



Department for Environment, Food and Rural Affairs

STATISTICAL RELEASE: 15 DECEMBER 2011

EMISSIONS OF AIR POLLUTANTS IN THE UK, 1970 TO 2010

**PRE-RELEASE ANNOUNCEMENT: 9 DECEMBER 2011
METHODOLOGICAL CHANGES**

The Defra National Statistics Release on Emissions of Air Pollutants in the UK, 1970 to 2010 will present figures from the 2010 National Atmospheric Emissions Inventory (NAEI) on nitrogen oxides, sulphur dioxide, ammonia and non-methane volatile organic compounds.

Some methodological changes in the NAEI affect the calculation of emissions of nitrogen oxides (NO_x) from road transport. Small changes occur every year to reflect improved knowledge and data sources; however this amendment reflects a significant change in methodology and is therefore being announced in advance

Summary of changes

The changes to the NO_x emissions from road transport result from:

- (a) changes in exhaust emission factors, and
- (b) changes in fleet composition defined by analysis of the Department for Transport's (DfT) Automatic Number Plate Recognition (ANPR) data for different road types and Driver and Vehicle Licensing Agency licensing data for the UK's Devolved Administrations.

NO_x Emission Factors

The previous version of the inventory used emission factors published by DfT in 2009. NO_x emission factors for road transport have been revised, and now use the COPERT4 v8.1 emission factors published in May 2011. COPERT is a software tool developed by the European Environment Agency (EEA) and used widely to calculate emissions from road transport. The methodology is part of the EMEP/EEA air pollutant emission inventory guidebook, and is consistent with the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines. The latest version of the COPERT model is available for download from <http://www.emisia.com/copert/>.

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The COPERT4 v8.1 factors are based on new sources of information on vehicle emissions emerged since the DfT emission factors were developed.

Fleet Composition

The previous version of the inventory used vehicle fleet composition data developed through analysis of national licensing data and travel surveys. The DfT are now able to provide anonymised ANPR data for 256 sites in the UK for 2007-2010. These were analysed to define the composition of the fleet in terms of vehicle age (and hence Euro emission standard) and fuel type actually observed on different types of roads: urban, rural and motorways. These data were used in conjunction with vehicle licensing data for each Devolved Administration (DA) country to adjust current assumptions made when calculating the UK vehicle fleet, with the aim of providing a more realistic 'on-road' vehicle fleet by DA region.

The change in methodology will affect vehicle emission figures for 2000 to 2009, as presented in the 2009 NAEI. The statistical release to be published on 15 December 2011 will be accompanied by an assessment of the impact on the figures for the UK road transport emissions of NO_x when both the emission factors and fleet composition data are updated, as well as other minor changes made in the activity data for the latest inventory compilation. The changes will be mainly due to increases in petrol and diesel car emission estimates partially offset by a reduction in the estimate for artic HGV emissions. The new emission factors are responsible for most of the overall changes in the road transport emissions inventory for NO_x. There will also be relatively small changes in estimates of emissions for other pollutants as a consequence of using the ANPR data

Rationale for the change in methodology

Trends in ambient roadside concentrations of NO_x and nitrogen dioxide (NO₂) in the UK have generally shown a decrease in concentration from ~1996 to 2002–2004, followed by a period of more stable concentrations from 2002/2004–2009. However, trends in the ambient concentrations of NO_x and NO₂ have not decreased by as much as suggested by previous UK road transport emission inventories. The report 'Trends in NO_x and NO₂ emissions and ambient measurements in the UK'¹ published by Defra in 2011, outlines the analysis that was undertaken to assess the differences in measured concentrations and forecast trends of NO_x and NO₂ in the UK, and informs the changes which will be implemented in the 2010 NAEI.

Background

The National Statistics release reports annual emissions of air pollutants that are covered by the National Emissions Ceiling Directive (NECD). The statistics are from the UK National Atmospheric Emissions Inventory (NAEI), funded by the Department for Environment Food and Rural Affairs (Defra) and the Devolved Administrations.

¹ [//uk-air.defra.gov.uk/reports/cat05/1108251149_110718_AQ0724_Final_report.pdf](http://uk-air.defra.gov.uk/reports/cat05/1108251149_110718_AQ0724_Final_report.pdf)

The NAEI is based on the same datasets used by the UK Greenhouse Gas Inventory (GHGI), compiled according to IPCC 1996 Revised Guidelines and Good Practice Guidance, with reference to the new 2006 IPCC Guidelines.

The inventories cover numerous source sectors specified under the international agreements, including road transport. According to good practice, each year the inventory is updated to include the latest data available. Improvements to the methodology are backdated as necessary to ensure a consistent time series. Methodological changes are made to take account of new data sources, or new guidance from IPCC, relevant work by CORINAIR, and new research, sponsored by the UK government.

A Defra National Statistics publication

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