Air Emissions Accounts

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2 Metadata update	
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3 Statistical presentation

3.1 Data description

Air emissions accounts (AEA) interconnect information on air emissions with economic information. AEA provide data on amounts of emissions generated by production and consumption activities broken down by economic sectors and households per year in weight units.

At national level, data on amount of emitted emissions of air pollutants including emissions of a greenhouse gases (GHG) broken down by economic activities and for households are compiled and published: **Air emissions accounts** (table zp1002rs).

3.2 Classification system

The data on production of emissions of the following GHGs and air pollutants are recorded in AEA: Carbon dioxide (CO2) - separately for CO2 without emissions from biomass and CO2 from biomass used as a fuel, Nitrous oxide (N2O), Methane (CH4), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride and nitrogen trifluoride (SF6_NF3), Nitrogen oxides (NOx), Sulphur dioxide (SO2), Ammonia (NH3), Non-methane volatile organic compounds (NMVOC), Carbon monoxide (CO), Particulate matter < 10μm (PM10), Particulate matter < 2,5μm (PM2,5).

Data in AEA are presented broken down by economic activities in accordance with the statistical classification of economic activities NACE Rev.2. The aggregation level A*64 is applied (it means 64 categories of economic activities), which is fully compatible with the tables in the system of national accounts (input-output tables). Also emissions from households (HH) in the following breakdown are included in AEA: transport, heating/cooling, other.

3.3 Sector coverage

AEA cover emissions of air pollutants including emissions of GHGs emitted to the atmosphere by the whole national economy and by households. AEA have the same system boundaries as the national accounts. Emissions arising from the activities of all resident units, regardless of where these emissions actually occur geographically are recorded in AEA.

3.4 Statistical concepts and definitions

Main concepts and definitions used in the AEA statistics are presented in the handbook „ System of Environmental-Economic Accounting 2012, Central Framework “ (international statistical standard for environmental accounts) and in the Eurostat manual „ Manual for air emissions accounts “.

Air emissions accounts (AEA) record the flows of residual gaseous and particulate materials emitted by national economy and households to the atmosphere. Emissions arising from the activities of all resident units, regardless of where these emissions actually occur geographically are included in AEA. AEA have the same system boundaries as the national accounts. Natural flows of residual gaseous and particulate materials are excluded (e.g. volcanoes, forest fires). Excluded are also indirect air emissions arising e.g. from land use.

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

3.5 Statistical unit

AEA data refer to emissions produced by resident economic units (in the sense of System of National Accounts), including households.

3.6 Statistical population

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

3.7 Reference area

AEA data are available only at national level (the whole area of the SR). Also data for other EU countries and data for total EU are available in the Eurostat public database.

The reference area for AEA is the economic territory as defined in the National Accounts (ESA). By following this residence principle, the AEA record emissions from resident economic units' activities, regardless where they occur. This is the main conceptual difference of the AEA in comparison to emission inventories for greenhouse gases (UNFCCC) and air pollutants (CLRTAP).

3.8 Time coverage

AEA data for the period 2008 -2017 are available in the public database of the Statistical Office of the SR. Eurostat database contains AEA historical data for SR backward to 1995.

3.9 Base period

Not applicable.

4 Unit of measure

Data in AEA are presented for CO2 in 1 000 tonnes (Gg) and for the other pollutants in tonnes (Mg).

5 Reference period

Reference period is the calendar year.

6 Institutional mandate

6.1 Legal acts and other agreements

AEA are legally covered by the Regulation (EU) No 691/2011 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts . AEA module is specified in the Annex I of the regulation.

6.2 Data sharing

Statistical information from the AEA is used for fulfilling reporting obligations of the Slovak Republic according the requirements of the European Statistical System, the international institutions and for meeting the needs of the national information system. AEA data are reported to Eurostat on regular annual basis. At national level, the outputs are provided to the Ministry of Environment of the SR and its organizations.

7 Confidentiality

7.1 Confidentiality - policy

Protection of statistical confidentiality (protection of confidential statistical data) is a system of interconnected measures in legislative, methodological, organizational, technical, security, personnel area, which are preventing leakage of confidential statistical data or untimely publication of statistical information. Authorities or bodies executing state statistics shall adhere the obligation to ensure protection of confidential statistical data as specified in §25a a §29 and §30 of the Act No 540/2001 on state statistics as amended. Principles of applying protection of confidential statistical data are available on the website of the Statistical Office of the SR (only in Slovak).

7.2 Confidentiality - data treatment

AEA do not contain confidential statistical data. Information on air pollution is not subjected to the protection of statistical confidentiality, since according to the Act 137/2010 Coll. on air, the operators of air pollution sources are obliged to provide information to public on air pollution caused by emission form their sources and about implemented measures to reduce this air pollution.

8 Release policy

8.1 Release calendar

Not applicable. AEA statistics is not included in the First release calendar of the Statistical Office of the SR.

8.2 Release calendar access

Not applicable

8.3 User access

The Policy on dissemination is defined in accordance with the Act on State Statistics, the development strategy of the Statistical Office of the SR, the information dissemination strategy of Eurostat and European Statistics Code of Practice.

Principles of release and provision of statistical information are available on the website of the Statistical Office of the SR.

9 Frequency of dissemination

Annually.

10 Accessibility and clarity

10.1 News release

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10.2 Publications

Data on emissions of air pollutants broken down by economic activities are presented in the Statistical Yearbook of the SR (table T 27-14) and in the publication Environment in the SR – selected indicators .

10.3 On-line database

AEA data are published in public database of the Statistical Office of the SR - DATAcube.: Air emissions accounts (table zp1002rs).

Various AEA data sets are available in Eurostat public database in the folder "Air emissions accounts" (access: https://ec.europa.eu/eurostat/data/database > Database by themes > Environment and energy > Environment > Emissions of greenhouse gases and air pollutants > Air emissions accounts_env_air_aa).

10.4 Micro-data access

Not applicable.

10.5 Other

AEA data are available on the website of the Slovak Hydrometeorological Institute in the format of separate PDF files for particular GHGs and air pollutants: : CO2 , CO2 from biomass , CH4 , N2O , PFC , HFC , SF6_NF3 , NOx , NMVOC , SOx , NH3 , CO , PM10 , PM2.5 .

10.6 Documentation on methodology

AEA are compiled in accordance with Eurostat methodology. AEA manual is available on the Eurostat website: https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-15-009 .

10.7 Quality documentation

Internal documentation of the Statistical Office of the SR on ensuring the quality of statistical outputs: Internal methodological directive for application of mathematical-statistical methods for statistical surveys MET-3/201, Internal methodological directive - Quality indicators of statistical outputs and statistical processes MET-2/2012.

The quality report on AEA data for Slovakia in the "Word" format and in the structure defined by Eurostat is annually elaborated and provided to Eurostat.

11 Quality management

11.1 Quality assurance

Statistical Office of the SR has established the system of quality management. Quality manual contains description of system of quality management and fulfillment of requirements of standard ISO 9001. The application of the manual in practice ensures that all activities with impact on the quality of statistical products are planned, managed, examined, evaluated and meet the requirements accepted in the customer order.

The national system of quality management is based on the European Statistics Code of Practice .

11.2 Quality assessment

Published AEA data are good quality since they are obtained from reliable official data sources. Data quality of AEA statistics is ensured by applying sound methodology for compilation of the AEA according to the Eurostat manual and by in-depth validation process which involves detail data checks mainly regarding the plausibility, accuracy, consistency.

12 Relevance

12.1 User needs

AEA are important for monitoring the interaction between the economy and the environment, in particular in a context of global climate change. AEA data are used in input-output modelling, including calculation of indicator “carbon footprint”.

The relevance of the AEA is enhanced by using a conceptual framework consistent with the National Accounts, which allows to put AEA data in relation with economic indicators such as production, GDP, etc.

Main users of AEA data for Slovakia are: European Commission - Directorate-General for Environment (DG ENV), Eurostat, various environmental institutions, Ministry of Environment of the SR and its organizations.

12.2 User satisfaction

Since 2009, the Statistical Office of the SR has carried out at two-year intervals customer satisfaction surveys. The purpose of the survey is to obtain information on user's interest and opinion regarding provision and quality of statistical products and services. Result of the survey in 2017 is published on the website of the Statistical Office of the SR.

However, the customer's satisfaction specifically regarding AEA statistics was not surveyed, only for the whole area of environmental and agricultural statistics.

12.3 Completeness

100% compared to the relevant legislation - Regulation 691/2011 on European environmental economic accounts.

Complete time series for AEA are available in the public database of Statistical Office of the SR (2008 -2017) and in the public database of Eurostat (1995 – 2017).

13 Accuracy and reliability

13.1 Overall accuracy

Overall accuracy of the AEA statistics is considered to be very good. AEA are compiled on the basis of information from the National Inventory System of the SR for GHGs under UNFCCC convention and from the National Emissions Information System (NEIS). Compiled AEA are thoroughly checked to prevent errors and validated in the Slovak Hydrometeorological Institute, Statistical Office of the SR and also Eurostat.

13.2 Sampling error

Not applicable for environmental accounts.

13.3 Non-sampling error

Not applicable for environmental accounts.

14 Timeliness and punctuality

14.1 Timeliness

Preliminary data on AEA are not disseminated. Final data at national level are available 21 months after the end of reference year.

Dissemination of data in the public database of Statistical Office of the SR follows the internal schedule. AEA data are published by 22 months after the end of reference year. Under the Regulation 691/2011 on European environmental economic accounts, Annex I it is obligatory provide to Eurostat data on AEA within 21 months after the end of the reference year (T+21 months). This means that in September 2019 it was mandatory to report data for reference year 2017.

14.2 Punctuality

Deadline for AEA data publication is met in accordance with the schedule.

15 Coherence and comparability

15.1 Comparability - geographical

AEA are compiled only at the national level (SR). Data for more detail territorial levels of the SR (regions) are not available.

AEA data for all EU countries are published in the Eurostat database. Comparability of data is good, since all countries shall apply common methodology according the Eurostat manual.

15.2 Comparability - over time

Published AEA data are comparable in the whole time series, since the same methodology and data sources were used for compilation of the data. Possible changes/revisions in methodology are usually applied in whole time series.

15.3 Coherence - cross domain

Data are coherent with the system of national accounts and satellite system of environmental-economic accounts.

15.4 Coherence - internal

Statistical outputs are internally consistent without deviations.

16 Cost and burden

Not applicable. No specific statistical survey for the purpose of obtaining data for AEA is conducted. AEA are compiled by using already existing data sources - national emission systems.

17 Data revision

17.1 Data revision - policy

The revision policy regulates the basic rules and general procedures for revisions of preliminary compiled data and also for revisions due to other reasons. The revision policy and the revision calendar are available on the website of the Statistical Office of the SR (only in Slovak).

17.2 Data revision - practice

AEA data are annually revised for the whole time series on the basis of revisions in national emissions inventories. Information on regular revisions of the time series is available as a note.

Possible changes in methodology are communicated after their implementation in the form of methodological notes or footnotes.

18 Statistical processing

18.1 Source data

AEA are compiled on the basis of data from the national emissions inventories for air pollutants and GHGs. The main source of data for Air Pollutants Emissions Inventory is the NEIS database (National Emission Information System). All operators of large and medium air pollution sources are obliged annually report data and information that are gathered into the NEIS database. Collection, checking and recording data into the NIES database is carried out by the District Environmental Offices. Data collection is performed either by using set of paper forms or electronically via module NEIS PZ. The source of data on GHG emissions is Annual GHG Emissions Inventory reported under UNFCCC Convention.

Information on main economic activity of companies from the Register of Organisations of the Statistical Office of the SR is used for allocation of data on emissions (from above mentioned data sources) to particular categories of economic activities (NACE Rev.2).

18.2 Frequency of data collection

National emissions inventories for air pollutants and GHGs used as a data source for the AEA are elaborated and reported in annual periodicity.

AEA data are compiled annually.

18.3 Data collection

AEA are compiled by using data form already existing data sources in the Slovak Hydrometeorological Institute listed in the item 16.1 "Source data". No specific statistical survey for the purpose of obtaining data for AEA is carried out.

18.4 Data validation

Source data from the national emissions inventories are checked and validated within the Slovak Hydrometeorological Institute, which is the holder of the quality management system certificate according to ISO 9001: 2015 (this certificate relates also to monitoring, evaluation, provision of data and information on air quality). The NEIS database used for obtaining data on emissions of air pollutants allows complex data collection a processing at particular District Environmental Offices and verification of accuracy of calculation of emissions from input data reported by operators of large and medium air pollution sources.

Compiled AEA for Slovakia are in-depth checked and validated by the Statistical Office of the SR and also by Eurostat. Data checks mainly regarding the plausibility, accuracy, consistency are applied by using IT tools.

18.5 Data compilation

In compiling of AEA at national level, the inventory-first approach is applied in case of air pollutants emissions from stationary air pollution sources. It means that compilation of this part of AEA is based on data from the reporting of Air Pollutants Emission Inventory under the Convention of UNECE on Long-Range Transboundary Air Pollution (CLRTAP Convention) and under Directive (EU) 2016/2284 on the Reduction of National Emission of Certain Pollutants (NECD). Data on emissions from economic activities are allocated to NACE Rev.2 categories based on information on main economic activity of operators of stationary air pollution sources.

In case of GHGs emissions from stationary air pollution sources, the different approaches are applied depending on different sectors. For compilation of data for energy and industry sector energy-first approach is applied taking into consideration specific national circumstances. Allocation of emission arising from these sectors is based on information from energy statistics and from Physical energy flow accounts (PEFA). As regards GHGs emissions from agriculture and waste sector, the inventory-first approach is used. It means that emissions from GHGs inventories for these sectors are allocated to NACE Rev.2 categories on the basis of value added of particular NACE Rev.2 economic activities and taking into consideration specific national circumstances.

The national methodology for allocation of emissions from transport sector (mobile air pollution sources) to NACE Rev.2 categories and households is specified in the document “Road transport allocation method of the SR“ which is available on CIRCA BC in the folder Environment Statistics, Indicators and Accounting > Physical environmental accounts > Road transport allocation to NACE and households > Inventory of country methods - document SK-Description_v2.docx.

The national methodology for calculation of emissions from households’ heating is described in the document “ Description of methodology for households’ heating “.

The methodology for compiling the air emissions account is described in detail in technical implementation report on the project titled “ Quality improvements of the air emission accounts and extension of provided time-series ”.

18.6 Adjustment

No data adjustment.

19 Comment