European Environment Agency

Manual for the European Environment Agency's Air Pollutant Emissions Data Viewer (NEC Directive)

This manual provides details on the scope, content and features of the European Environment Agency's (EEA) air pollutant emissions data viewer (NEC Directive).

This viewer is a user-friendly tool which allows visualising and downloading of emissions data submitted by EU Member States under the reporting requirements of the National Emission Ceilings Directive (2001/81/EC) (NEC Directive).

The air pollutant emissions data viewer (NEC Directive) provides access of the data contained in the NEC Directive status report 2008.

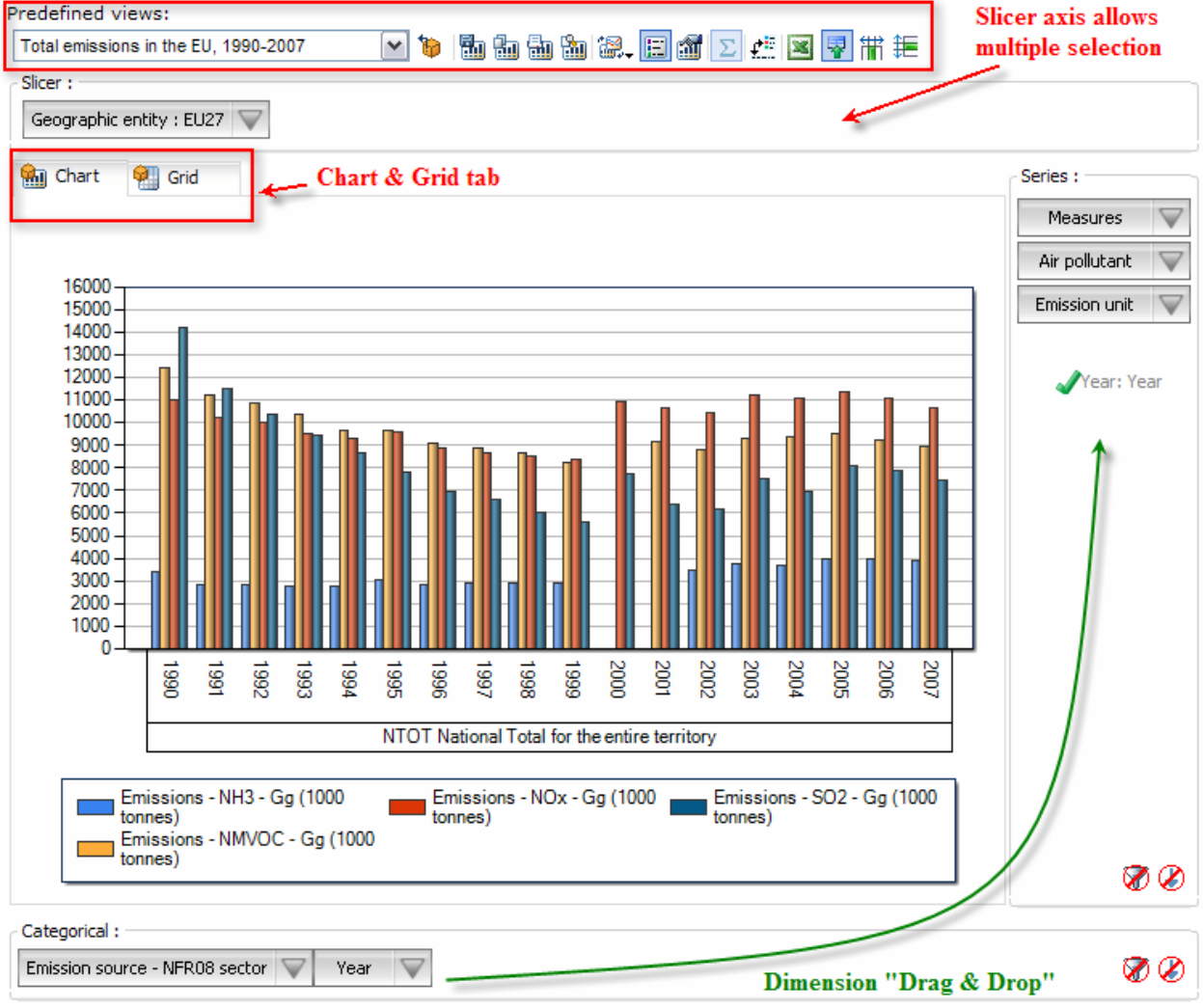The manual is organised as follows:

1 General data viewer navigation

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

o **Predefined views:**

The "Predefined views" drop down menu allows switching between defaults predefined views.
Four "Predefined" views" are available from the menu.

o **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).

o **Axis:** three distinct axis "Filter/Slicer", "Series" and "Categories".

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 NH_3 in France, Germany, Italy, Spain and United Kingdom accounts for 63.2% of total emissions in the EU-27 in 2007".
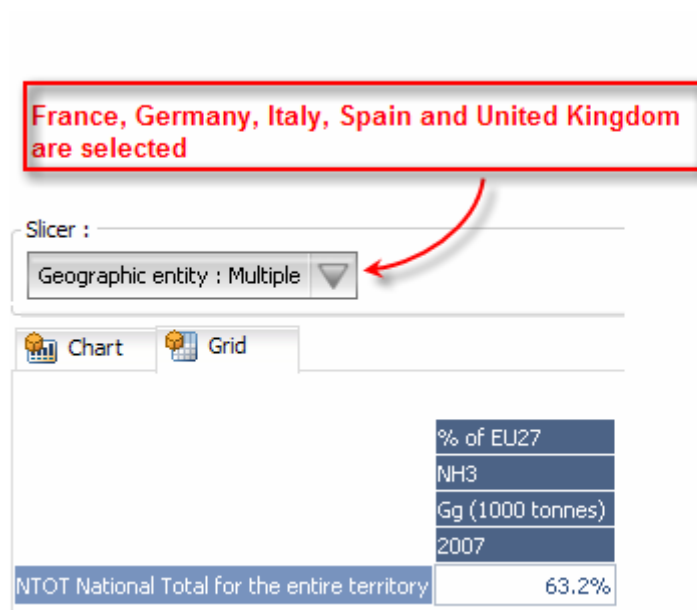
o **Chart/Grid tabs:** the "Chart/Grid" tabs allow easy switch between chart view and grid view.

2 Scope of the viewer

2.1 Air pollutants

The table below lists the four air pollutants (as provided in the data viewer) for which data is reported under the NEC Directive.

Air pollutants	
Ammonia	NH_3
Non-methane volatile organic compounds	NMVOC
Nitrogen oxides	NO_x
Sulphur dioxide	SO_2

2.2 Geographic entities

Data are available for the EU-27 country group aggregation and for each Member State of the European Community (EU-27), as of the 15 July 2009 (the 2008 reporting deadline for Member States was 31 December 2008).

The EU-27 Member States are: 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.

2.3 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.

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. Under the NEC Directive, Member States are obliged each year (year X) to report preliminary emissions for the preceding year (i.e. X-1) and final emissions for the previous year but one (i.e. X-2). However, not every Member State has reported emissions of each pollutant for all years since the NEC Directive entered into force. Annual data for the majority of Member States is available for the year 2000 onwards; the latest year for which data is available is 2007.

2.6 Emissions ceiling for 2010

The viewer includes the respective Member State 2010 emissions ceilings for national totals (for NO_x, NMVOC, SO_2 and NH_3) as prescribed Annex I of the [NEC Directive](#).

2.7 Projections for 2010 reported by Member States

In addition to reporting emission data for previous years, the NEC Directive also requires Member States to report projected emissions of NO_x, NMVOC, SO_2 and NH_3 for the year 2010. Member States report different types of projections to the European Commission and EEA.

- A **with measures (WM)** projection taking into account all currently implemented and adopted policies and measures;
- A **with additional measures (WAM)** projection taking into account all planned policies and measures;

Where Member States have instead reported only 'business as usual' (BAU) or 'current legislation projection' (CLP) projections, it is assumed for comparison that these are equivalent to a WM projection.

In the first instance, the information on projections was obtained from the data files sent by Member States which accompanied the historic emissions data submissions. Additional data sources (such as the national plans and programmes reports, informative inventory reports or explanatory notes) were searched for information only in cases when the Member States did not provide such tables.

2.8 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 Totals" 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…) will not have any effect on the data displayed.

2.9 Measures

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).

2.9.1 Emissions: air pollutants emissions and notation keys

Emissions can be displayed in 2 units (Mg or Gg), according to the "emission unit" selected (see **2.8 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.

2.9.2 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	$((E_{year} - E_{1990})/ E_{1990})*100$
Proximity with 2010 ceiling (%)	Distance from E_{year} to the 2010 ceilings in percent. **Note:** a negative value implies that E_{year} is already below the respective ceiling.	$((E_{year} - E_{ceiling\ 2010})/ E_{ceiling\ 2010})*100$
Annual % change (Y vs. Y – 1)	Percentage change between previous year and selected year emissions	$((E_{year} - E_{year-1})/ E_{year-1})*100$
5-year % change (Y vs. Y – 5)	Percentage change in emissions during the 5-year period preceding the selected year	$((E_{year} - E_{year-5})/ E_{year-5})*100$

Examples:
The screen shot below can be interpreted: "*In 2007, total SO_2 emissions in Austria were 17.4% lower than 5 years before (in 2002)*".

		5-year % change (Y vs. Y-5)
		SO2
		Austria
NTOT National Total for the entire territory	2007	-17.4%

The screen shot below can be interpreted: *"Total emissions of NO_x in 2007 for United Kingdom lie 27.3% above the 2010 ceiling".*

		Proximity with 2010 ceiling (%)
		United Kingdom
		NOx
NTOT National Total for the entire territory	2007	+27.3%

2.9.3 Index

One index measure is available.

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

Example: The screen shot below can be interpreted: "*For France in 2007, the index of total NMVOC emissions with 100 being emissions for 1990 stands at 43.9, this represents an decrease of 51.6% compared to 1990".*

		Index (1990=100)
		France
		NMVOC
NTOT National Total for the entire territory	2007	43.9

2.9.4 Emission change

Four different calculations of emissions change in absolute (tonnage) terms are available. In the formulas below, E_{year} represents the selected year emission. See also **2.8 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	$E_{year} - E_{1990}$
Annual absolute change (Y vs. Y-1)	Change in absolute emissions between previous year and current year displayed	$E_{year} - E_{year-1}$
5-year absolute change (Y vs. Y-5)	Change in absolute emissions during the 5-year period preceding the selected year	$E_{year} - E_{year-5}$
10-year absolute change (Y vs. Y-10)	Change in absolute emissions during the 10-year period preceding the selected year	$E_{year} - E_{year-10}$

Example: The screen shot below can be interpreted: *"For EU-27, total SO_2 emissions decreased by 428.337 Gg between 2006 and 2007"*.

	Annual absolute change (Y vs. Y-1)
	EU27
	SO2
	Gg (1000 tonnes)
NTOT National Total for the entire territory 2007	-428.337

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.

2.9.5 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_{sector} / National Total emissions)*100
% of EU-27	percentage share of selected country emission in the EU-27 for the selected years(s)	($E_{country}$ / E_{EU-27})*100

Examples:
The screen shot below can be interpreted: *"Spain accounts for 15.0% of all EU-27 SO_2 emissions in 2007"*.

	% of EU27
	Spain
	SO2
NTOT National Total for the entire territory 2007	15.0%

The screen shot below can be interpreted: *"The sector "1A3bi. Road Transport: Passenger cars" represents 8.1% of NMVOC emissions in the EU-27 in 2007"*.

	Share of National Total emissions (%)
	EU27
	NMVOC
1A3bi Road Transport:, Passenger cars 2007	8.1%