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European Taxes and Incentives to Support the Environmental Transition

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Abstract: *The EU-27 has multiple environmental policy instruments among which revenues-based mechanisms and direct or indirect subsidies stand out. In the first group, around 142 taxes have been identified, whose objective is to reduce GHG emissions. The second group includes tax incentives divided into five very broad categories. To this must be added the spending on environmental protection that has grown until reaching 269 EUR billion in the last year (analyzed by Eurostat).*

The tax structures in the EU-27, Iceland, Norway, and United Kingdom are quite similar and show how the main segment comes from taxes on energy followed by taxes on transport, and taxes on pollution or resources. Some of them, more than an environmental goal, has the purpose of collecting taxes. The article seeks to underline the need to jointly manage the revenues and expenditures policy in environmental matters and increase control over its use, implementation, recipients, and effectiveness.

1. ENVIRONMENTAL POLICY INSTRUMENTS

A recent report of the European Commission (2020) prepared by the Austrian Institute of Economic Research and ECORYS Consulting Firm provides an overview of the *Environmental Policy Instruments* introduced to change the behavior of producers and consumers to reduce Greenhouse Gas (in advance, GHG) emissions.

Among this heterogeneous group of measures, two clear tax instruments are included. First, *revenue-based mechanisms* (like taxes, charges, fees, or penalties) and other international instruments (such as the European Emission Trading System that operates in all the EU countries plus Iceland, Liechtenstein, and Norway and restrict emissions from around 10.000 installations in the power sector and manufacturing industry, as well as airlines that operates between all these countries and that cover around 40% of the EU`s GHS emissions[2]). Second, the indirect (tax incentives like tax credits or deductions) or direct economic *Subsidies* (such as incentives for electric cars or for companies to invest in environmental protection).

In that frame, *taxes* are divided into four main categories: energy taxes, carbon taxes targeting explicitly CO2 emissions, vehicle taxes and taxes on non-carbon GHG emissions. At the same time, *tax incentives* can be divided into five broad categories: incentives for electric/hybrid vehicles, incentives for energy efficiency, incentives to promote the use of public transport, incentives that encourageinvestments in renewable energy sources, and incentives for green research and development[3].

The Report *identified 142 taxes* whose target is to reduce GHG emissions across 33 countries *excluding taxes that fall into the scope of the Energy Tax Directive* (Council Directive 2003/96/

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[2] See European Commission (2015) "EU ETS Handbook".

[3] For environmental incentives database see the Study for the European Commission-Directorate General of Environment. ECORYS (2012) Study on Incentives Driving Improvement of Environmental Performance of Companies. Final Report, Rotterdam, 2012.

EC of 27 October 2003, about restructuring the Community framework for the taxation of energy products and electricity) which are present in all the EU Member States. It must be borne in mind that the mentioned Directive will be reviewed soon and strikes directly at the heart of the European Green Deal's implementation presented by the European Commission in December 2019[4], and included in the roadmap as "key action"[5], and as part of the EU Proposal for the "European Climate Law"[6] to became our region in climate-neutral by 2050, reducing GHG emissions by at least 55% in 2030 (compared to levels in 1990).

It should be noted how, while the taxes differ across the countries included in the European Commission Report, no country does not use at least one tax to reduce GHS emissions. Nonetheless, in general, we can see how the taxes are divided into three main categories: *carbon taxes, vehicle taxes,* and *energy taxes.* To this, we must add that some countries apply taxes targeting non-carbon GHG emissions. All the taxes in European Countries show great similarities and according to the Ecorys Study «while the specific design of measures varies regarding tax rates, exemptions or the tax base, the activities targets are almost always the same across countries».

2. ENVIRONMENTAL TAXES REVENUE'S STRUCTURE

The information from the UE Directorate General on Taxation and Customs Union (2021) shows the same idea about the environmental taxes revenues[7]. The main part is energy products taxes (including C02 taxes), follow by transport taxes (excluding fuel, which is covered by the energy taxes) and pollution/resources taxes (group that remained particularly low). Total revenue from environmental taxes in 2019 has represented the 2.4% of the EU-27 GDP.

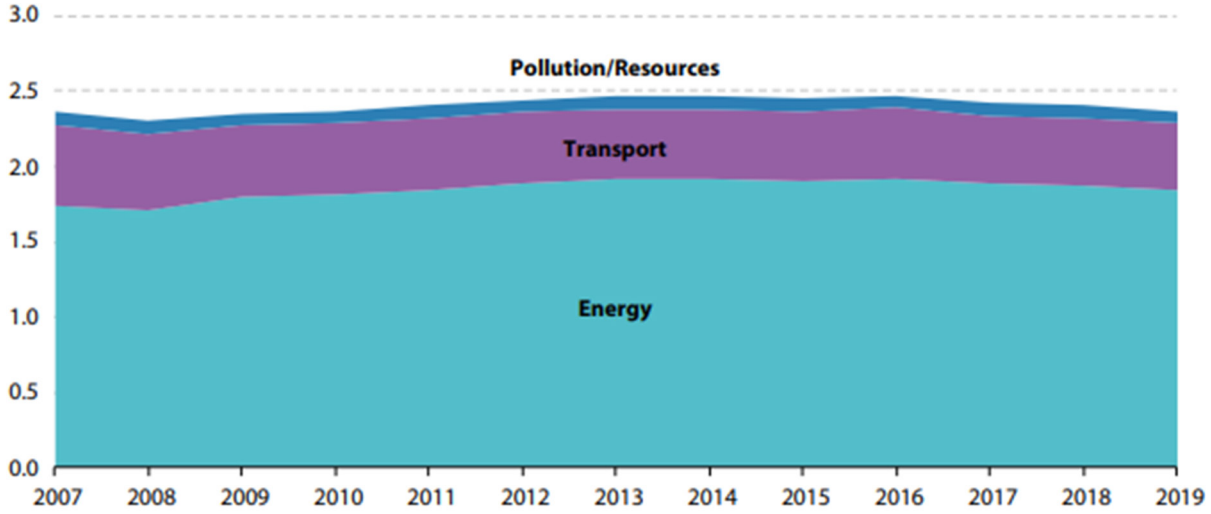

Figure 1. Environmental taxes revenues EU-27, 2007-2019 (% of GDP)

4 See European Commission COM (2019) 640 final, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, the European Green Deal, Brussels, 11.12.2019.

5 See ANNEX to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, Brussels, 11.12.2019.

6 See European Commission, COM (2020) 80 final 2020/0036 (COD), Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), Brussels, 4.3.2020.

7 See European Commission (2021), Taxation Trends in the European Union. Data for the EU Member States, Iceland and Norway, Luxembourg, Publications Office of the European Union, June 2021

Source: European Commission, DG Taxation and Customs Union, 2021.

According to the European Commission, we can find the same tax structure in all the EU countries, Island, Norway, and the United Kingdom. Around the energy taxes that constitute almost 78% of EU-27 environmental tax revenues, we found the highest percentage in Belgium and Latvia, and the lowest in Denmark or the Netherlands, and regarding the non-fuel transport taxes which represent 19% of the European environmental tax revenues, the highest percentage is in Denmark and the Netherlands, and the lowest in Poland, Lithuania, or the Czech Republic. The pollution/resources tax revenues are only 3%.

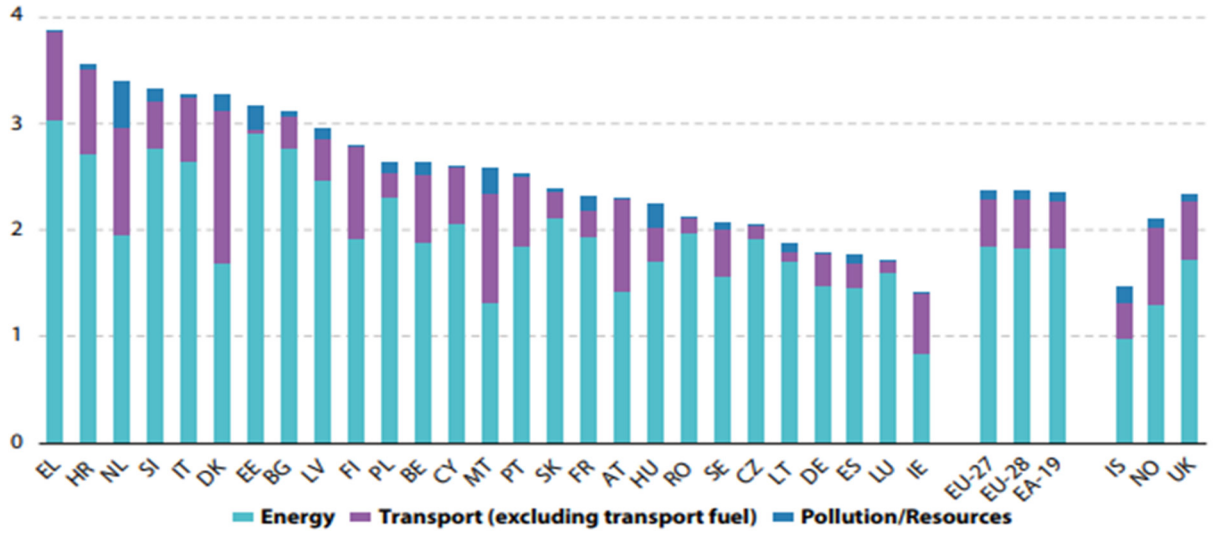

Figure 2. Structure of Environmental taxes as % of GDP (2019)

Source: European Commission, DG Taxation and Customs Union, 2021.

Instead, around 2/3 of the total Energy Tax Revenues in the EU are raised through taxes on transport fuel and, for example, in Lithuania and Luxembourg transport fuel represents over 95% of energy tax revenues, whereas it represents around 40% in Denmark. Excluding these two countries, the highest tax revenues percentage are in Greece, Estonia, and Slovenia (between 2.8% and 3%) whereas the other five countries are below 1.5% of the GDP (Spain, Germany, Austria, Malta, and Ireland).

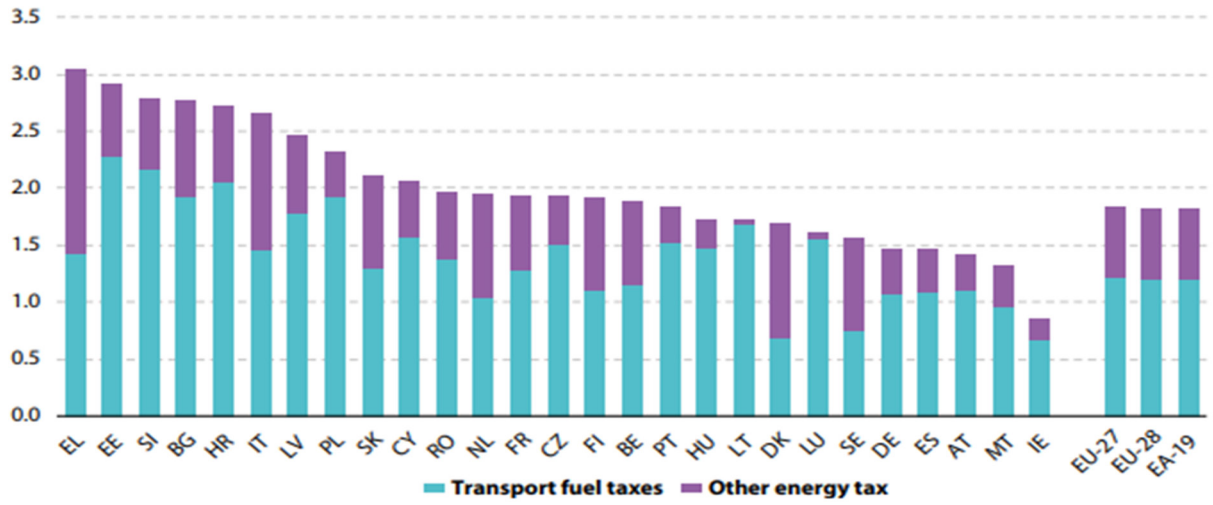

Figure 3. Energy taxes revenues by Member State as % of GDP (2019)

Source: European Commission, DG Taxation and Customs Union, 2021 based on Eurostat data

3. ENERGY TAXES

The Energy Directive establishes the minimum excise duty rates that the Member States must apply to energy products for motor fuels, heating fuels and electricity. In principle, the EU countries are free to apply excised duty rates above this minimum level of taxation, according to their national needs and environmental decisions. The Directive also set up the conditions for applying tax exemptions and reductions for energy products in harmonized way, but it does not pivot around the potential of energy saving or emission reductions. Indeed, the EU energy taxes do not focus on the reduction of GHG emissions, even if they have an indirect impact, because, obviously, the energy efficiency (less fuel) and the effectiveness can improve if fuel with lower carbon is used.

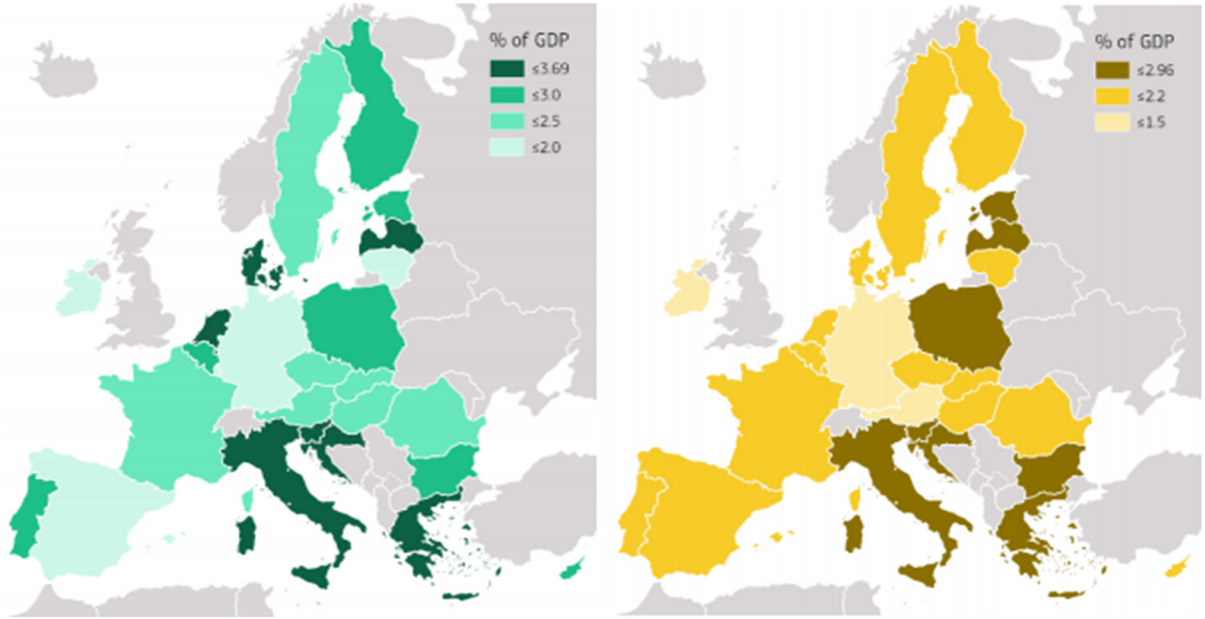

Figure 4. Environmental taxes (left) and Energy taxes (right) revenues in the EU, 2018 (% of GDP)
Source: Eurostat data, 2020.

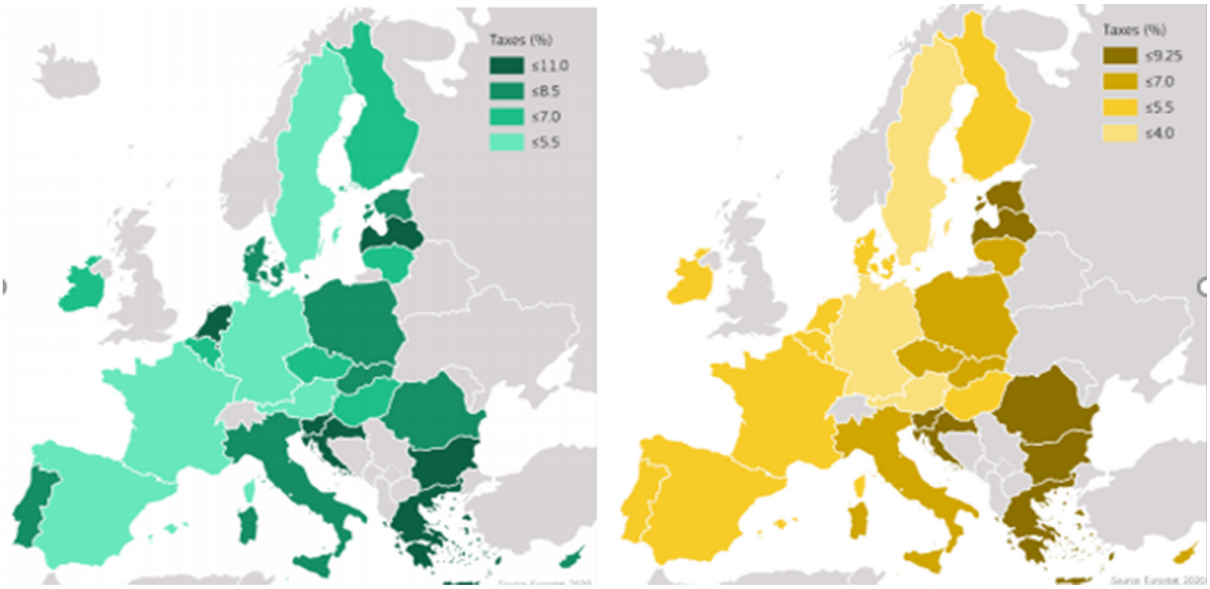

Figure 5. Environmental taxes (left) and energy taxes (right) revenues as a share of total taxes and social contributions in 2018
Source: Eurostat data, 2020.

As we already pointed out, the energy tax revenues constitute the main component of environmental tax collection for almost all countries, although there are great differences between them, depending on the country's economic situation in each year. In this framework, the 2018 data differs from the 2019 data (which we saw in the previous section) in each one of the EU-27 countries; we find the lowest share of environmental taxes in Ireland (only 1.56%) and the highest in Greece (3.69%). However, when it comes to energy tax, Ireland has still the lowest share (0.97%), while Slovenia has the highest (2.96%).

In the same year, in some countries, energy taxes accounted for more than 90% of total environmental revenue, such as in the Czech Republic, Romania, Luxembourg and Lithuania. Besides that, the share of environmental taxes varies quite a bit between the different EU-27 Member States and in the "basket of environmental taxes" three countries had the highest share of energy taxes (Latvia, Bulgaria, and Slovenia), while Austria and Sweden had the lowest.

4. VEHICLE TAXES

Taxes on car ownership are used very frequently; however, the tax treatment in each one of the EU-27 countries is different. Despite this, there are two key components on which the typology of such taxes can be based: the frequency of taxation and the tax base applied. According to MURAUSKAITE-BULL and CARAMIZARU (2021) the Member States have three options: (a) Can decide to tax the purchase/registration of the vehicle (registration tax); (b) Can decide to tax the car ownership on a recurrent or yearly basis (circulation tax); or (c) Can decide to apply taxes both at registration time and on a recurring basis.

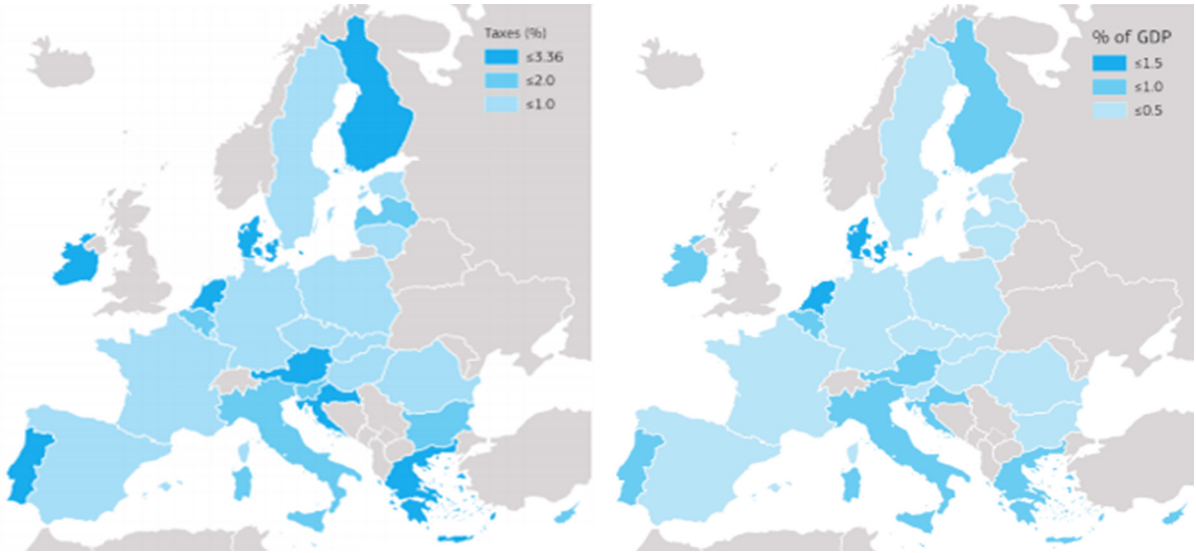

Figure 6. Transport taxes (left) revenues as a share of total taxes and social contributions in 2028, and transport taxes revenues (right) as % of GDP in 2018.

Source: Eurostat data, 2020.

In that frame, Ecorys data indicates that in Europe there are only two countries (Poland and Norway) that tax only the registration, and eight countries that solely apply circulation tax (Bulgaria, Latvia, Germany, Sweden, Luxembourg, Romania, Czechia, and Switzerland). Estonia and Lithuania do not apply either of them; however, most countries require both taxes in place (Spain, Portugal, Italy, France, the Netherlands, Croatia, Cyprus, Malta, Denmark, Finland, Greece, Hungary, Ireland, Austria, Belgium, or Iceland).

The base of circulation taxes often does not appear to be linked to GHG emissions and only a few countries tax the vehicles concerning those emissions: three in the registration taxes (Spain, United Kingdom and France) and one in the circulation tax (Cyprus). Many of them prefer a mixed tax base that combines C02 components with other criteria such as the age of the car, fuel type, or cylinder capacity. The idea to link the tax with fuel consumption is used less frequently, and most countries choose not to establish any relationship with C02 reductions.

On the other hand, tax incentives for buying electric vehicles are very common and many countries have tax incentives in place for that including exemptions in the registration or circulation taxes. In that sense, countries like Finland or Ireland apply the lowest tax rate to electric vehicles and others, such as Germany, give a temporary exemption (full during the first ten years and a half reduction after this period).

5. ENVIRONMENTAL PROTECTION EXPENDITURE

We must also take into account statistics about environmental protection expenditures. It`s not about *"tax expenditures"* in the classic sense (Surrey & McDaniel, 1976) but rather "*direct expenditures"* like subsidies for companies, households, non-profit institutions serving households (NPISH), or the own government. The EPEA (Environmental Protection Expenditure Accounts) key basket is the National expenditure on environmental protection (NEEP), which measures the resources devoted to protecting the natural environment.

Outside the scope of EPEA, all the activities are undertaken for resource management, such as protection of energy from renewable sources, energy efficiency, or forest management. Instead, it includes current spending on *environmental protection services* (like waste and wastewater collection and treatment), as well as on other services, such as protection of biodiversity or supporting activities like education, administration, and consulting. Also, it covers investments undertaken by private corporations and public bodies to construct waste (water) treatment plants or other installations or infrastructure and to purchase the equipment essential to provide the environmental protection services or investments and costs incurred by corporations to make their production process less environmentally harmful (*environmental protection investments*).

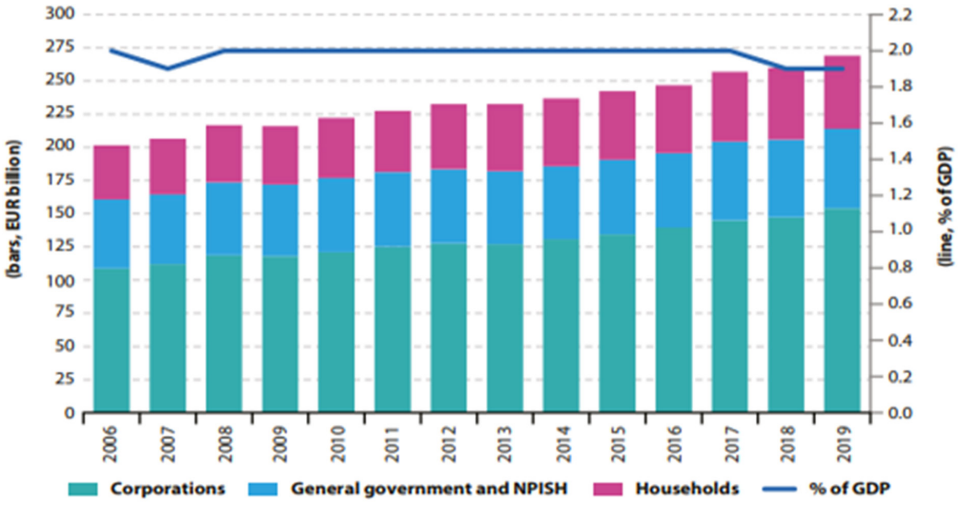

Figure 7. National expenditure on environmental protection, EU-27, 2006-2019 (EUR billion and % of GDP).

Source: Eurostat, 2020.

In the last fifteen years, the EU-27 expenditure on environmental protection has grown steadily; for example, in 2019, the statistics show that it was 34% higher than in 2006, increasing from 200 EUR billion to 269 EUR billion. Moreover, according to the EUROSTAT (2020), in 2019 the corporations sector accounts for 57% of the EU environmental protection expenditure. Instead, contributions of the government and non-profit sector, and households to NEEP are only 22% and 21% respectively.

The same year, the EU allocated EUR 52 billion to *investments for environmental protection* (such as wastewater treatment plants, vehicles to transport waste, acquisitions of land to create a natural reserve, or cleaner equipment for producing with less polluting emissions) distributed in a 60% for corporations[8] (EUR 31 billion) and the remaining 40% for the government and NPISH (EUR 21 billion).

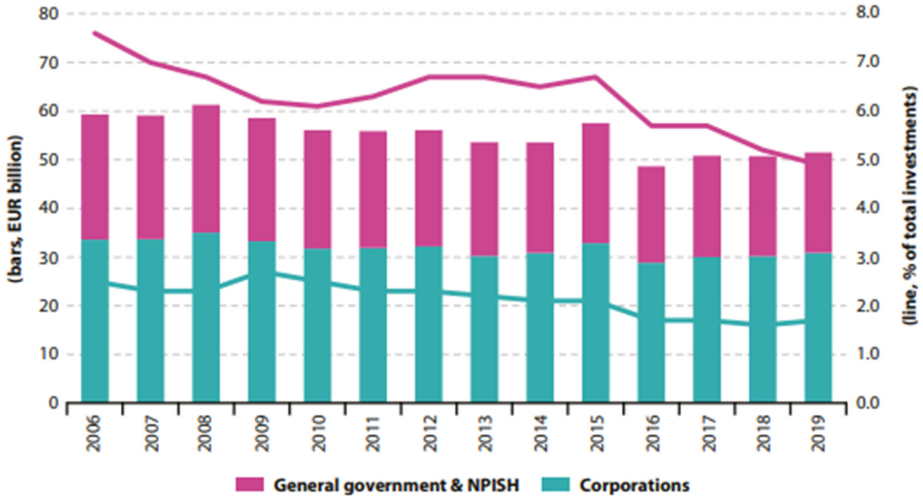

Figure 8. Investments for environmental protection, EU-27, 2006-2019 (EUR billion and % of a sector's).

Source: Eurostat, 2020.

In our opinion, is very important to connect the collection of environmental taxes with spending on environmental protection and investment because they are two sides of the same coin. It is necessary to debate about priorities, amounts, and beneficiaries of all this huge money. We need more control in making decisions.

6. CONCLUSION

First. The EU-27, Iceland, Norway, and United Kingdom have introduced more than 142 taxes for environmental purposes, excluding those taxes that fall into the scope of the Energy Tax Directive. Some of them, rather than an environmental objective have as their main purpose the collection of taxes, as the case of those taxes on vehicle registration and circulation that are only in a few countries linked to the reduction of GHG emissions.

Second. According to the latest information, the total revenues from environmental taxes in the EU-27 has represented the 2.4% of the Eurozone GDP (EUR 324.6 billion). Most of it comes

[8] Such as specialist providers of environmental protection services (like private companies dealing with waste collection and processing and with sewerage) and corporations other than specialist producers which purchase technologies and equipment reducing the environmental pressures arising from their production process.

from energy taxes (78%), followed by transport taxes (19%) and a residual part from pollution or resources taxes (3%). On the other hand, around 2/3 of the total energy taxes revenues in the EU-27 are raised through taxes on transport fuel. Despite this, between 1990 and 2018, the reduction in some sectors has not been too big.

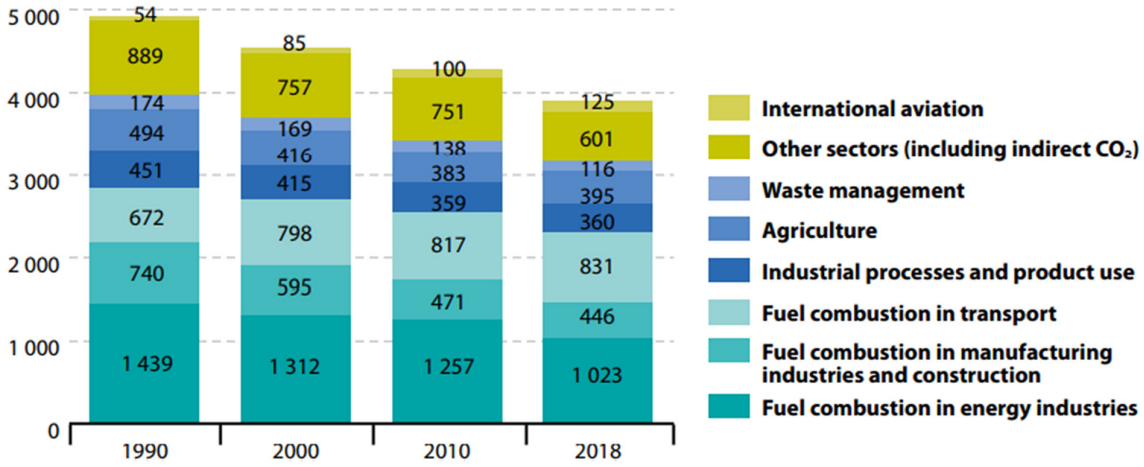

Figure 9. Greenhouse gas emissions, by sector, EU-27, 1990/2000/2010/2018.
Source: European Environmental Agency and Eurostat, 2020.

Third. Regardless of environmental taxes, the EU-27 spends a lot of money in fighting climate change through direct and indirect subsidies (the quantification of which is still unknown). To the subsidies must be added the expenditure on "environmental protection" and "investments in environmental protection", that is, in the last year analyzed by Eurostat, 269.000 billion euros and 52 billion euros respectively, whose main recipients have been the corporations, whilst the households and the non-profit sector have only received about 22% in environmental protection expenditures and 40% in investments with the same purpose. This means that the private sector manages a large part of the resources destined for the environmental transition.

Fourth. In our opinion, it is necessary to jointly manage the revenues and expenditures policy in environmental matters and increase control over its use, implementation, recipients, and effectiveness. It is important to strengthen the debate on priorities, instruments, options, needs, and costs; also, to compare the resources used in environmental policy with those used in other policies that European citizens view as essential and urgent. The environmental policy is very important but it is not everything.

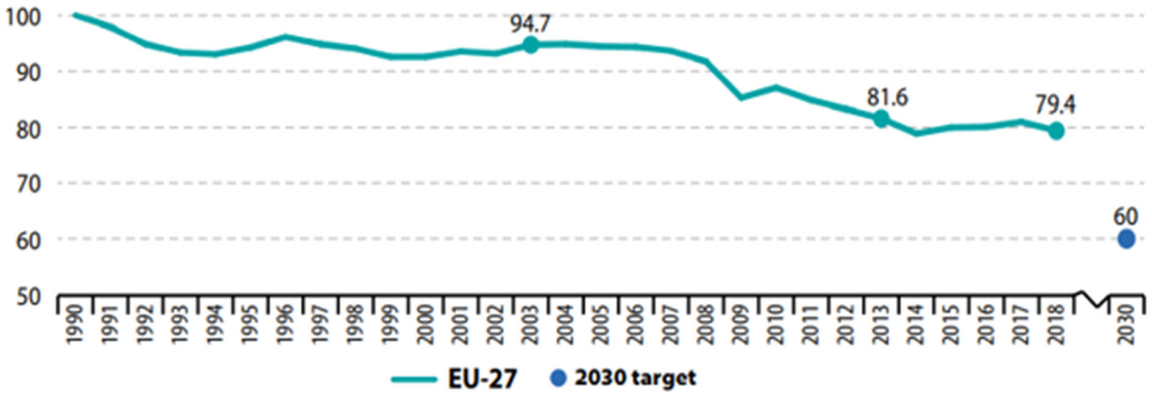

Figure 10. Greenhouse gas emissions, UE -27, 1990-2018.
Source: European Environmental Agency and Eurostat, 2020.

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