

**Documentation of statistics for
Emission Accounts 2017**

1 Introduction

Air Emission Account is one of the integrated Environmental-Economic Accounts (Green National Accounts) that is used as a term for separate accounts for environmentally related matters compiled in close relation with the National Accounts. The same boundaries, definitions and classifications are used in compilation of Green National Accounts as in National Accounts. In that way, it is possible to analyse the relationship between the economy on the one hand and the environment on the other, in a logical way.

SEEA, System of Environmental Economic Accounting, which is a statistical standard published by the UN and several other international organizations provides the "State of the art" for Green National Accounts.

The statistics is part of the Environmental-Economic Accounts for Denmark (Green National Accounts).

2 Statistical presentation

Air emissions contain information on different substances (CO₂, N₂O, CH₄, PFC, HFC, SF₆, NO_x, NMVOC, CO, PM₁₀, PM_{2.5}, SO₂, NH₃)

Air emission accounts follow the same definitions and classification as National Accounts, which allows for analyses of the connection between the economy and air pollution.

2.1 Data description

Air emission accounts: The air emission accounts show emissions of green house gases as well as other polluting substances caused by the industries' or households' use of energy. In addition to that, the air emission accounts also accounts for emissions originating from activities not related to the use of energy, e.g. processes.

Emission accounts for the greenhouse gases CO₂, CH₄ and N₂O are published 9 months after the reference year on the 21 industry aggregation level. The final year is compiled using the most recent data from the energy accounts, coefficients from the previous year and emissions from processes and agriculture are estimated using relevant indicators. In particular for agriculture emissions are adjusted for the change in the stock of cattle and swine. Emissions from processes of the Manufacture of concrete and bricks is adjusted with the production index for the most recent year.

2.2 Classification system

Statistics Denmark's industrial classification DBO7, which is a Danish version of the EU NACE, rev. 2. and the UN's ISIC, rev. 4, contains a number of standard classifications: the 127, 36, 19, and 10 classifications.

The 117 industry classification in Air Emission Accounts, which is the same as in the national accounts, corresponds to the standard 127 standard classification. The 117 industry classification can be aggregated to other standard classifications as well. Air Emission Accounts are thus fully comparable and can be combined with other statistics operating with the DBO7 standard classifications

2.3 Sector coverage

All industries according to Danish Industrial Classification of All Economic Activities 2007 (DB07).

2.4 Statistical concepts and definitions

Air emission: 'Air emission' means the physical flow of gaseous or particulate materials from the national economy (production or consumption processes) to the atmosphere (as part of the environmental system).

2.5 Statistical unit

The statistical unit is the local kind-of-activity unit, enterprise.

2.6 Statistical population

All units engaged in economic activity on the Danish territory.

2.7 Reference area

Denmark

2.8 Time coverage

Air emission accounts cover years 1990-2017.

2.9 Base period

Not relevant for this statistics.

2.10 Unit of measure

Emissions to air are measured in tons for all substances.

2.11 Reference period

01-01-2016 - 31-12-2017

2.12 Frequency of dissemination

Annually.

2.13 Legal acts and other agreements

Regulation no. 691/2011 on European environmental economic accounts.

2.14 Cost and burden

No direct response burden, since all information is based on existing statistics.

2.15 Comment

[Link to Subject page](#)

3 Statistical processing

Emission accounts are compiled taking energy accounts as a starting point for the emissions caused by the use of energy. Emissions caused by other factors than energy use are added subsequently and distributed among the relevant industries.

3.1 Source data

The environmental accounts are based on: The air emissions accounts are based on technical information on emissions and emission inventories obtained from the DCE, Danish Centre for Environment and Energy, University of Aarhus. Statistics on environmentally related taxes etc. are based on information from statistics on the government finances. The break down by industries and households is based on information obtained from the national accounts. Information from the government finances. The break down by industries and household is based on information obtained from the national accounts.

3.2 Frequency of data collection

Annually.

3.3 Data collection

Data is collected from different internal and external sources by extracting information from data bases, excel spreadsheets and printed publications.

3.4 Data validation

First there is a process of data validation of each primary statistics, as described in the respective quality statements of the relevant statistics. It is followed by an initial validation of input data in connection to compilation of Air Emission Accounts.

3.5 Data compilation

Air emission accounts are compiled using Energy First principle, which takes energy accounts as a starting point and the emissions are calculated by multiplying energy use with the respective emission coefficients. Emission accounts are further supplemented with the emissions not related to the combustion of energy products. These include emissions from agriculture as well as emissions from the industrial processes. Air emission accounts are then aligned with the official emission inventories in regards to overall national totals as well as the subtotals for groups of industries to ensure consistency between the official statistics on the national level.

3.6 Adjustment

Not relevant for this statistics.

4 Relevance

Environmental Accounts are relevant for those interested in the correlation between the economy on the one side and environment and natural resources on the other side. Ministries and consultant firms are among the main users of environmental accounts. Accounts are included in the overall European environmental accounts, collected and compiled by Eurostat.

4.1 User Needs

External users of the air emission accounts are ministries, business and trade organizations, research institutes and engineering consultancy firms who want a general view of the interactions between the economy and the environment. Linking the input-output calculations to the air emission accounts makes it possible to examine the interaction between economic activity and the emissions of different polluting substances. The interaction between different types of demands (e.g.household's consumption, exports, etc.) and emissions can also be monitored.

4.2 User Satisfaction

A liaison group on environmental economic accounts and statistics holds at least one meeting per year. All or part of the committee's meetings are in a seminar form, where several participants from the institutions may be represented on the committee. The following institutions and organizations have a representative on the committee: Statistics Denmark, The Ministry of Industry, Business and Financial Affairs, The Ministry of Finance, Ministry of Energy, Utilities and Climate , The Ministry of Environment and Food , The Ministry of Transport, Building and Housing, The Ministry of Economy and The Ministry of Interior, The Danish Energy Agency, The Danish Environmental Protection Agency.

4.3 Data completeness rate

Data meets all the requirements of the Regulation no. 691/2011 on European environmental economic accounts.

5 Accuracy and reliability

There is an uncertainty connected to the compilation of Air Emission Accounts as a combination of scientific assumptions and calculations have to be made. Uncertainty inherited in the source data is transferred to the Air Emission Accounts. However, conceptually consistent and over time uniform treatment of source data contribute to increasing the certainty of data.

5.1 Overall accuracy

There is variability in accuracy for the emissions to air for different industries and for types of air emissions. The uncertainty reflects, inter alia, the uncertainty about the allocation of energy by industries, given that the starting point for calculations of emissions is the energy accounts (cf. the documentation of statistics for the Danish energy accounts). Add to this variability in the technical emission factors for the various industries as well as a substantial variability related to the non-energy related emissions.

5.2 Sampling error

Not relevant for these statistics.

5.3 Non-sampling error

Uncertainty in the emission accounts are connected to the uncertainties in the source data. Detailed information regarding emission coefficients and emission levels can be found in [Denmark's National Inventory Report 2018](#).

5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

5.6 Quality assessment

No measurements of quality has been done, however the quality of the statistics is seen as best possible, given the resources available for the compilation of accounts. Air Emission Account have the scope and the degree of detail that is on the same level as other countries, such as Netherlands, Sweden and Norway. Accounts are compiled in accordance with recommendations and quality standards provided by UN and Eurostat.

5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](#). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

5.8 Data revision practice

The time series is fully revised annually.

6 Timeliness and punctuality

Data is normally published without delays.

6.1 Timeliness and time lag - final results

The Statistics is published annually.

6.2 Punctuality

The environmental accounts are normally published without delay in relation to the scheduled publication.

7 Comparability

The industry classification in the tables is the same as the one used in the national accounts. The tables can therefore be compared to other statistics based on the industry classification. Accounts are compiled in form of time series. For example accounts for air emissions are available for each year from 1990 until the last year that is published. Accounts are consistent and fully comparable within these years. On the more aggregated level (NACE 64), the Danish accounts are comparable with accounts of other EU countries compiled according to the Regulation no. 691/2011 on European environmental economic accounts.

7.1 Comparability - geographical

Internationally there is a high degree of comparability with other countries, as the Danish Environmental accounts follow the same principles and methods as described in SEEA- framework.

7.2 Comparability over time

Time series for Air Emission Accounts is revised back in time in connection with each publication. Data thus can be different compared with earlier publications, but there is full conceptual consistency and comparability over time within a publication.

7.3 Coherence - cross domain

Air Emission Accounts follow the same industry classifications and boundaries as National Accounts. Therefore it is possible to combine the data on emissions with other statistical data that follow the same industry classifications.

7.4 Coherence - internal

It is ensured that data is internally consistent.

8 Accessibility and clarity

These statistics are published annually in a Danish press release, at the same time as the tables are updated in the StatBank. In the StatBank, these statistics can be found under the subject [Energy and air emissions](#). For further information, go to the subject page for [Environmental-Economic Accounting](#).

8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

8.2 Release calendar access

The Release Calendar can be accessed on our English website: [Release Calendar](#).

8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

8.4 News release

These statistics are published annually in a Danish press release.

8.5 Publications

[Annual publications](#)

8.6 On-line database

The statistics are published in the StatBank under the subject [Energy and air emissions](#) in the following tables:

- [MRU1](#): Air Emission Accounts by industry, type of emission and time
- [MRO1](#): Bridge table by bridging items, type of emission and time
- [DRIVHUS](#): Greenhouse Gas Accounts (in CO₂ equivalents) by type of emission, industry and time

8.7 Micro-data access

Accounts are published at the most detailed level.

8.8 Other

Not relevant.

8.9 Confidentiality - policy

[Data Confidentiality Policy](#) at Statistics Denmark.

8.10 Confidentiality - data treatment

Not relevant for these statistics.

8.11 Documentation on methodology

- Statistics Denmark (2013). "Grønne nationalregnskaber. Metoder og muligheder" (publication in the Danish language).
- European Commission. Eurostat (2013) Compilation Guide (2013) for Eurostat's Air Emissions Accounts (AEA). Version: April 2013.
- Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank (2012). System of Environmental-Economic Accounting, Central Framework. White cover publication. New York.
- Statistics Denmark (2007). "Nationalregnskab Kilder og metoder 2003"(publication in the Danish language).

8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

9 Contact

Administratively the statistics is situated in the National Accounts division. Responsible for the statistics is Leif Hoffmann, tel. 3917 3496, e-mail: lhf@dst.dk

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