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## **Environmental Taxes**

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## Revision of SEEA 2003:

# Outcome paper: Environmental taxes

– Document to the London Group meeting in Canberra, April 2009, following the meeting in Brussels, October 2008.

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# 1. Introduction

Within the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA) and the London Group (LG) it was agreed to discuss the further developments of SEEA 2003 in the field of environmental economics. The aim being to elevate related statistics to an agreed international standard.

In SEEA 2003 taxes are described in chapter 5 within the framework of the Environmental Protection Expenditure Accounts (EPEA) and in chapter 6 relating to environmental taxes specifically.

## 1.1 Purpose

This outcome paper presents identified issues in relation to environmental taxes. The paper proposes the scope for the planned revision of SEEA 2003. See the earlier presented *issue paper* (for the LG meeting in Brussels, October 2008) for more discussions and background information concerning the identified issues listed in this paper as well as country experiences in the area of environmental taxes.

The issue identified in the research list adopted by the UNCEEA is the following:  
Environmental taxes are broadly defined in the SEEA-2003. Recently OECD and Eurostat have tested a definition of environmental taxes in several countries. There is a further need to standardize the definitions of environmental taxes taking also into consideration the practical implementation of these concepts.

In order to assist in the allocation of taxes versus fees the SEEA 2003 included a discussion on the topic. It has also been recognised by the experts revising the SNA 93 that there are difficulties establishing if an item should be recorded in the national accounts as a tax or as a fee.

## 2. Taxes

Taxes on products are defined in the SNA 93 (D2) as:

§7.48 Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units. They are described as unrequited because the government provides nothing in return to the individual unit making the payment, although governments may use the funds raised in taxes to provide goods or services to other units, either individually or collectively, or to the community as a whole.

The revision of the SNA will not change this definition and it can therefore continue to be applied.

The final draft chapter 7 of the SNA therefore includes a description of taxes versus fees (new paragraph 7.75). The border line cases are most apparent when it comes to licenses and permits. The draft chapter describes how an item should be recorded as a tax when little or no work is provided by the government for exchange of a service. The item should be recorded as a fee if the government is providing some type of control or “proper regulatory function” along with the licences.

→ See chapter 3A for a discussion and suggestions related to clarifications of taxes versus fees.

### 2.1 Environmental taxes

#### Definitions

In 2001 the European Commission (Eurostat, DG TAXUD), the OECD, the International Energy Agency and experts on environmental accounts at national level produced a guideline on how to develop environmental taxes. The guideline includes the definition, data sources and how to use and interpret results.

#### SEEA 2003/European Commission definition currently in use

In chapter 6 of the SEEA 2003 the concept and outline of environmental taxes are described. The description in the SEEA is based on the 2001 OECD/EC definition of an environmental tax.

*“A tax whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment.”*

This definition is solely based on the physical unit of the tax. This means that motive from the legislator is disregarded. Instead, it is the impact on the price of the physical unit that is in focus.

In the OECD/EC guideline (2001) the impact on costs and prices is also discussed;

*“The environmental effect of a tax comes primarily through the impact it has on the relative prices of environmentally related products and activities, in combination with the relevant price elasticities (OECD 2000, p.8). With this in mind, the definition of environmental taxes used in the statistical framework puts emphasis on the potential effect of a given tax in terms of its impact on costs and prices.”*

## **OECD**

The OECD has together with the EEA developed a database for economic instruments related to the environment. Part of this database captures taxes. The theoretical definition of an environmental tax (it is called environmentally related taxes in the database) has been modified slightly compared to the 2001 definition.

The definition used is the following:

*”This database defines environmentally related taxes as any compulsory, unrequited payment to general government levied on tax-bases deemed to be of particular environmental relevance. Taxes are unrequited in the sense that benefits provided by government to taxpayers are not normally in proportion to their payments.”*

Consistent with the EC 2001 definition, the purpose of the legislator is not of concern in the OECD definition. It is explained on the web-site of the database that, *“The focus is instead on the potential environmental effects of the given tax, which is determined by the tax impacts on the producer and consumer prices in question, in conjunction with the relevant price elasticities”*.

→ See chapter 3B for a discussion and suggestions related to definitions.

## **Tax bases**

Eurostat (2001) agreed to group environmental taxes into four categories such as energy, transport, pollution and resources. These groups were selected to facilitate analytical applications. The separate groups are described below. Annex A also describes what tax bases were agreed upon to be included.

Value Added Tax is excluded from the above definition of environmental taxes.

→ See chapter 3C for a discussion and suggestions related to VAT.

## **Energy taxes**

This group includes taxes on energy products used for both transport and stationary purposes. The most important energy products for transport purposes are petrol and diesel. Energy products for stationary use include fuel oils, natural gas, coal and electricity. The CO<sub>2</sub>-taxes are included under energy taxes rather than under pollution taxes. There are several reasons for this. First of all, it is often not possible to identify CO<sub>2</sub>-taxes separately in tax statistics, because they are integrated with energy taxes, e.g. via differentiation of mineral oil tax rates. In addition, they are partly introduced as a substitute for other energy taxes and the revenue from these taxes is often large compared to the revenue from the pollution taxes. This means that including CO<sub>2</sub>-taxes with pollution taxes rather than energy taxes would distort international comparisons. If they are identifiable, CO<sub>2</sub>-taxes should be reported as a separate category next to energy taxes. SO<sub>2</sub>-taxes may be subject to the same problem as CO<sub>2</sub>-taxes but should be recorded under the category pollution.

→ See chapter 3D for a discussion related to SO<sub>2</sub>-taxes.

## **Transport taxes**

This group mainly includes taxes related to the ownership and use of motor vehicles. Taxes on other transport equipment (e.g. planes), and related transport services (e.g. duty on charter or scheduled flights) are also included here, when they conform to the general definition of environmental taxes. The transport taxes may be ‘one-off’ taxes related to imports or sales of

the equipment or recurrent taxes such as an annual road tax. Taxes on petrol, diesel and other transport fuels are included under energy taxes.

### **Pollution taxes**

This group includes taxes on measured or estimated emission to air and water, management of solid waste and noise. An exception is the CO<sub>2</sub>-taxes, which are included under energy taxes as discussed above. SO<sub>2</sub>-taxes are included here.

### **Resource taxes**

Under the OECD/EC definition resource taxes typically includes taxes on water abstraction, forest and some raw materials like gravel.

Taxes on oil and gas extraction are excluded from the definition of environmental taxes.

→ See chapter 3E for a discussion and suggestions related to resource taxes.

## **2.2 Taxes within Environmental Protection Expenditure Accounts**

In the EPEA the following kinds of taxes are accounted for<sup>1</sup>:

- other taxes on production, levied on the production of environmental protection services;
- taxes on products, levied on the output of environmental protection services;
- specific taxes, i.e. taxes ear-marked for financing the production of environmental protection services;
- other environment-related taxes, i.e. taxes on a physical environmental tax base, but not ear-marked for environmental protection activities.

It is worth noting that only the ear-marked taxes and the other environment-related taxes fall into the Eurostat 2001 “environmental taxes” category because they comply with the guidelines definition.

According to the SNA, other taxes on production consist of all taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced or sold. The EPEA, consistently with national accounts, records in Table B all the production costs incurred by EP producers, including other taxes on production.

Taxes on products consist of non-deductible taxes, like e.g. VAT, paid at the moment of the purchases of environmental protection services: to account for these taxes is important in order to estimate the whole cost borne for the uses of environmental protection services; in the EPEA these taxes are included in national expenditure for environmental protection that is quantified at purchasers’ prices (Table A).

The environmental taxes accounted for in the EPEA are the specific taxes and the other environment-related taxes.

Specific taxes are taxes ear-marked for environmental protection purposes, i.e. the revenue from these taxes is used for subsidising the production of environmental services, financing non-market activities or paying current transfers or investment grants, capital formation of non-market Specialised Producers or other capital transfers for environmental protection.

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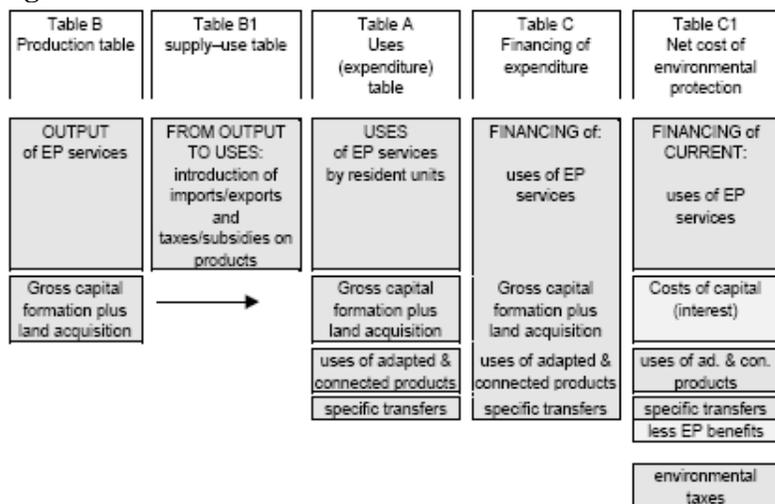
<sup>1</sup> For more details see e.g. Eurostat handbook on GG and specialised producers, §§ 4.3.3 and 4.6

Earmarked taxes are taken into account in the analysis of financing of environmental protection. In the EPEA they are mainly accounted for in Table C to describe how the national EP expenditure is financed by the different institutional sectors.

The other environment-related taxes are taxes levied on a physical environmental tax base, but not ear-marked for environmental protection measures, like e.g. carbon or energy taxes. In the EPEA these environment-related taxes neither constitute elements of national expenditure nor contribute to the financing of national expenditure. These taxes are taken into account in Table C1 in order to calculate the ‘total environment-related financing burden’ in addition to the ‘net cost of environmental protection’ by sector.

The main objective of Table C1 is to calculate the ‘net cost of environmental protection’ by sector. This indicator already incorporates the effect of all taxes taken into account somewhere in the EPEA tables A-C, except for the environment-related taxes that are not ear-marked. As a matter of fact the net cost indicator incorporates the contribution of taxes already captured in Tables B1 and A as taxes on products or in Table B as taxes on production (e.g. vehicle taxes on garbage trucks) and those earmarked taxes captured in Table C that were used to finance current national expenditure (see Eurostat, 2002, SERIEE Environmental Protection Expenditure Account – Compilation Guide, ch. 5).

**Figure 1: Outline of the EPEA**



Eurostat 2002

→ See chapter 3F for a discussion and suggestions of taxes in relation to the EPEA.

### **3. Points for discussions and decisions**

#### **A. Taxes – a definition**

As the environmental accounts are satellite accounts to the national accounts we will need to use the same tax definition. However, as the SNA revision has pointed out and from the experience of experts it is sometimes difficult to establish the difference between what is a tax and what is a fee. Political influences sometimes labels actions and new measures depending on what is acceptable in the society. It is therefore important for the statistician to evaluate the individual measure and classify it according to a strict framework.

*A1. It is suggested that the SEEA rev. will further develop the paragraph clarifying the difference between a tax and a fee in accordance with the final draft chapter 7 of the SNA rev both in general terms and for more environmentally related items.*

#### **B. Environmental taxes – a definition**

The definition described in Eurostat (2001) was developed by the environmental accounts experts in Europe and accepted at the time by the European Commission in the form of DG TAXUD and Eurostat, the OECD and the IEA as well. Today DG TAXUD is producing in cooperation with Eurostat an aggregate of environmental taxes still following the agreement of 2001.

The OECD on the other hand has modified the definition. When the database was established the national delegates of the OECD working party on national environmental policy could not agree on the available definition. The term is therefore “environmentally related taxes”. This means that a softer approach is used to accepting a tax as environmental. One example is that the database includes *all* resource taxes. This was decided due to the cultural and historical background that may create differences among countries in applying the same instrument.

On a practical level, the two definitions have not meant very different taxes to be reported or labelled as an environmental tax. Looking at what is delivered to the different reporting tools (ESA 95 or the OECD) the taxes are not that different. What is different is sometimes that a complete coverage of taxes is not available in the OECD reporting. A previous evaluation of taxes reported to Eurostat and to the OECD also revealed some discrepancies in the levels of revenues (Eurostat 2006).

*B1. It is suggested to use the definition of “A tax whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific negative impact on the environment” in accordance with Eurostat/OECD 2001 and SEEA 2003. Regarding the group of resource taxes, there is a further need for a more detailed description of what is included, see more in 3E.*

#### **C. Value Added Tax**

Some specifics discussed in Eurostat/OECD (2001) concerns value added tax (VAT). It was decided then to exclude VAT from the concept of environmental taxes. The reason VAT was excluded *then* was because it is deductible for many producers but not for households and this was considered to have no influence on the relative prices in the same way that other taxes on environmentally related tax bases do (i.e. VAT is related to price and not to the good itself).

However, discussions following the issue paper presented in October 2008 (to LG in Brussels) have led to one exception where VAT should be included. For example, in the UK and Portugal, there are cases of VAT on duty which are calculated as a fixed proportion of the duty paid on hydrocarbon oils (UK) and automobiles (PT). This means that, for example, UK drivers pay two taxes on the fuel purchased at the pump;

1. Fuel duty on hydrocarbon oils.
2. Value Added, charged on the duty (VAT is also charged on the price of the petrol, but this is not to be included).

In cases like this, when the VAT is charged on a duty included as an environmental tax, it should be included in the concept of environmental taxes.

*C1. It is proposed to exclude calculations of VAT in the concept of environmental taxes with one exception. When VAT is charged on a duty that is already defined as an environmentally related tax, this specific VAT should be included in the concept and calculation of environmental taxes.*

*C2. It is proposed that a discussion in the SEEA could highlight the subsidy aspect of VAT.*

#### **D. Tax on sulphur**

Studies on environmental taxes have highlighted the issue of the difficulties separating taxes on sulphur from taxes on carbon dioxide. The studies have also argued that taxes on sulphur is important from an energy perspective as it directly puts a higher price on fuels with higher sulphur content (Statistics Denmark, Finland, Norway and Sweden (2003), Statistics Norway (2004)).

Today sulphur taxes are classified as a pollution tax according to the guidelines of Eurostat (2001). Some countries argued that it would fit better in the group of Energy taxes, while others thought it does correspond better as a Pollution tax, as classified today.

*D1. It is proposed that the sulphur taxes remains as a pollution tax.*

#### **E. Resource taxes**

In the OECD/EEA database taxes on resource extraction are treated as environmentally related taxes. In the Eurostat definition from 2001 these taxes are excluded as environmental taxes. It is important to discuss how this problem should be solved in the future since countries today report all sorts of taxes under this category. Resource extraction can lead to environmental problems, such as pollution and soil erosion, and therefore a possible wider definition of resource taxes in the Eurostat definition may be needed or a clarification which taxes are included in the current definition.

It is important to discuss not only the tax on oil and gas but also other taxes on minerals, such as for example gold and diamonds. The areas of water taxes and gravel extraction also need to be discussed more thoroughly.

*E1. It is suggested that the area of Resource taxes is discussed further in an issue paper presented to the LG meeting in November 2009. The paper needs to solve the current problem of which definition is to be used in the SEEA rev. and what type of resource taxes can be included in the chosen definition. It is important also to consider taxes on for example minerals and not only taxes on oil and gas extraction as well as for example taxes on the exploitation of rock, sand and gravel.*

#### **F. Taxes under the EPEA framework**

The Environmental Protection Expenditure Account take into consideration taxes on production and taxes earmarked for environmental purposes. It is important that the analytical values of the EPEA together with other approaches to measure environmental economic instruments are kept close to one another. This will reduce the difficulty of separating one area from another.

*F1. It is proposed that the revised SEEA includes in the same chapter the discussions on environmental taxes and EPEA for example some text / guidance is needed to work out how both concepts can be introduced in close connection with each other in a consistent way.*

## Annex: Tax bases

### Tax bases included in the environmental tax statistics framework (Eurostat 2001)

#### Measured or estimated emissions to air

- Measured or estimated NO<sub>x</sub> emissions
- SO<sub>2</sub> content of fossil fuels
- Other measured or estimated emissions to air

#### Ozone depleting substances (e.g. CFC or halon)

#### Measured or estimated effluents to water

- Measured or estimated effluents of oxydizeable matters (BOD, COD)
- Other measured or estimated effluents to water
- Effluent collection and treatment, fixed annual taxes

#### Certain non-point sources of water pollution

- Pesticides (Based on e.g. chemical content, price or volume)
- Artificial fertilisers (Based e.g. on phosphorus or nitrogen content or price)
- Manure

#### Waste management

- Waste management in general (e.g. collection or treatment taxes)
- Waste management, individual products (e.g. packaging, beverage containers)

#### Noise (e.g. aircraft take-off and landings)

#### Energy products

- Energy products used for transport purposes
  - Unleaded petrol
  - Leaded petrol
  - Diesel
  - Other energy products for transport purposes (e.g. LPG or natural gas)
- Energy products used for stationary purposes
  - Light fuel oil
  - Heavy fuel oil
  - Natural gas
  - Coal
  - Coke
  - Biofuels
  - Other fuels for stationary use
  - Electricity consumption
  - Electricity production
  - District heat consumption
  - District heat production

#### Transport

- Motor vehicles, one-off import or sales taxes
- Registration or use of motor vehicles, recurrent (e.g. yearly) taxes

#### Resources

- Water abstraction
- Extraction of raw materials (except oil and gas)
- Other resources (e.g. forests)

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<http://unstats.un.org/unsd/sna1993/projectmanagement/drafts/chapter7dv4.pdf>

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### **Web-sites for data access:**

OECD/EEA database on instruments used for environmental policy and natural resources management

<http://www2.oecd.org/ecoinst/queries/index.htm>

Commission Services, Eurostat: Environmental tax revenues

[http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1996,45323734&\\_dad=portal&\\_schema=PORTAL&screen=welcomeref&open=/env/env\\_acc&language=en&product=EU\\_MASTER\\_environment&root=EU\\_MASTER\\_environment&scrollto=0](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/env/env_acc&language=en&product=EU_MASTER_environment&root=EU_MASTER_environment&scrollto=0)