

GREEN TAXATION IN THE EUROPEAN UNION

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1. The current Community manifestation of EU green taxes

The dirigistic theories (command and control), under which governments have the opportunity and the obligation to create the legal framework and to issue regulations that ensure the internalization of negative externalities¹. This perspective allows authoritarian interference by means of the market economy.

In an authoritarian way the state imposes a maximum threshold (e.g. noise caused by a noise polluter) that can not be exceeded. Thus, the problem of externalities is resolved. In fact, in most cases, such legislation is problematic for the pollutant in question since the entity, in order to operate, will have to exceed the noise level, and that can lead to abandonment of the work (especially since the authoritative solution does not allow the achievement of the optimum level)

But the State can control the internalization process using certain economic tools. One of the pioneers of this trend of thought was Arthur Cecil Pigou, who issued in 1920 the theory that bears his name. Since Pigou, some economists have proposed that, concerning negative externalities, taxes should be used as a tool for correcting

inefficiencies in the allocation of resources in a competitive economy. The Pigouvian principle described by Pigou in „The Economics of Welfare”, claimed a tax on externalities generator. This point of view was also supported by William J. Baumol in the article “On taxation and the control of Externalities” (1972) and later by Vassilis T. Rapanos in "A note on externalities and taxation" (1992).

Theories based on free trade (cooperation and transactions), according to which economic agents can negotiate among themselves the cost of pollution, for example, within certain limits imposed by law. The economist Ronald Harry Coase claimed, in his work “The Problem of Social Cost” (1960) that economic agents can make decisions on a paretian allocation of resources, but provided that property rights are well defined (by law, by mutual agreement between parties etc.) and the source of externalization is well identified.

Despite numerous obstacles, especially economic and political, the use of pigouviene taxes (green taxes) saw an acceleration after the '90s of last century, in OECD view being four reasons for this evolution:

- The adjustment of the thick, complex and difficult to enforce laws and regulations;
- The study of environmental policies effectiveness;
- Financial need;
- Requirement of effective integration of environmental policies into economic decisions as a prerequisite for a sustainable development process.

¹ Negative externalities are the negative consequences, whose cost is borne by society and who produce inefficiencies in the allocation of resources. On a market unadjusted from the outside, the producers of negative externalities are not responsible for external costs. They are transmitted to the company.

In terms of promoting sustainable economic development, the European Community supports the Environmental Protection Action programs, introducing in an increasingly measure higher green taxes.

The main purpose of a pigouviene tax is the economic efficiency, for example, a (green) tax on emissions takes into account three elements:²

- Reducing the amount discharged
- the tax increases the marginal production cost which reduces the balance on the market.
- Technical substitution - the tax requires the company to use clean technologies to the extent that the cost of remediation is less than the tax saved.
- Research and development - the tax incites the company to develop new production and decontamination technologies to enable them to avoid paying it.

The European Commission, OECD and the International Energy Agency (IEA) define the environmental tax as a tax "whose tax base is a physical unit (or may be treated as such) of something that has proven a specific negative impact on the environment".

Regarding the typology of green taxes, they can be divided into four main categories, namely:

a) *energy taxes* – that include taxes on energy products (fuel, gas, coal and electricity) used both for transport and parking, and also the tax on CO₂.

b) *taxes on transport* – including possession and use taxes on motor vehicles, taxes on other means of transport (e.g. aircraft) and taxes on transport services (if they are consistent with the general definition of environmental taxes). There must be made a precise delimitation of this tax category because one can easily make

confusion between these taxes and those on fuel used for transport (which are part of taxes on energy).

c) *taxes on pollution* – include taxes on measured or estimated emissions in air and water, on solid waste management and noise level, except taxes on CO₂, included in energy taxes;

d) *resource taxes* – include taxes on the resource extraction, seen as having harmful environmental effects, such as pollution and soil erosion.

2. Role and importance of environmental reforms

Since October 2003, the European Council adopts a Directive on restructuring the Community framework for the taxation of energy products and electricity, thereby aiming at extending the minimum rates of taxation of coal, natural gas and electricity existing at the beginning of 1992. The Directive has as main objectives on the one hand a better functioning of the internal market and on the other hand ensuring a greater environmental protection by encouraging the so-called "green tax reforms" promoted by the European Union Member States.

The idea of introducing the green tax reforms was to shift the tax burden from the production factor of labor to the use of natural resources and to activities and products harmful for the environment.

The implementation of such reforms is beneficial in several ways because it promotes simultaneously the economic growth, job creation and environmental protection. Also producers are protected against any negative effects of competitiveness that may result from increased production costs, by offsetting these costs with various tax cuts and refinancing schemes.

The use of Green taxes for the promotion of economic and environmental policy objectives echoed in several EU countries. The states that

² B.Bürgeinmeier, Y.Horayama, N.Wallart, *Theorie et pratique des taxes environnementales*, Economica, Paris, 1997.

have opted to introduce in their tax systems some elements of green tax reforms include Denmark, Germany, Italy, Netherlands, Austria, Sweden and the United Kingdom. Also some new member states did the same: the Czech Republic introduced in 2008 an environmental tax reform that provides and increase in taxes on most energy products in the period 2008-2012; Slovenia has introduced since 1997 the CO₂ tax.

Although environmental reforms were an important point of attraction for most Member States of the European Union, revenues from green taxes registered a stagnation or even a decline in recent years. This is explained by the fact that environmental taxes are levied per unit of physical consumption (unitary taxes) and are usually fixed in nominal terms. This problem could be solved by indexing nominal tax rates to inflation, but so far only Denmark has used this option.

Green tax fiscal erosion can be explained by several hypotheses: the

demand for energy has a lower (slower) growth tendency compared to revenues, which makes energy tax revenues to drop when the economy grows; higher taxes on energy leads to lower energy consumption, thus reducing the tax base while energy costs didn't drop; another hypothesis would be the growing popularity of non-fiscal instruments and high world price of oil in early 2000.

3. Dynamics of environmental taxes in EU

As we stated before, despite the great interest for the promotion of green tax reforms and environmental protection, revenues from taxes on environmental protection didn't increase in recent years. Table no.1 presents the revenue from environmental taxes in the EU in 2005-2009.

Table no. 1
Revenues from environmental taxes in the European Union (% of GDP)

Country	2005	2006	2007	2008	2009
Belgium	2,3	2,2	2,1	2,0	2,0
Bulgaria	3,0	2,9	3,4	3,4	3,0
Czech Republic	2,7	2,6	2,5	2,5	2,5
Denmark	6,0	6,2	5,9	5,7	4,8
Germany	2,5	2,4	2,2	2,2	2,3
Estonia	2,3	2,2	2,2	2,4	3,0
Ireland	2,5	2,5	2,5	2,5	2,4
Greece	2,1	2,0	2,1	1,9	2,0
Spain	1,9	1,9	1,8	1,6	1,6
France	2,2	2,2	2,1	2,1	2,1
Italy	2,7	2,7	2,6	2,4	2,6
Cyprus	3,5	3,3	3,4	3,1	2,9
Latvia	2,6	2,4	2,1	2,0	2,3
Lithuania	2,3	1,8	1,8	1,7	2,0
Luxembourg	2,9	2,6	2,5	2,5	2,4
Hungary	2,7	2,8	2,8	2,7	2,6
Malta	3,3	3,3	3,7	3,5	3,3
Netherlands	3,9	4,0	3,8	3,9	4,0
Austria	2,6	2,5	2,4	2,4	2,4
Poland	2,7	2,8	2,7	2,6	2,6

Portugal	3,0	2,9	2,8	2,6	2,5
Romania	2,0	1,9	2,1	1,8	1,9
Slovenia	3,2	3,0	3,0	3,0	3,6
Slovakia	2,4	2,3	2,1	2,0	1,9
Finland	3,1	3,0	2,7	2,7	2,7
Sweden	2,8	2,7	2,6	2,7	2,8
United Kingdom	2,5	2,4	2,5	2,4	2,6
UE-27	2,8	2,7	2,7	2,6	2,6

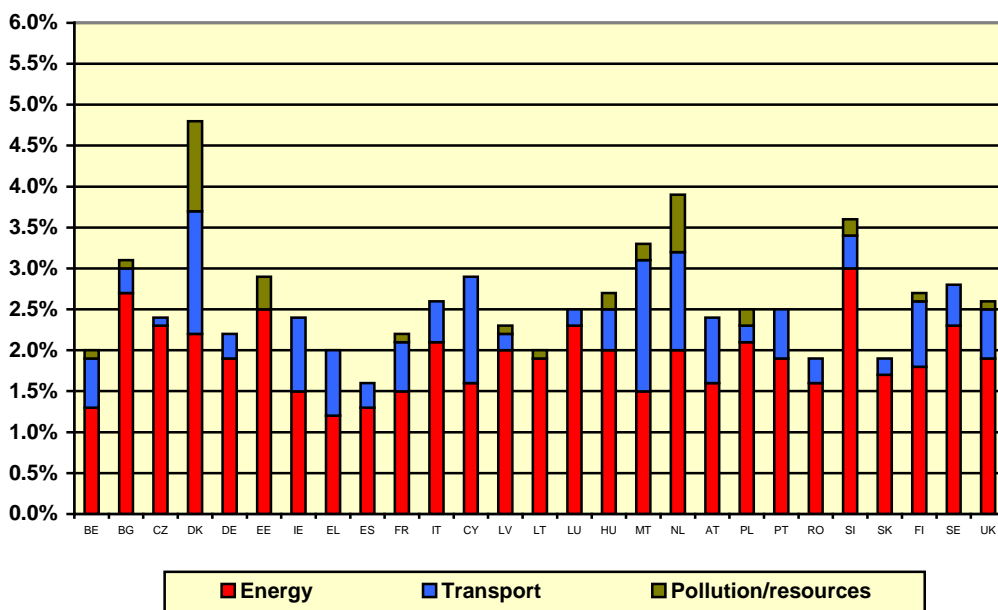
In 2009, revenues from green taxes in EU-27 (GDP average value) accounted for 2.6% of GDP and 7.4% of total revenues. Compared to 1980, when environmental taxes represented 0.5% of GDP, the growth is significant. However, in EU-15, the main increase occurred between 1990 and 1994 and was largely due to increased taxes on energy. The new Member States increased environmental taxes later and this was largely due to the EU accession process, although some of them have used this opportunity to increase the energy tax rates over the strict requirements set by the EU. Since 1999, revenues from environmental taxes, in weighted average, decreased both in relation to

GDP and as share of total taxes (with - 0.2% and -0.3% respectively).

As regards the revenues from tax categories on environmental protection, energy taxes are by far the most significant representing about three quarters of the revenues from environmental taxes. In UE-27 transport taxes correspond, on average, to less than a quarter of revenues from environmental taxes and 1.6% of total taxes and social contributions (weighted average). The other two categories, pollution taxes and resource taxes achieve only a marginal revenue threshold; together they represent about 4% of total environmental taxes.

Graph no. 1

Revenues from environmental taxes (% of GDP) in 2009-on tax categories-



Source: data from "Taxation trends in the European Union"

Graph no.1 shows the ratio of environmental tax/GDP revenue in the Member States on tax categories. The relative importance of each tax category varies from one country to another representing 2-3% of GDP, or slightly more. Only three Member States have less than 2% of GDP, while only in three countries the revenues from environmental taxes exceed 3.5% of GDP. With 4.8% in 2009, Denmark has by far the highest level of „green“ taxation, followed by the Netherlands (4%). The lowest revenues from environmental taxes related to GDP are found in Spain (1.6%), followed by Romania and Slovakia (both 1.9%).

The predominance of energy taxes is common to all Member States. However, in some countries the transport tax contribution is significant; for example in Ireland, Cyprus and Malta they represent almost half of environmental taxes. In Denmark, transport taxes reach almost the same value as energy taxes, but due to high levels of pollution and resource taxes in that country, they

represent only a third of environmental taxes.

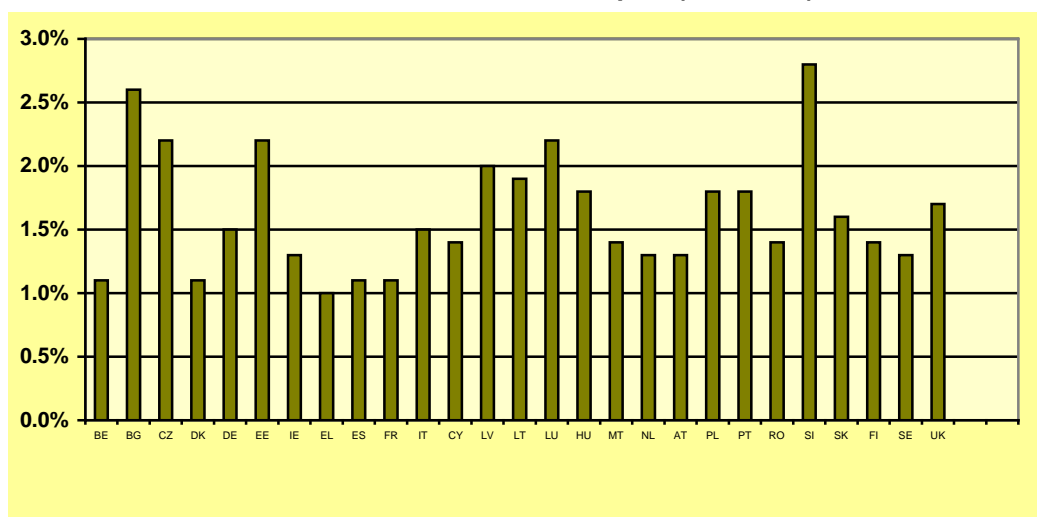
4. Tax on fuel for transport – the most efficient green tax?

Energy taxes include taxes on energy products for transport and parking. Graph no.2 highlights what part comes from taxes on transport fuels in total revenues as a percentage of GDP in 2009. The graph shows that most taxes are collected on fuel.

Most taxes on transport fuels are particularly striking for the new Member States; most of them charge more than 90% of energy taxes on transport fuels. The exceptions are Cyprus and Poland, which – using the old Member States model – collect only 80% of energy taxes on fuels used for transport. The relative homogeneity of transport fuel rates from energy taxes in the new Member States is explained by the fact that they enjoy exemption or at least excise taxes reduced to minimum for other energy products, such as electricity or natural gas (Council Directive 2004/74/EC).

Graph no. 2

Revenues from fuel tax for transport (% of GDP)



Source: data from „Taxation trends in the European Union“

Since electricity and natural gas are barely taxed, revenues from energy taxes and resources other than mineral oils are very low. Poland is an exception to this, with a tax rate that exceeds 10 times the minimum rate of electricity and generates over 10% of revenues from taxes on electricity.

Compared to the new Member States, the relative importance of transport fuels taxes varies considerably in the old Member States. This extends to a share of revenues from fuel tax in energy taxes of over 90% in Ireland, Greece, Portugal and the United Kingdom to a share of just a little over 50% in Denmark and Sweden. The difference in rates is due to the taxation of income from natural gas and electricity. While the latter two countries have substantial incomes from electricity and natural gas taxes (approximately 30% of energy taxes), Ireland, Greece, Portugal and the UK collect negligible amounts from these taxes (less than 2% on energy taxation). Therefore, differences in natural gas and electricity taxation still persists, despite the attempts to reduce differences in the levels of taxation in the Member States by establishing some minimum levels of taxation of energy products and electricity through the Energy Tax Directive (2003/96/Ec). The difference results from the choices made by each Member State. While Denmark exceeds the minimum electricity excise more than 150 times (Sweden 60 times), other countries enjoy exemptions for compliance with the minimum rates, reflected in zero tax rates. Zero tax rates does not necessarily imply that there are no taxes charged for electricity. Some of these countries, like the U.K., levy general taxes as the cost of climate change, taxing energy products for lighting, heating and electricity for companies and public sector, which also include a tax for electricity.

5. Conclusion

Generally, the green taxation objective is to encourage the consumer or the producer to adopt a behavior that takes into account all costs incurred in the activity.

Since 1992, several specialists from the World Resource Institute in Washington showed in their study "Green Taxes" that the economic benefits associated with the transition from the classical tax system to eco-taxes could be ranged between 0.45 - 0.80 dollars per dollar.³

The implications are, however, in our opinion, more deeper and diverse, being beyond the simple vision translated into economic gain. Green tax is a good way to:

- influence the consumer's behavior to reduce pressure on limited resources. Products and energy-intensive services become more expensive and therefore less attractive, thereby reducing consumption and pollution;
- increase the ethical potential of consumers decisions;
- cultivate markets for energy efficient products;
- increase the share of home working and video conferencing to reduce transport for business and especially to reduce a major source of pollution etc.

Besides these evident benefits there is also the risk of widening inequalities in certain conditions in which people with lower incomes are unable afford environmental and energy efficient products, products that have become

³ B. Repetto, R. Dower, R. Jenkins, J. Geoghegan, *Green Fees: How a Tax Shift Can Work for the Environment and Economy*, Washington DC, World Resource Institute, 1992, pag.11

more expensive due to additional taxation.

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*****	Taxation trends in the European Union.