nature of such activities could be very diverse across the 13 countries that opted-in installations falling into this category. For example, Sweden decided to include all installations with a thermal input below 20 MW that are nevertheless connected to a district heating network with a total rated thermal input above 20 MW. In practice, the activity of an installation which is listed under activity type 99 in the EUTL is rarely clear. In addition, some installations included under the EU ETS after 2013 used this activity code, too.

The result of the translation is shown in Table 7.2 with regard to the number of installations and related verified emissions 2015. The most actual translation table is available as download from the EEA Data Service (file: [Translation of activity codes September 2016.xlsx](#)).

⁽¹⁰⁾ http://ec.europa.eu/clima/policies/ets/cap/leakage/docs/installation_nace_rev2_matching_en.xls as of 23 March 2015

⁽¹¹⁾ http://acm.eionet.europa.eu/docs/ETCACM_EU-ETS_translation_of_activity_codes_April_2016_for_publication.pdf



Table 7.2 Allocation of new activity codes to installation with old codes

MAIN_ACTIVITY_TYPE_CODE	Before Translation		After Translation		Conducted Translation		Percentage of translation to total	
	No of installations	VE 2015	No of installations	VE 2015	No of installations	VE 2015	No of installations	VE 2015
1	3471	220 092 483						
2	51	20 575 803						
3	3							
4	4							
5	77	13 989 186						
6	192	23 344 386						
7	163	4 078 864						
8	614	1 512 307						
9	390	6 458 792						
10	1396	57 068 784	1396	57 068 784	0	0	0%	0%
20	6248	1 021 426 860	9233	1 225 235 782	2 985	203 808 922	32%	17%
21	123	109 641 733	175	129 596 884	52	19 955 151	30%	15%
22	19	11 607 096	30	11 823 789	11	216 693	37%	2%
23	13	2 774 724	13	2 774 724	0	0	0%	0%
24	212	93 992 168	297	110 721 682	85	16 729 514	29%	15%
25	226	11 295 201	273	11 854 899	47	559 698	17%	5%
26	30	7 157 178	37	7 157 178	7	0	19%	0%
27	35	1 410 484	36	1 410 484	1	0	3%	0%
28	85	6 696 282	95	6 718 610	10	22 328	11%	0%
29	204	94 190 412	333	114 656 704	129	20 466 292	39%	18%
30	247	26 936 342	438	31 848 916	191	4 912 574	44%	15%
31	304	14 242 268	460	18 213 729	156	3 971 461	34%	22%
32	1106	14 238 196	1720	15 697 023	614	1 458 827	36%	9%
33	37	1 315 049	60	1 667 098	23	352 049	38%	21%
34	41	1 054 702	41	1 054 702	0	0	0%	0%
35	140	4 557 893	166	4 983 757	26	425 864	16%	9%
36	454	15 647 921	899	22 342 189	445	6 694 268	49%	30%
37	13	1 399 560	14	1 505 294	1	105 734	7%	7%
38	32	4 202 469	35	4 918 520	3	716 051	9%	15%
39	3	135 601	3	135 601	0	0	0%	0%
40	1	9 070	1	9 070	0	0	0%	0%
41	27	20 877 785	31	23 283 279	4	2 405 494	13%	10%
42	288	32 822 742	462	40 112 927	174	7 290 185	38%	18%
43	41	7 937 443	48	9 160 544	7	1 223 101	15%	13%
44	14	2 949 551	14	2 949 551	0	0	0%	0%
99	409	4 072 602	403	2 810 217	-6	-1 262 385	-1%	-45%
Group 1-9	4 965	290 051 821	-	-				
Group 10-99	11 748	1 569 660 116	16 713	1 859 711 937				
Total	16 713	1 859 711 937	16 713	1 859 711 937	4 965	290 051 821	30%	16%

Source: EUTL, 13 September 2016; EEA.

The sums for all activity codes (as outlined in Table 7.1), as well as sums for all industrial activities or sums for all stationary installations can also be shown in the EEA EU ETS data viewer.



8 Size of entities

In the EU ETS data viewer, it is possible to limit the data to entities of a certain size category. An overview of the possible choices is presented in Table 8.1.

Table 8.1 Size definitions

Size	Emission values
large	Entities with verified emissions higher than 500 000 t CO ₂
medium	Entities with verified emissions comprised between 50 000 and 500 000 t CO ₂
small	Entities with verified emissions comprised between 25 000 and 50 000 t CO ₂
mini	Entities with verified emissions lower than 25 000 t CO ₂
zero	Entities with verified emissions equal to 0
unknown	Entities where verified emissions are unknown
All sizes	All entities

The EUTL does not contain information on the size of an entity. As an approximation, the maximum emissions of an entity over the time series are used to define its size.

9 Active entities and number of entities

The indicator “Active Entity” is based on the indication of operators on the year of last emissions of each entity. If the year of last emission is 2005 to 2012, this entity is not active in the third trading period (no). If the year of last emissions is after 2013 or not reported, the entity is indicated to be active in the third trading period. This indicator seems to be more helpful for the focus on active entities than the former indicator on the account status.

If the user wishes to assess the number of entities taking part in the third trading period, only entities with “Active Entity” “yes” should be selected; if the user aims at assessing e.g. the total volume of emissions over the whole time period the EU ETS has been in operation also entities with “no” should be taken into account.

The viewer can show the number of entities. A good indicator of whether an entity is participating in the system in a given year is that it has any ETS information in that year. Therefore the number of entities only takes into account entities for which ETS information (emissions, allocations or total surrendered units) are available in the year shown (including the reporting of zero emissions).

10 Measures

The unit in which the information is downloaded from the EUTL is the tonne of CO₂ equivalent and the emission trading unit — emission allowance or emission credit — one unit being equivalent to one tonne of CO₂.

The EU ETS data viewer also offers the option to change the output values in kilo tonnes of CO₂ equivalents or million tonnes of CO₂ equivalents.



11 Gases

By default the ETS covered only CO₂ emissions in the first two trading periods (with the exemption of some smaller opt-ins in the second trading period). Since 2013, N₂O from the production of nitric, adipic and glyoxylic acid and PFC emissions from aluminium production are also included.

As all allowances and verified emissions are reported in CO₂ equivalent, it is not possible to distinguish whether an installation emitted CO₂, N₂O, PFC or a combination of gases.



Annex 1 – Correction of freely allocated allowances

1 Stationary installations

The amount of freely allocated allowances recorded in the EUTL has been corrected manually for six countries (see Table A1.1).

- Free allocation to installations in Austria and France has been corrected downwards as these countries have bought EUAs from the market and allocated these to new entrants. Therefore, the amount of free allocation recorded in the EUTL is higher than the amount of EUAs initially issued by these two countries.
- In Germany, some operators gave back their free allocation and it was not possible to correct this in the EUTL.
- Similarly, an excess of allowances on closed accounts was deleted in Denmark, which was not recorded in the EUTL.
- For Spain, the overall quantity recorded is correct, however, a correction is applied to its distribution across years.
- Finally, the EUTL does not contain any information on free allocation to Bulgarian installations in 2007.

Table A1.1 Corrections to freely allocated allowances for stationary installations

	2005	2006	2007	2008	2009	2010	2011	2012
				million EUA				
Austria				0.58	-1.56	-1.56	-1.86	-3.48
Bulgaria			39.70					
Denmark				-0.08	-0.08	-0.08	-0.08	-0.08
France						-5.41	-5.41	-5.41
Germany				-0.96	-0.96	-0.96	-0.96	-0.96
Spain				0.26	0.69	-0.95		

2 Aviation

EUAs allocated for free 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. For the analysis of verified emissions of aviation operators in the year 2012, it is therefore necessary to reflect the amount of allowances returned following this decision, which is not recorded in the EUTL. The amount which had to be returned is publicly available on operator level. The European Commission has sent the according excel file with amounts which have to be returned. On the basis of this file and the EUAs allocated for free as shown in the EUTL, returned allowances can be calculated on MS level as displayed in the right column in Table A1.2.



Table A1.2 Adjustment to freely allocated allowances for aviation operators in the year 2012

Country	Original allowance 2012	Adjusted allowance 2012	Adjustment
	EUAA		
Austria	1.932.411	682.958	1.249.453
Belgium	3.056.619	1.753.311	1.303.308
Bulgaria	269.245	261.881	7.364
Cyprus	461.758	275.834	185.924
Czech Republic	798.821	798.821	-
Germany	42.770.182	13.521.585	29.248.597
Denmark	1.074.189	1.045.920	28.269
Estonia	58.429	35.249	23.180
Spain	9.488.760	3.802.703	5.686.057
Finland	2.109.537	782.793	1.326.744
France	20.022.081	7.724.503	12.297.578
United Kingdom	54.783.369	12.858.960	41.924.409
Greece	717.685	691.075	26.610
Croatia	66.442	66.442	-
Hungary	1.097.418	1.085.442	11.976
Ireland	7.012.841	7.012.245	596
Iceland	434.617	209.720	224.897
Italy	4.909.375	2.481.235	2.428.140
Liechtenstein			
Lithuania	55.953	55.953	-
Luxembourg	2.311.181	2.311.181	-
Latvia	311.520	221.198	90.322
Malta	212.330	197.164	15.166
Netherlands	12.369.053	4.018.267	8.350.786
Norway	1.068.510	1.014.306	54.204
Poland	651.131	254.866	396.265
Portugal	2.111.265	773.001	1.338.264
Romania	380.258	335.568	44.690
Sweden	3.144.641	3.144.575	66
Slovenia	82.534	44.556	37.978
Slovakia	55.051	55.051	-
Total	173.817.206	67.516.366	106.300.840

Annex 2 – Auctioning

EUAs auctioned or sold by governments are not recorded in the EUTL. For the first and second trading period the number of EUAs auctioned or sold by governments has been collected from publications from the respective countries, as well as auction reports published by the trading platforms on which the auctions are carried out. Table A2.2 summarises the amount of EUAs auctioned or sold by countries during the first and second trading period and includes the relevant sources ⁽¹²⁾.

Table A2.1 EUAs auctioned or sold, 2005 to 2012

Auctions/ Sales	2005	2006	2007	2008	2009	2010	2011	2012*	Sources
	million EUA (1st & 2nd trading period)								
Austria				0.4	0.4	0.2	1.0	www.climex.com	
Belgium							9.6	www.eex.com	
Bulgaria							0.1	www.eex.com	
Cyprus									
Czech Republic							2.6	www.eex.com	
Denmark		4.4					2.8	http://greenstream.dev.aucor.fi/content/greenstream-network-appointed-trustee-sell-2775-million-euas-behalf-danish-state	
Estonia									
Finland									
France									
Germany				49.1	41.1	41.1	40.7	48.1	www.bmu.de , www.dehst.de
Greece							10.0	8.8	http://www.helex.gr/index2.php?option=com_content&task=view&id=2239&pop=1&page=0&Itemid=10554
Hungary		1.2	1.2					7.7	www.euets.com ; www.eex.com
Iceland									
Ireland		1.2		0.2	0.2	0.2			www.pointcarbon.com , www.ec.europa.eu
Italy									
Latvia									
Liechtenstein									
Lithuania			0.6				0.9	2.5	www.eex.com
Luxembourg								0.004	www.eex.com
Malta									
Netherlands						8.0	4.0	4.0	www.eex.com
Norway				12.6	6.3	6.3	6.3	9.8	Email from Norwegian financial department.
Poland								0.2	http://www.gpw.pl/wydarzenia_en/?ph_tresc_glowna_star_t=show&ph_tresc_glowna_cmn_id=50140
Portugal									
Romania								0.6	www.eex.com
Slovakia									
Slovenia									
Spain									
Sweden									
United Kingdom				4.0	25.0	35.8	30.7	27.3	http://www.dmo.gov.uk/index.aspx?page=ETS/AuctionInfo
EU-25		6.8	1.7	53.1	66.7	85.5	86.6	114.5	
EU-27		6.8	1.7	53.1	66.7	85.5	86.6	115.3	
All countries		6.8	1.7	53.1	79.3	91.9	92.9	125.0	

From the third trading period onwards, a much larger share of allowances is auctioned. Volumes can be derived from auction calendars and auction reports published by the two exchanges that carry out auctions of allowances for the third trading period: The European Energy Exchange (EEX) and the Intercontinental Exchange (ICE) ⁽¹³⁾.

⁽¹²⁾ Auctions in Germany in 2008 include sales of 8.125 million EUA by the KfW to compensate for costs of the replenishment of the NER in period I. Source (page 69): http://www.dehst.de/cln_162/SharedDocs/Downloads/Publikationen/Auswertung_1_Handelsperiode.templateId=raw,property=publicationFile.pdf/Auswertung_1_Handelsperiode.pdf

⁽¹³⁾ www.eex.com; www.theice.com



However, auctions scheduled for a certain year may take place in an earlier or later year, due to technical or procedural reasons. The following special cases have to be taken into account:

- Some countries (Belgium, Bulgaria, Czech Republic, Denmark, Hungary, Lithuania, Luxembourg, Norway, Poland and Romania) sold/auctioned allowances relative to the second trading period in the first months of 2013. These were mainly EUAs remaining in the new entrants reserve or unused EUAs set aside for UN backed emission reduction projects. These volumes are added to the 2012 figures.
- In 2012 so-called “early auctions” of third trading period EUAs were held. The volumes of these auctions were equal to 90 million EUA and are added to 2013 auctioning volumes in the data viewer.
- Part of the new entrants reserve for the third trading period (NER300: 300 million EUAs in total) was auctioned to generate financial support for CCS and innovative renewable energy projects. These auctions started in August 2012. The amounts are added to auctioning volumes in 2013 and 2014 (200 and 100 million EUA respectively).
- Croatia has been part of the EU ETS since 2013, but only started auctioning in 2015, since the necessary arrangements between the EEX, which serves as the transitional common auction platform, and the Croatian auctioneer had not been in place before-hand. In 2015, Croatia is set to auction a total amount of 11 328 500 EUAs. This amount represents 4 900 000, 3 012 000, 3 416 500 allowances that were to be auctioned in the years 2013, 2014 and 2015 respectively. Therefore, the data viewer includes those amounts for the years 2013 to 2015.
- For Iceland, Liechtenstein and Norway, a different approach is suggested. These countries are also set to auction on the transitional common auction platform, but similarly to Croatia, the necessary arrangements have not been in place. However, whilst Croatia has started auctioning in 2015, the three EEA-EFTA states have not done so. This is why their cumulated withheld amount of 26 031 000 is not displayed in the data viewer yet ⁽¹⁴⁾. It will be included – and distributed between years, according to the Croatian case – once these countries have carried out their first EUA auction.
- Finally, auctions of EU Aviation Allowances (EUAAAs) are included separately in the EU ETS data viewer. After the stop the clock decision taken in 2012, auctions of EUAAAs were suspended. Germany was the only country which auctioned EUAAAs already in 2012 (2.5 million EUA), whilst all other countries started auctioning EUAAAs in 2014. 2014 auctions of EUAAAs relate to auctioning amounts for the year 2012, whilst in 2015, amounts for 2013 - 2015 are auctioned. The exception is Poland which auctions amounts for 2012 - 2015 in 2015 and has not auctioned any EUAAAs in 2014 ⁽¹⁵⁾.

For EUAAAs, the following approach is taken:

- Allocate 2014 auctioned amounts of EUAAAs to the year 2012, as well as EUAAAs auctioned by Germany already in 2012;
- Divide auctioned amounts of EUAAAs in 2015 by 3 and distribute equally between the years 2013 – 2015;
- Divide auctioned amounts of EUAAAs in 2015 for Poland by 4 and distribute equally between the years 2012 – 2015.

Table A3.1 summarises auctioned amounts of EUAs and EUAAAs for the years 2013 and 2015 (2012 – 2015 for EUAAAs).

⁽¹⁴⁾ http://ec.europa.eu/clima/policies/ets/cap/auctioning/faq_en.htm

⁽¹⁵⁾ http://ec.europa.eu/clima/policies/ets/cap/auctioning/faq_en.htm



Table A2.2 Auctioned EUAs (2013–2015) and EUAAs (2012–2015) contained in the EU ETS data viewer

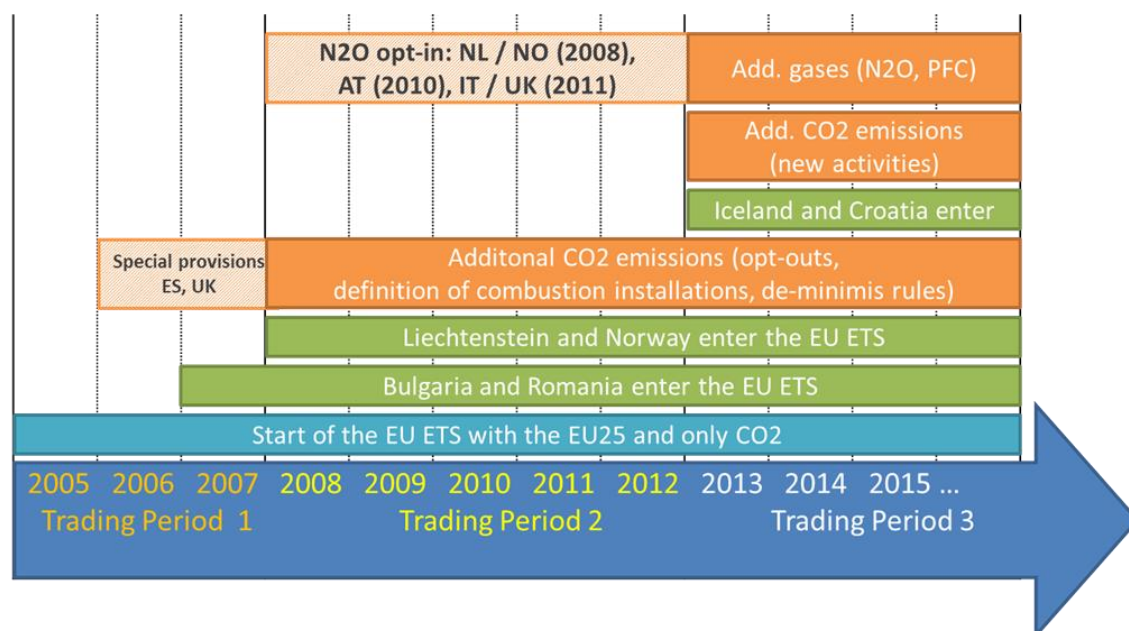
	Mio. EUAs auctioned			Mio. EUAAs auctioned			
	2013	2014	2015	2012	2013	2014	2015
Austria	14.33	8.84	10.00	0.20	0.11	0.11	0.11
Belgium	26.11	16.09	18.22	0.34	0.13	0.13	0.13
Bulgaria	15.26	6.11	15.86	0.04	0.04	0.04	0.04
Croatia	4.90	3.01	3.42		0.02	0.02	0.02
Cyprus	0.31	0.07		0.05	0.07	0.07	0.07
Czech Republic	18.60	9.42	14.46	0.08	0.06	0.06	0.06
Denmark	12.89	7.95	9.00	0.19	0.13	0.13	0.13
Estonia	4.09	1.24	2.77	0.01	0.01	0.01	0.01
Finland	17.21	10.62	12.02	0.14	0.10	0.10	0.10
France	56.35	34.76	39.34	1.67	0.58	0.58	0.58
Germany	206.09	127.13	143.89	2.50	0.74	0.74	0.74
Greece	35.75	22.01	24.95	0.18	0.24	0.24	0.24
Hungary	8.41	9.52	10.79	0.05	0.05	0.05	0.05
Iceland							
Ireland	9.63	5.94	6.73	0.15	0.10	0.10	0.10
Italy	99.20	61.18	69.25	0.87	0.68	0.68	0.68
Latvia	2.77	1.71	1.93	0.02	0.03	0.03	0.03
Liechtenstein							
Lithuania	5.02	2.92	3.69	0.01	0.01	0.01	0.01
Luxembourg	1.24	0.76	0.87	0.11	0.01	0.01	0.01
Malta	1.05	0.65	0.73	0.02	0.03	0.03	0.03
Netherlands	34.49	21.28	24.08	0.91	0.17	0.17	0.17
Norway							
Poland	51.25	13.34	17.13	0.11	0.11	0.11	0.11
Portugal	18.11	11.15	12.63	0.21	0.14	0.14	0.14
Romania	33.81	16.50	25.40	0.05	0.08	0.08	0.08
Slovakia	15.85	9.75	11.06	0.01	0.01	0.01	0.01
Slovenia	4.56	2.81	3.18	0.01	0.01	0.01	0.01
Spain	88.94	54.79	62.07	1.09	0.77	0.77	0.77
Sweden	9.17	5.65	6.40	0.17	0.17	0.17	0.17
United Kingdom	107.36	66.22	74.96	2.71	0.84	0.84	0.84
NER 300 auctions	200.00	100.00					
Total	1 102.75	631.41	624.81	11.89	5.43	5.43	5.43



Annex 3 – Estimates to reflect current ETS scope for stationary installations

The EU ETS started in 2005 covering only CO₂ emissions from the EU-25 countries. In 2007, Bulgaria and Romania joined the EU and its ETS. Installations from Liechtenstein and Norway entered the scheme at the start of the second trading period in 2008. At the same time, additional installations from already participating countries started to be covered by the scheme, due to the end of opt-outs and to the clarification of the definition of combustion installations. At the start of the third trading period in 2013, stationary installations from Croatia and Iceland started to be covered by the EU ETS. At the same time, a range of new activities (and gases) were included, in particular N₂O emissions from the production of nitric and adipic acid, glyoxal and glyoxylic acid and PFC emissions from the production of aluminium.

Figure A3.1 Scope of the EU ETS since 2005



To reflect these changes in scope, six types of estimates were applied to ETS verified emissions in order to derive a time-series for stationary installations starting from 2005 consistent with the scope of the third trading period (see Figure A3.1).

Estimates to reflect the scope of the second trading period:

- An estimate for Bulgaria and Romania entering the EU ETS. This is relevant in 2005 and 2006 and was calculated using inventory emissions and EUTL verified emissions for these countries in 2007-2009.
- An estimate for Liechtenstein and Norway entering in 2008. Their historical emissions in 2005 were taken from the respective NAP and combined with 2008 verified emissions from the EUTL.
- An estimate for changes in scope between the first and second trading period related to opt-outs and the clarification of the definition of combustion installations. This estimate was performed using information stemming from the process to determine annual allocation allowances (AEAs) under the ESD.
- Estimates to reflect the scope of the third trading period:



- An estimate for Croatia entering the EU ETS in 2013. Data stemming from the process to determine annual allocation allowances (AEAs) under the ESD was used to estimate for Croatia's emissions in 2005–2012, combined with 2013 verified emissions data and inventory emission trends for this country.
- An estimate for non-CO₂ gases entering in 2013. For this purpose, historic emissions in the relevant source categories were taken from GHG inventories and converted to CO₂ equivalent units.
- An estimate for CO₂ emissions of installations which fell into the scope of the EU ETS from 2013 onwards.
- One country, Norway, has provided the authors with bottom-up calculated figures to reflect current ETS scope. These are considered to be more accurate than any top-down approach can be and are thus used in further work of the EEA and the EEA EU ETS data viewer.

The estimates to reflect current scope (see Table A3.1) is applied both to verified emissions and allocated allowances. It does not address changes related to the inclusion or exclusion of individual installations within trading periods (e.g. new entrants and closures). No estimate was quantified for aviation.

The methodology applied by EEA to quantify the estimates to reflect the current ETS scope by participating country is documented in detail in an ETC/ACM technical paper¹⁶.

⁽¹⁶⁾

http://acm.eionet.europa.eu/reports/ETCACM_TP_2016_1_Estimates_reflect_current_scope_ETS



Table A3.1 Estimates to reflect current ETS scope for stationary installations in the EU ETS data viewer

	1st trading period			2nd trading period				
	2005	2006	2007	2008	2009	2010	2011	2012
	Mt CO ₂ e							
Austria	2.68	2.65	2.61	2.28	2.09	1.90	1.86	1.83
Belgium	11.23	10.23	9.49	4.30	4.31	4.64	3.39	3.40
Bulgaria	38.05	38.06	1.91	1.86	1.55	1.52	1.47	1.34
Croatia	12.43	12.47	13.57	12.66	11.14	10.53	10.32	9.27
Cyprus								
Czech Republic	3.67	3.53	3.34	3.26	3.06	2.89	2.89	2.85
Denmark								
Estonia	0.25	0.25	0.25					
Finland	2.53	2.34	2.37	2.05	1.29	0.68	0.64	0.66
France	22.89	21.97	21.28	15.25	14.26	12.34	11.54	11.10
Germany	43.87	43.13	45.29	32.67	32.59	24.06	23.23	22.58
Greece	2.44	2.30	2.27	2.23	2.12	2.17	2.19	2.01
Hungary	3.38	2.81	2.30	0.00	0.01	0.01	0.02	0.02
Iceland	1.77	2.10	2.01	2.06	1.80	1.77	1.64	1.63
Ireland	0.34	0.34	0.33	0.37	0.36	0.35	0.35	0.34
Italy	21.54	16.47	15.66	8.72	8.70	8.03	7.34	7.09
Latvia	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Liechtenstein	0.02	0.02	0.02					
Lithuania	4.93	4.89	5.52	5.22	3.02	2.90	3.15	2.84
Luxembourg	0.32	0.31	0.31	0.30	0.30	0.29	0.29	0.28
Malta								
Netherlands	11.17	11.05	9.83	1.69	1.63	1.63	1.63	1.52
Poland	18.17	18.01	18.03	12.22	9.12	9.03	8.79	8.64
Portugal	1.96	1.93	1.95	1.12	0.89	0.88	0.65	0.64
Romania	76.03	76.78	8.97	7.27	6.75	7.16	7.05	6.76
Slovakia	3.82	4.11	3.93	2.03	1.79	1.60	1.12	1.00
Slovenia	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
Spain	16.58	9.93	9.62	9.46	9.19	8.66	8.27	8.01
Sweden	4.03	4.01	3.78	2.08	1.87	2.00	1.74	1.60
United Kingdom	32.25	31.73	23.45	2.69	1.37	1.54	0.37	0.15
Norway	26.79	26.22	27.51	7.39	5.12	6.20	5.98	6.05