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THEME 2 – 20/2000

NATIONAL ACCOUNTS

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Environmental taxes in the EU

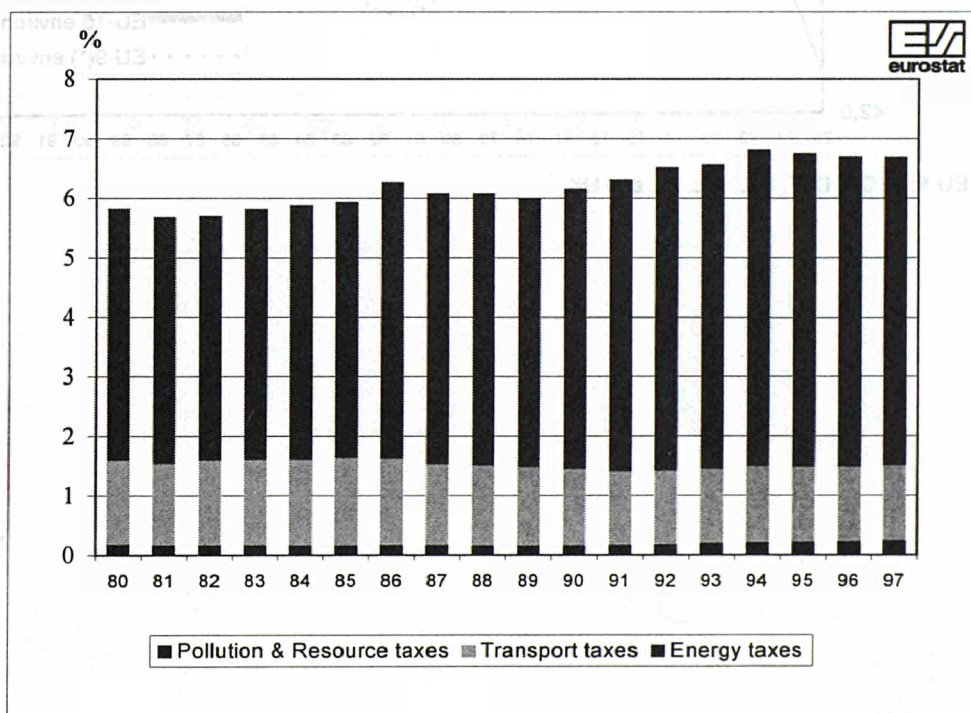
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Environmental tax revenues in the EU amounted to 204 billion ECU in 1997

In 1997, revenues from environmental taxes amounted to 204 billion ECU and represented 6.7% of the total revenues from taxes and social contributions in the EU, the same share as in 1996 (see figure 1 and table 4). Since 1980, the importance of environmental taxes in the EU taxation system has increased by 0.9 percentage points, presenting a rather slow but regular upward trend. Marked declines in this share occurred in 1981 and 1987. The share of environmental taxes regularly increased between 1982 and 1986, with a strong acceleration observed in 1986 (more than 0.3 percentage points). A second five year period of regular and strong increase can be identified between 1990 and 1994, followed by a stabilisation until 1997.

Environmental taxes can be divided into four broad categories: energy taxes, non-energy transport taxes, pollution taxes and resource taxes. As figure 1 shows, the overall increase in revenues was mostly due to increases in energy taxation.

Figure 1: Revenues from environmental taxes in percent of total revenues from taxes and social contributions, EU-15, 1980-1997



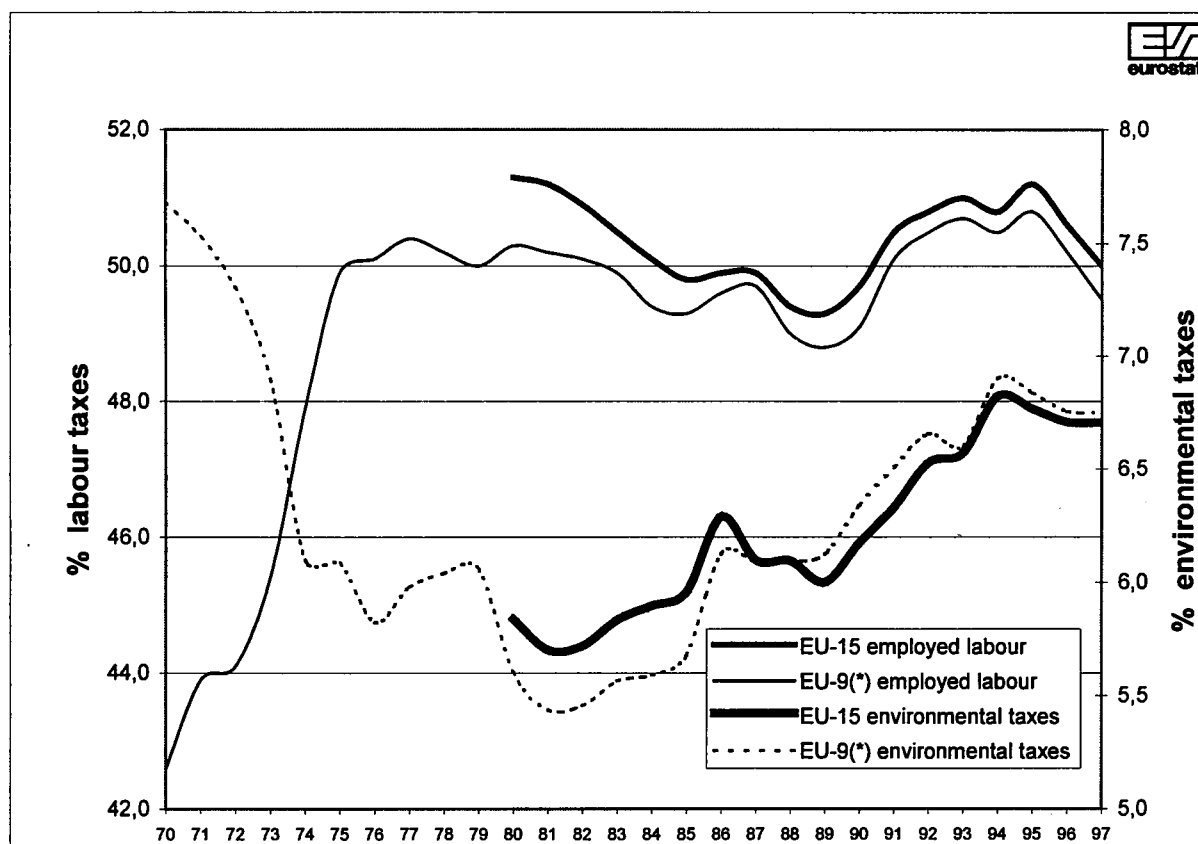
1970-1997 evolution and comparison to taxation of employed labour

In modifying the structure of the taxation system a principle of 'green' fiscal reform is to reduce the tax burden on labour and to increase the tax burden on the use of the environment. Figure 2 shows the trends for environmental taxes and for taxes on employed labour.

For the nine member countries of the EU in the 1970s the share of environmental taxes decreased from 7.7% in 1970 to 5.6% in 1980, losing 2.1 percentage points during this period. At the same time, taxation of employed labour increased its share dramatically from 42.6 % to 50.3 %.

At the beginning of the 1980s, it can be seen in figure 2 that the inclusion of the six other Member States strengthened the role played by both environmental taxes and by taxes on labour but the differences gradually declined.

Figure 2: Revenue from environmental taxes (right scale) and from taxes on employed labour (left scale) in percent of total revenue from taxes and social contributions, 1970-1997



(*) EU-9: B, DK, D, F, IRL, I, L, NL and UK.

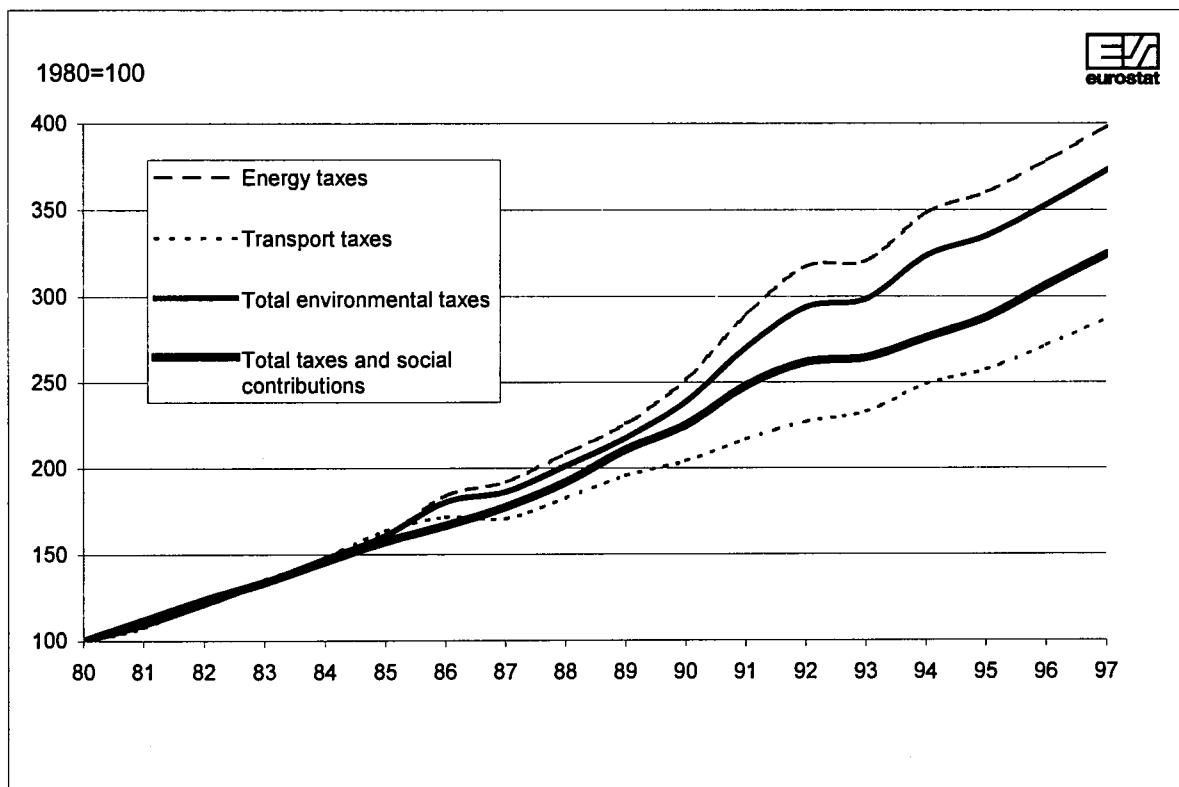
EU environmental tax revenues have multiplied by 3.7 between 1980 and 1997

Analysing the tendency for the European Union, in absolute amounts and over the 1980-1997 period (with base year=1980), leads to a somewhat different picture about the evolution by main aggregates. Figure 3 shows that, in comparison with the base year, revenues from environmental taxes have multiplied by 3.7 by 1997, slightly more than the total taxes and social contributions (which increased by a factor of 3.3). The weight of energy taxes within the whole taxation system has gained one percentage point compared to the base year (5.2% in 1997 against 4.2% in 1980, see also table 4). Similarly, the share of environmental taxes in the revenues from total taxes and social contributions has gained 0.9 percentage points: 6.7% in 1997 against 5.8% in 1980.

Among the main environmental tax aggregates, transport taxes increased least.

The share of transport taxes in the total taxes and social contributions fluctuated between 1.23% in 1992 (the lowest point) and 1.48% in 1985 (the peak). The long-term evolution seems to be a rather slow but regular development of the nominal amount generated by these taxes. Whilst receipts from energy taxes had doubled by 1988 and tripled by 1992, revenue from transport taxes doubled only by 1991 and have not tripled yet. The nominal increase in revenues from transport taxes has been interrupted once, in 1987, when governments collected 129 million ECU less than the 1986 amount. This might be due to the fact that some Member States have replaced specific taxes on sales and imports of vehicles by general VAT.

Figure 3: EU-15 environmental tax revenue, 1980-1997, indices with 1980 = 100



Energy taxes accounted for more than 3/4 of the revenue from environmental taxes in the EU in 1997

In 1997, the total amount of environmental taxes collected within the EU was 204 billion ECU, an increase of 5.7% compared to the 1996 value. Energy taxes are by far the most significant, accounting for more than three-quarters (77.3%) of environmental tax receipts and representing 5.2% of total revenues from taxes and social contributions (see tables 1 and 4). Energy taxes amounted to 157.6 billion ECU, 7.9 billion more than in 1996.

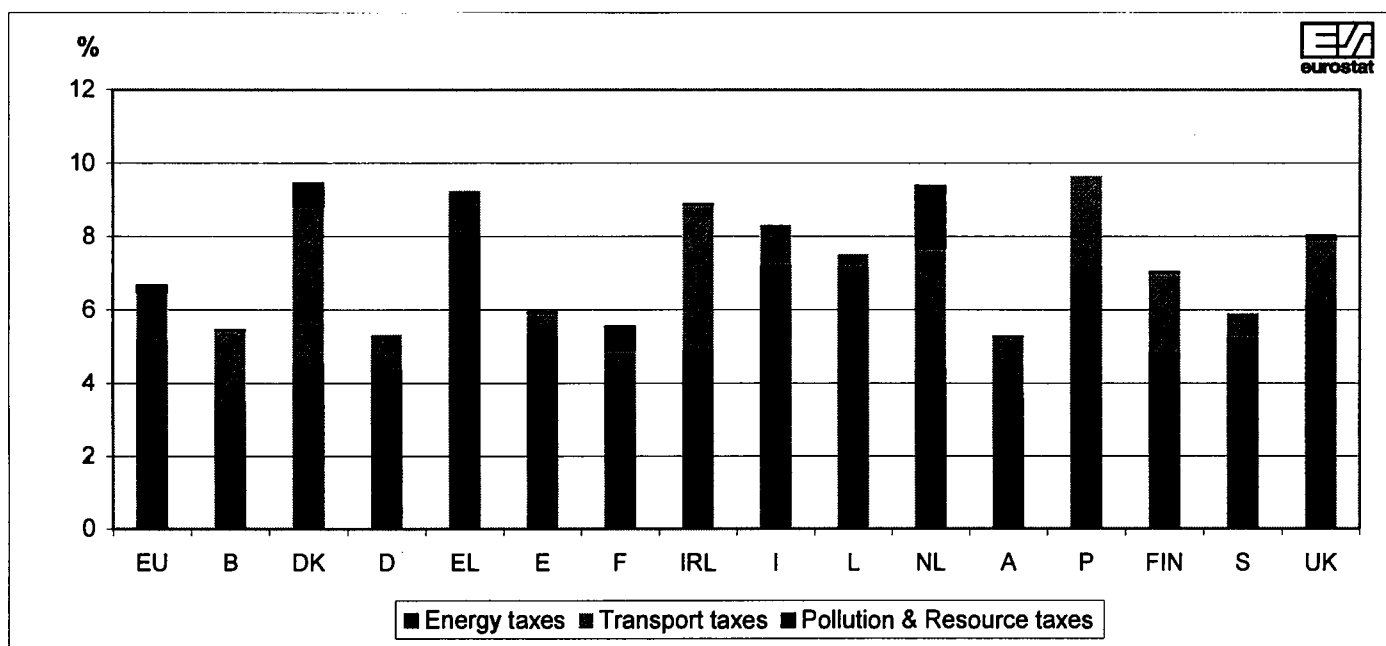
Table 1: European Union environmental tax revenue, 1997

	Million ECU	In % of GDP	In % of total taxes and social contributions	Structure of environmental taxes in %
Energy taxes	157 615	2.21	5.18	77.31
Transport taxes	38 438	0.54	1.26	18.85
Pollution taxes	7 479	0.10	0.25	3.67
Resource taxes	351	0.00	0.01	0.17
Total environmental taxes	203 883	2.85	6.71	100.00
Total taxes and social contributions	3 040 155	42.56	100.00	
GDP	7 143 931	100.00		

The total revenue generated through transport taxes was 38.4 billion in 1997, representing 18.9% of total environmental tax revenues and only 1.26% of the total EU revenues from taxes and social contributions.

The role played by other environmental taxes is rather marginal. Pollution taxes generated a revenue of 7.5 billion ECU whilst resource taxes stayed at low level with 351 million ECU recorded. All together, pollution and resource taxes accounted for 3.8% of total environmental tax revenue and only for 0.26% of the total revenue from taxes and social contributions.

Figure 4: Structure of revenues from environmental taxes in 1997 by Member State, in percent of total revenues from taxes and social contributions



The importance of environmental taxes varied significantly across Member states (see figure 4 and table 6). Nine EU countries recorded a contribution of environmental taxes to the total revenue from taxes and social contributions above the EU average. The lowest contributions of environmental taxes were observed in Austria (5.30%), Germany (5.33%), Belgium (5.49%), France (5.57%), Sweden (5.92%) and Spain (5.97%).

By contrast, the highest ratios are observed in Portugal, Denmark, the Netherlands and Greece, all of them having a ratio above 9%. Ireland, Italy and the United Kingdom form another group of countries with a relatively high contribution of environmental taxes to total revenue from taxes and social contribution, more than 8%.

The Netherlands and Denmark are the only EU countries with less than 50% of environmental taxes derived from energy taxes

In almost all the EU countries, a strong concentration of environmental taxes in the field of energy can be observed (see figure 4). The Netherlands and Denmark were the only EU countries where energy taxes generated less than 50% of total revenues from environmental taxes. Denmark was the only EU country where revenues collected through transport taxes were close to those collected via energy taxes, representing more than 4% of the total revenues from taxes and social contributions. Just behind Denmark, significant contributions of transport taxes (by more than 3%) were also observed in Ireland and the Netherlands.

The role of pollution taxes is very marginal in most Member States. The Netherlands, France and Denmark were the only EU countries presenting a non-negligible contribution of pollution taxes to their total tax receipts: 1.76%, 0.7% and 0.69% respectively. This is due to the integration, partly or in whole, of the financing of the treatment of waste and wastewater into the taxation systems. In most EU countries the financing of these activities is either organised via fees or the management of waste and waste water is largely or completely privatised.

Revenues from environmental taxes remained stable in Germany and Sweden, and grew strongly in Greece and Finland.

As can be seen in table 2, the evolution in environmental tax revenues between 1996 and 1997 shows strong disparities among Member States. Changes in environmental tax revenue reported in table 2 are in the Member States' national currencies, i.e. they do not include the effect linked to the variation of the exchange rates vis-à-vis the ECU.

Whilst environmental tax revenues were more or less stable in Germany (+0.1%), a huge increase was observed in Greece (+12.9%) and, to a lesser extent, Finland (+10.7%). Significant increases of environmental tax revenues have also been observed in Spain (9.1%), Ireland (8.5%) and Austria (7.3%).

Sweden was the only EU country having recorded a slight decline of -0.9%. In the rest of the Union, the evolution of environmental tax receipts fluctuated between 2.4% (France) and 6.7% (United Kingdom).

Because of its large share, the description based on the evolution of energy taxes leads to a similar snapshot, except for the Netherlands and Austria. For these two countries, energy taxes increased by more than 10%, putting them in the same class as Greece (12.9%). In Germany, the stability observed on the total environmental taxes turned into a slight decline of the revenues generated by energy taxes (-0.8%), an effect largely due to the abolition of a special energy levy (Kohlepfennig). This decline was compensated by a 4.7% increase in the revenues from transport taxes. The impact of the global stability observed in Germany is important as this country alone accounts for one fourth of total environmental tax revenue collected in the EU in 1997.

Table 2: Changes in environmental tax revenues from 1996 to 1997 per Member State, percent change in national currencies

Member State	Environmental taxes					Taxes and social contributions
	Energy taxes	Transport taxes	Pollution taxes	Resource taxes	Total	
B	4.1	3.6	5.7	-	3.9	5.4
DK	4.6	6.7	20.9	25.4	6.6	4.7
D	-0.8	4.7	-	-	0.1	1.7
EL ^{*)}	12.9	12.9	-	-	12.9	17.7
E ^{*)}	9.2	9.2	8.1	-	9.1	7.6
F	1.7	-1.3	10.5	1.1	2.4	4.2
IRL	6.8	11.2	-	-12.1	8.5	13.4
I ^{*)}	6.2	7.1	-	-1.5	6.3	7.2
L	4.8	-9.2	-	-	4.0	9.4
NL	10.4	0.6	3.4	-	5.5	7.9
A	10.3	-0.2	49.7	-	7.3	5.2
P ^{*)}	4.1	4.2	-	-	4.1	7.7
FIN	9.5	11.8	95.5	-	10.7	5.9
S ^{*)}	-0.1	-6.1	-11.1	-	-0.9	3.3
UK	4.8	6.1	- ²⁾	-	6.7	7.8

*) Eurostat estimates.

1) Reductions mainly due to abolition of vehicles sales tax and revision of electricity taxes.

2) The landfill levy generated a revenue of 546 million ECU in 1997.

➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

The basic framework for this presentation was developed jointly by Eurostat, the European Commission Directorate General Environment and Directorate General Taxation and Customs Union, OECD and IEA. According to this framework, an environmental tax is defined as a tax on an environmentally harmful tax base. Included are taxes on e.g. transport fuels, motor vehicle taxes, taxes on discharges to water or air, landfill taxes, taxes on pesticides, etc. Environmental taxes should not be interpreted as an indicator for environmental friendliness.

For international comparison reasons and with regard to data availability, the framework of this work is strictly limited to taxes as defined in the national accounts. This means that fees paid to government units in exchange for services received (e.g., waste and waste water collection services) are excluded.

EU environmental taxes are described and analysed by broad categories of taxes (energy, transport, pollution and resources). Carbon dioxide taxes are included under energy as they are often an integral part of general energy taxes. Excluded from the analysis is general Value Added Tax (VAT) on environmentally harmful tax bases as well as royalty payments and other special taxes related to oil and gas extraction.

The data have been derived from the Eurostat NewCronos database. Special studies on environmental taxes, undertaken by virtually all Member States, have been used to complement the time series of tax revenue data.

The list of individual taxes included under environmental taxes was established jointly with the Directorate General Taxation and Customs Union and Member State representatives at a Working Party meeting on 6 October 1999.

More information about the taxation systems in the EU may be found in the Eurostat publication "Structures of the taxation systems in the European Union – 1970-1997 – 2000 edition".

Table 3: European Union environmental tax revenue, 1980-1997, in million ECU

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Energy taxes	39530	43405	47578	52877	58333	63370	72741	75883	82398	89252	99469	114470	125557	126789	137752	142447	149706	157615
Transport taxes	13381	14409	16548	18109	19843	21890	22943	22814	24441	26150	27316	29002	30355	31142	33304	34431	36355	38438
Pollution taxes	1633	1759	1940	2076	2242	2417	2643	2832	2959	3172	3446	3919	4460	5021	5511	5929	6560	7479
Resource taxes	81	96	115	118	166	195	181	184	187	198	217	227	182	160	198	265	315	351
Total environmental taxes	54621	59671	66184	73180	80584	87872	98507	101712	109985	118772	130448	147618	160556	163112	176765	183073	192936	203883
Total taxes and social contributions	935574	1046496	1157058	1254391	1366633	1474877	1566227	1667673	1804553	1979269	2112828	2332029	2459574	2482215	2590470	2705141	2875553	3040155
GDP	2440355	2690575	2933683	3133103	3399315	3653292	3878610	4086995	4423563	4828755	5199780	5659159	5900520	5915677	6210731	6451378	6781095	7143931

Table 4: European Union environmental taxes, 1980-1997, in percent of total revenue from taxes and social contributions

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Energy taxes	4.23	4.15	4.11	4.22	4.27	4.30	4.64	4.55	4.57	4.51	4.71	4.91	5.10	5.11	5.32	5.27	5.21	5.18
Transport taxes	1.43	1.38	1.43	1.44	1.45	1.48	1.46	1.37	1.35	1.32	1.29	1.24	1.23	1.25	1.29	1.27	1.26	1.26
Pollution taxes	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.16	0.16	0.17	0.18	0.20	0.21	0.22	0.23	0.25
Resource taxes	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total environmental taxes	5.84	5.70	5.72	5.83	5.90	5.96	6.29	6.10	6.09	6.00	6.17	6.33	6.53	6.57	6.82	6.77	6.71	6.71

Table 5: European Union environmental tax revenue, in percent of GDP

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Energy taxes	1.62	1.61	1.62	1.69	1.72	1.73	1.88	1.86	1.86	1.85	1.91	2.02	2.13	2.14	2.22	2.21	2.21	2.21
Transport taxes	0.55	0.54	0.56	0.58	0.58	0.60	0.59	0.56	0.55	0.54	0.53	0.51	0.51	0.53	0.54	0.53	0.54	0.54
Pollution taxes	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10
Resource taxes	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total environmental taxes	2.24	2.22	2.26	2.34	2.37	2.41	2.54	2.49	2.49	2.46	2.51	2.61	2.72	2.76	2.85	2.84	2.85	2.85

Table 6: Revenues from environmental taxes by Member State in 1997, in percent of total revenues from taxes and social contributions

	EU	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Energy taxes	5.18	3.52	4.53	4.36	8.11	5.28	4.33	4.90	7.22	7.17	4.39	3.74	7.17	4.84	5.23	6.30
Transport taxes	1.26	1.91	4.27	0.97	1.15	0.62	0.55	3.94	1.08	0.35	3.26	1.52	2.50	2.16	0.68	1.63
Pollution & Resource taxes	0.26	0.06	0.69	0.00	0.00	0.06	0.70	0.06	0.00	0.00	1.76	0.04	0.00	0.06	0.01	0.13
Environmental taxes	6.71	5.49	9.49	5.33	9.25	5.97	5.57	8.91	8.30	7.52	9.42	5.30	9.67	7.06	5.92	8.05

Further information:

➤ Reference publications

Title Structures of the taxation systems in the European Union
 Catalogue No KS-28-00-147-EN-C Price EUR 35.50

➤ Databases

NewCronos Theme 2, Domain GOV

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