

**Documentation of statistics for  
Public sector environmental protection plus environmental  
related taxes and subsidies 2016**

## **1 Introduction**

The purpose of the statistics is to focus on the expenditure and revenue that the public sector has in the area of environmental protection. The statistics also contains a separate section on the revenue from environmental related taxes allocated by industries and households. The purpose of the statistics of the environment motivated subsidies and other transfers is to analyze the share of the subsidies, which has a positive impact on the environment.

## **2 Statistical presentation**

The purpose of the statistics of the public expenditures and revenues spend on environmental protection is to illustrate the money spent on activities and actions that are aimed to the prevention, reduction and elimination of pollution as well as any other degradation of the environment.

Tax revenues and subsidies are broken down by industries, households and other categories of final demand on the basis of internal material from National Accounts, the Energy Accounts as well as detailed information on the recipients of subsidies. The main purpose for the accounts for the environmentally related taxes is to provide a coherent description of the amount of environmentally related taxes imposed on the industries as well as the households. The data can be used for various analysis e.g. the polluter pays principle.

## 2.1 Data description

The public environmental revenues and expenditure statistics provides information on, government environmental protection activities aimed at the prevention and control of pollution and transition to sustainable technologies. The statistics provide information on public sector environmental protection expenditure and - revenue by sector, environmental domains and economic categories. Since 2007 the accounts are divided into central government, local government, regions and public corporations.

The environmental domains are: - Air and climate - Wastewater - Waste - Soil and groundwater - Noise - Biodiversity and landscape - Radiation - Research and development - Other (including administration)

The main economic categories are current and capital expenditure, sales of goods and services, total capital revenue.

In addition, the statistics include a separate statistics on the environmental taxes. The main purpose of the calculation of the environmental taxes is to give a coherent description of where the major environment-related taxes across industries and households, etc. directly imposed. The taxes in the accounts separated into what is related to pollution, energy, transportation or resources. As an additional supplement, the resource interest rent also known as hydrocarbon tax, oil pipeline tax and corporation tax on hydrocarbon are presented as a supplement to the Danish inventory of environmentally related taxes. These 5 categories is allocated to industries and households.

Environmentally Related Tax: Means a tax whose tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment, and which is identified in ESA 2010 as a tax.

Further, the statistics include a separate statistics of the environment motivated subsidies and transfers.. The main purpose of this statistics is to describe the subsidy share that improve the environment. The environmentally motivated subsidies is an economic instrument which is intended to influence the environment in a more durable and sustainable direction. The environmentally motivated subsidies is divided into five categories according to whether they are related to pollution, energy, transport, nature or assistance abroad. The environment motivated subsidies and transfers have a motive, which supports activities that protect the environment and reduce the use of natural resources.

## **2.2 Classification system**

The environmental taxes are classified into four main categories, resource, energy, transport, pollution taxes. The resource rent such as hydrocarbon tax and corporation tax on hydrocarbon is additionally presented as an supplement to the Danish inventory of the environmentally related taxes. The environmental taxes are based on the international manual from Eurostat: Environmental taxes - A statistical guide (2013), ISBN 978-92-79-33230-2

The environmentally motivated subsidies is divided into five areas according to whether they are related to pollution, energy, transport, nature or assistance abroad. The subsidies is based on the international manual from Eurostat; Environmental subsidies and similar transfers (2015), ISBN 978-92-79-48269-4.

The environmental protection expenditure and revenues by the public sector uses basically the same expenditure and revenue terms used in the public sector in national accounts. The total environmental protection expenditure and revenues are presented by sector, economic categories and nine environmental domains such as soil and groundwater, waste, wastewater, air and climate ect. The statistics on environmental protection expenditure and revenues is based on the international manuals: Environmental expenditure statistics - General Government and Specialized Producers data collection handbook (2007), ISBN 978-92-79-04732-9 and SERIEE - Environmental Protection Expenditure Accounts; compilation guide (2002), Cat no. KS-BE-02-001-EN-N

## **2.3 Sector coverage**

Public sector which includes the central government, local government, regions and public corporations.

## **2.4 Statistical concepts and definitions**

ESA2010: The European System of National and Regional Accounts (ESA 2010) is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy.

Hydrocarbon tax: Hydrocarbon tax must be paid on income from the first sale of hydrocarbons recovered.

Subsidies: Subsidies in ESA2010 are defined as unilateral transfers to public or private enterprises and cover a wide range of transfers. EU agricultural subsidies are an example of product subsidies. Other production subsidies are, e.g. grants for social housing, and enterprise and rehabilitation allowances, etc.

Oil pipeline duty: Anyone recovering liquid hydrocarbons in the Danish territory in the North Sea, should connect the production facility to the pipeline established for the transport of the recovered oil. The users of the pipeline must pay a fee for the cost of maintenance. Oil pipeline tax was abolished from 2013.

Production and import taxes: Production and import taxes in ESA2010 are taxes imposed on production and imports of goods and services or the use of production factors. This type of tax is independent of the company's operating profit. Examples of production and import taxes are VAT, taxes on specific goods such as electricity, gasoline etc.

Expenditure and revenue in Government Finance: Statistics on Government illustrates the expenditure and revenue for the general government sector, making it possible to calculate the surplus or deficit. Current and capital accounts are specified by transactions, such as compensation of employees, consumption in production, investment, capital transfers, taxes, subsidies and income transfers.

## **2.5 Statistical unit**

The statistics for the public environmental protection expenditure and revenues are published on subsector level such as central-, local- and regional government, as well as public corporations.

The statistics on environment-related taxes and duties is published on individual types of taxes and industries.

The statistics on environmentally motivated subsidies is published for general government.

## **2.6 Statistical population**

Final accounts from the central government accounts, local government and regional accounts which can be related to environmental protection activities.

## **2.7 Reference area**

Denmark.

## **2.8 Time coverage**

1995-2016

## **2.9 Base period**

Not relevant for this statistics.

## **2.10 Unit of measure**

Million DKK.

## **2.11 Reference period**

31-12-2015 - 31-12-2016

## **2.12 Frequency of dissemination**

yearly statistics

## **2.13 Legal acts and other agreements**

§ 6 in Law on Statistics Denmark

Statistics on environmentally related taxes by economic activity is regulated under the European Parliament and council regulation no. 691/2011 on European environmental economic accounts.

Statistics on environmental protection expenditure and -revenues is regulated under the European Parliament and council regulation no. 538/2014 on European environmental economic accounts.

## **2.14 Cost and burden**

The response-burden is nil, since the statistics are compiled on the basis of register information.

## **2.15 Comment**

There is no further information.

## **3 Statistical processing**

Data for government environmental protection expenditure accounts is collected annually from final accounts from central-, local- and regional accounts, which are coded for national accounts based on manual for the European System of National Accounts (ESA2010). Based on the detailed information in the database of Integrated Public Accounts (Statistic's Denmark's "DIOR" register) there is a manual classification of the relevant items to compile the environmental government revenues and expenses, environmental taxes and environmental motivated subsidies. All environmental statistics are industry-specific based on national accounting office information.

### **3.1 Source data**

The sources of the statistics are public accounts and accounts from public companies from the relevant sectors. Technically, the statistics are compiled on the basis of the Database of Integrated Public Accounts (Statistic's Denmark's "DIOR" register).

### **3.2 Frequency of data collection**

Yearly.

### **3.3 Data collection**

Data from final accounts in the central, local and regional accounts are collected for the public sector environmental protection statistics. Data for the environmentally related taxes are collected from government finance statistics.

### **3.4 Data validation**

Data for the environmentally related taxes are validated and quality assured by comparing them against the collected taxes and fees collected by the Ministry of Taxation, which is incorporated in the Government Finance database (DIOR).

### **3.5 Data compilation**

Data for the public environmental revenues and expenditure are collected from the final accounts in central, local and regional government. Data for the public corporations are stored electronically at Statistics Denmark. A budget analysis is made in order to detect the accounts and transactions which can be related to environmental protection activities.

Data for the environmental taxes are collected directly from Statistics Denmark's database DIOR.

### **3.6 Adjustment**

No further adjustments are being made, expect for what is described under data compilation.

## **4 Relevance**

The most frequent users of the statistics are: The Ministry of the Environment, including the Environmental Protection Agency, the Environment and Economic Council (DØRS), Climate and Energy Ministry, Local Government Denmark, Eurostat - Unit E2 Environmental Statistics and the OECD - Environment Directorate. Information about users' needs and satisfaction is collected via the contact committee on environmental-economic accounting and statistics.

#### **4.1 User Needs**

Ministry of the Environment and Food, Danish Economic-Environmental council, Ministry for Energy, Utilities and Climate, local government authorities, OECD - Environment Directorate, Eurostat etc.

#### **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 is as seminar form where there may be several participants from the institutions represented on the committee. The following institutions and organizations have a representative on the committee: Statistics Denmark, Minister of Economic and Business Affairs, Finance, Climate, Energy and Building Department, Ministry of Environment, Ministry of Food, Agriculture and Fisheries, Ministry of Transport, Ministry of Economy and Ministry of Interior, Energy Agency, the Environmental Protection Agency.

#### **4.3 Data completeness rate**

All published data meets the current requirements under EU legislation and guidelines in this area.

### **5 Accuracy and reliability**

There are possibilities for error entries of expenditure and revenue in the accounts of the central government, municipalities and regions, which are included in the statistics for Government Finances. There is a certain uncertainty about the environment related share of the current accounts which has common purposes.

The detailed distribution of taxes and subsidies to industry groups is based on a number of assumptions and it is therefore uncertain at the most detailed level. Especially, the distribution of pollution related subsidies for earlier years (2010-2013) has been based on detailed information on the actual distribution in 2014 only.

#### **5.1 Overall accuracy**

The statistics only give a rough estimate on 'the level' of public expenditure and revenue on the environment, since it is most difficult to give an unambiguous demarcation of this wide field. It is highly debatable whether this or that account in the public accounts should be part of the assessment. In some cases it has been necessary to estimate an environmental share of a given account, so that this particular account does not enter the assessment with its full amount. In such cases the judgment is typically based on relative rough estimates.

Fundamentally, it is not possible to capture all environmental transactions/activities conducted by the public authorities via their accounting. The main reason is that accounts are not detailed enough. Very often environmental issues are highly integrated parts of a complex whole, and this makes it impossible to estimate shares of every activity in the accounts. The statistics is consolidated within general government. This means that transfers between sectors are cancelled out. Thus the expenditures are shown by the sector that actually manages the tasks.



## **5.2 Sampling error**

Not relevant for this statistics.

## **5.3 Non-sampling error**

Not relevant for this statistics.

## **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**

The statistics cover the total accounts for all 98 municipalities and regions, all ministries in the state, and all public companies. The final accounting figures are not revised. The central government, the municipal and regional accounts and public companies are considered to be final when published. Corrections may occur later if errors in the data or in the data processing is discovered. The individual statistics have a scale and level of detail which is in line with other countries such as Sweden, Norway and the Netherlands. The accounts are established in accordance with international guidelines from Eurostat and the United Nations.

## **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 differences between provisional and final years are typically small. National accounting revisions may bring data changes as long back in timelines as 3 years. This will however only seldom if ever affect the data on environmental expenditure and revenue.

## **6 Timeliness and punctuality**

The statistics is published with high timeliness and punctuality. The statistics is usually published without delay in relation to the scheduled date.

### **6.1 Timeliness and time lag - final results**

For accounting data: 12 months.

### **6.2 Punctuality**

Normally, the statistics are published without delay in relation to the scheduled date.

## **7 Comparability**

Data on environmental taxes are compared with the reported data from the Ministry of Taxation, which is stored in the Government Finance database, DIOR. At the aggregate level the Danish accounts are comparable with the European accounts established for other EU countries as an result of the European Parliament and Council Regulation no. 691/2011 on European environmental economic accounts.

### **7.1 Comparability - geographical**

The statistics on environmental taxes are comparable with corresponding statistics for the other EU member states, see Eurostat's publications on environmental taxes: [Eurostat environmental taxes manual](#)

The statistics on public environmental protection expenditure and revenues are comparable with corresponding statistics for the other EU member states, see Eurostat's publications on environmental protection accounts: [Eurostat, Environmental protection expenditure manual](#)

### **7.2 Comparability over time**

Since 2012 the environmentally related taxes are based on new EU legislation. The time series back to 1995 was recalculated in 2013, using new methods according to ESA 2010 which is in line with national accounts transition to the use of this manual. Environmentally related taxes are comparative in an international perspective.

The environmental protection expenditure and revenues follows the national accounts principles according to the European System of Accounts, ESA 2010.

Back-data for environmental subsidies and similar transfers was calculated in 2016 for the period 1995-2009. The back-data for 1995-2009 is not as detailed as data for 2010 and onwards is.

### **7.3 Coherence - cross domain**

Since the statistic is build on a European framework and methods it is comparable with other European statistics on economic expenditure and revenue in the field of environmental protection.

The statistics are comparable with all other statistics on public expenditure and revenue, and the section on environmental related taxes is comparable with other tax statistics. If one wished to compare the environmental statistics with general government statistics one has to exclude public corporations, as they are not contained in general government

### **7.4 Coherence - internal**

The final accounts data are collected directly from the systems in the municipalities and regions and received only from one source. There is internal consistency between the main accounting numbers and underlying functions.

The final accounts for the central government is collected directly from the Ministry of Finance. There is internal consistency between main paragraphs and sub-accounts.

## **8 Accessibility and clarity**

The statistics is published continuously in: *Nyt fra Danmarks Statistik and Miljø og energi* (Statistiske Efterretninger) (in English: News from Statistics Denmark and Environment and energy, both which are only available in Danish).

The statistics are included annually in the following yearly publications: Statistical Yearbook, Statistical ten-year review and Environment (of which the last is only available in Danish)

### **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 Calender can be accessed on our English website: [Release Calender](#).

### **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**

[Nyt](#)

### **8.5 Publications**

[Miljøøkonomisk regnskab](#)

## **8.6 On-line database**

Environmental protection expenditure by environmental domain, kind and sector: [MREG2](#)

Environmental taxes etc. by industry and type of tax: [MRS1](#)

Environmentally related taxes by environmentally related category : [MREG21](#)

## **8.7 Micro-data access**

Micro data is not made available to for instance researchers.

## **8.8 Other**

Not relevant for this statistics.

## **8.9 Confidentiality - policy**

[Statistics Denmark's confidentiality policy](#)

## **8.10 Confidentiality - data treatment**

Not relevant for this statistics.

## **8.11 Documentation on methodology**

For further documentation se for instance the following Eurostat publications:

- Environmental expenditure in Europe. <http://www.http://www.http://www.http://www.Cat.No.KS-39-01-320-N-EN>
- Environmental taxes - A statistical guide. ISBN 92-894-1358-1. Cat.No. KS-39-01-007-EN-N

## **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**

The administrative placement of this statistics is in the division of Government Finances. The person responsible is Maria Nilsson, tel.: +45 39 17 34 08, e-mail: [mnn@dst.dk](mailto:mnn@dst.dk)

### **9.1 Contact organisation**

Statistics Denmark

## **9.2 Contact organisation unit**

Government Finances, Economic Division

## **9.3 Contact name**

Maria Nilsson

## **9.4 Contact person function**

Responsible for the statistics

## **9.5 Contact mail address**

Sejrøgade 11, 2100 Copenhagen

## **9.6 Contact email address**

mnn@dst.dk

## **9.7 Contact phone number**

+45 39 17 34 08

## **9.8 Contact fax number**

+45 39 17 39 99