An Phríomh-Oifig Staidrimh
Central Statistics Office

Standard Report on Methods and Quality for Environmental Accounts, Air Emissions 2018

Standard Report
on
Methods and Quality

for
Environmental Accounts,
Air Emissions

This documentation applies to the reporting period:

2018

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1 Overview

Air Emissions Accounts record emissions of greenhouse gases and air pollutants by economic sectors and households. They are compiled in line with the System of Environmental-Economic Accounting framework, the internationally accepted standard for producing environment statistics. Reporting of Air Emissions Accounts is required under EU regulation 691/2011.

The principal data source for air emissions in Ireland are the air emissions inventories produced annually by the Environmental Protection Agency in accordance with United Nations Framework Convention on Climate Change (UNFCCC) and Convention on Long-Range Transboundary Air Pollution (CLRTAP) guidelines.

The main statistics reported in the Air Emissions Accounts are the annual emissions by the household and economic sectors of greenhouse gases and air pollutants. The unit of measurement used for greenhouse gas emissions is the tonne of carbon dioxide equivalent. Air pollutant emissions are measured in tonnes. The emitting industries are identified using the NACE Rev. 2 classification[1].

Air Emissions Accounts categorise emissions by emitting sector in a manner that is consistent with the European System of Accounts, meaning they are useful in measuring the relationship between emissions and the economy and thus also support policy formation on climate change.

2 General Information

2.1 Statistical Category

Aggregated data on air emissions in Ireland are obtained from the air emissions inventories produced annually by the Environmental Protection Agency (EPA).

2.2 Area of Activity

Environmental-economic accounts.

2.3 Organisational Unit Responsible, Persons to Contact

The Environment division of the CSO is responsible for compiling and publishing Air Emissions Accounts.

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2.4 Objectives and Purpose; History

Air Emissions Accounts provide a basis on which to analyse the environmental implications of economic activity. A time-series of air emissions can be maintained and used to evaluate the relationship of emissions to economic growth.

2.5 Periodicity

Air Emissions Accounts are reported on an annual basis.

2.6 Client

Eurostat.

2.7 Users

National users of air emissions statistics include the environment sector, the government, the media, educational institutions and the public. International users include Eurostat, the European Environment Agency and the OECD[2].

[1] NACE Rev. 2 is the statistical classification of economic activities in the European Community (Nomenclature générale des Activités économique dans les Communautés Européenne).
[2] Organisation for Economic Cooperation and Development.

2.8 Legal basis

Reporting of Air Emissions Accounts is a legal requirement under EU regulation 691/2011.

3 Statistical Concepts, Methods

3.1 Subject of the Statistics

Air Emissions Accounts itemise emissions of greenhouse gases and air pollutants by the economic activities of producers and by households as consumers.

The greenhouse gases are carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3), as well as hydrofluorocarbons (HFC) and perfluorocarbons (PFC).

The air pollutants are sulphur dioxide (SO_2), nitrogen oxides (NO_x), ammonia (NH_3), carbon monoxide (CO), non-methane volatile organic compounds (NMVOC) and particulate matter (PM_{10} and $PM_{2.5}$)[3].

3.2 Units of Observation/Collection Units/Units of Presentation

Not applicable.

3.3 Data Sources

Aggregated data are obtained from the air emissions inventories carried out by the EPA.

3.4 Reporting Unit/Respondents

Not applicable.

3.5 Type of Survey/Process

Total greenhouse gas emissions and air pollutant emissions obtained from the EPA inventories are allocated to the household and economic sectors using the correspondence between the UNFCCC/CLRTAP reporting codes and the NACE Rev. 2 classification. Where necessary this mapping is complemented using data from CSO sources such as the Business Energy Use Survey.

3.6 Characteristics of the Sample/Process

The estimation process is based on the methodology set out in the Eurostat publication, “Manual for air emissions accounts 2015”[4]. The manual offers alternative approaches to compiling air emissions accounts; the approach taken here is the “inventory-first approach”.

3.7 Survey Technique/Data Transfer

Not applicable.

3.8 Questionnaire (including explanations)

Not applicable.

3.9 Participation in the Survey

Not applicable.

3.10 Characteristics of the Survey/Process and its Results

The source data consist of air emissions by the energy, industry, agricultural and waste sectors, classified using CRF[5] codes. The published accounts report total and individual greenhouse gas emissions and air pollutant emissions by

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[3] PM_{10} is particulate matter of diameter greater than 2.5 μm but no greater than 10 μm, while $PM_{2.5}$ is particulate matter of diameter not greater than 2.5 μm.

[4] http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-15-009

[5] UNFCCC guidelines stipulate the use of CRF (Common Reporting Format) codes.

households and economic sectors classified using NACE Rev. 2 codes. The correspondence between CRF and NACE Rev. 2 codes is described in Section 4.3 below.

The data are available on the CSO website at the following link:

http://www.cso.ie/en/releasesandpublications/er/eaae/environmentalaccountsairemissions2018/

3.11 Classifications used

NACE Rev. 2 (See http://www.cso.ie/px/u/NACECoder/Index.asp for details.) The correspondence between CRF and NACE Rev. 2 codes can be found at the following link: http://ec.europa.eu/eurostat/web/environment/methodology

3.12 Regional Breakdown of Results

Air Emissions Accounts are reported for Ireland as a single regional unit.

4 Production of the Statistics, Data Processing, Quality Assurance

4.1 Data Capture

Not applicable.

4.2 Coding

Not applicable.

4.3 Data Editing

Not applicable.

4.4 Imputation (for Non-Response or Incomplete Data Sets)

Not applicable.

4.5 Grossing and Weighting

Not applicable.

4.6 Computation of Outputs, Estimation Methods Used

The correspondence between the CRF codes and the NACE Rev. 2 classification is provided by Eurostat in its manual for Air Emissions Accounts. In some cases, there is a direct equivalence between a single CRF code and a single NACE Rev. 2 code, however in other instances a single CRF code may encompass several NACE categories.

In these latter situations, further data are used to estimate the proportion of the emissions to be assigned to each NACE category. For example, the single CRF code *1A2a* (representing combustion in the iron and steel industries) covers two NACE codes, *24* and *25*. The *1A2a* emissions must therefore be distributed between the two NACE categories; this is done using data from the CSO's Business Energy Use survey on non-transport fuel use for these categories.

Air Emissions Accounts are compiled based on the residence principle. Emissions based on the territorial principle are provided in the national emissions inventories and are used as a starting point. Emissions from non-resident units on the territory of Ireland are removed and emissions by Irish resident units abroad are added to obtain total emissions by resident units. These emissions are then disaggregated by NACE Rev. 2.

4.7 Other Quality Assurance Techniques Used

An important aspect of the process is that the overall air emissions for each gas and pollutant are taken from the EPA inventory, therefore the emissions totals are controlled throughout the estimation procedure. In addition, data are reviewed in relation to estimates from previous years to assess continuity.

5 Quality

5.1 Relevance

Reporting of Air Emissions Accounts is a legal requirement under EU regulation 691/2011. National users of air emissions statistics include the environment sector, the government, the media, educational institutions and the general public, while international users include Eurostat, the European Environment Agency and the OECD.

5.2 Accuracy and Reliability

The main data source used to assign emissions to NACE categories is the Business Energy Use survey, which is carried out by the CSO.

5.3 Timeliness and Punctuality

The accounts are to be submitted to Eurostat within 21 months of the end of the year to which the figures relate. They are also published on the CSO website. The 2018 Air Emissions Accounts were submitted to Eurostat 20 months after the end of 2018 and were published on the website 22 months after the end of the 2018.

5.4 Coherence

The overall air emissions for each gas and pollutant are taken from the EPA inventory, therefore the emissions totals are controlled throughout the estimation procedure. In addition, data is reviewed in relation to estimates from previous years to assess continuity.

5.5 Comparability

The accounts are compiled in line with Eurostat guidelines in so far as this is possible. They can therefore be considered methodologically sound, and as they are compiled annually in a consistent manner, they are comparable over time.

5.6 Accessibility and Clarity

5.6.1 Assistance to Users, Special Analyses

Background notes are provided with each release on the CSO website. (See http://www.cso.ie/en/releasesandpublications/er/eaae/environmentalaccountsairemissions2018/ for details.)

5.6.2 Revisions

Revisions are made annually in line with revisions made to the EPA air emissions inventory. Revisions were made to the data in the 2018 release as data on emissions by resident units were presented throughout the release for the first time.

5.6.3 Publications

The data are available on the CSO website at the following link:

http://www.cso.ie/px/pxeirestat/Database/eirestat/Environment/Environment_statbank.asp?SP=Environment&Planguage=0

The results are published on the following page of the CSO website:

http://www.cso.ie/en/releasesandpublications/er/eaae/environmentalaccountsairemissions2018/

5.6.4 Confidentiality

All confidential data are treated in accordance with Part V of the Statistics Act 1993.