EU ETS data viewer

User manual and background note

European Environment Agency

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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 CITL data. Please also note the general disclaimer which applies for all information on the EEA website at www.eea.europa.eu/legal/disclaimer.

1. Introduction

The EU emission 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 target under the Kyoto Protocol. The main source of information on the system at EU level is the Community Independent Transaction Log (CITL) ([1]), run by the European Commission, which checks and records all transactions between electronic registries set up by the countries participating to the system. It contains information on all installations covered by the system including their activity/sector, allocation and verified emissions on an annual basis. However, the data is not easily accessible in a user-friendly format.

The European Environment Agency ([2]) (EEA) and its European Topic Centre on Air and Climate Change (ETC/ACC) ([3]) developed the EU ETS data viewer, a tool to help exploring the information contained in the CITL. The 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:

 http://www.eea.europa.eu/data-and-maps/data/data-viewers/emissions-trading-viewer

This viewer enables users to assess the data concerning installations and emissions contained in the CITL by country or country grouping, sector, size of installation and year. The CITL reports installation-level data, whereas the EU ETS data viewer provides aggregated data.

The trading sectors are the nine sectors mentioned in Annex I of the Emission Trading Directive ([4]) and an additional category for opt-in installations.

This manual explains some of the functions and underlying data of the EU ETS data viewer to support users in their analysis of the data contained in the CITL. The latest version of the tool is based on data downloaded from the CITL on March 2012 for the reporting years 2005 to 2010.[5] Verified emissions, allocated allowances and surrendered allowances for the years 2008 to 2011 are based on data published on the 2nd of May 2012 ([6]).

([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

(5)   http://ec.europa.eu/environment/ets/oha.do?languageCode=en

([6])   The Commission provides downloaded data from the CITL at their website at http://ec.europa.eu/clima/documentation/ets/registries_en.htm.

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 read chapter 3.

Important setting: in order to access all functionalities of the EU ETS data viewer, a specific setting has to be enabled under Internet Explorer 8. Under the menu "Tools/Internet options/security tab" the security setting "Active X controls and plug-ins/Binary and script behaviors" should be set in the "Enable" state.

The diagram below represents some main elements and functionalities of the EU ETS data viewer.
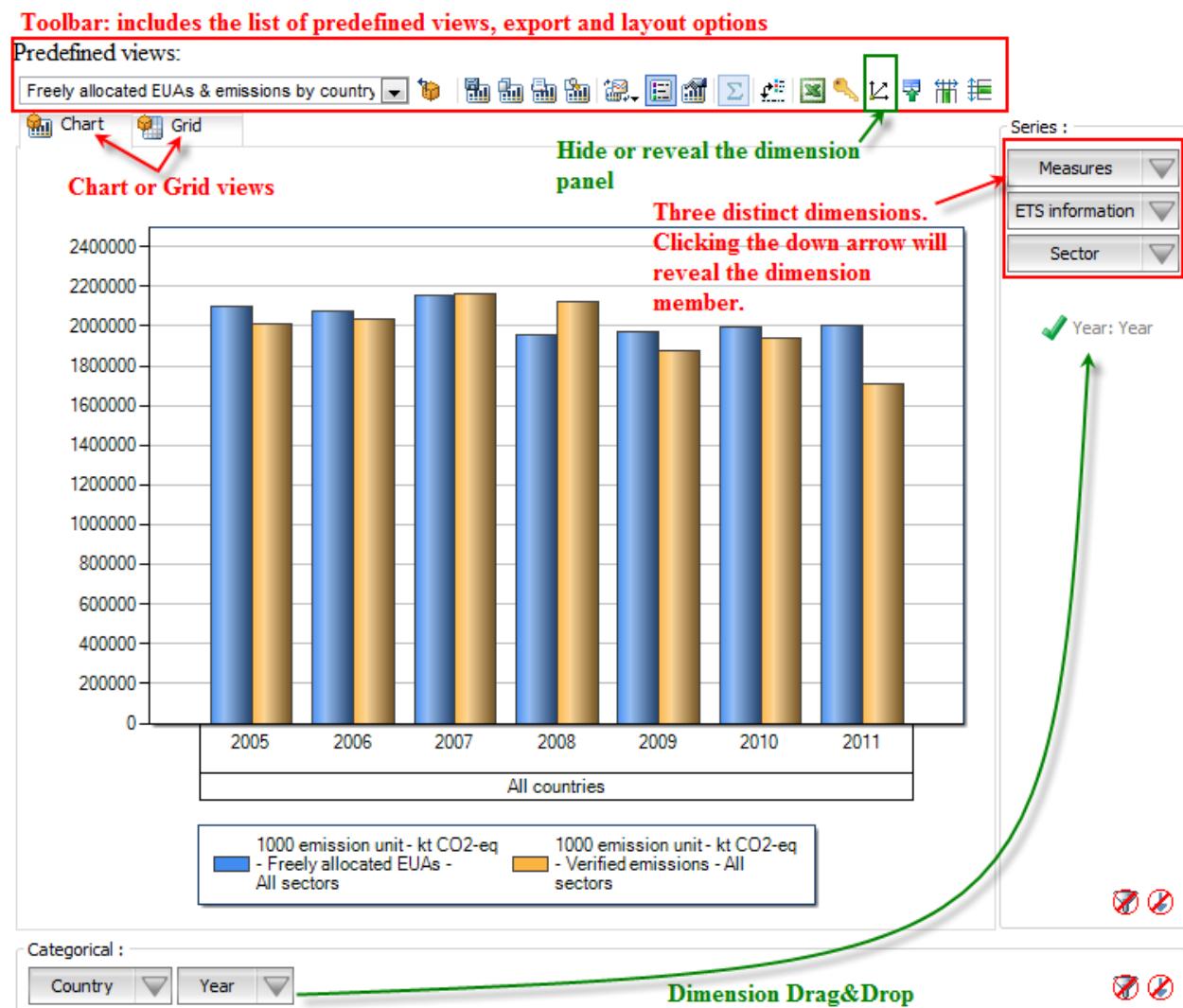
Predefined views:
The "Predefined views" drop down menu allows switching between defaults predefined views. Several "Predefined views" are available from the menu.

Dimensions:
The data viewer counts seven different dimensions: "Measures", "Year", "ETS information", "Sector", "Size", "Country" and "Account status".

Axis: two distinct axis "Series" and "Categorical".

Chart/Grid tabs: the "Chart/Grid" tabs allow easy switch between chart view and grid view.
Note:
Each dimension can be removed or added to the two axis panel. This can be accomplished by clicking the button "Show/Hide the dimension panel" (see figure) and using drag and drop behavior.

When a dimension is removed from either two axis ("Series" or "Categorical"), a predefined member is selected by default.

Default member have been defined as followed:

- ETS information: "Verified emission";
- Year: "2011";
- Sector: "All sectors";
- Country: "All countries";
- Size: "All sizes";
- Account status: "All account status".
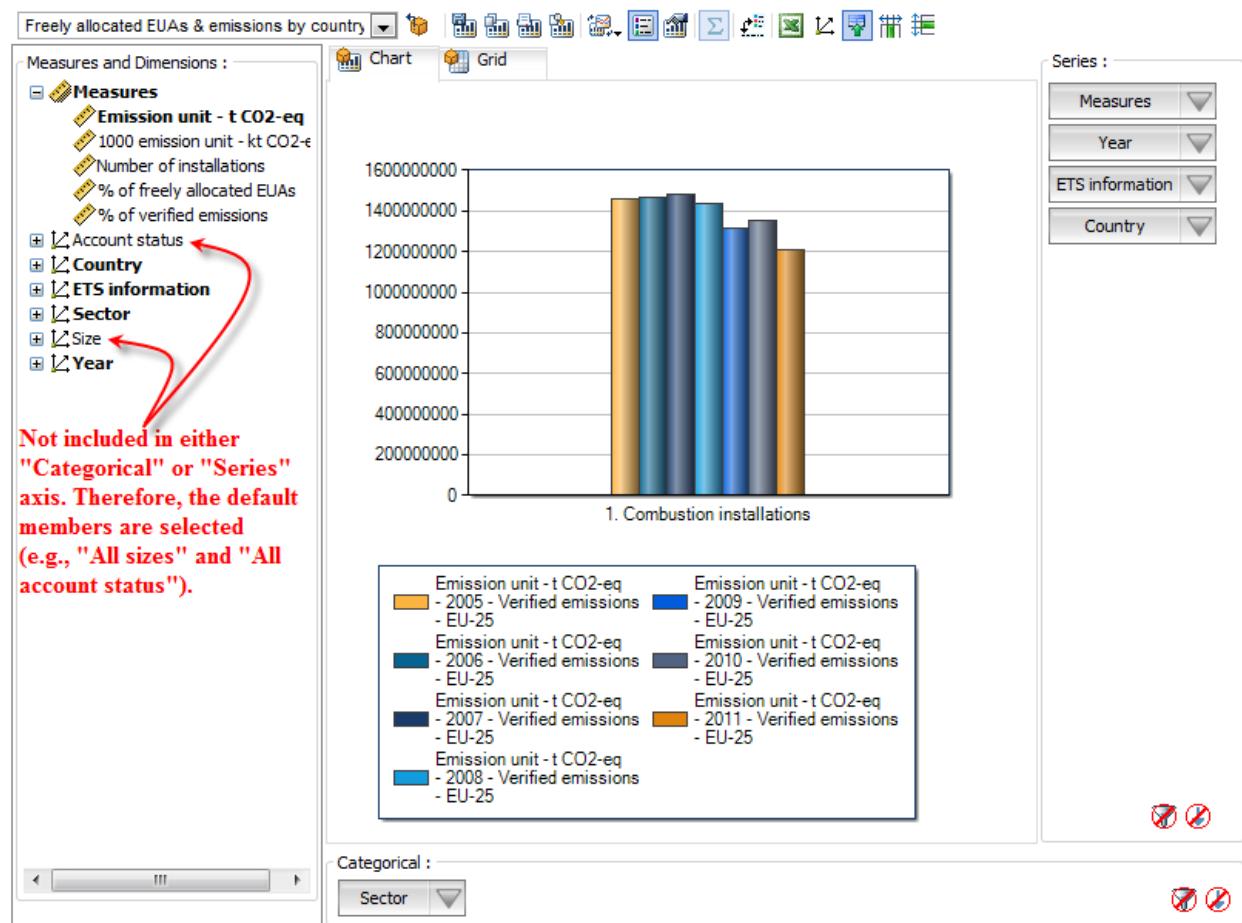
3. Background information on the data and figures in the EU ETS data viewer

3.1. Data availability

Out of the publicly available data according to Annex XVI of Commission Regulation 2216/2004[7] (Registries Regulation), the EU ETS data viewer contains for each installation covered by the ETS:

- the quantity of allowances allocated to and the verified emissions of that installation for the years 2005 to 2011,

- the activity under which the installation is registered

- the amount of total units surrendered, the amounts of EUAs surrendered, the amounts of certified reduction units (CERs) and emission reduction units (ERUs) surrendered

- the account status (open/closed).

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

- installations 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;

- court decisions on the allocation decisions.

In most cases these changes are small and have no significant effect on the overall analysis.

The aggregated data presented in the EU ETS data viewer includes also data for installations with incomplete information (e.g. missing reports on verified emissions, ongoing court procedures on allocation, etc.).

The EEA accepts no responsibility or liability whatsoever with regard to any use of its EU ETS data viewer nor the use, accuracy or completeness of the CITL data. Please also note the general disclaimer which applies for all information on the EEA website ([8]).

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(7)   http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:02004R2216-20090101:EN:NOT,
OJ L 386, 29.11.2004, p.1.
(8)   www.eea.europa.eu/legal/disclaimer

3.2. Country

All countries participating in the emission trading system are included in the EU ETS data viewer. The user can select individual countries or country groups. Countries are sorted alphabetically followed by the country groups. **Table 1** lists all Countries and to which groups they belong.

Table 1   Countries and country groups

	EU-15	EU-25	EU-27	All countries
Austria	x	x	x	x
Belgium	x	x	x	x
Bulgaria			x	x
Cyprus		x	x	x
Czech Republic		x	x	x
Denmark	x	x	x	x
Estonia		x	x	x
Finland	x	x	x	x
France	x	x	x	x
Germany	x	x	x	x
Greece	x	x	x	x
Hungary		x	x	x
Iceland				x
Ireland	x	x	x	x
Italy	x	x	x	x
Latvia		x	x	x
Liechtenstein				x
Lithuania		x	x	x
Luxembourg	x	x	x	x
Malta		x	x	x
Netherlands	x	x	x	x
Norway				x
Poland		x	x	x
Portugal	x	x	x	x
Romania			x	x
Slovak Republic		x	x	x
Slovenia		x	x	x
Spain	x	x	x	x
Sweden	x	x	x	x
United Kingdom	x	x	x	x

The EU ETS started with the EU-25 in 2005, but the number of countries covered has since increased to 30. Bulgaria and Romania entered the EU ETS in 2007, Norway, Iceland and Liechtenstein joined in 2008 (Table 2). However, installations from Iceland will only participate in the EU ETS from 2013 onwards. Care has to be taken when analysing the time series for EU-27: due to the two latest EU Member States the time series jumps from 2006 to 2007. EU-27 figure for the total data 2005-2007 can be assessed but for Bulgaria and Romania only 2007 numbers are used in all cases. The time series for 'All countries' includes a further jump between 2007 and 2008 due to the inclusion of three non-EU countries. The user is advised to analyse the EU-25 group only for questions related to the entire period covered by the EU ETS (2005 to 2011). In addition, due to extension and increased harmonisation of the

scope of the EU ETS between 2007 and 2008, aggregate emissions data and, in some cases, installation-level 2008 emissions data are not directly comparable in terms of their coverage to 2007 data.

Table 2   Scope of the EU ETS

Participation to the EU ETS	2005	2006	2007	2008-2011
EU-15 countries	x	x	X	x
EU-25 countries	x	x	X	x
Bulgaria			X	x
Romania			X	x
EU-27 countries	x	x	X	x
Iceland				
Liechtenstein				x
Norway				x
All countries	x	x	x	x

3.3.   Year

The European Emission Trading System is based on trading periods; coverage of installations and sectors 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 covers five years (2008-2012). Between the first and the second trading period no banking of EUAs was possible.

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

- 2005, 2006, 2007, 2008, 2009, 2010 or 2011: data for an individual year

- total 1st trading period (05-07): sum of the three years (2005-2007) of the first trading period

- total 2nd trading period (08-12): sum of the four years (2008 to 2011) of the second trading period where data is available..

Bulgaria and Romania only entered the EU ETS in 2007. If 2005 or 2006 is selected, no data is shown for all installations for these two countries. The same goes for the selection of the years 2005, 2006 or 2007 for Norway, Iceland and Liechtenstein which joined the EU ETS in 2008. However, there are no installations from Iceland participating in the EU ETS in the period from 2008 to 2012.[9] As all combustion installations in Iceland have emissions below 25 000 t CO_2 per year Iceland was exempted from the requirement to submit a national allocation plan for the 2008-2012 period. From 2013 onwards primary aluminium smelters from Iceland will participate in the EU ETS.

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[9]   Pursuant to EEA Joint Committee Decision No 146/2007,

3.4. ETS information

The CITL contains information on the verified emissions, the free allocation received and the surrendered units. The EU ETS data viewer gives the possibility to select one or several items described in Table 3.

Table 3   Information included in the CITL

Item	Description
Total EU allowances (EUAs)	Sum of free allocation and auctioning (see below):
• Freely allocated EUAs	Amount of free allocation received (does not include allowances bought, e.g. through auctioning).
• Auctioned or sold EUAs	Amount of EUAs auctioned or sold by Member States
Freely allocated EUAs (installations with emissions for 2008 until 2011)	Freely allocated EUAs of a subset of installation(s). Only installations that have verified emissions for the whole second trading period are included in this aggregate.
Verified emissions	Emissions of the installation(s) which have been testified by a verifier; for each tonne of CO_2-eq. emitted the operator has the obligation to surrender one emission trading unit.
Verified emissions (installations with emissions for 2008 until 2011)	Verified emissions of a subset of installation(s). Only installations that have verified emissions for the whole second trading period are included in this aggregate.
Total surrendered units	Different types of units are surrendered to comply with the legal obligation of the operator; each unit equals one tonne of CO_2-eq. These might include EUAs (European Allowance Units) allocated for free, bought at auctions or from other operators as well as CERs and ERUs (see below): Remark: only available aggregated by trading periods.
• Surrendered allowances (EUAs)	The surrendered EUAs are calculated by subtracting surrendered CERs and surrendered ERUs from the total surrendered. Remark: only available aggregated by trading periods.
• Surrendered CERs	CERs (Certified Emission Reductions) can be surrendered to comply with the legal obligation of the operator and originate from CDM projects; i.e. emission reduction projects in non-Annex 1 countries (countries without an emission reduction target under the Kyoto-Protocol, mostly developing countries). Remark: only available aggregated by trading periods.
• Surrendered ERUs	ERUs (Emission Reduction Units) can be surrendered to comply with the legal obligation of the operator and originate from JI projects; i.e. emission reduction projects in Annex 1 countries (countries with an emission reduction target under the Kyoto-Protocol, mostly industrialized countries). Remark: only available aggregated by trading periods.

EUAs auctioned or sold by governments are not recorded in the CITL. Therefore the number of EUAs auctioned or sold by governments has been collected from publications from the respective countries. **Table 4** summarises the amount EUAs auctioned or sold by countries and includes the relevant sources.

Table 4   EUAs auctioned or sold, 2005 to 2011

Auctions/Sales	2005	2006	2007	2008	2009	2010	2011	Sources
				million EUA				
Austria					0.4	0.4	0.5	www.climex.com, www.co2markt.at, www.oekv-energy.at
Belgium								
Bulgaria								
Cyprus								
Czech Republic								
Denmark								
Estonia								
Finland								
France								
Germany				41.0	41.1	41.1	40.7	www.bmu.de, www.dehst.de
Greece								
Hungary		1.2	1.2					www.euets.com
Ireland		1.2			0.2	0.2	0.2	www.pointcarbom.com, www.ec.europa.eu
Italy								
Latvia								
Liechtenstein								
Lithuania			0.6				0.9	
Luxembourg								
Malta								
Netherlands						8.0	4.0	www.dsta.nl, www.eex.de
Norway					12.7	6.4	6.4	www.regjeringen.no
Poland								
Portugal								
Romania								
Slovakia								
Slovenia								
Spain								
Sweden								
United Kingdom				4.0	25.0	35.8	30.7	www.dmo.gov.uk
EU-25		**2.4**	**1.7**	**45.0**	**66.7**	**85.5**	**76.9**	
EU-27		**2.4**	**1.7**	**45.0**	**66.7**	**85.5**	**76.9**	
All countries		**2.4**	**1.7**	**45.0**	**66.7**	**91.9**	**83.3**	

3.5. Sectors

Installations included in the CITL are grouped in different sectors according to Annex I of the EU Emission Trading Directive ([10]) (Table 4). Users can select individual sectors or choose to select all sectors together. Sector 99 was included to cover other installations opted in under Article 24 of the EU ETS Directive. 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 sector 99 in the CITL is often not clear.

Table 5   Sectors included in the CITL

Sector code	Sector description
1	Combustion installations
2	Mineral oil refineries
3	Coke ovens
4	Metal ore roasting or sintering installations
5	Production of pig iron or steel
6	Production of cement clinker or lime
7	Manufacture of glass including glass fibre
8	Manufacture of ceramic products by firing
9	Production of pulp, paper and board
99	Other activity opted-in
All sectors	All sectors

3.6. Installation size

In the EU ETS data viewer, it is possible to limit the data to installations of a certain size category. An overview of the possible choices is presented in Table 5.

Table 6   Size definitions

Size	Emission values
large	Installations with verified emissions higher than 500 000 t CO_2
medium	Installations with verified emissions comprised between 50 000 and 500 000 t CO_2
small	Installations with verified emissions comprised between 25 000 and 50 000 t CO_2
mini	Installations with verified emissions lower than 25 000 t CO_2
zero	Installations with verified emissions equal to 0
unknown	Installations where verified emissions are unknown
All sizes	All installations

The CITL does not contain information on the size of an installation. As an approximation the maximum emissions of an installation over the time series were used to define the

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([10])   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

installation size. It is appropriate to use the maximum and not average emissions over the time series as real emissions are always lower than theoretical emissions if an installation would run at maximum capacity throughout the entire year.

According to the proposal for the revision of the EU ETS after 2012 ([11]) installations with emissions below 25 000 t CO_2/year for a three year period and, where they carry out combustion activities, a capacity below 35 MW may be excluded from the EU ETS, if they are subject to equivalent contribution to emission reductions. These installations are included in the size categories mini and zero. The sum of these two categories is an overestimation of the number of installations which might be excluded in the future as the CITL contains no information on the installation size and the second criteria (capacity below 35 MW) can therefore not be checked.

3.7.   Account status

The account status indicates whether an installation actively takes part in the trading system (open) or has left the system (closed). The account status always refers to the date of download. If the user wishes to assess the number of installations included in the system to date, only installations with account status "open" should be selected; if the user aims at assessing e.g. the total volume of emissions over time also closed accounts should be taken into account.

3.8.   Measures

The unit in which the information is downloaded from the CITL is tonnes of CO_2 equivalent / emission trading units. The EU ETS data viewer also gives the possibility to change the output values in kilo tonnes of CO_2 equivalents / 1000 emission trading units but also to show them in relative units. All CITL information data can be given in relation to the allocation allowances or in relation to the verified emissions.

There is also the option to show the number of installations. The CITL does not contain information on the status of an installation in a given year, i.e. whether it is a new entrant, existing installation or has been closed. A good indicator is whether an installations is participating in the system in a given year is that it has emissions in that year. Therefore the number of installations takes only into account installations for which emissions are available in the year shown.

3.9.   Gases

In the first trading period only CO_2 emissions have been taken into account in the emission trading system. From the year 2008 on also N_2O emissions of nitric acid production may be included in the system. Until now only Austria the Netherlands and Norway decided to include such installations (the Netherlands and Norway are opting-in since 2008, Austria since 2010 and Italy and the UK since 2011).[12]

([11])   European Parliament legislative resolution of 17 December 2008: P6_TA-PROV(2008)0610

[12]   http://ec.europa.eu/clima/policies/ets/allocation/2008/documentation_en.htm

The trading system is based on CO_2 equivalents, this means that it is not possible to distinguish whether an installation emitted CO_2 or N_2O or both, this makes it very difficult to track installations for which N_2O emissions are included in the system. The number of those installations is very limited, (for the year 2008 latest researches indicate that there are only 4 installations), this means that there is no essential change in the database from the year 2007 to 2008 due to the inclusion of those installations.