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Manual: Statistics on Environmental Taxes

commissioned by

European Commission

DG XI - Environment, Nuclear Safety and Civil Protection and
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FOREWORD

On May 6/7, 1996 a group of experts on environment and taxes met in Brussels. It comprised representatives from the European Commission (DG II, DG XI, DG XXI, DG XXXIV), from several Member States (Finland, France, Sweden, UK) and from OECD (dep. for environmental affairs and for financial affairs).

On the basis of a draft (Manual: Statistics on Environmental Taxes, April 1996 version), prepared by ATW-research, the discussions of this meeting have led to a consensus on definitions, classifications, operational procedures and the treatment of borderline cases. This revised version of the manual represents this consensus and should hence serve as a starting point for an agreement on the international and supranational level.

I. GENERAL FRAMEWORK

I.1 An Economic Instrument for Environmental Protection

1. Among the instruments for environmental protection (e.g. rules&regulation and economic instruments such as taxes, subsidies, deposit systems, emission trading, liability insurance, non compliance fees) taxes have gained increasing importance in the EU Member States and elsewhere.

   Hence it is the aim of this manual to give an operational definition of environment-related taxes and a prescription for their further disaggregation. The procedure has to be compatible with similar efforts by OECD and other international organisations. For this purpose a coordination meeting of experts has achieved a general consensus on definitions and borderlines. This achieved the procedure can be applied to any list of taxes to identify those that are related to the environment.

   The manual is addressed in the first place to public employees in the national finance or revenue services or statistics departments; it may support an effort to prepare environment-related tax statistics in a consistent and comparable way.

2. Environmental taxes, charged for example on the use of limited natural resources and energy, are envisaged as one important and efficient economic instrument for environmental protection; both OECD and EU have expressed their preference for this tool in recent documents and supporting publications[1]. The central argument for taxes on goods and economic activities which damage the environment is the following:
   - They are based and can be justified by the concept of social costs; within this concept environmental taxes/charges serve to internalize - at least partly - the external costs of any economic activity which deploys and deteriorates hitherto free environmental goods.
   - As a consequence environmental taxes often serve as an incentive for behavioural changes: in as far as present and expected relative factor costs influence the deployment of factors, increases (and announced future increases) of taxes on economic activities with negative environmental impact will lead to economically efficient reallocations for the benefit of the environment.

3. Environmental taxes are also seen as one instrument towards sustainable development and may possibly increase employment in the European Economies. Revenue from environmental taxes would enable statutory levies on labour to be reduced, see White Paper, ch. 9.4 and 10[2].

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[1] 1992 EC Programme of Policy and Action in Relation to the Environment and Sustainable Development "Towards Sustainability" (socalled EAP or Fifth Environmental Action Program), Luxembourg, 1993, ch. 7.4; Economic Growth and the Environment: Some Implications for Economic Policy Making, COM(94)465, 3.11.1994; White Paper on Growth, Competitiveness and Employment, EC, 1994, ch. 9 and 10; Implementation Strategies for Environmental Taxes, OECD, 1996. In particular the EC Fifth Environmental Action Program asks in sec. 7.4 for EC-actions to ensure transparent and comparable taxation for the further protection of natural resources and the environment; the recent proposal for a European Parliament and Council Decision on the review of the European Community Programme of policy and action in relation to the environment and sustainable development "Towards Sustainability" gives in art. 3, 3.1(a) special attention to environmental charges, in (d) to the encouragement of fiscal reform as a means to the protection and improvement of the environment and proposes in art. 7(a) filling the gaps in statistical data.
For a detailed description of the environmental situation in the EU see: Environment in the European Union - Report for the Review of the Fifth Environmental Action Plan, Luxembourg, 1995 (for economy and environment see ch. 5.2).

[2] and also ´Taxes in the European Union´, discussion paper for the informal meeting of the ministers for economic affairs and for finance, Brüssel, 20.3.1996, SEK(96)487 endg.

This tax shift view takes into account that the relative factor costs of the production factors ´labour´ and ´natural resources´ have - over the last decades - been set (among others by taxation) in such a way that the total system ´economy - ecology´ is increasingly unbalanced: the ever growing cost of labour has contributed to unemployment whereas constant or falling real prices for natural resources have contributed to their careless and inefficient exploitation[3].

I.2 Statistics on Environmental Taxes: A Priority Task

4. One step in the progressing development of the EU´s environmental policy is a precise documentation of the present situation in the Member States and the development of statistics which makes available indicators for monitoring progress towards increased use of economic instruments. Among these instruments environment-related taxation finds increasing acceptance and has been introduced in a growing number of Member States.

   One shortcoming at present seems to be the lack of a generally agreed definition and list of environmental taxes that would allow regular collection of data on such taxes in an internationally comparable and uncontestible way.

5. A clear definition and classification of environmental taxes is required to follow and to compare the trends in the taxation of environmental resources in the Member States. It will allow macro- and micro-economic analysis related to the application of such fiscal instruments such as assessment of their impact on economic sectors and on environmental domains.

   To be useful such a definition and classification has to be made compatible with the ongoing work of OECD, IMF and other international organizations.

I.3 General Definition: Tax Base has Specific Negative Environmental Impact

6. Several indicators for classifiying a tax as "environmental" are conceivable and have been discussed:
   - tax base: the physical base on which the tax the tax is levied has a scientifically verifiable negative impact on the environment;
   - incentive action: the taxation may act as an economic incentive for environmental improvement;
   - declared purpose: the political intention of the legislator (as, e.g., written as declared purpose into the tax law) is environmental improvement.

   It was agreed that only the first indicator should be used as a solid ground for a definition, since it is based on commonly accepted scientific evidence; the others, depending more on expectations, projections and subjective judgements, must only be used as auxiliary evidence for the identification of environmental taxes.

7. Hence the following definition is introduced:

   A tax falls into the category environmental if the tax base is a physical unit (or a proxy for it) of something that has a proven specific negative impact on the environment, when used or released. A negative impact on the environment is a deterioration of hitherto free environmental goods or a reduction of the supply of such goods. This physical unit may be a unit of substance emitted (e.g. 1 kg of NOx) or a unit of a proxy for emissions (e.g. 1 liter of petrol burned in the standard engine or one motor vehicle with a certain emission specification) or a unit of a finite natural resource (e.g. fresh water).

[3] For a detailed description see ´Structure of the Taxation System in Europe´, joint DGXXI/Eurostat publication, 7/1996 and ´More Jobs, Less Pollution: A Tax Policy for an Improved Use of Production Factors´, on behalf of DG XXI by ATW (Jarass/Obermair), Wiesbaden, FRG, 2/1994. The novelty of this approach lies in the fact that all the taxes and statutory levies have been disaggregated and reaggregated in such a way that they are directly assigned to the production factors labour, capital and natural resources/environment.

A proven specific negative impact is constituted by a causal relationship between this physical unit and a specific environmental deterioration which must be assumed if the following criteria are valid:

- there is sufficient scientific evidence for it (technical knowledge);
- the caused environmental deterioration is well above the average negative impact of all economic activities (techno-economic knowledge);
- the impact is politically judged as significant (social acceptance).

Based on this definition this manual develops an operational procedure that allows a consensual listing of environment-related taxes necessary for internationally harmonized statistics.

8. The terms "taxes" and "fees" shall be used for all compulsory[4] payments to general[5] government[6]; they are distinguished as follows:
   - taxes: payments which are not associated with return flows of goods or services - unrequited[6];
   - fees: payments which are associated with return flows of goods or services[7] - requited.

I.4 Types of Tax Base

9. Depending on the type of physical unit that serves as the tax base environment-related taxes are classified in the following categories:
   - Taxes on pollutants
     Here the tax base is a physical unit of a specific pollutant, e.g. SO_2; the amount actually levied may be calculated from a measured quantity of emissions of this pollutant or based on an estimate of the emission potential.
   - Environment-related taxes on products
     Here the tax base is not a unit of emission of a specific pollutant, but a physical unit of a resource, or a product or an equipment which stands as a proxy for environmental deterioration in the general sense, i.e. this unit has, when used or released, some negative impact on the environment as defined in § 7.
     A further subdivision is provided in § 16 and 17.

   Environment-related fees[8] are charged on the basis of a (measured or estimated) quantity of (undesirable) output to be treated or a proxy thereof.

II. CLASSIFICATION

II.1 Relevant Features of the Classification

10. Based on this general framework one arrives at a classification of all environment-related taxes and fees. A procedure[9] to achieve this classification is outlined in the following table 1. A precise definition of the terms used in questions (1) to (6) of this decision tree will be given in the subsequent paragraphs 14 to 18.

    Tab. 2, referred to at the bottom of table 1, will be introduced and explained below, in particular in § 24. It contains a further disaggregation of the three relevant classes of environmental taxes/fees identified by the decision tree.

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4 required by law, regulation or ordinance.

5 central, regional or local.

6 for the precise definition of the term see System of National Accounts (SNA), 1993; European System of Accounts (ESA), 1995; see also § 11.

7 In the context of this manual the emphasis lies on fees which correspond to the cost of supply of specific environmental services; see also § 29 for problems of definition.

8 See also: Managing the Environment. The role of economic instruments. OECD 1994. In accordance with EC-terminology this manual uses the term "fee" instead of OECD´s "user charges".

9 The basic idea for such a decision tree has been developed in a memo for the programming meeting for this project in Brussels on Jan 5, 1996 by A. Steurer, Eurostat F3.

11. The first step in this procedure, question 1 of table 1, is to define payments that are "uses" for General Government in ESA95-definition: compulsory payments to general government (central, regional or local) are included, other payments are excluded[10].

12. The second step, question 2, serves to distinguish
    - unrequited payments for which no goods or services are obtained in exchange - this is the category "tax", and
    - requited payments that cover, at least partly, the cost of supplying the service - this is the category "fee".

Tab. 1 : Classification Tree for Environmental Taxes/Fees

To arrive at the classification of environmental taxes, take a complete list of taxes, charges, fees etc. .. and ask the following questions:

(1) Payment to general government?

⇓ YES

(2) Payment is unrequited? (no goods or services in exchange)

⇓ YES

PAYMENT IS A TAX

(3) Tax base is a specific pollutant?

⇓ YES

ENVIRONMENT RELATED TAX ON POLLUTANT

⇓ NO

(4) Tax base is product or equipment which serves as proxy for pollution

⇓ YES

(5) Tax rate is environmentally differentiated?

⇓ YES

ENVIRONMENT RELATED TAX ON PRODUCT "in narrow sense"

⇓ NO

ENVIRONMENT RELATED TAX ON PRODUCT "in wider sense"

GOTO table 2 line 1

GOTO table 2 line 2

⇓ NO

not applicable[14]

⇓ NO

not applicable[11]

⇓ NO

PAYMENT IS A FEE

(6) Fee pays for environmental service[12]?

⇓ YES

ENVIR.-REL. FEE "purchase"

GOTO table 2 line 3

⇓ NO

not applicable[13]

[10] fees payable by law or ordinance but paid to private or semi-private organizations are excluded by this definition, unless they are unrequited payments required by law.

[11] unless the payment is required by law, and is unrequited. Example: In UK, landfill tax is reduced if a payment is made to an approved environmental trust.

[12] required by law or regulation or ordinance.

[13] fee is not environment-related.

[14] tax is not environment-related.

13. Within the category "tax" questions (3) and (4) serve to distinguish between taxes on pollutants, environment-related product taxes and all other taxes.

    Question (5) serves to distinguish environment-related product taxes in a narrow and in a wider sense. Narrow sense refers to taxes with environmentally differentiated tax rate, wider sense refers to taxes without differention.

    Within the category "fee", question (6) discerns environment-related fees, where the fee pays for the purchase of an environmental service required by law or ordinance, from all other fees.

II.2 Three Relevant Classes of Environmental Taxes/Fees

II.2.1 Taxes on Pollutants

14. A tax falls into the category pollutant tax, if the tax base is physical unit of a specific pollutant, i.e. a toxic or noxic material (example: the tax on each ton of SO_2).

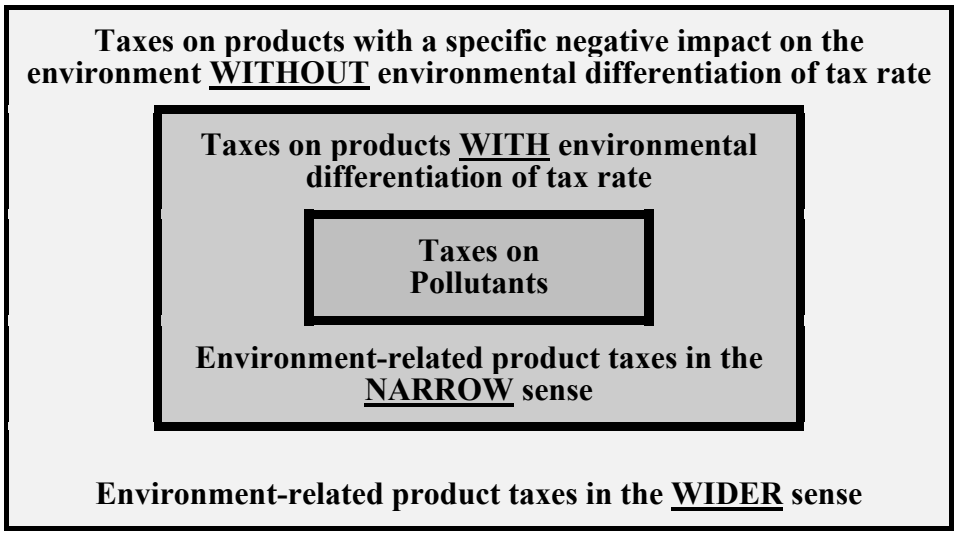
    A further disaggregation according to environmental domains is provided in § 24.

II.2.2 Environment-related Product Taxes

15. A tax falls into the category environment-related product tax, if the tax base has a causal relationship with environmental deterioration as defined in § 7 and 9.

    A further subdivision is based on the criterion of tax differentiation and provided by question (5) in tab. 1 (c.f. the following §§ 16 and 17 and fig. 1).

Figure 1 : Types of Tax Base



Example for CO_2 and climate: A tax on CO_2-emission is a pollution tax. A tax on fuels where the rate is differentiated according to carbon content is an environment-related product tax in the narrow sense. A flat rate tax on energy that, among others, reflects CO_2-effects is a environment-related product tax in the wider sense.

16. Environment-related product taxes in the NARROW sense: These are taxes on products or on equipment WITH an environmental differentiation of the tax rate based on a quantitative proxy of pollutants contained in the product or associated with the use of the equipment.

    In the case of a differentiated tax (§ 16) only the surtax on the higher environmental impact (e.g. surtax on leaded petrol) should be classified as environmental in the narrow sense. The basic tax (e.g. basic tax on unleaded petrol) should be listed as environment-related in the wider sense in the same way as all non differentiated product taxes are (§17).

17. Environment-related product taxes in the WIDER sense: These are taxes on products or on equipment WITHOUT an environmental differentiation of the tax rate. The taxation reflects a qualitative relationship between the product (which may be a unit of a proxy for emissions, e.g. 1 litre of petrol burned or a unit of a finite natural resource, e.g. fresh water) and environmental deterioration.

II.2.3 Environment-Related Fees

18. Compulsory requited payments to general government are environment-related fees, if they cover - at least partly - the price of an environmental service required by law or regulation or ordinance (examples: fees on one unit of waste water earmarked for waste water treatment; fees on one unit of solid waste earmarked for proper deposit or incineration or recycling).

II.3 Other Classification Criteria Not Explicitly Used in this Manual

19. From the point of view of Economic Instruments for Environmental Protection, taken in the 5th Environmental Action Programm, SERIEE[15] etc., the question whether the main function of a tax is fiscal (more revenues) or incentive (environmental improvements) is not necessary for the classification and hence not raised in the decision tree:
    - Environment-related taxes, both on pollutants and on products, lead to higher costs and prices for goods and services that involve the taxed items. Hence they create in any case an incentive for substitution towards less environmentally damaging behaviour, irrespective of a possible purely revenue raising intention on the side of the legislation or ordinance issuing body.
    - Fees are used to cover the cost of providing environmental services and therefore they are environmental in any case. They also have a fiscal effect if the fees are higher than the actual cost of the provided service.

20. The classification is based on tax base, not on destination of tax revenues ("earmarking" or "hypothecation"); therefore the question "Revenue earmarked for environmental protection?" is not contained in the classification procedure of tab. 1. Although the answer ´earmarked´ / ´non earmarked´ is a useful information that is provided in table 2 and in the application to Member States (see tables in the annex), it does not contribute significantly to the classification of environmental taxes:
    - Pollutant taxes and environment-related product taxes are already classified as environmental because, irrespective of the destination of the revenue, their tax base has a proven specific negative environmental impact. Moreover very few, if any, taxes in the true sense ("payment is unrequited") are earmarked[16].
      If a tax were earmarked for environmental protection without having an environmental tax base (e.g. hunting taxes) such taxes would not fall under the definition of § 6 because they are not of interest from the point of view outlined in paragraphs 1 to 3.
    - Fees are used to cover the cost of providing environmental services and therefore "earmarked" in a practical sense.

II.4 Borderline Cases

21. The classification procedure of §§ 10-18 brings forth two completely different types of borderline cases:
    - ´external´ borderline cases, i.e. between ´environmental taxes&fees´ and ´not applicable´ (cf. the three cases of ´not applicable´ in table 1);
    - ´internal´ borderline cases, i.e. between the three defined classes of environmental taxes&fees.

22. The ´external´ borderline cases fall into two disjunct categories:

    (a) Category 1: ´Payment to general government´ or not (cf. question 1 in table 1): it is doubtful, whether the agency the payment goes to may be classified as general government. This category

[15] European System for the Collection of Economic Information on the Environment, Luxembourg, 1994.

[16] In some Member States (e.g. Germany) by law or constitution the revenue from ´taxes´ must go to the general fiscus without any earmark.

concerns mostly fees (see § 18 above). Examples: payment for waste disposal goes to a non-profit organization working by commission of a city/township (for a detailed discussion see § 29 below).

(b) Category 2: ´proven specific negative environmental impact´or not; in other words it is doubtful, whether the tax base is environment-related or not. This category concerns mostly taxes.

The most important taxes in this group are (more or less) environment-related product taxes in the wider sense, in particular the (non differentiated or basic) taxes on energy or energy products and general taxes (e.g. registration taxes) on motor cars.

At the expert meeting on May 6/7, 1996 a unanimous consensus could be reached that all taxes on energy and on transport equipment shall be included in statistics on environment-related taxes provided that taxes with an environmental tax differentiation are listed separately.

Further examples: Tobacco is not a specific pollutant, its use, however, may have a specific negative environmental impact, e.g. the effect on non-smokers; hence: tobacco tax is a borderline case between ´environmental related product tax´ and ´not applicable´; as the environmental effect is weak, it is classified as ´predominantly not applicable´. Alcoholic beverages have no specific negative environmental effects; hence: alcohol tax should be classified as ´not applicable´.

A difficult (and revenuewise most important) borderline case in this category 2 are taxes on ´real estate´. In the first place they are a special type of property tax, hence they should be classified as ´not applicable´. But in some countries they contain an element of ´land use tax´, which is linked to the negative impact of land use (e.g. construction) on environmental domains such as soil, ground water and landscape/biodiversity; some regions (e.g. Land Hessen, Germany) have a separate tax on this type of detrimental land use, which might be classified under product taxes[17].

The tables in the annex list in line (4B) some borderline cases of the ´external´ type.

23. ´Internal´ borderline cases are all those taxes that are clearly identified as environment-related, but where the assignment ´pollutant tax´, ´product tax´ or ´fee´ is up to debate. Even though complete information about the tax in question would allow this classification for one Member State, decisions have to be made that bring similar cases into the same class for all member States. Examples:
    - The extra tax on leaded petrol introduced in most Member States: if the specific lead content were the tax base as a quantitative proxy for lead compound pollution, it had to be classified as pollutant tax; if all leaded fuels are taxed as such irrespective of the actual concentration of lead, the tax ought to be assigned to product taxes.
    - The tax on lubricating oil, charged in Germany, Italy and other Member States and earmarked for recycling: as far as lubricating oil is a proxy for potential contamination of soil and ground water, this tax must be classified as (earmarked) pollutant tax; if the tax is used to guarantee an individual right for return and safe disposal of used lubricating oil, it has to be classified as a fee (purchase of an environmental service).

    The tables in the annex, lines (1B), (2B) and (3B) list some borderline cases of the ´internal´ type.

II.5 An Operational Application of the Classification Procedure

24. Table 2 provides a procedure for a further classification and disaggregation of environmental taxes&fees that have been identified by application of the decision tree (see table 1).

    Lines in table 2 refer to the tax base according to §§ 14 to 17, further broken down as explained in § 25, and according to borderline cases according to §§ 22 and 23:

    (1) POLLUTANT TAXES;
    (1B) borderline case: predominantly pollutant tax.

    (2) PRODUCT TAXES with and without tax diffferentiation ("narrow" and "wider" sense);

[17] Such a land use tax, even though classified under ´product tax´, would, in contrast to all other environmental taxes/fees, constitute a direct tax, since it would be levied on the individual property of a specific owner.

(2B) borderline case: predominantly product tax
(2diff) thereof product taxes with environmental differentiation of tax rate ("narrow" sense);

(3) FEES;
(3B) borderline case: predominantly environmental related fee.

(4) NOT APPLICABLE;
(4B) borderline case: predominantly not applicable.

Columns in table 2 allow allow the precise specification of each tax and its categorization according to economic target sectors and to environmental target domains.

This procedure is the model for the actual listing and disaggregation of all environmental taxes&fees in selected Member States, performed in the annex (tab.s 4, 5, 6).

25. For pragmatic reasons the environment-related product taxes (line 2 in table 2) are disaggregated according to (potential) major contributors of the revenue:
    - transport fuel and transport equipment,
    - other energy consumption, disaggregated into types of fuels,
    - agricultural inputs,
    - raw material and water,
    - waste.

    Product taxes with an environmental differentiation of the tax rate are listed separately.

    The (sub-)totals of environmental taxes and fees may serve as first indicators for environmental protection by means of market instruments.

    The table also serves as a questionnaire for the actual classification of the complete list of payments to general government in a given Member State. Such a classification along the lines of table 2 is in fact performed for Germany and (less detailed as a first draft) for Italy and Sweden in annex I.

26. The columns of table 2 provide information on:
    - tax base, tax rate and beneficiary;
    - environment-related revenue;
    - environment-related revenue per total tax revenue (incl. social security contributions);
    - revenue earmarked for environmental protection (see § 20);
    - economic target sectors[18] (i.e. sectors where the revenue is predominantly raised);
    - environmental target domains[19] (i.e. domains where the negative impact of the taxed item is predominantly felt).

[18] economic sectors according to standard classification with an emphasis on: agriculture, energy supply, heavy industry, light industry, transport, services, household.

[19] air, soil, water, biodiversity & natural resources, noise.

Tab. 2 : Classification and Disaggregation of Environmental Taxes/Fees

Specifics of Tax/Fee	**General Description**				**Effects**	
	(1)	(2)	(3)	(4)	(5)	(6)
Type of Tax/Fee	base&rate; beneficiary	revenue	share	ear-marked?	econo-mic sector	environ-mental domain
(1) POLLUTANT TAXES[a)]						
(1B) borderline: predominantly pollutant tax[b)]						
(1T) SUB-TOTAL of pollutant taxes	---					
(2) PRODUCT TAXES (in the "narrow" + in the "wider" sense), classified according to major contributors:						
(2.1) energy and equipment for transport						
(2.1.1) transport fuel[c)]						
(2.1.2) transport equipment[e)]						
(2.1.3) other transport taxes[t)]						
(2.2) energy for other uses						
(2.2.1) heating oil[g)]						
(2.2.2) gas[h)]						
(2.2.3) coal						
(2.2.4) electricity[i)]						
(2.2.5) other energy taxes						
(2.3) raw materials and water[k)]						
(2.4) agricultural inputs[l)]						
(2.5) waste[m)]						
(2.6) other products[n)]						
(2B) borderline: predominantly product tax[o)]						
(2T) SUB-TOTAL of product taxes	---					
thereof product taxes WITH environmental differentiation of tax rate *("narrow" sense)*						
(2.1.1diff) differentiated petrol tax[d)]						
(2.1.2diff) differentiated car sales tax[f)]						
(T) TOTAL ENV.-RELAT. TAXES = 1T+2T	---					
(GT) total taxes and social security contributions	---					
(3) ENVIRONM.-RELATED FEES						
(3.1) waste disposal[p)]						
(3.2) other						
(3B) borderline: predom. environ.-related fee[q)]						
(3T) TOTAL of fees	---					
(4) NOT APPLICABLE						
(4B) borderline: predominantly not applicable[r)]						
For information: tax deductions/exemptions[s)]						

Examples[20]:

a) carbon tax; SO_2 tax; NO_x-tax; tax on CFCs and halons; noise tax.
b) tax on pollutants in pesticides and fertilizers.
c) general petrol/diesel tax.
d) e.g. higher tax on leaded petrol.
e) general sales/excise/registration tax.
f) e.g. higher sales or registration tax on cars with higher pollution.

[20] The examples are taken from: Environmental Taxes in OECD countries, OECD, Paris 1995; Elements towards a Communication on Environmental Levies used in Member States, internal DG XI.B.1 discussion paper, draft, 22.4.1996; annex of this report

g) tax on light fuel oil; tax on heavy fuel oil.
h) tax on natural gas.
i) tax on electricity for private use.
k) fresh water charge.
l) tax on weight of fertilizer.
m) tax on waste water; sewage charge; water effluent charge.
n) tax on batteries, plastic carrier bags, disposable containers.
o) concession for electr. supply (not applicable?).
p) Green point; waste disposal; hazardous waste disposal.
q) parking fee; payments to MNC in Italy for plastic raw material, lubricating oil and batteries.
r) tobacco tax, dog tax.
s) no fuel tax on aircraft and ships; lower VAT on heating oil.
t) general road tax.

Tab. 3 : Cases for Testing the Classification

Payment levied on	(1) Payment to government?	(2) Payment unrequited?[21]	if unrequited: (3) base specific pollutant? if not: (4) base has (less specific) negative environmental impact?	if requited: (5) Fee pays for environmental service?	Resulting classification (lines acc. to table 2)
(1) Water pollution (D, NL)	yes	yes; no purification service etc. in exchange	(3) no, (4) yes	--	product tax (revenues possibly earmarked), line 2.5
(2) Waste collection	yes, if waste is collected by a governmental organization	no, services in exchange	--	yes, waste collection in exchange	(environmental related) fee, line 3.1
(3) Property (F)	yes	yes	(3) and (4) no	--	not applicable[22], line 4
(4) NOx emission (S)	yes	yes	(3) yes, NOx is a specific pollutant	--	pollutant tax, line 1
(5) Fertilizer (A)	yes	yes	(3) no, (4) yes	--	product tax, line predom. pollutant tax, line 2.4
(6) Car sales	yes	yes	(3) no, (4) yes,	--	product tax, line 2.1.2
(7) Tourists	yes	yes	(3) and (4) no	--	not applicable[23], line 4
(8) Waste-tax (DK, state of Hessia, D)	yes	yes; no purification service etc. in exchange	(3) no, (4) yes	--	product tax (revenues possibly earmarked), line 2.5
(9) CO2 (Scandinavia)	yes	yes	(3) yes	--	pollutant tax, line 1
(10) Hunting/-fishing license	yes	yes?	(3) and (4) no	--	not applicable, line 4
(11) Aircraft noise	yes	yes	(3) yes	--	pollutant tax, line 1

III. ISSUES YET TO BE RESOLVED

III.1 The Role of VAT within Environmental Taxes

27. VAT-payments by producers are, as a rule, reimbursed by the financial authorities to the producers. There are, however, exceptions to this rule: In some countries VAT-payments for certain environment-related goods are not reimbursed to producers. In Sweden and Italy VAT on purchases of company cars is not reimbursed; additionally in Sweden VAT on car sales tax and on surcharge on polluting cars.

28. The final resting place of VAT is the consumer. Hence VAT on the environmental tax-content of the consumers´ price for products and services subject to environmental taxes constitutes an additional part of environmental taxes[24].

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[21] no goods or services in exchange.

[22] In France part of the property tax is earmarked to pay for waste collection. As property tax has no environmental tax base, we classify it ´not applicable´.

[23] In Austria part of the tourist tax is earmarked for environmental protection. As tourist tax has no environmental tax base, we classify it ´not applicable´.

VAT-rates differ between countries: The regular VAT-rate in Germany is 15 %, in Italy 19 % and in Sweden 25 %. In some countries reduced rates are applied to pesticides and fertilizers[25]: "Today, a substantial amount of the artificial fertilizers used in Germany comes from Luxembourg dealers: whilst pesticides and fertilizers are subject to the normal VAT of 15 % in Germany, only a reduced tax rate of 3 % is applied in Luxembourg"[26].

VAT-rates differ within countries: In Italy the VAT-rate for private energy consumption is only 9 % (regular rate is 19 %); in Sweden the VAT-rate for commercial transport is only 12 % (regular rate is 25 %). In Germany the government discusses the introduction of a 3rd (higher) VAT-rate on energy as an elegant way to increase taxes on private energy consumption without increasing the existing energy tax. This results in different environmental tax rates even if the rates before VAT were equal.

On principle the VAT on any environment related tax/fee in as far as not reimbursed must be classified as an additional part of the respective tax/fee. In practice, however, the aggregation of VAT to the different classes of environment related taxes/fees will require a systematic development of appropriate estimates due to differentiated reimbursement procedures. Therefore one should consider to test whether differentiated VAT-rates can be taken into account at all in statistics on environmental taxes[27].

III.2 The Role of Fees within Environmental Taxes

29. Of the three classes of environmental taxes/fees the class ´fees´ poses serious problems of definition and data availability.

    Problems of Definition: Government make laws requiring business or private consumers to buy environmental services. The cost of these services are counted as "environmental fees" in this manual only when they are compulsory and bought from governmental institutions. This will lead to inconsistencies in the environmental fee statistics for different countries because environmental services are supplied by different sectors of the economy in different countries.

    Also in some cases the services might have been bought voluntarily.

    In some cases, the fees might recover more than the cost of supplying the service - in such case the excess revenue is a sort of environmental tax, if the government is a monopoly supplier of the service.

    Moreover some environmental services might not be "compulsory", but government is monopoly supplier and sets "fees" above cost to ration demand and protect environment. In such case the excess revenue is a sort of environmental tax.

    As an alternative and to make the manual more consistent with ESA95, the manual might identify only those payments made by individuals and businesses that, in terms of ESA95, are "distributive transactions". This definition excludes "transactions in products" such as intermediate and final consumption, etc. It includes taxes, subsidies, fees charged by government that recover more than the cost of supplying the services purchased; and other current and capital transfers such as many payments to non-profit making bodies (NPISH). Under this proposal a fee which covers no more than cost of supply would be counted as a cost of environmental regulation, rather than a fiscal measure and would be outside the scope of the manual.

30. Problems of Data Availability: Fees are mostly collected locally or regionally, therefore statistical data are relatively poor; for the same reason the border between ´statutory levy´ and ´purchase of an environmental service from a private enterprise´ is hard to draw.

    The activity of providing environmental services is increasingly carried out by private or government-owned enterprises which are not part of governmental revenue statistics. This varying degree of privatisation must be taken into account when making international comparisons.

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[24] For a detailed assessment of VAT-components in environment-related taxes for Austria cf. Environmental Taxes in Austria. Joint Eurostat/EFTA Group on Statistics of the Environment. Statistical Office of the European Communities, March 1995, Doc. SERIEE/95/1.

[25] 6 % in the Netherlands, 5.5 % in France; in Belgium the rate is 12 % for pesticides and 6 % for fertilizers.

[26] See European Parliament Hearing on the Intergovernmental Conference, Brussels, February 26/27, 1996, statement by the Confédération Fiscale Européenne, repres. J. Rädler.

[27] "Net recording of VAT", i.e. prices recorded include all non-deductible VAT, acc. to ESA and SNA; see also SERIEE, § 2058.

In principle one might distinguish two types of fees: those that cover essentially the cost of the returned goods or services; those that cover more than that cost (i.e. include a tax or economic rent). This distinction, however, may not be apparent in statistics on taxes and fees.

Therefore, the data base for the actual revenue from these fees is certainly still unsatisfactory. Nevertheless an attempt to incorporate these fees into the general environmental accounting should be made because:

- they constitute a large share of all environmental taxes;
- they are directly levied on pollution or on a proxy of pollution;
- they are directly used for environmental protection;
- they constitute costs and hence may be incentive for behavioural changes such as a reduction of the quantity of waste.

IV. CONCLUSIONS

31. This manual presents an effort towards
    - a general definition of environmental taxes consistent with the guiding principles formulated by EU and OECD;
    - a practical procedure for the identification and classification of such taxes within a list of all taxes as given, e.g. in tax and revenue statistics.

    An preliminary application of this definition and procedure is demonstrated using available data for 3 Member States in the following annex. This has shown that the three classes
    - pollutant tax,
    - environment-related product tax (with or without environmental differentation of tax rate),
    - environment-related fees

    are sufficiently broad to cover all cases and sufficiently specific to keep the number of borderline cases small.