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Organisation of Environmental Accounting in Finland

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(for information)

Organisation of Environmental Accounting in Finland

1. Historical Background

In the organisation of Statistics Finland before 1997 environmental accounts were a small unit in the department of Economic Statistics, environmental statistics a small unit in the department of Social Statistics and energy statistics part of the department of Business Statistics. In 1997 the department of Business Statistics was divided into two new departments: Business Trends and Business Structures. Environmental accounts, environmental statistics and energy statistics together became a new unit Environment and Energy in Business Structures. Since 2010 environment and energy -unit is divided into two teams: environmental accounting team and energy team.

In 2003, the government decided that Statistics Finland would be the National Authority for Finland's greenhouse gas inventory. The Greenhouse Gas Inventory unit was created into the department of Business Structures in 2005.

2. The present environmental accounts and their surroundings

2.1 Environmental Accounting

The current production of environmental accounts at Statistics Finland contains environmental expenditures by public sector and by industry, environmental taxes by tax type, but not by economic activity and forest accounts. Material flow accounts have been compiled by the Thule Institute at the University of Oulu, but will be transferred to Statistics Finland in 2011. Statistics on the environmental goods and services sector have been compiled on a permanent basis since 2010.

Since the 1980's Statistics Finland has carried out or participated in pilot studies on several other areas of environmental accounting, e.g. energy accounts, air emissions accounts, water accounts and waste accounts. Air emissions accounts will be part of the statistical programme in near future, because they are one of the modules of the European regulation on European Environmental Economic Accounts. Energy accounts will be included in the modules of the regulation in the next stage.

2.2 Environmental Statistics

Environmental statistics currently include the compilation of the Environmental Statistics Yearbook and waste statistics. The Yearbook contains much data from governmental and non-governmental organisations. The co-ordination of the statistical information services of governmental organisations is an important part of the work in environmental statistics. In Finland, the Finnish Environment Institute (SYKE) produces statistics on water, the Ministry of Agriculture and Forestry or institutes under the Ministry produce statistics on renewable natural resources and statistics on the quality of the environment connected with them.

The EU waste statistics regulation sets the framework for waste statistics. The main data source is the Compliance Monitoring Data system - VAHTI of the environmental administration, which gathers the annual reports of enterprises on generation and treatment of waste into a database. Other types of data sources and estimation methods are used, e.g. for construction waste and mining waste. A written agreement between Statistics Finland and the Finnish Environment Institute regulates the co-operation with the environmental administration. The agreement covers the division of labour in reporting to the EU according to several waste directives and the waste statistics regulation, as well as in collection of waste data.

2.3 Energy Statistics

Statistics Finland's energy statistics contain statistics on:

- Quarterly energy prices
- Quarterly energy supply and consumption
- Energy use in manufacturing
- Production of electricity and heat
- Consumption of hard coal
- Energy balances.

The main data sources are Statistics Finland's surveys on energy use in manufacturing, production of electricity and heat and surveys of branch organisations (the Finnish Energy Industries, the Finnish Petroleum Federation, etc.). Written agreements between Statistics Finland and the branch organisations regulate the co-operation in data collection. Statistics Finland reports energy statistics to the

International Energy Agency (IEA) and the EU annually, quarterly, monthly and even weekly. The energy statistics regulation operates as a framework for EU reporting.

2.4 National Greenhouse Gas Inventory

The Kyoto Protocol identifies the National System of Greenhouse Gas Inventory. In addition to the annual calculations of greenhouse gas emissions, the system is used to produce estimates about the actual effects of the climate policy and forecasts for future development. In Finland, the National System is based, besides regulations concerning Statistics Finland, on agreements between the inventory unit and expert organisations on the production of emission calculations and reports and on co-operation between the responsible ministries.

Statistics Finland as the National Authority is in charge of the preparation of the national emission inventory and its quality management. Statistics Finland also bears the responsibility for the general administration of the inventory and communication with the UNFCCC, co-ordinates participation in reviews, and publishes and archives the inventory results.

2.5 Surveys, registers and other data sources

The most important surveys for environmental accounting are:

- A sample survey on environmental expenditures to 1,700 enterprises and 2,000 establishments
- A census to enterprises producing environmental goods and services as a secondary activity
- A sample survey on energy use in manufacturing to 2,100 establishments
- A census to xxx industrial sites on the production of electricity and heat

The most important external data sources used are:

- The air emission subsystem of the compliance monitoring data system - VAHTI
- The waste subsystem of the VAHTI system
- The register of the Energy Market Authority on emissions trading
- The foreign trade database of Finnish Customs
- The Finnish Energy Industries' survey data on electricity and district heat statistics

- LIPASTO - a calculation system for traffic exhaust emissions and energy consumption in Finland.

Environmental Accounting is also using plenty of national accounting data, e.g. the taxation database, and supply and use tables.

2.6 Integrated data system for environment and energy statistics

Statistics Finland has constructed an integrated data system for environment and energy statistics (YEIS). The system contains all unit level data of our own surveys and unit level data imported from other organisations. The integrated system includes tools to manage the surveys, to edit the data, to analyse the results and to tabulate the reports. Waste statistics, environmental accounting, energy statistics and greenhouse gas inventory use the system. Aggregated data used for energy balances and environmental accounting have so far been processed in Excel spreadsheets.

An important problem for the data system is the linking of data from different administrative sources in which the recording unit differs. The basic unit in the VAHTI register is “customer”, which means a unit that has applied for an environmental permit. “Customers” are reporting according to “loading points”. Statistical surveys are based on enterprise and establishment-level information. Establishments are linked to loading points, which is necessary in order to produce information by ISIC categories. In addition, the reporting units of the emissions trading system and the branch organisations’ surveys may differ from those of Statistics Finland.

3. Implementation of the EU regulation

The EU regulation that will come into force this year includes three modules:

- A module for air emissions accounts,
- A module for environmentally related taxes by economic activities,
- A module for economy-wide material flow accounts.

For air emissions accounts, Statistics Finland carried out a pilot study from 2009 to 2010. The aim of this study was to develop a system for regular compilation of NAMEA air tables in Finland. The project also produced NAMEA air time series for 1995-2007. The target is that in future the NAMEA time series by NACE classification will be compiled simultaneously with the greenhouse gas inventory by

using the same YEIS database. The greenhouse gas inventory and national accounts were closely involved in the work.

A project on environmental taxes will start this year. The project will intensively use data on energy use by manufacturing activities. The Thule Institute at the University of Oulu has produced material flow accounts. These accounts are going to be transferred to Statistics Finland and later on integrated to the existing production model of Statistics Finland. The view is to integrate waste statistics as far as possible to the framework of material flow accounts.

For the “second wave” of the EU regulation, energy accounts need the most resources. For them a project will be started in 2012. The main idea is to build a system where both energy balances for the IEA and Eurostat and energy accounts could be compiled from the same YEIS database simultaneously.

4. Conclusions

Development projects on different modules of environmental accounts will have steering groups with members from energy statistics, environmental statistics, environmental accounts, greenhouse gas inventory and national accounts. A high-level advisory group will be set for the development programme for environmental accounting. It will represent the most important ministries and research organisations. Its task is to promote the use of the accounts and to help in the presentation of the results. Environmental accounting will also have its own Internet site in near future.

Finland is one of the few countries using the bottom-up method in the Greenhouse Gas Inventory. In order to keep the consistency with energy balances it is necessary to integrate the data at the individual establishment level. This is a problem because data of different origin are in use: emission data are from the VAHTI register and energy data originate from surveys of Statistics Finland and others. Both for the GHG inventory and energy statistics the need for more detailed data on recycling, waste and renewable energy is growing. It is useful that we can co-ordinate our efforts inside Statistics Finland.

Consistency with the national accounting data has a very high priority. For air emissions, the water transport is a problem. In the recording of the ferry traffic in the Baltic Sea to Finland, Estonia and Sweden the economic data must be consistent with

the physical data. Otherwise, the emission coefficients are not on a reliable level. More efforts to study the methods in national accounts will be necessary in this issue. It also seems that the supply and use tables of national accounts are not in some cases accurate enough for the needs of environmental accounts. I believe that better coordination with the physical flows will increase the quality of national accounts, too.

It is also important to increase the use of information and knowledge of taxation and public sector accounting and the national accounts have to enhance the efficiency and quality of accounts on environmental taxes and public expenditures.

Internet sites

The calculation system for traffic exhaust emissions and energy consumption in Finland - LIPASTO:

<http://lipasto.vtt.fi/indexe.htm>

The Compliance Monitoring Data system - VAHTI:

<http://www.ymparisto.fi/default.asp?contentid=374022&lan=EN>

Greenhouse Gas Inventory:

http://tilastokeskus.fi/tup/khkinv/index_en.html

Statistics Finland - organisation:

http://tilastokeskus.fi/org/tilastokeskus/organisaatio_en.html