



An
Phríomh-Oifig
Staidrimh

Central
Statistics
Office

Standard SIMS Report: Air Emissions Accounts



Single Integrated Metadata Structure (SIMS) Report

For

Air Emissions Accounts

This documentation applies to the reporting period:

2019

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2. Introduction

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 (EPA) 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 annual emissions by economic sector 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.

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.

3. Contact

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4. Metadata Update

4.1. Metadata last certified

22/09/2021

4.2. Metadata last posted

22/09/2021

4.3. Metadata last update

22/09/2021



5. Statistical Presentation

5.1. Data Description

Air emissions accounts (AEA) record flows of gaseous and particulate materials emitted into the atmosphere as a result of economic activity.

AEA are a subset of environmental-economic accounts. They offer a detailed breakdown for 64 emitting economic activities (NACE), plus households, as defined in the national accounts of EU countries. They are aligned with economic statistics and GDP. These features make them suitable for integrated environmental-economic analyses and modelling – for example of 'carbon footprints' and climate-change modelling scenarios.

National Statistical Institutes (NSI) submit AEA to Eurostat through a mandatory annual data collection. The data collection includes an electronic questionnaire and this quality report.

5.2. Classification System

The AEA dataset has the following dimensions:

- 1) **Air pollutant:** Emissions to air of the following gaseous and particulate substances are collected (greenhouse gases, air pollutants):
 - Carbon dioxide without emissions from biomass (CO₂),
 - Carbon dioxide from biomass (Biomass CO₂)*,
 - Nitrous oxide (N₂O),
 - Methane (CH₄),
 - Perfluorocarbons (PFCs),
 - Hydrofluorocarbons (HFCs),
 - Sulphur hexafluoride (SF₆) including nitrogen trifluoride (NF₃),
 - Nitrogen oxides (NO_x),
 - Non-methane volatile organic compounds, (NMVOC),
 - Carbon monoxide (CO),
 - Particulate matter < 10µm (PM₁₀),
 - Particulate matter < 2,5µm (PM_{2.5}),
 - Sulphur Oxides (SO_x),
 - Ammonia (NH₃)
- 2) **Geopolitical entity:** EU Member States, EFTA Countries, Candidate Countries etc.
- 3) **Economic activities:** include 64 production activities (classified by NACE rev.2 A*64), and households' consumption (3 sub-classes).
- 4) **Time:** reference year for which air emissions are reported
- 5) **Unit:** tonnes and thousand tonnes

5.3. Sector Coverage

The data refer to national economies as defined in the system of national accounts. Greenhouse gases and air pollutants emitted by resident units representing the national economy are covered.

5.4. Statistical Concepts and definitions

Conceptually AEA belong to the international system of environmental economic accounting (SEEA-Central Framework). Furthermore, AEA is one of several physical modules of Eurostat's programme on European environmental economic accounts. It is covered by Regulation (EU) No.691/2011 on European environmental economic accounts.

AEA are closely related to concepts and definitions of national accounts. Most notably, they follow the residence principle, i.e. they record emissions related to resident units' activities, regardless of where those occur geographically.

Further methodological guidelines are provided in various publications by Eurostat.
<https://ec.europa.eu/eurostat/web/environment/methodology>



5.5. Statistical Unit

Data refer to emissions by resident economic units in the sense of SEEA CF 2012 and National Accounts (ESA), including households.

5.6. Statistical Population

The national economy is as defined in SEEA CF 2012 and National Accounts (ESA), i.e. all economic activities undertaken by resident units.

5.7. Reference Area

The reference area is the economic territory as defined in SEEA CF 2012 and National Accounts (ESA). A unit is said to be a resident unit of a country when it has a centre of economic interest in the economic territory of that country, that is, when it engages for an extended period (1 year or more) in economic activities in that territory.

By following this residence principle, the Air Emission Accounts record emissions from resident units' activities, regardless of where they occur. This is the main conceptual difference to emission inventories for greenhouse gases (UNFCCC) and air pollutants (CLRTAP).

5.8. Time Coverage

Data are provided for Ireland for 2010-2019.

5.9. Base period

Not applicable because AEA are not reported as indices

6. Unit of Measure

The unit of measure is tonnes or thousand tonnes.

F-gases (HFC, PFC, SF₆ and NF₃) are reported in tonnes of CO₂ equivalents.

SO_x are reported in tonnes of SO₂ equivalents, and NO_x are reported in tonnes of NO₂ equivalents.

7. Reference Period

2019

8. Institutional Mandate

8.1. Legal Acts and other agreements

Air emissions accounts (AEA) are legally covered by Regulation (EU) 691/2011 on European Environmental Economic Accounts.

8.2. Data Sharing

Not applicable at national level.

9. Confidentiality

9.1. Confidentiality – policy

All information supplied to the CSO is treated as strictly confidential. The Statistics Act, 1993 sets stringent confidentiality standards: Information collected may be used only for statistical purposes, and no details that might be related to an identifiable person or business undertaking may be divulged to any other government department or body.



These national statistical confidentiality provisions are reinforced by the following EU legislation: Council Regulation (EC) No 223/2009 on European statistics for data collected for EU statistical purposes. Further details are outlined in the CSO's Code of Practice on Statistical Confidentiality.

For more information on the CSO confidentiality policy please visit:
<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/statisticalconfidentiality/>

9.2. Confidentiality – data treatment

There are no confidentiality issues arising in the reported data.

10. Release Policy

10.1. Release Calendar

The date of dissemination of all statistics released by CSO can be found in the Release Calendar published in CSO.ie. This calendar is regularly updated. The national Air Emissions Accounts release is published annually at the end of October.

10.2. Release calendar access

The release calendar can be accessed via the CSO website, www.cso.ie, or directly from this link:
<https://www.cso.ie/en/csolatestnews/releasecalendar/>

10.3. User access

In accordance with Principle 6 of the European Statistics Code of Practice all users of CSO statistics have equal access via the CSO website at the same time of 11 am. Any privileged pre-release access to any outside user is limited, controlled and publicised. In the event that leaks occur, pre-release arrangements are revised so as to ensure impartiality.

The CSO recognises that in very limited circumstances a business need for pre-release access may be substantiated. Any form of pre-release access is a privilege and a strict CSO pre-release access policy is adhered to for these special requests. The full pre-release access policy can be accessed at
<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csopolicyonpre-releaseaccess/>

The results are published nationally in statistical release format on the CSO website (www.cso.ie). Selected extracts from the results are posted on the CSO's data dissemination database, PxStat.

11. Frequency of Dissemination

Data are disseminated annually.

12. Accessibility and clarity

12.1. News release

The AEA release is published annually on the CSO website. It is not usually accompanied by a press release.

12.2. Publications

The AEA release is published annually on the CSO website. The publication can be accessed from this link:
<https://www.cso.ie/en/statistics/environmentaccounts/environmentalaccountsairmissions/>

12.3. On-line database

The data are published on PXSTAT, the CSO's main data dissemination service. PXStat tables can be found at the following link: <https://data.cso.ie/product/EAAE>

12.3.1. AC 1. Data tables - consultations

Total consultations: 1,037, of which 487 were unique.



12.4. Micro-data Access

Micro-data are not disseminated.

12.5. Other

Not applicable.

12.5.1. AC2. Metadata consultations

Total consultations: 290, of which 130 were unique.

12.6. Documentation on Methodology

CSO Air Emissions Accounts Methods page: <https://www.cso.ie/en/methods/environment/airemissions/>

12.6.1. AC3 – Metadata completeness – rate

Not calculated.

12.7. Quality Documentation

National quality reports are published alongside the national release and can be found at the following link: <https://www.cso.ie/en/methods/qualityreports/environmentalaccountsairmissions/>

13. Quality Management

13.1. Quality Assurance

Quality Management Framework

The CSO avails of an office wide Quality Management Framework (QMF). This framework allows all CSO processes and outputs to meet the required standard as set out in the European Statistics Code of Practice (ESCOMP). The QMF foundations are based on establishing the UNECE's Generic Statistical Business Process Model (GSBPM) as the operating statistical production model to achieve a standardised approach to Quality Management. All and any changes implemented to CSO processes and outputs require adherence to the QMF.

13.2. Quality Assessment

The reported data are generally considered to be of good quality. The primary data are the national Emissions Inventories (compiled by the EPA). The main data sources used for NACE/Household disaggregation of the emissions inventories are the CSO Business Energy Use survey, the national Energy Balances and CSO Transport Statistics. Thus, the data used for disaggregation are all official statistics underpinned by detailed methodological guidance and high standards of quality at all stages of the statistical process.

14. Relevance

14.1. User Needs

Principal external users are government, policy-makers, environment sector, business, national media, and general public. Background notes are provided with each release, along with a quality report and other methodological information.

14.1.1. Main National Users

National users of air emissions statistics include the environment sector, the government, the media, educational institutions and the public.

14.1.2. Principal External Users

International users include Eurostat, the European Environment Agency and the OECD



14.2. User Satisfaction

Not measured.

14.3. Data Completeness

Data are not available for the water transport residence adjustment.

14.3.1. Data Completeness rate

Not calculated; to ensure comparability, this will be calculated and provided by Eurostat in the European quality report using a standardised method.

15. Accuracy and reliability

15.1. Overall accuracy

Substance	Economic Activity/ Bridging item	Year	Reason for low quality data
All	Water transport bridging items	2010-2019	Lack of data availability

15.2. Sampling Error

Not applicable because data are not based on a sample survey.

15.2.1. A1. Sampling error indicator

Not applicable.

15.3. Non-sampling Error

Not applicable because data are not based on a sample survey.

15.3.1. Coverage error

Not applicable.

15.3.1.1. A2. Over coverage rate

Not applicable.

15.3.1.2. A3. Common units – proportion

Not applicable.

15.3.2. Measurement error

Not applicable.

15.3.3. Non-Response Error

Not applicable.

15.3.3.1. Unit non-response rate

Not applicable.

15.3.3.2. Item non-response rate

Not applicable.



15.3.4. Processing error

Not applicable.

15.3.5. Model assumption error

Not applicable.

16. Timeliness and punctuality

16.1. Timeliness

EPA inventory data are not available until 15 months after the end of the reference year.

16.1.1. TP1. Time lag – First results

Not applicable.

16.1.2. TP2. Time lag – Final results

Data provided to Eurostat within 21 months of the reference year, as per EU Regulation 691/2011. Data are published nationally within 22 months of the reference year.

16.2. Punctuality

Data are provided within the timeframe of the EU Regulation. Data were provided to Eurostat 41 days in advance of the deadline.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

-41 days

17. Comparability

17.1. Comparability – Geographical

AEA are compiled according to harmonised guidelines provided by Eurostat and hence comparable across European countries reporting AEA to Eurostat.

17.1.1. CC1. Asymmetry for mirror flow statistics

Not applicable.

17.2. Comparability over time

17.2.1. Breaks in time series (indicated with b-flag)

Substance	Economic Activity (NACE or Households) / Bridging item	Reason for break in time series or revision	Volume of the change/revision	Year (when the change was introduced)

17.2.2. Length of Comparable Time series

Not applicable; To ensure comparability, this will be calculated and provided by EUROSTAT in the European quality report using a standardised method.

17.3. Coherence – cross domain

Not available.



17.3.1. Coherence – Sub annual and annual statistics

Not applicable, because AEA data are annual.

17.3.2. Coherence with National Accounts

A residence adjustment is carried out on the air emissions data for road transport and air transport in order to attain coherence with national accounts.

17.4. Coherence – internal

The data are internally consistent.

17.4.1. Errors and Omissions

Not Applicable.

18. Cost and Burden

Not applicable.

19. Data Revision

19.1. Data Revision Policy

Revisions refer to changes made to published statistical data when the information used in its production has been updated or corrected. This information includes all data used in compiling the statistic e.g. respondent data, administrative data, weights and factors, methodology, classifications, definitions, modifications to survey questionnaires, survey scope and data collection methods

19.2. Data Revision Practice

19.2.1. Data Revision – Average size

Not applicable; To ensure comparability, this will be calculated and provided by Eurostat in the European quality report using a standardised method.

20. Statistical processing

20.1. Source Data

The data sources are the EPA national emissions inventories which are submitted annually under the UNFCCC (United Nations Framework Convention on Climate Change) and the CLRTAP (Convention on Long-Range Transboundary Air Pollution).

20.1.1. Population and sampling frame

EPA Air Emissions Inventories.

20.1.2. Sampling design

Not Applicable.

20.1.3. Survey size

Not applicable.

20.1.4. Survey technique

Not applicable.



20.2. Frequency of data collection

Data are collected annually.

20.3. Data Collection

The AEA is not based on a survey. The data used by the CSO are the national emissions inventories compiled by Ireland's EPA. However other data sources are used in order to assign emissions to NACE codes. These data sources include the CSO's Business Energy Use Survey, the national Energy Balances, and CSO Transport Statistics. All are collected annually.

20.3.1. Type of Survey/Process

Data are compiled using statistical, scientific and administrative data.

20.3.2. Questionnaire (including explanations)

Not Applicable.

20.3.3. Survey Participation

Not Applicable.

20.3.4. Data Capture

Not Applicable.

20.4. Data Validation

Data are not collected using a survey. The national emissions inventories are validated by the EPA and by the UN.

20.5. Data Compilation

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

Data used for NACE disaggregation and residence principle adjustment include the Central Statistics Office's Business Energy Use survey, the CSO road freight transport survey and OECD data on carbon dioxide emissions from air transport.

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.

20.5.1. Method used to allocate emissions to economic activities

Emissions from industry and services are allocated proportionally according to non-transport fuel use, as collected by the Central Statistics Office's Business Energy Use (BEU) survey. We have a detailed breakdown by NACE and type of fuel from 2009-2018. We used 2018 survey data for 2019 emissions as 2019 is not yet available. This will be revised next year. Last year we relied on 2017 survey data for 2018 emissions. These were revised and are now disaggregated using 2018 BEU survey data. This has resulted in mostly minor revisions to the data for those years.

In some cases, there is a direct equivalence between inventory data for 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, data from the CSO's Business Energy Use survey on non-transport fuel use are used to estimate the proportion of the emissions to be assigned to each NACE category.

20.5.2. Method used to determine and distribute road transport emissions

We use CSO road freight transport survey data on tonne-km by NACE, along with energy balances data on road freight fuel use, to allocate a proportion of road transport emissions to agricultural use. We use CSO road traffic



volumes data on kilometres travelled by private household cars (as opposed to taxis and company cars) to allocate a proportion of road transport emissions to households. We then distribute the remaining emissions proportionally across industry and services NACE codes according to data from the Business Energy Use survey on transport fuel use. We have a breakdown by NACE and type of fuel (petrol, diesel) from 2009-2018.

For greenhouse gas emissions, vehicle and fuel categories are provided in the inventory, and we use vehicle type data from the energy balances in addition to fuel type data from the energy balances and the business energy use survey to allocate emissions. For air pollutants there is no fuel type breakdown provided in the inventory files. However, we have now incorporated vehicle and fuel type data on air pollutants from the COPERT road transport emissions model into the inventory data. These were used in conjunction with fuel and vehicle type data from the energy balances and with transport fuel use data from the business energy use survey to disaggregate air pollutant road transport emissions.

20.5.3. Adjustment for residence principle

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.

Land Transport

To implement the residence principle adjustment, we use international tonne-km data from the road freight transport survey to estimate emissions from Irish freight companies abroad (freight vehicles; diesel and biodiesel). We use the national energy balances data on fuel tourism to estimate emissions from non-resident drivers on the territory (cars; petrol, diesel, biomass). We have obtained data on tonne-km travelled by British- and Northern Irish-registered freight vehicles in Ireland and included emissions estimates based on these (freight vehicles; diesel, biodiesel).

Aviation

We have received data on CO₂ emissions for Irish airline companies for the years 2010-2012 which we use to estimate the aviation residence adjustment for those years. We use the OECD database on carbon dioxide emissions from air transport for all years from 2013 onwards.

Water Transport

We do not have a suitable data source for the water transport residence adjustment and are unable to provide estimates at the moment.

20.5.4. Imputation (for Non-Response or Incomplete Data Sets)

Not applicable.

20.5.4.1. A7. Imputation rate

Not Applicable

20.5.5. Grossing and Weighting

Not applicable.

20.6. Adjustment

Not applicable.

20.6.1. Seasonal Adjustment

Not applicable.

21. Comment