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London group meeting
November 2013

SEEA Technical Notes on environmentally related taxes and subsidies

1. Introduction and general description

This note is intended to give an overview of what material can be used for the teaching and implementation of environmentally related taxes and subsidies within the SEEA.

The environmentally related taxes are already reported in the EU under the environmental accounts regulation 691/2011. OECD and Eurostat decided on a definition many years ago that has been thoroughly tested. During this time, a manual has been produced (Eurostat 2001) and training sessions were developed, e.g. for Eurostat by the Austrian Statistical Office, and have been held with material being provided on the web[1]. Eurostat has prepared a revised statistical guide, the latest public version is the one for the March Working Group[2] which is nearly final - the final version is planned to be published before the end of the year.

The environmentally related subsidies statistics are at an early stage in development. A manual is currently being developed lead by Eurostat and some country experience has been gathered through this work.

The policy demand is high on this type of statistics. OECD and IEA are active in this field e.g. through the OECD initiative on Green growth and the IEA data collection of subsidies and investments connected to energy. In Sweden, as well as in Denmark, the environmental accounts have published environmental related transfers since 2000 and more recently the Netherlands are doing the same. The distinction between an environmentally beneficial and a potentially damaging transfer has been analysed and discussed among statisticians as well as users of statistics (OECD, 2006; Palm and Larsson, 2007).

2. Key questions

While governments initiate transfers to encourage more environmentally desirable behaviour, they also provide subsidies and investment grants for other activities. Some of these other subsidies have the effect of encouraging activities that damage the environment. Energy subsidies are one such example, in that, depending on their structure, encourages the combustion of fossil fuels, resulting in greenhouse gas emissions and other types of pollution. When examining the effect of government transfers on the environment, policy analysts and decision makers need to consider both environmentally damaging and environmentally beneficial transfers.

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[1] https://circabc.europa.eu/w/browse/23bc30ec-df72-4885-a579-ef24ca576295
[2] https://circabc.europa.eu/w/browse/d012a95a-042e-4b67-87d7-dd3c0cd4a9de

The G20 leaders in 2009 agreed to phase out subsidies that "encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change". OECD and IEA are contributing to the follow-up on this commitment by the G20 (see e.g. Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels, 2011).

It is important to understand the use of taxes and subsidies in countries as regards their impact on the environment.

The SEEA central framework defines an environmentally related tax as 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 includes taxes on production and imports, capital taxes and current taxes on income and wealth. Generally environmental taxes are presented according to four broad categories: energy, transport, pollution and resources. The categories of energy, transport, pollution and resources are then available for cross country comparisons. In a particular country, there will also be an interest to go deeper into the classification and use more detailed data.

3. Examples of presentations

Below you will find some examples of existing tables, where you can see some typical transfers that can be included in such presentations.

In EU there is now a law to report on environmentally related taxes by industry. The data collected can be found on the Eurostat website[3]. There is also a national tax list that is used to harmonise the country tax reporting between the SNA and the SEEA.

[3] http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental_accounts/methodology/data_collections

Table 1. Total environmental taxes in Sweden 2008-2012. Current prices, SEK million

	2008	**2009**	**2010**	**2011**	**2012**
Total	86 897	88 041	91 315	87 970	88 503
Energy tax	69 068	70 423	73 565	70 915	71 763
Energy tax on fuels	19 590	20 224	20 152	20 419	19 906
Electricity taxes	19 732	20 720	22 094	21 268	22 675
Carbon dioxide tax	25 770	26 084	27 322	25 376	25 243
Nuclear power tax	3 976	3 395	3 997	3 852	3 939
Tax on pollution	1 528	1 233	1 197	1 168	1 027
Fee to the battery fund	76	14	25	8	6
Fee for chemical products	71	68	34	45	44
Tax on insecticides	89	72	86	86	93
NOx fee	536	673	714	794	657
Tax on waste	332	189	289	204	198
Tax on commercial fertilizers	366	178	-	-	-
Sulphur tax	58	39	49	31	29
Tax on natural resources	254	166	153	163	111
Natural gravel tax	254	166	153	163	111
Tax on transportation	16 047	16 219	16 400	15 724	15 602
Vehicle tax	11 308	11 524	11 875	11 238	11 191
Tax on road traffic insurance	3 270	3 019	2 948	2 907	2 828
Congestion tax	687	785	799	800	811
Road charges	782	891	778	779	772
Per cent of GDP in Sweden	2.7%	2.8%	2.7%	2.5%	2.4%

Table 2. Total environmentally motivated direct subsidies 2008-2012 in Sweden. SEK million

	2008	2009	2010	2011	2012
Total	6 693	8 193	7 565	8 206	7 714
Resource-related subsidies:	3 087	3 098	3 650	3 723	3 272
Environmental supports in agriculture	2 129	2 031	2 390	2 518	2 506
Support for liming and protecting the nature	423	401	432	309	216
Support to sanitation of polluted areas	77	94	130	208	132
Environmental research	121	152	159	171	174
Support for local investment programs	-17	-	-	-	-
Return of taxes on fertilizer and pesticides	190	184	154	133	2
Support for the environment in the sea	31	103	164	138	125
Support for sustainable cities	-	-	95	129	10
Support for environmental marking	4	4	4	4	4
Subsidy to preserve the fish	18	21	18	2	0
Support for international environmental cooperation	33	37	36	48	49
Measures for improving the environment in the agricultural sector	20	20	17	12	6
Other (environmental goals, supervision etc)	56	52	51	51	49
Energy-related subsidies:	1 264	2 086	1 465	1 672	1 292
Energy research	385	688	625	772	662
Support for international environmental cooperation	0	0	0	19	21
Support for more efficient use of energy	102	111	108	107	110
Support for energy investments in public facilities	394	690	5	0	-
Support for energy technology/energy efficiency	51	161	395	378	395
Support for installation of energy efficient windows etc.	54	62	0	0	
Support for conversion from direct electricity heating	129	85	124	210	0
Support related to nuclear safety (international)	58	69	67	53	60
Support related to nuclear safety	12	9	8	6	5
Support for solar heat	8	16	16	20	11
Support to wind power	70	195	118	107	29
Emission-reducing subsidies	319	510	436	-27	-57
Different supports in the climate area	42	265	258	73	54
Support for climate investments	277	245	177	-101	-111
Transport-related subsidies	352	424	138	18	20
Transport related research	30	76	97	18	0
Eco car subsidy	322	349	41	-	20
Environmentally related aid	1 672	2 075	1 876	2 820	3 187
Environmental aid	1 672	2 075	1 876	2 820	3 187
Total environmentally motivated as per cent of GDP in Sweden	0.21%	0.26%	0.23%	0.23%	0.21%

Table 3: Environmentally motivated subsidies/transfers by industry and environmentally damaging implicit subsidies in the Netherlands 2005-2009, million Euro

NACE	2005	2006	2007	2008	2009
Agriculture, forestry and fishing	152.2	205.4	221.1	294.6	246.2
Mining and quarrying	0	0	0	0	0.4
Manufacturing	0	6.6	20.5	18.9	16.3
Electricity and gas supply	467.8	532.1	337.2	458.4	526.2
Water supply and waste management	5.8	11.4	20.6	18.7	33.6
Construction	2.1	3	2.7	4.9	6.3
Wholesale and retail trade	7.1	10.7	26.7	14.5	13.3
Transportation and storage	0.7	3.3	91.6	44.8	22
Accommodation and food serving	0	0	0.1	1.7	0.2
Information and communication	0	0.3	1.7	2.2	3.2
Financial institutions	9.2	13.1	15	14.9	16
Renting, buying and selling real estate	0	0.3	0.4	1	6.2
Other specialised business services	4.3	18	36	43.8	55.6
Renting and other business support	0	13.1	30.1	11.8	9.3
Public administration and services	97.8	61.8	11.3	9.5	17.1
Education	1.2	2.3	3.7	8.2	11.7
Health and social work activities	1	1.2	1.8	1.3	2
Culture, sports and recreation	8.3	10.1	9.5	11.9	12.5
Other services activities	6.3	5.7	9.5	9	9.2
Extraterritorial organisations	0	0	0	0	0
Households	0	0.1	13.6	6.5	50.6
Total	763.9	898.6	853.3	976.6	1,058.20
Percentage of total expenditure by central government	0.58%	0.64%	0.57%	0.61%	0.61%
Environmentally damaging implicit subsidies	**2005**	**2006**	**2007**	**2008**	**2009**
Excise duties (reduction in)					
Horticulture	131	149	156	169	86
Water transport	76	76	77	110	802
Air transport	127	129	131	133	922
Tariff differentiation tractors and mobile equipment	130	130	132	120	208
Motor vehicle tax					
Exemption vehicles > 25 years	88	92	94	102	141
Total	421	427	434	465	2,073

Source: CBS 2011

4. Compilation

Accessing data for the compilation of an account on environmentally related transfers means to investigate possible approaches applicable to specific country circumstances.

For environmental taxes, there is already a manual since 2001, and good training materials that has been helpful in the EU work.

In the upcoming guideline from Eurostat, the following priority is used for the different support measures;

A. Environmental support measures, which includes:

1. Environmental subsidies and similar transfers

2. Environmental tax abatements

3. Other environmental support measures.

B. Potentially environmentally damaging subsidies (PEDS)

The data sources to be explored in order to compile statistics on environmental subsidies and similar transfers can be grouped in two;

• The National Accounts and government budgets. This is the main source of data for environmental subsidies and it can take different form.

• Other data sources, such as for example state aid data and micro databases. These can be used as additional sources of data for environmental subsidies.

5. References

ABS (2012) Completing the picture – environmental accounting in practise (catalogue 4628.0.55.001)

http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/2910B851D04B7DA2CA2579F900124AA9/$File/4628055001_may%202012.pdf

This report explores the relationships between economic activity and the environment, and provides information relevant to sustainability, climate change, the Murray-Darling Basin and green growth. It is based on the SEEA central framework.

ABS (2012) Discussion Paper: Environmental taxes in Australia - Experimental new statistics, 2000-2011 (catalogue 4629.0.55.001)

http://www.abs.gov.au/ausstats/abs@.nsf/mf/4629.0.55.001

Describes the methodology used and the results of producing environmental tax statistics in Australia.

The Australian Government the Treasury (2011). STRONG GROWTH, LOW POLLUTION MODELLING A CARBON PRICE

http://archive.treasury.gov.au/carbonpricemodelling/content/report/downloads/Modelling_Report_Consolidated_update.pdf

The Treasury modelling has been prepared to inform policy design and public discussion about carbon pricing. Treasury modelled a range of scenarios which explore different environmental targets and design features in a carbon pricing scheme. The modelling provides important insights into the economic impacts of carbon pricing at global, national, sectoral and household levels.

CSB (2011). Environmental accounts of the Netherlands 2010

http://www.cbs.nl/NR/rdonlyres/A3AF6855-3FF1-4344-8699-7C181A293979/0/2010c174pub.pdf

This publication presents a broad quantitative overview of important economic-environmental developments. Key indicators that can be derived from the environmental accounts provide an insight into the interrelation between the environment and the economy, and into the issues of sustainability and green growth.

European Environment Agency (2011). Environmental tax reform in Europe: implications for income distribution. Technical report No 16/2011

http://www.eea.europa.eu/publications/environmental-tax-reform-in-europe

Although environmental tax reforms (ETR) tend to improve incomes across society, they can have mild regressive impacts in that richer households gain more than poorer ones. Care is needed to design ETRs in ways that ensure that certain groups are able to benefit equally. ETR's overall benefits for the economy, environment and society are potentially significant. ETR should therefore be regarded as a key element in the policymaking toolkit for shifting to a green economy.

European Environment Agency (2011) Environmental tax reform in Europe:

opportunities for eco-innovation. Technical report No 17/2011

http://www.eea.europa.eu/publications/environmental-tax-reform-opportunities/at_download/file

Environmental policy instruments are frequently characterised as obstacles to economic activity but environmental taxes can, in fact, be the opposite — serving as catalysts for the creativity that underpins thriving economies.

EEA (2005). Market based instruments for environmental policy in Europe. EEA Technical report No 8/2005

http://www.eea.europa.eu/publications/technical_report_2005_8

This report presents an overview and assessment of the main recent developments in the use of market-based instruments in Europe.

EEA (2007). Size, structure and distribution of transport subsidies in Europe. EEA Technical report No 3/2007

http://www.eea.europa.eu/publications/technical_report_2007_3

Eurostat (2001) Environmental taxes — A statistical guide

http://epp.eurostat.ec.europa.eu/portal/page/portal/environmental_accounts/documents/2.pdf

This publication presents guidelines for compiling statistics on environmental taxes, including definitions and concepts, data sources and estimation methods.

Eurostat Statistics in Focus 67/2010 Distribution of environmental taxes in Europe by tax payers in 2007

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-10-067/EN/KS-SF-10-067-EN.PDF

Eurostat Statistics in Focus 67/2011 In 2009, EU-27 environmental tax revenue rose to 2.4 % of GDP

http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-SF-11-067

This report describes the distribution of environmental tax revenues at EU level and European Union Member States

National Bureau of Economic Research (2008). Don Fullerton, Andrew Leicester, Stephen Smith. Environmental taxes Working Paper 14197 July 2008 JEL No. H23,Q28
http://www.nber.org/papers/w14197.pdf

This report provides an overview of key economic issues in the use of taxation as an instrument of environmental policy in the UK. It is a good example of how arguments are explained for using taxes and other market based instruments.

OECD (2007). The Political Economy of Environmentally Related Taxes, Paris: OECD.

http://www.oecd.org/dataoecd/26/39/38046899.pdf

OECD (1998). Improving the environment through reducing subsidies, Part I: Summary and conclusions.

http://www.oecd.org/LongAbstract/0,3425,en_2649_34281_2406578_1_1_1_1,00.html

OECD (2006). Studies Subsidy Reform and Sustainable Development: Economic, Environmental and Social Aspects

http://www.oecd.org/document/1/0,3343,en_2649_37425_36566913_1_1_1_37425,00.html

The report provides an overview of approaches for assessing subsidies and associated taxes, and looks at country experiences in reforming subsidies in the agriculture, fisheries, industry, and transport sectors.

Palm V and Larsson M (2007). Economic instruments and the environmental accounts. Ecological Economics, Volume 61, issue 4, pp 648-692

http://www.sciencedirect.com/science/article/pii/S092180090600460 5

This article presents the accounts for taxes and subsidies, linked to the accounts for emissions data by industry. It demonstrates disparities between emissions and environmental taxes, as well as where industries or environmental problems are not regulated. The data show that in Sweden economic instruments are always aimed at particular actors or areas, and are never quite as comprehensive as recommended by economic theory.

SCB and ABS, 2011. Palm, Steinbach and Feng. Analysis of market based instruments for the environment - extensions, applications and techniques.

SCB (2005). Public environmental protection expenditures and subsidies in Sweden
http://www.scb.se/statistik/_publikationer/MI1301_2005A01_BR_MIFT0601.pdf

The report presents the development of a methodology of collecting data for both environmental protection expenditures (EPE) of the public sector and environmentally motivated subsidies in Sweden

SCB (2003). MIR2003:4 Environmental subsidies - a review of subsidies in Sweden between 1993 and 2000
http://www.scb.se/statistik/MI/MI1202/2003M01/MI1202_2003M01_BR_MI71OP0304.pdf

This report focuses on subsidies that may support the environment, here called environmentally motivated subsidies. These are presented for the period from 1993 to 2000 on an aggregated level as well as broken down by industries and sectors.