

## Environmental taxes account for 6.2% of all revenues from taxes and social contributions in the EU-27

In 2010 environmental tax revenues in the EU-27 were 292 billion EUR

A government policy instrument to reduce environmental damage is to impose taxes on environmentally harmful activities and products.

The EU-27 raised around 292 billion EUR from environmental taxes corresponding to 2.4% of GDP and 6.2% of taxes and social contributions (TSC) in 2010.

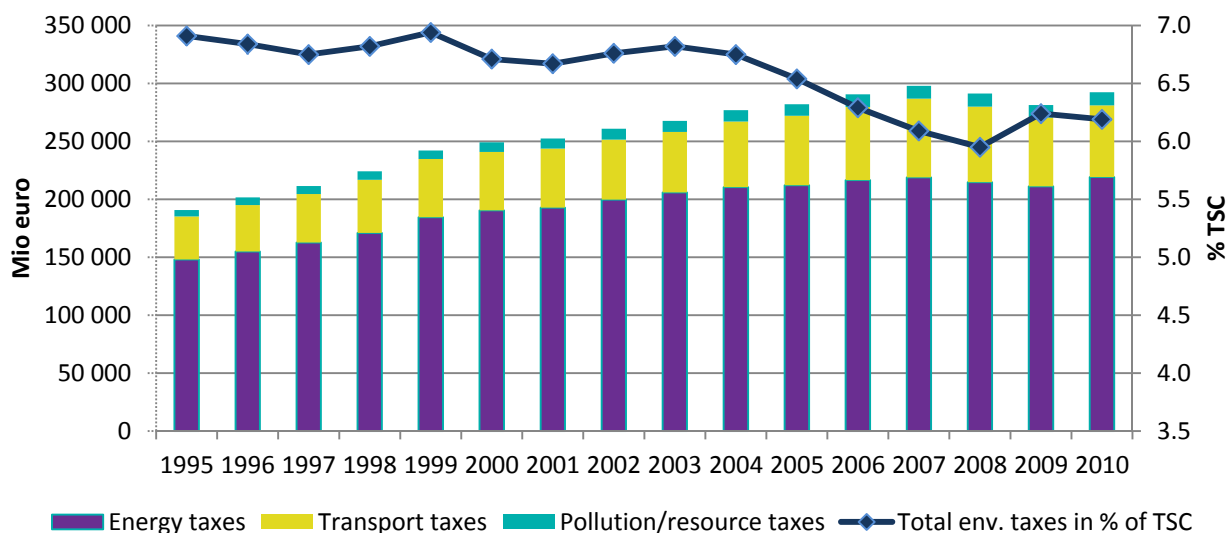
As a percentage of TSC, the trend of environmental taxes has been downward

throughout the period 1995 to 2008 with environmental tax revenue dropping by 1 percentage point of TSC to 5.95% in 2008.

A brief rise to 6.24% occurred in 2009 due to the fall in government revenue which resulted from the financial crisis. In 2010 the percentage again decreased to 6.19% of TSC.

The continued decline of the importance of environmental taxes has many causes as explained on page 6.

Figure 1: Environmental tax revenue by type, EU-27, 1995 – 2010 (million EUR and % TSC)



Source: Eurostat (online data code: [env\\_ac\\_tax](#))

## Energy taxes represent three quarters of EU-27 environmental tax revenue in 2010

Environmental taxes can be of four types: energy, transport, pollution and resource taxes. Energy taxes include taxes on energy products (e.g. coal, oil products, natural gas and electricity) used for both stationary purposes and transport purposes.

In 2010 almost 75% of all environmental taxes were energy taxes. By convention, CO<sub>2</sub> taxes are also included in this tax category since they are usually levied on energy products. Including CO<sub>2</sub> taxes with pollution taxes rather than energy taxes would distort international comparisons.

Transport taxes mainly include taxes related to the ownership and use of motor vehicles. In 2010, 21% of EU-27 total environmental tax revenue came from transport taxes.

Pollution and resource taxes cover different types of taxes: taxes on the extraction of raw

materials; on measured or estimated emissions to air (e.g. NO<sub>x</sub> and SO<sub>2</sub>) and water; on noise and on the management of waste. Only 4% of EU-27 total environmental tax revenue was raised by pollution and resource taxes in 2010.

Compared with 1995 environmental tax revenue has increased by more than 100 billion EUR, which is an increase of 53%, but in percent of GDP (and TSC) they have declined (see Table 1). In comparison to GDP, environmental tax revenue decreased since 1995 by 0.35 percentage points. Since 2003, environmental tax revenue as a share of GDP has continuously fallen, reaching a historical minimum of 2.34 in 2008.

The distribution of the tax types has remained roughly the same.

**Table 1: Environmental tax revenue in EU-27, 1995-2010**

	1995				2010			
	Million EUR	% total	% TSC	% GDP	Million EUR	% total	% TSC	% GDP
Total environmental taxes	190 774	100%	6.91	2.72	292 434	100%	6.19	2.37
Energy taxes	147 988	78%	5.36	2.11	219 114	75%	4.67	1.79
Transport taxes	37 217	19%	1.35	0.53	61 964	21%	1.29	0.49
Taxes on pollution/resources	5 569	3%	0.2	0.08	11 356	4%	0.22	0.1

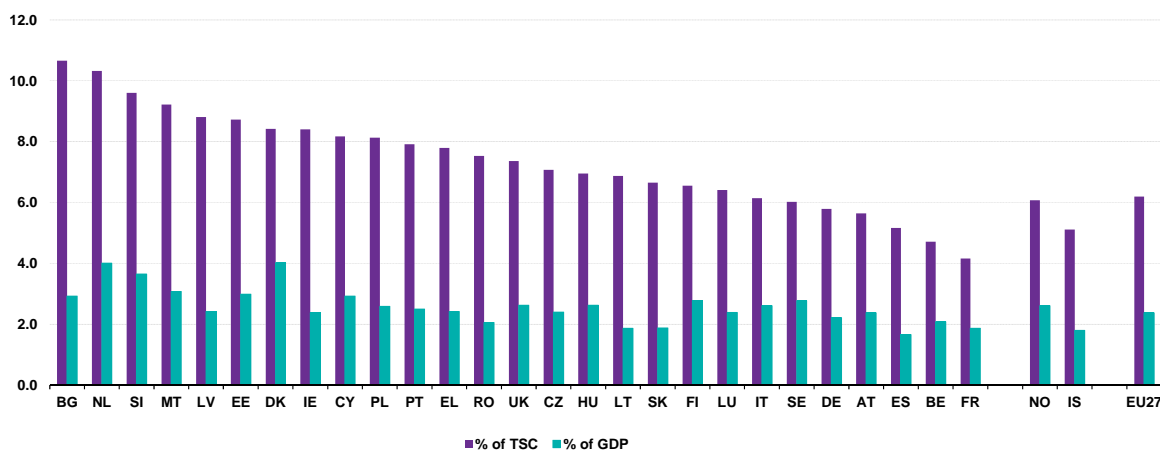
Source: Eurostat (online data code: [env\\_ac\\_tax](#))

## Environmental tax revenues in European countries in 2010

A vast majority of European countries showed levels of environmental tax revenue in a band ranging from 6 to 10% of TSC in 2010.

Only in Bulgaria and the Netherlands did more than 10% of TSC come from environmental taxes.

**Figure 2: Environmental taxes in % of TSC and GDP, 2010**



Source: Eurostat (online data code: [env\\_ac\\_tax](#))

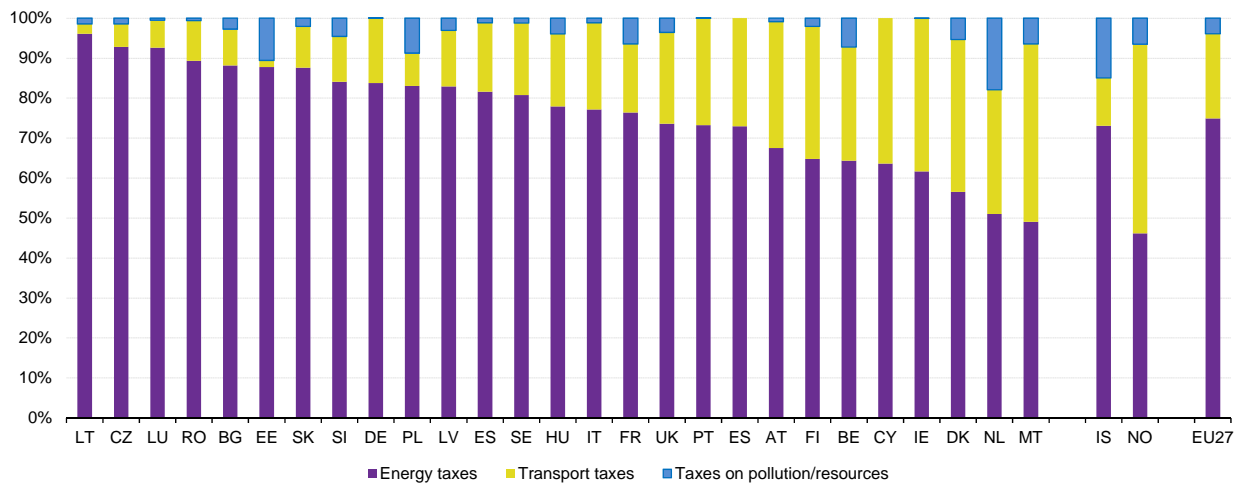
In Germany, Austria, Spain, Iceland, Belgium and France less than 6% of TSC was raised from environmental taxes. The EU-27 average was 6.2%.

When comparing the environmental tax revenue to GDP most of the countries are in a range between 2 and 3% of GDP.

Denmark, the Netherlands and Slovenia have far higher ratios, with environmental tax revenue totalling between 3.6 and 4.0% of GDP.

Slovakia, Iceland, France, Lithuania and Spain are the only five countries where environmental taxes are less than 2% of GDP.

**Figure 3: Environmental tax revenue by type, EU Member States, Norway and Iceland, 2010 (% of total environmental tax revenue)**



Source: Eurostat (online data code: [env\\_ac\\_tax](#))

When comparing the distribution of the different tax types across countries (see Figure 3), large differences can be seen.

Many of the eastern European countries and Luxembourg raise 85% or more of their environmental tax revenue from energy taxes.

This is due to the higher energy intensity of eastern European economies when compared to the EU-15 which renders their tax bases larger than those in the EU-15. In Luxembourg the high share for energy taxes is due to the high amount of road fuels sold in the country to non-residents

which increases the tax base for energy taxes compared to the other European countries.

At the other end of the scale, in Malta and Norway transportation taxes were almost as significant as energy taxes.

The Netherlands, Iceland and Estonia were the only countries in which pollution and resource taxes accounted for more than 10% of total environmental tax revenue.

Detailed figures by country are available in Table 3 in Annex.

## Revisions compared to last year's collection

Compared to last year's data collection (see [SiF 67/2011](#)), revisions of environmental tax data were made. The main causes are revisions in national accounts, revisions of basic statistics or revisions of methods. In comparison with last year's data collection, the most significant revisions for the 2009 figures were observed for Denmark (a decrease of 21% in total environmental taxes), France (16%), and Norway (6%).

These revisions were mainly due to improvements of the methodology to achieve greater comparability between countries (exclusion of taxes that did not fall under the scope of environmental taxes). For EU-27 these revisions resulted in a decrease of 2% in total environmental taxes for 2009 (see Table 2).

**Table 2: Environmental tax revenue in EU-27 in % of GDP and TSC 1995 – 2010 and comparison of revised data with last year's time series**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Environmental taxes in % of GDP - revised data</b>	2.72	2.73	2.71	2.74	2.82	2.71	2.63	2.62	2.65	2.61	2.55	2.48	2.40	2.34	2.39	2.37
Environmental taxes in % of GDP - last year's data	2.76	2.77	2.75	2.78	2.84	2.74	2.66	2.65	2.68	2.64	2.59	2.53	2.45	2.38	2.43	
<b>Environmental taxes in % of TSC - revised data</b>	6.91	6.84	6.75	6.82	6.94	6.71	6.67	6.76	6.82	6.75	6.54	6.29	6.09	5.95	6.24	6.19
Environmental taxes in % of TSC - last year's data	7.00	6.91	6.81	6.89	6.98	6.76	6.71	6.80	6.87	6.82	6.62	6.39	6.18	6.04	6.32	

Source: Eurostat (online data code: [env\\_ac\\_tax](#))

## Comparing the evolution of environmental tax revenue in European countries

While environmental taxes as a share of GDP have converged to a level between 2 and 3% of GDP in most European countries in the period from 1995 to 2010, the share of environmental tax revenue in % of TSC has not followed the same trend.

Figure 4 shows the development of environmental taxes in relation to TSC throughout the EU-27. Most eastern European countries record an increase in environmental tax revenue (in % of TSC) since 1995.

Even though there have been fluctuations in Lithuania, Germany and Hungary, the level in 2010 was about the same as it was in 1995.

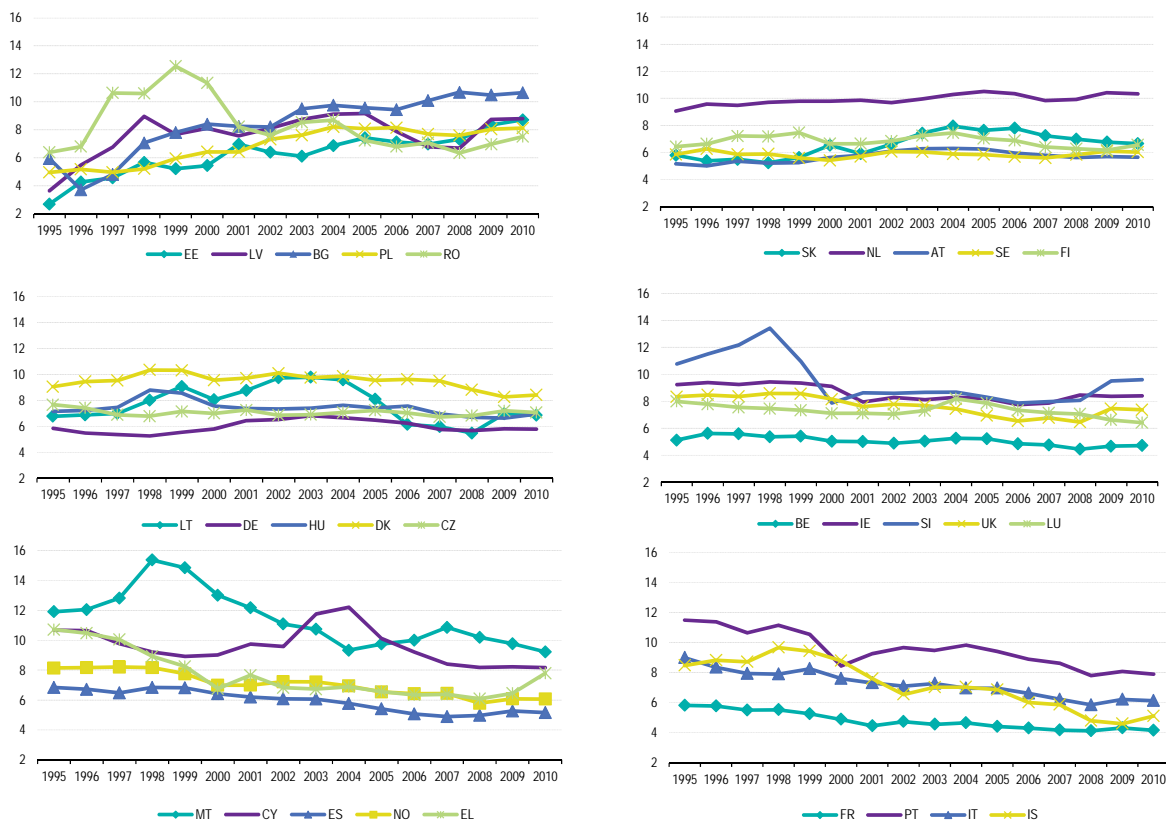
On the other hand, Portugal, Italy and Iceland observed a decrease of more than 30% compared to 1995.

The Netherlands is the only real exception to this trend with an increase of 14%.

In 1998, Malta and Slovenia showed notable peaks in the share of environmental taxes in relation to TSC, as did Romania in 1999.

This was due mainly to changes in revenues from direct taxes and social security contributions paid by employers. There was also a major change in the tax system in Slovenia in 1999 when VAT replaced the previous sales tax.

Figure 4: Environmental tax revenue in EU-27 Member States and Norway, 1995 - 2010 (% of TSC)



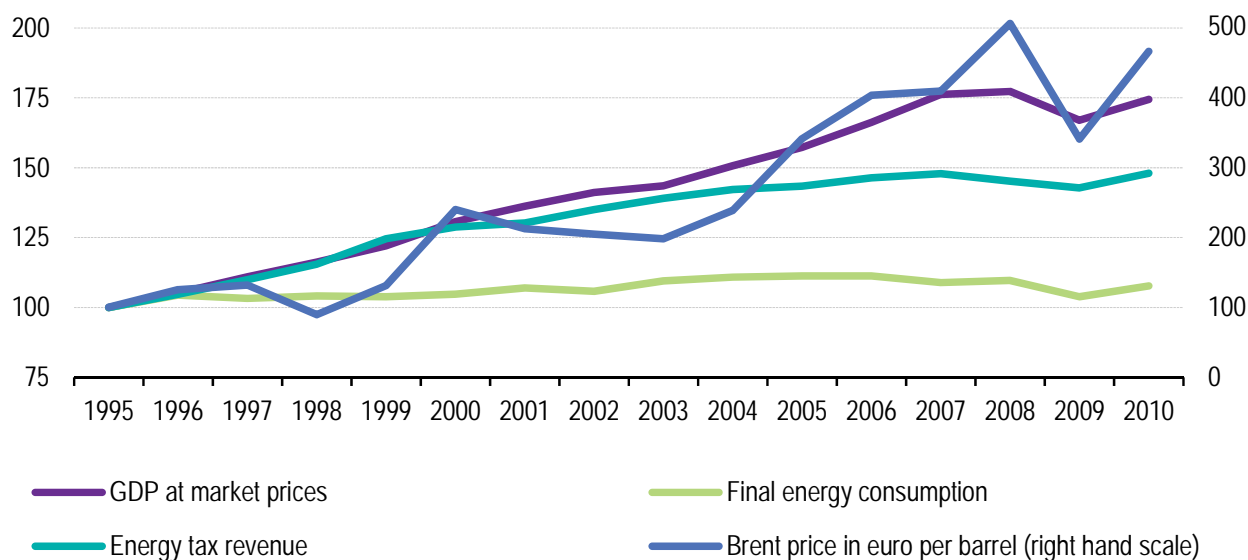
Source: Eurostat (online data code: [env\\_ac\\_tax](#))

## Main drivers for the evolution of environmental tax revenue

EU-27 energy tax revenues in % of GDP dropped by 15% in the period 1995-2010. Most of this decrease occurred in the period 2003-2008 when GDP grew at a faster pace than energy tax revenue.

There are several possible reasons for the decoupling in the growth rates of energy tax revenue and GDP in the EU-27.

**Figure 5: Energy taxes, GDP and final energy consumption, EU-27, 1995-2010 (index 1995=100)**



Source: Eurostat (online data codes: [env\\_ac\\_tax](#); [nama\\_gdp\\_c](#); [nrg\\_100a](#) and [INSEE](#))

Energy consumption had been growing more slowly than GDP, which could have been the result of higher energy prices (oil more than doubled its price between 2003 and 2010) and energy efficiency policies.

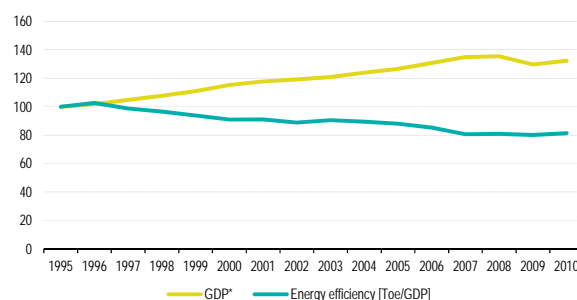
The switch towards renewable energy may have eroded the tax base since renewable energies (for example biofuels) are often taxed less or completely exonerated from taxation.

It would have been possible to balance the erosion of the tax base by an increase in energy tax rates. However, governments may have been reluctant to increase tax rates or introduce new taxes on energy products because of the already high price for households and businesses.

At the same time governments have started to put in place other mechanisms than taxes that affected energy demand (e.g. emission permits, etc.) – see Figure 5.

Energy intensity is the ratio between the gross inland consumption of energy and the gross domestic product (GDP) for a given calendar year.

**Figure 6: GDP and energy intensity, EU-27, 1995-2010 (index 1995=100)**



\*Gross Domestic Product in chain-linked volumes, reference year 2005;

Source: Eurostat (online data codes: [nama\\_gdp\\_k](#); [nrg\\_ind\\_332a](#))

The gross inland consumption of energy is calculated as the sum of the gross inland consumption of five energy types: coal, electricity, oil, natural gas and renewable energy sources. The GDP figures are chain linked volumes with reference year 2005. The energy intensity ratio is determined by dividing the gross inland consumption by the GDP (see Figure 6).

Transport taxes are levied mainly on vehicles at the time they are sold (e.g. sales taxes) and then for every year they remain in circulation (e.g. circulation taxes).

Thus, the revenue from transport taxes tends to follow the dynamics of the vehicle stock. The stock of passenger cars, goods vehicles and buses and coaches has been growing in the period 1995-2009.

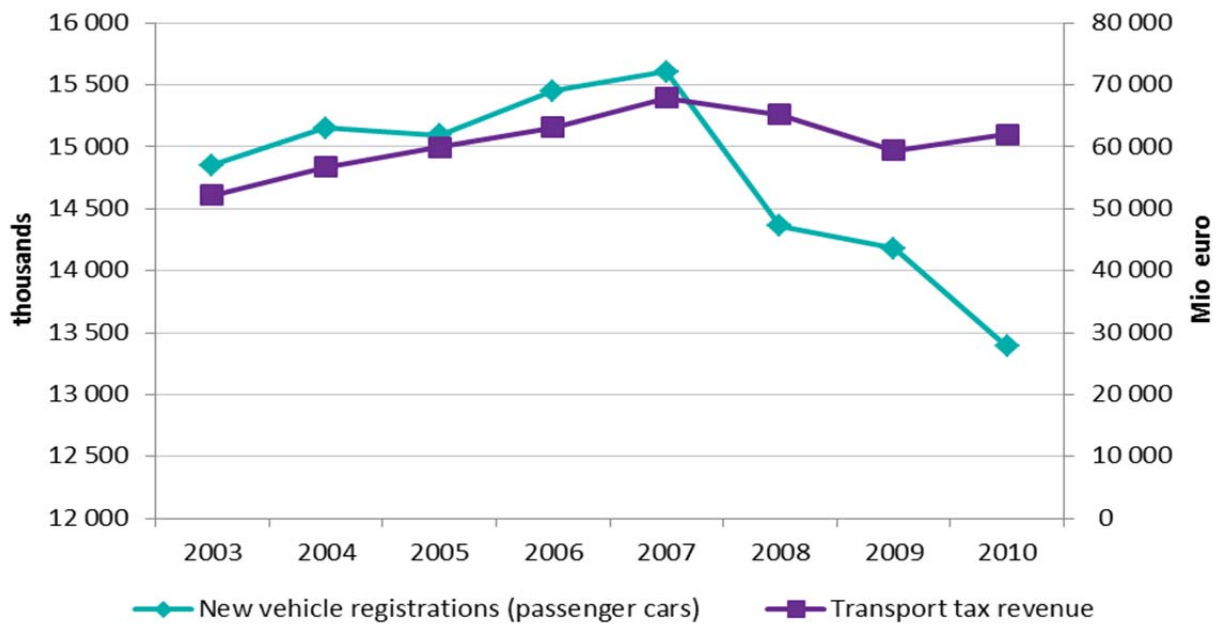
However, in 2007-2010 passenger car sales in the EU-27 slowed down due to the economic

crisis (see Figure 7). In countries with high car sales taxes, an economic downturn can have a big impact on car sales and therefore on revenues from such taxes.

Furthermore governments may have reduced sales and circulation taxes on vehicles in order to counterbalance the effects of the economic crisis.

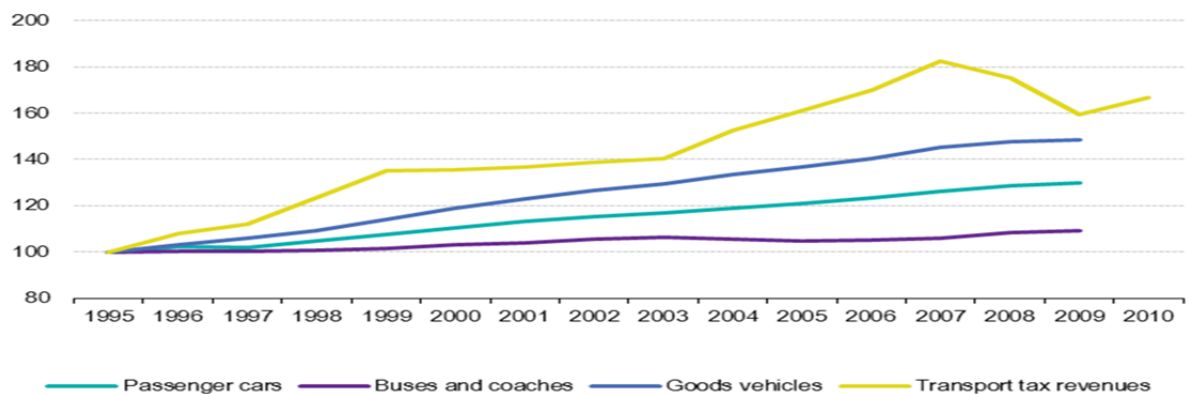
These two factors could partly explain the reduction in transport tax revenue after 2007 (see Figure 8).

**Figure 7: Transport tax revenue and new vehicle registrations (passenger cars), EU-27, 2003-2010**



Source: Eurostat (online data code: [env\\_ac\\_tax](#); Association des Constructeurs Européens d'Automobiles (ACEA))

**Figure 8: Transport tax revenues and vehicle stock (passenger cars, goods vehicles, buses and coaches), EU-27, 1995-2010, index 1995 = 100**



Source: Eurostat (online data codes: [env\\_ac\\_tax](#); Commission services - Panorama of transport)

## Who pays energy taxes

Eurostat collects data on environmental tax revenue (by tax category - energy, transport, pollution and resource taxes) broken down by economic activities (tax payers). These detailed data become available later than the overall revenue data. Thus the last reference year for which data is available is 2009.

In 2009 most of the revenue governments raised from environmental taxes came from households and businesses (in agriculture, fishing, mining and manufacturing industry, electricity supply, construction and services) and around 3% from non-residents (see Figure 9).

Whenever these taxes cannot be attributed to one of the tax payer categories mentioned above, they fall into the category 'not-allocated'.

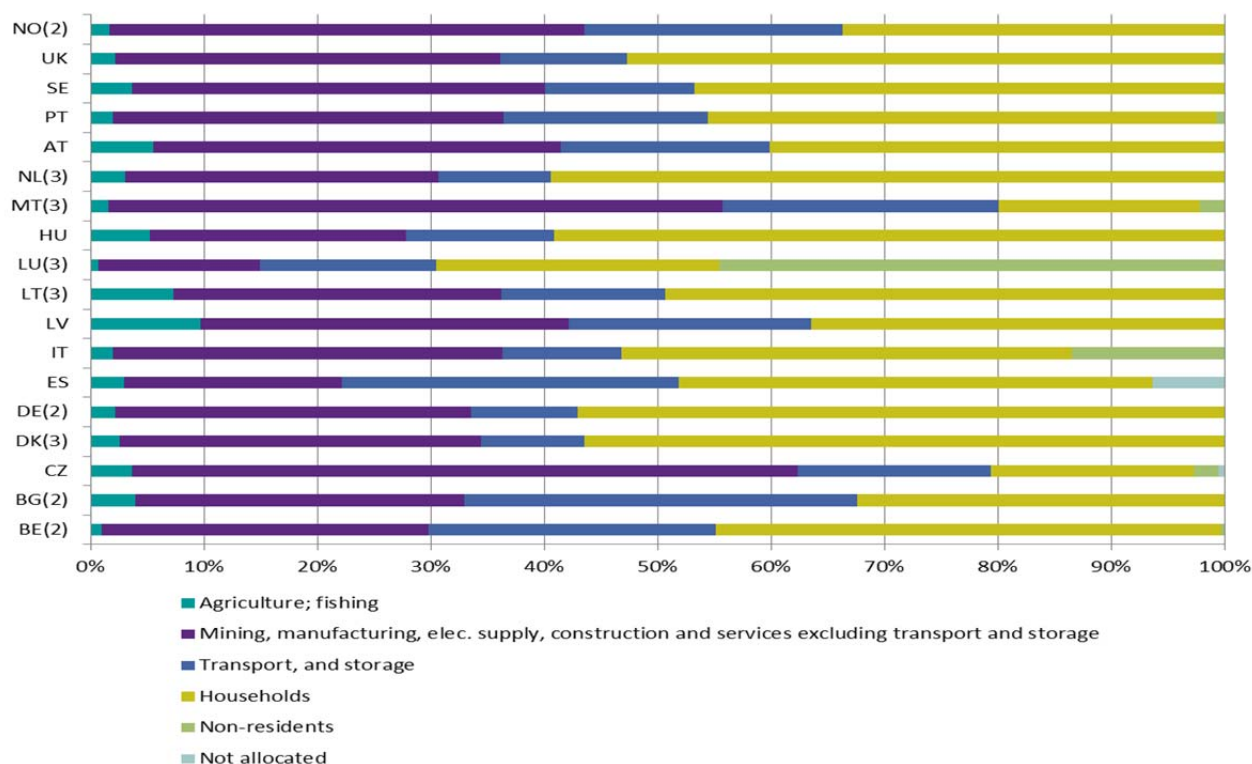
On average, households paid just under half of the energy tax revenues collected by governments. Exceptions to this are the Czech Republic and Malta where households stand for around 18% of energy taxes.

Latvia has a relatively high share coming from agriculture (10%) and Malta from electricity and water supply (15%) which is well above the average for these two industries.

The contribution of agriculture and fishing to total energy tax revenues was lower than 6% in all of the EU Member States (and Norway), aside from Latvia and Lithuania (2008).

The share of energy taxes in the total revenue from environmental taxes differs widely across the countries – for details see Table 3 in the Annex.

**Figure 9: Energy taxes by paying economic activities in European countries, 2009 (1), (%)**



(1) No information available for those Member States that are not shown

(2) 2007

(3) 2008

Source: Eurostat (online data codes: [env\\_ac\\_taxind](#) and [env\\_ac\\_taxind2](#))



## Who pays transport taxes?

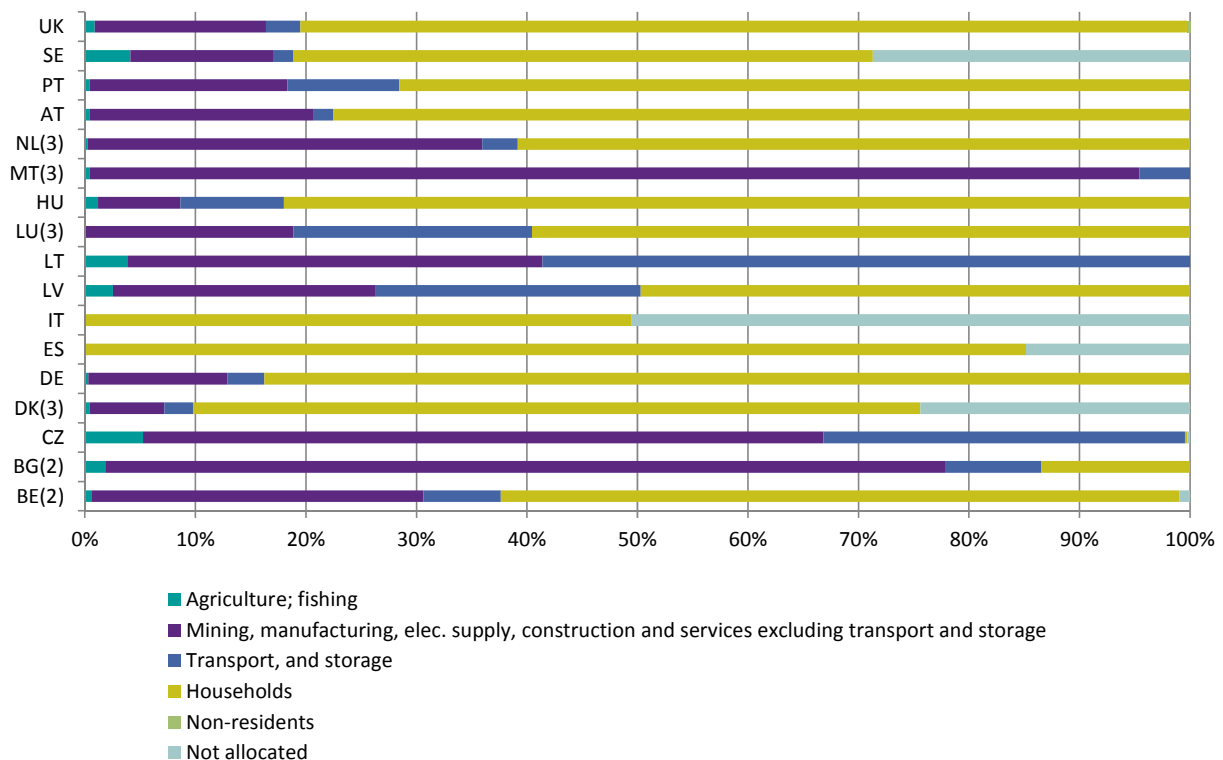
Just like for energy taxes, the main contributors to transport tax revenue in 2009 were households, paying an average of around 68% of all transport taxes, followed by some 16% by businesses (agriculture, fishing, mining, manufacturing, electricity supply, construction and services).

The share paid by non-residents was negligible. The share paid by households was the highest in Spain and Hungary where it was 85% and 82%. In most European countries, the transport industry paid less than 10% of the transport taxes. The most

important exception to this is Lithuania (see Figure 10), where the transport industry alone paid almost 60% of transport taxes. The share of transport taxes in the total revenue from environmental taxes is however very low in Lithuania - for details see Table 3 in the Annex.

In comparison with 2009, there is a rise of the share of transport taxes in total environmental taxes in Latvia (48%), Lithuania (16%), Estonia and Finland (11%).

**Figure 10: Transport taxes by paying economic activities in European countries (1), 2009, (%)**



(1) No information available for those Member States that are not shown.

(2) 2007

(3) 2008

Source: Eurostat (online data codes: [env\\_ac\\_taxind](#) and [env\\_ac\\_taxind2](#))

## Annex

Table 3: Environmental taxes by countries and by type of tax, 2010 (EUR and %)

	Energy taxes		Transport taxes		Taxes on pollution/resources		Total environmental taxes
	Mio EUR	Share in environmental taxes (%)	Mio EUR	Share in environmental taxes (%)	Mio EUR	Share in environmental taxes (%)	Mio EUR
<b>EU27</b>	219 114	75	61 964	21	11 356	4	292 434
<b>BE</b>	4 711	64	2 081	28	532	7	7 324
<b>BG</b>	927	88	96	9	29	3	1 051
<b>CZ</b>	3 315	93	204	6	52	1	3 571
<b>DK</b>	5 341	57	3 601	38	504	5	9 446
<b>DE</b>	45 769	84	8 880	16	20	0	54 669
<b>EE</b>	374	88	7	2	45	11	426
<b>IE</b>	2 275	62	1 412	38	3	0	3 690
<b>EL</b>	4 004	73	1 484	27	:	:	5 488
<b>ES</b>	14 135	82	2 993	17	205	1	17 333
<b>FR</b>	27 453	76	6 135	17	2 331	6	35 919
<b>IT</b>	31 179	77	8 756	22	490	1	40 425
<b>CY</b>	322	64	184	36	:	:	506
<b>LV</b>	359	83	61	14	13	3	433
<b>LT</b>	492	96	13	2	7	1	512
<b>LU</b>	887	93	66	7	5	1	958
<b>HU</b>	1 983	78	462	18	101	4	2 545
<b>MT</b>	93	49	84	44	12	6	189
<b>NL</b>	12 006	51	7 311	31	4 219	18	23 536
<b>AT</b>	4 580	68	2 142	32	61	1	6 783
<b>PL</b>	7 601	83	754	8	803	9	9 158
<b>PT</b>	3 153	73	1 153	27	1	0	4 306
<b>RO</b>	2 236	89	252	10	16	1	2 503
<b>SI</b>	1 086	84	146	11	59	5	1 291
<b>SK</b>	1 077	88	128	10	26	2	1 230
<b>FI</b>	3 222	65	1 650	33	103	2	4 975
<b>SE</b>	7 719	81	1 720	18	120	1	9 559
<b>UK</b>	32 816	74	10 191	23	1 602	4	44 609
<b>IS</b>	124	73	20	12	25	15	170
<b>NO</b>	3 790	46	3 882	47	535	7	8 207

Source: Eurostat (online data code: [env\\_ac\\_tax](#))

## METHODOLOGICAL NOTES

An environmental tax is 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.

Environmental taxes are identified as taxes in national accounts ([ESA 95](#)) and consist of compulsory, unrequited payments, in cash or in kind, which are levied by general government or by the institutions of the European Union. They fall within the following ESA 95 categories: taxes on production and imports (D.2), current taxes on income, wealth, etc. (D.5), capital taxes (D.91).

Statistics on environmental taxes are produced according to the following categories: energy taxes, transport taxes, pollution taxes, resource taxes.

The Eurostat publication 'Environmental taxes - A statistical guide' includes detailed methodological guidance for environmental tax statistics.

To supplement the definition of environmental taxes, a list of environmental tax bases was agreed upon in 1997 and slightly updated in 2011.

CO<sub>2</sub>-taxes are included under energy taxes rather than under pollution taxes. There are several reasons for this. First, 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. Including CO<sub>2</sub>-taxes with pollution taxes rather than energy taxes would distort international comparisons.

Taxes on extraction of oil and gas are often designed to capture the resource rent and do not influence prices in the way that other environmental taxes do. For international comparison purposes such taxes should be excluded from environmental tax statistics.

All other taxes on resource extraction (e.g. mining taxes) should be included.

Value added type taxes (VAT) are excluded from the definition of environmental taxes. This is mainly because of the special characteristics of this type of tax. VAT is a tax levied on all products (with few exceptions), and it is deductible for many producers, but not for households. Because of this, it does not influence relative prices in the same way that other taxes on environmental tax bases do.

Table 9 of the ESA 95 transmission programme gathers data on environmental taxes. Eurostat validates and disseminates these data on its database, in the table '[env ac tax](#)'.

Eurostat collects data on environmental taxes in a breakdown by economic activities and disseminates these data on its database, in the tables '[env ac taxind](#)' and '[env ac taxind2](#)'.

This annual data collection has been based so far on a Gentlemen's Agreement.

Starting from 2013, Member States shall transmit data on environmental taxes according to the requirements set out in the [Regulation 691/2011](#) on European environmental economic accounts, adopted on 6 July 2011.

**Country codes:** European Union (27 countries) is written as EU-27 and consists of Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), the Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE) and the United Kingdom (UK).

We have data only from Iceland (IS) and Norway (NO) from EFTA countries.

## Further information

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Eurostat Website: <http://ec.europa.eu/eurostat>

Data on 'environmental tax revenue'

<http://epp.eurostat.ec.europa.eu/portal/page/portal/environment/data/database>

Select 'environmental accounts'

Further information about 'environment'

<http://epp.eurostat.ec.europa.eu/portal/page/portal/environment/introduction>

More information about 'environmental taxes'

Eurostat, (2001), [Environmental taxes - A statistical guide](#)

Eurostat, (2011), [In 2009, EU-27 environmental tax revenue rose to 2.4 % of GDP, SiF 67/2011](#)

Eurostat, (2012), [Key figures on Europe, edition 2012](#) (pocketbook)

Eurostat, (2012), [Taxation trends in the European Union: Data for the EU Member States, Iceland and Norway](#)

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