



Manual for the European Environment Agency's Air Pollutant Emissions Data Viewer (LRTAP Convention)

This manual provides details on the scope, content and features of the European Environment Agency's (EEA) [air pollutant emissions data viewer \(LRTAP Convention\)](#).

This viewer is a user-friendly tool which allows visualising and downloading of data submitted by EEA member countries and cooperating countries to the [UNECE Convention on Long-range Transboundary Air Pollution](#) (LRTAP Convention) for the period 1990 – 2007.

For the EU-27 Member States and EU-27 totals, the data and information reflected are fully consistent with the data reported by the European Community to the LRTAP Convention in the EEA Technical Report No 8/2009 [Annual European Community LRTAP Convention emission inventory report 1990-2007](#).

Where gaps existed in the data supplied by the EU Member States to the EEA, the emissions of air pollutants (SO_x, NO_x, CO, NMVOC and NH₃) officially reported by Member States under the National Emissions Ceilings Directive (2001/81/EC) and/or the EU Greenhouse Gas Monitoring Mechanism (280/2004/EC) have been used to fill gaps where possible. Further details are provided in the aforementioned inventory report. Emissions provided in the dataviewer for the non-EU EEA member countries have not been gap-filled.

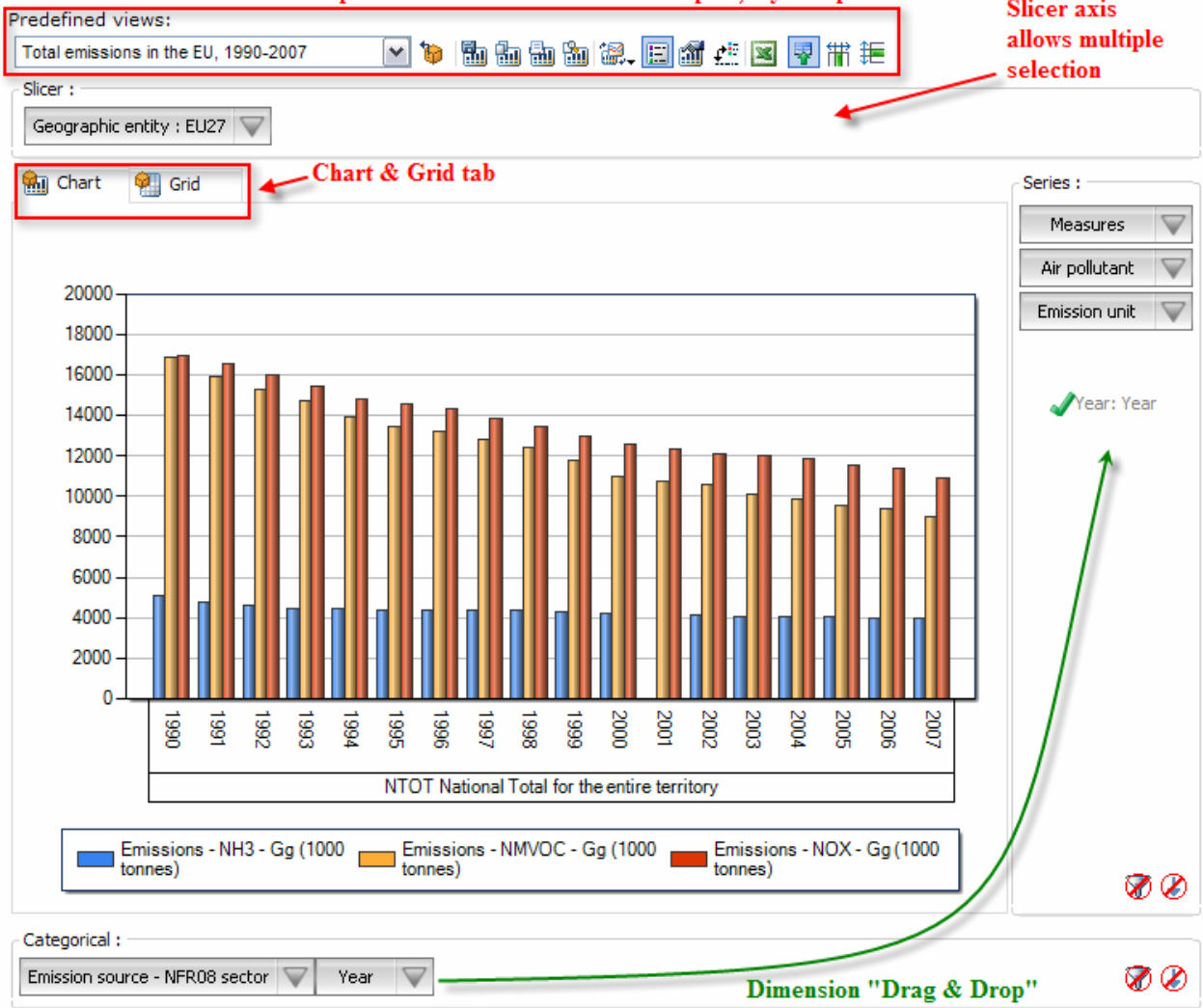
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1 General data viewer navigation

The diagram below represents some main elements and functionalities of the data viewer.

The toolbar includes the list of predefined views and different export, layout options



Predefined views: Total emissions in the EU, 1990-2007

Slicer : Geographic entity : EU27

Chart & Grid tab

Series : Measures, Air pollutant, Emission unit

Year: Year

Dimension "Drag & Drop"

NTOT National Total for the entire territory

Year	Emissions - NH3 - Gg (1000 tonnes)	Emissions - NMVOC - Gg (1000 tonnes)	Emissions - NOX - Gg (1000 tonnes)
1990	500	17000	17000
1991	480	16000	16500
1992	460	15500	16000
1993	440	15000	15500
1994	430	14500	15000
1995	420	14000	14500
1996	410	13500	14000
1997	400	13000	13500
1998	390	12500	13000
1999	380	12000	12500
2000	370	11500	12000
2001	360	11000	11500
2002	350	10500	11000
2003	340	10000	10500
2004	330	9500	10000
2005	320	9000	9500
2006	310	8500	9000
2007	300	8000	8500

Categorical : Emission source - NFR08 sector, Year

- **Predefined views:**

The “Predefined views” drop down menu allows switching between defaults predefined views. Nine “Predefined views” are available from the menu.

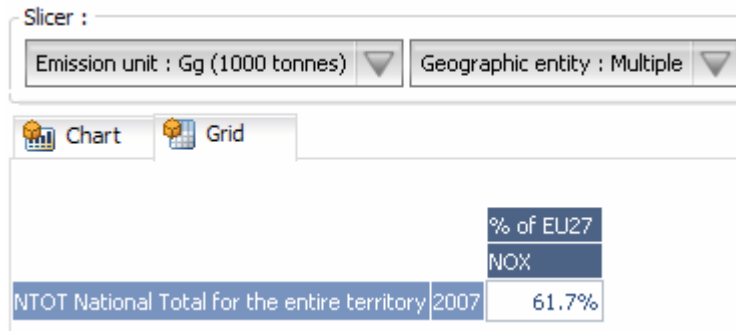
- **Dimensions:**

The data viewer counts six different dimensions: “Air pollutant”, “Emission unit”, “Year”, “Measures”, “Emission source - NFR08 sector” and “Geographic entity”. Each dimension can be arranged within each axis (drag and drop).

- **Axis:** three distinct axis “Slicer”, “Series” and “Categorical”.

Note: the “Filter/Slicer” allows multiple member selection, and therefore offers many possibilities in terms of aggregation.

Example: The screen shot below can be read: “Emissions of NOX in France, Germany, Italy, Spain and United Kingdom accounts for 61.7% of total emissions in the EU-27 in 2007”.



Chart/Grid tabs: the “Chart/Grid” tabs allow easy switch between chart view and grid view.

2 Scope of the viewer

2.1 Air pollutants

The table below lists the height air pollutants (as provided in the data viewer) for which data is reported under the LRTAP Convention.

Air pollutants	
Ammonia	NH ₃
Non-methane volatile organic compounds	NMVOG
Nitrogen oxides	NO _x
Sulphur dioxide	SO ₂
Particulate matter <= 10 µm	PM ₁₀
Particulate matter <= 2.5 µm	PM _{2.5}
Carbon monoxide	CO
Total suspended particulates	TSP

2.2 Geographic entities

Data are available for each Member State of the European community (EU-27), including EU-27 country group aggregation. In addition to the EU-27 Member States (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Spain, Slovak Republic, Slovenia, Sweden and the United Kingdom), data is also available via the data viewer for the following EEA member countries and cooperating countries: Croatia, the Former Yugoslav Republic of Macedonia, Montenegro, Norway, Serbia and Switzerland.



2.3 Emission source - NFR08 sectors

The Nomenclature for Reporting (NFR08) reporting format developed by EMEP/TFEIP as documented in the 2009 UNECE/EMEP Emission Reporting Guidelines ([ECE/EB.AIR/97](#)). Member States report emissions data using the NFR classification system. The NFR format uses around 100 categories to describe emission sources, and is consistent with the common reporting format (CRF) sector classification system developed by the UNFCCC/IPCCC for the reporting of greenhouse gases. For the countries that only provided data in the older NFR02 format, a conversion to NFR08 has been done. Details of the mapping used to convert NFR02 to NFR08 are provided in the [Annual European Community LRTAP Convention emission inventory report 1990-2007](#).

2.4 Total emissions

The “National Total for the entire territory” presented in the Data viewer comprises the aggregated NFR08 sectors (excluding memo items) reported by countries corresponding to anthropogenic (man-made) emissions. Natural emission sources (e.g. wind-blown dust) and re-suspension (e.g. the re-suspension of road-side particulates) are not included in the reported national totals.

2.5 Years

Emission data are reported annually. Data are in principle available for 28 years (from 1980 to 2007) for the main pollutants (CO, NH₃, NO_x, NMVOC, SO₂), although not every country has reported emissions of each pollutant for all these years. In general the most complete data are available from 1990 for the pollutants and therefore presented in the data viewer. For the EU-27 Member States, where gaps existed in the LRTAP data supplied by the Member States to the EEA, the emissions of air pollutants (SO_x, NO_x, CO, NMVOC and NH₃) officially reported by Member States under the National Emissions Ceilings Directive (2001/81/EC) and/or the EU Greenhouse Gas Monitoring Mechanism (280/2004/EC) have been used to fill gaps where possible. Further details are provided in the EEA Technical Report No 7/2008 [Annual European Community LRTAP Convention emission inventory report 1990-2007](#).

2.6 Emissions ceiling for 2010

The viewer shows the 2010 emissions ceilings for national totals (for NO_x, NMVOC, SO₂ and NH₃) where these are defined for Parties that have ratified the Gothenburg Protocol to abate acidification, eutrophication and ground-level ozone of the UNCE LRTAP Convention. The text of the Gothenburg Protocol provides further information concerning the ceilings, for details please refer [here](#).

2.7 Emission unit

Emissions can be visualized in 2 distinct scales:

- in megagrams (Mg) 1 Mg = 1 tonne = 1 000 kg;
- in gigagrams (Gg) 1 Gg = 1 000 tonnes = 1 000 tonnes;

This allows the user to adjust the unit relevant to displayed emission data. For example, the unit *Gg* is most relevant to view “National Total for the entire territory” emissions, while selecting the unit *Mg* might be more relevant to view emissions for a specific sub-sector.

Note: As “Emission unit” entries are linked with the emissions data, selecting any measure other than absolute emissions statistics (for example: % change or index...) is independent of the unit selected.



2.8 Statistics

The viewer can display data of different types including emission trends (expressed in absolute values or indexed to 1990 emissions levels), and the absolute or relative change from one year to another (expressed as a percentage).

2.8.1 Emissions: air pollutants emissions and notation keys

Emissions can be displayed in 2 units (Mg or Gg), according to the "emission unit" selected (see **2.7 Emission unit**). Member States use notation keys (see table below) when an emission for a certain sector has not been reported for various reasons.

Notation key	Definition
C	Confidential: for emissions by sources of compounds which could lead to the disclosure of confidential information.
IE	Included elsewhere: for emissions by sources of compounds that are estimated but included elsewhere in the inventory instead of in the expected source category.
NA	Not applicable: is used for activities in a given source category which are believed not to result in significant emissions of a specific compound.
NE	Not estimated: for existing emissions by sources of compounds that have not been estimated.
NO	Not occurring: for emissions by sources of compounds that do not occur for a particular compound or source category within a country.
NR	Not reported: is introduced to ease the reporting where emissions for a specific Party are not strictly required by the different Protocols.

2.8.2 Percentage change

Five different percentage change statistics are available. In the formulas below, E_{year} represents the selected year emission.

Statistic	Definition	Formula (E_{year} = selected year emission)
% change compared to 1990	Percentage change between 1990 and selected year emissions	$(E_{\text{year}} - E_{1990}) / E_{1990} * 100$
% emission reduction for 2010	Percentage change required to E_{year} in order that the 2010 ceilings are met (for NO_x , NMVOC, SO_2 and NH_3 only). Note: a positive value implies that E_{year} is already below the respective ceiling	$(E_{\text{ceiling } 2010} - E_{\text{year}}) / E_{\text{year}} * 100$
Annual % change (Y vs. Y - 1)	Percentage change between previous year and selected year emissions	$((E_{\text{year}} - E_{\text{year} - 1}) / E_{\text{year} - 1}) * 100$
5-year % change (Y vs. Y - 5)	Percentage change in emissions during the 5-year period preceding the selected year	$((E_{\text{year}} - E_{\text{year} - 5}) / E_{\text{year} - 5}) * 100$
10-year % change (Y vs. Y - 10)	Percentage change in emissions during the 10-year period preceding the selected year	$((E_{\text{year}} - E_{\text{year} - 10}) / E_{\text{year} - 10}) * 100$

Examples: The screen shot below can be interpreted: “In 2007, total NH₃ emissions in the EU-27 were 9.1% lower than 10 years before (in 1997)”.

		10-year % change (Y vs. Y-10)
		NH ₃
		EU27
NTOT National Total for the entire territory	2007	-9.1%

The screen shot below can be interpreted: “French Total emissions of NMVOC in 2007 should be reduced by at least 8.2% in order to be compliant with the 2010 ceiling”.

		% emission reduction for 2010
		NMVOC
		France
NTOT National Total for the entire territory	2007	-8.2%

2.8.3 Index

One index measure.

Statistic	Definition	Formula (E _{year} = selected year emission)
Index (1990=100)	Index of current year emissions, with index 100 = 1990 emissions	$(E_{\text{year}} / E_{1990}) * 100$

Example: The screen shot below can be interpreted: “For EU-27 in 2007, the index of total NO_x emissions with 100 being emissions for 1990 stands at 64.4, this represents an decrease of 35.6% compared to 1990”.

		Index (1990=100)
		NO _x
		EU27
NTOT National Total for the entire territory	2007	64.4

2.8.4 Emission change

Four different calculations of emissions change in absolute (tonnage) terms are available. In the formulas below, E_{year} represents current year emission. See also **2.7 Emission unit**.

Statistic	Definition	Formula (E _{year} = selected year emission)
Absolute change compared to 1990	Change in absolute emissions between 1990 and current year displayed	$E_{\text{year}} - E_{1990}$
Annual absolute change (Y vs. Y-1)	Change in absolute emissions between previous year and current year displayed	$E_{\text{year}} - E_{\text{year-1}}$
5-year absolute change (Y vs. Y-5)	Change in absolute emissions during the 5-year period preceding the selected year	$E_{\text{year}} - E_{\text{year-5}}$
10-year absolute change (Y vs. Y-10)	Change in absolute emissions during the 10-year period preceding the selected year	$E_{\text{year}} - E_{\text{year-10}}$

Example: The screen shot below can be interpreted: "For EU-27, Total NO_x emissions decreased by 2903.998 Gg between 1997 and 2007".

		10-year absolute change (Y vs. Y-10)
		NOX
		EU27
		Gg (1000 tonnes)
NTOT National Total for the entire territory	2007	-2903.998

Note: The "Emission unit" dimension is relevant for the "emission change statistics" - switching between the "Emission unit" options (Mg, Gg) will change the unit of the displayed emissions.

2.8.5 Percentage share

Two different percentage share statistics are available.

Statistic	Definition	Formula (E _{sector} = selected sector emission) (E _{country} = selected national total emission)
Share of National Total emissions (%)	Percentage share of selected sector emission in National Total emissions for the selected years(s)	$(E_{\text{sector}} / \text{National Total emissions}) * 100$
% of EU-27	percentage share of selected country emission in the EU-27 for the selected years(s)	$(E_{\text{country}} / E_{\text{EU-27}}) * 100$

Examples:

The screen shot below can be interpreted: "Denmark accounts for 2.2% of all EU-27 Total Particulate Formation PM₁₀ emissions in 2007".

		% of EU27
		PM10
		Denmark
NTOT National Total for the entire territory	2007	2.2%

The screen shot below can be interpreted: "The sector 1A1a Public Electricity and Heat Production represents 58.9% of SO₂ emissions in the EU-27 in 2007".

		Share of National Total emissions (%)
		EU27
		SO2
1A1a Public Electricity and Heat Production	2007	58.9%