This article provides an overview of environmental taxes in the European Union (EU). According to Regulation (EU) No 691/2011 on European environmental economic accounts, 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 and which is defined in the European system of accounts (ESA 2010) as a tax. European statistics distinguish four different categories of environmental taxes relating to energy, transport, pollution and resources. For more detailed information, see Environmental tax statistics - detailed analysis.

Environmental taxes in the EU

In 2020, the governments in the EU collected environmental tax revenue of EUR 299.9 billion. The value represents 2.2 % of the EU gross domestic product (GDP) and 5.4 % of the EU total government revenue from taxes and social contributions (TSC)² (see Table 1).

Table 1 presents the breakdown of environmental tax revenue by type of tax and payer.

A very large portion of the 2020 EU environmental tax revenue – 77.2 % - comes from energy taxes. Transport taxes account for 19.1 %, and the share of taxes on pollution and resources is still very small (3.7 %) in the EU.

The tax burden varies by environmental tax category and sector (see also Table 1 and Figures 4 and 5). While corporations pay the highest share of energy taxes (51.5 % in 2019³) the share levied on households is at a slightly lower level (44.0 %). Households are however the main payer of transport taxes (66.4 % in 2019), and they pay a larger portion of pollution and resource taxes (55.9 %). Residents pay a very large majority of the environmental taxes, with a relatively small share (3.4 %) payable by non-residents.

¹update pending
²excluding imputed social contributions
³The most recent year for which the detailed data are available
Since 2002, the environmental tax revenue’s share in total government revenue from taxes and social contributions has slightly decreased.

The 2020 value of the EU environmental taxes was around EUR 88.5 billion higher than in 2002 (see Figure 1). Relative to GDP, its level has, however, decreased (from 2.6 to 2.2 % of GDP). Over the same period, the share of the environmental taxes in TSC dropped by 1.2 percentage points (pp), from 6.6 % in 2002 to 5.4 % in 2020.

Still, the evolution of the environmental tax revenue relative to GDP and TSC seems to have changed its pattern in 2008, and again in 2016. After five years of consecutive decrease, it started to increase in 2009 (presumably due to the economic recession and drop in both nominal GDP and government revenue, as a result of the financial crisis) and it remained relatively stable for seven subsequent years. Starting from 2017, the ratios have again been slightly falling.

For the first COVID-19 crisis year 2020 the majority of the countries reported significant decreases in energy taxes compared to 2019. The typical range of decrease is there between 5 % and 15 % (see also Figure 1).
Environmental tax revenue varies across the EU Member States, but energy taxes remain its main source in most of the countries.

Figure 2 shows the 2020 environmental tax revenue by country both as a percentage of GDP and of TSC, presenting for the latter also the split by type of tax.

Across the EU, the environmental tax revenue-to-GDP ratios ranged in 2020 from 1.2 % (Ireland) to 4.7 % (Slovenia). The environmental taxes to TSC ratios also varied across the EU Member States, with Slovenia (12.3 %) reporting the largest shares of environmental taxes in TSC, and Slovakia (4.0 %) and Luxembourg (3.5 %) the lowest.

Taxes on energy accounted for over half of the environmental tax revenue in all EU Member States in 2020, being by far the largest source of environmental taxes in Czechia, Romania, Luxembourg, Estonia and Lithuania (with more than 90 % share of the total environmental tax revenue).

Transport taxes were the second-largest component of the environmental tax revenue for all EU Member States but Estonia. The contribution of transport taxes to the total was particularly high in Denmark, Austria, Malta and Ireland.

Pollution and resource taxes account for a very small portion of the environmental tax revenue. They group a variety of taxes, levied e.g. on waste, water pollution and abstraction. In many European countries, such taxes were introduced later than energy or transport taxes and only small values of this category of taxes are reported up to now. As yet, no taxes of this category have been reported for Germany. The Netherlands, Malta, Hungary and Estonia stand out in this regard, recording shares of pollution and resource taxes that, albeit small, are larger than in other EU Member States.

The breakdown of the environmental tax revenue by category is also available for three EFTA countries. For details, see Figure 2.
Figure 2: Environmental tax revenue by category as % of TSC and GDP, 2020 (%) Source: Eurostat (env_ac_tax)

Between 2019 and 2020, environmental tax revenue dropped as % of GDP and of TSC in a majority of EU Member States

Most of the EU Member States recorded a lower share of environmental tax revenue in TSC in 2020, although for the majority the drop remained marginal (below 0.35 percentage points). Larger decreases were observed in Estonia, Slovenia and Romania (between 1.0 and 2.4 pp). Only in one EU Member States, Latvia (0.24 pp, did the share slightly increase.

Although the changes in the environmental tax revenue-to-GDP ratios between 2019 and 2020 are not quite as significant, differences can be noted between Member States. Some countries kept or slightly increased their 2019 environmental tax revenue-to-GDP ratio, but for the majority of countries, the ratio decreased in 2020, with the largest decreases recorded by Luxembourg, Slovenia and Estonia (more than 0.3 pp).
Environmental tax revenue - change between 2019 and 2020 (percentage points)

**Environmental taxes by payer**

Corporations contribute half to the total energy tax revenue

For the latest available year 2019 (detailed data by tax payer becomes available later than data on the total revenue), corporations in the EU paid 51.5% of all energy tax revenue collected by governments. The contribution of households, at 44.0%, was lower by 7.5 pp. The remainder (4.5%) relates to the amounts payable by non-residents or that could not be allocated to a specific group of payers.

Among the EU Member States, Luxembourg stands out with the largest share of the energy tax revenue (60%) collected from non-residents, largely due to non-resident purchases of petrol and diesel. In Malta, non-residents make also a substantial contribution to the energy tax revenue of the country (35%).

In 2019, households paid 65% of total energy taxes in Slovenia and 60% in Denmark (see Figure 4).

Services (including transportation and trade) accounted for 26% of the EU energy tax revenue, with Estonia, Czechia, Poland and Croatia, and recording shares of over 40%. Manufacturing, construction, mining and utilities generated over 21% of the EU energy tax revenue.
Figure 4: Energy taxes by economic activity, 2019 (% of energy tax revenue) Source: Eurostat (env_ac_taxind2)

Households pay over two thirds of the EU transport taxes

On average, transport taxes paid by households accounted in 2019 for a larger share (66 %) of the EU transport taxes than those paid by the business sector (33 %) (see Figure 5). This is because households are the main payer of the motor vehicle tax revenue (an important component of transport tax revenue) in the EU.

In four EU countries – Spain, Malta, Italy and Finland – the households’ share in transport taxes exceeds 75 %.

However, in some Member States the structure of transport tax revenue by payer differs considerably from the EU average, e.g. households contribute only marginally to transport tax revenue in Czechia (with the share below 5 %) and in Slovakia (8 %).
Implicit tax rate on energy

The implicit tax rate on energy is defined as the ratio of energy tax revenue to final energy consumption calculated for a calendar year. Energy tax revenues are measured at constant price euros (deflated with the implicit GDP deflator, prices of year 2010) and final energy consumption is measured in tonnes of oil equivalent (toe); as such the implicit tax rate on energy is expressed in terms of euro per tonne of oil equivalent (EUR per toe). The implicit tax rate on energy is not influenced by the size of the tax base and provides a measure of the effective average level of energy taxation. It is a very broad indicator, capturing information on a variety of energy products with different tax rates.

From 2002 to 2019, the implicit tax rate on energy grew by 20 % in real terms (in other words, after deflating the energy tax revenue), changing from EUR 205.8 per toe to EUR 247.0 per toe (at 2010 prices). Between 2002 and 2008, the implicit tax rate on energy decreased. From 2008 to 2014, overall, strong annual increases were observed (except in 2010). From 2014 to 2019, ITR increased only very slightly (by 3.7 EUR per toe).
Implicit tax rate on energy (deflated), EU, 2002–2019
(EUR per tonne of oil equivalent)

Source: Eurostat (online data code: ten00120)

Figure 6: Implicit tax rate on energy (deflated), EU, 2002–2019 (EUR per tonne of oil equivalent)
Source: Eurostat (ten00120)

Source data for tables and graphs
- Environmental tax statistics — figures and tables

Data sources
Using the 'National Tax List', a supporting dataset to Table 9 from the ESA transmission programme, Eurostat gathers data on environmental taxes for four categories - energy, transport, pollution/resource taxes; the data are then validated and published.

Eurostat also collects data on environmental taxes at a more detailed level, by economic activity, under Regulation (EU) N° 691/2011 on European environmental economic accounts. The Eurostat publication titled ‘Environmental taxes — a statistical guide’ constitutes the methodological basis for this data collection.

Data relating to environmental taxes can be used to analyse the revenue stream from such taxes and to provide a relative measure of the importance of these taxes through the calculation of ratios relative to GDP or to the total revenue from all taxes and social contributions. In the first case (ratio relative to GDP), the comparison helps to provide an understanding of the tax burden. In the second case, the comparison helps to assess whether or not the tax burden is shifting from other tax bases (for example, labour income) towards environmental taxes. It has to be noted that the total revenue of taxes and social contributions used to compute the ratio does not include imputed social contributions. For further information concerning various tax aggregates, see ‘Main national accounts tax aggregates’.

Environmental tax revenue can also be allocated according to the different economic activities paying the taxes. Eurostat collects data on environmental taxes using a categorisation by economic activity (based on the NACE Rev. 2 classification supplemented by information for households, non-residents and a residual category for taxes that
Increasing revenue from environmental taxes should be interpreted with caution. The increases may be caused by the introduction of new taxes or an increase in tax rates, or alternatively may be linked to an increase in the tax base caused, for instance, by a higher consumption of energy products.

**Context**

Economic instruments for pollution control and natural resource management are an important part of environmental policy in the EU Member States. The range of instruments that are available includes, among others, environmental taxes, fees and charges, tradable permits, deposit-refund systems and subsidies.

The European Green Deal creates the context for well-designed tax reforms which boost economic growth and resilience to climate shocks and help contribute to a fairer society and to a just transition. Environmental taxes play a direct role by sending the right price signals and providing the right incentives for sustainable behaviour by producers, users and consumers.

The use of economic tools for the benefit of the environment is also promoted in Goal 17 of the EU sustainable development goals.

**Other articles**

- Tax revenue statistics
- Environmental tax statistics - detailed analysis

**Main tables**

- Environmental taxes (t_env_eta), see: Environmental tax revenues

**Database**

- Environmental tax revenues (env_ac_tax)
  - Environmental taxes by economic activity (NACE Rev. 2) (env_ac_taxind2)
  - Main national accounts tax aggregates (gov_10a_taxag)

**Dedicated section**

- Dedicated section

**Publications**

- Taxation trends in the European Union - Data for the EU Member States, Iceland and Norway, 2020

**Methodology**

- Environmental tax revenues (ESMS metadata file — env_ac_tax_esms)
- Environmental taxes by economic activity (NACE Rev. 2) (ESMS metadata file — env_ac_taxind2_esms)
- Implicit tax rate on energy (ITR) (ESMS metadata file — ten00120_esmsip)
Legislation

- Regulation (EU) No 691/2011 of 6 July 2011 on European environmental economic accounts
- Summaries of EU legislation: European environmental economic accounts

External links

- European Commission — Environment — Policies
- European Commission — Energy Strategy
- European Commission — Taxation and Customs Union
- European Commission - Taxes in Europe database

This article is available on-line at http://ec.europa.eu/eurostat/statistics-explained/index.php/Environmental_tax_statistics