

Research for TRAN Committee – Pricing instruments on transport emissions

KEY FINDINGS

- Pricing instruments on road transport CO₂ emissions are widely applied in Europe, although there are significant differences between Member States. More broadly, Member States also differ to the level by which their road transport sectors meet the 'polluter-pays' and 'user-pays' principles.
- The European Commission has presented proposals to incentivise the pricing of CO₂ emissions of road transport by introducing emission trading for this sector as well as by revising the Energy Taxation Directive. One of the aims of the latter is to incentivise the uptake of low-carbon energy carriers by the transport sector.
- Pricing instruments (particularly emission trading and fuel taxes) are effective in reducing CO₂ emissions in the road transport sector. They may, however, also have significant distributional impacts, which should be carefully considered in order to gain social acceptance for this type of instruments.



Fair and efficient pricing in transport is one of the core elements within the European Commission's vision to decarbonise the transport sector. By using a mutually compatible and complementary mix of pricing instruments, like emission trading, infrastructure charges, energy taxes and vehicle taxes, transport users should be incentivised to make more sustainable transport decisions. This briefing provides a general overview of the current and proposed pricing instruments on road transport CO₂ emissions in the EU.

The present document is the executive summary of the study on Pricing instruments on transport emissions. The full study, which is available in English, can be downloaded at: <https://bit.ly/382Gccx>

State of play of pricing instruments on road transport CO₂ emissions

Pricing instruments on road transport's CO₂ emissions are widely applied in the EU. All Member States levy fuel taxes, although tax levels differ significantly between countries. Most countries also apply purchase and ownership taxes for passenger cars, but the extent by which these taxes are CO₂ based differs widely. For heavy goods vehicles (HGVs), only (non-CO₂ based) ownership taxes are applied in the majority of the countries. Finally, about half of the Member States apply a road infrastructure charge (i.e. a toll or vignette) for passenger cars, while these charges are applied in almost all countries for HGVs (with an increasing number of countries replacing a vignette scheme with a distance-based road charging scheme). Although road user charges are not differentiated to CO₂ emissions in any of the Member States, they may indirectly have a CO₂ reducing impact by curbing overall transport demand and boost transport efficiency.

Because of the wide differences in the type of pricing instruments applied, the tax/charge levels set and the level of differentiation to CO₂ emissions applied, Member States differ significantly in the extent by which CO₂ emissions of road transport are effectively charged. In general, CO₂ emissions of passenger cars are more heavily charged than emissions of vans and HGVs. This is because of higher fuel taxes on petrol than on diesel, and because CO₂ differentiated vehicle taxes are more often applied for passenger cars. More broadly, Member States also differ on the level by which their road transport sectors meet the 'polluter-pays' and 'user-pays' principles. Although in almost none of the EU countries external and infrastructure costs of road transport are fully covered by taxes and charges, some countries have made much more progress in this respect than others.

EU legislative framework

Transport pricing is mainly a Member State competence. The current EU legislative framework is primarily focused on harmonising (to some extent) the design of national instruments. The [Energy Taxation Directive](#) (ETD) harmonises national fuel taxes by setting minimum rates¹. However, as these minimum rates have not been indexed since 2003, their effectiveness has diminished over the years. Furthermore, the current ETD presents some voluntary and mandatory exemptions on fuel taxes, e.g. the mandatory exemptions for aviation and maritime shipping. Road infrastructure charges in the EU are harmonised by the [Eurovignette Directive](#). Although this Directive does not oblige Member States to implement a road charging scheme, it does provide some rules that should be followed once a country decides to implement such a scheme. In the recently adopted revision of this Directive, a mandatory switch from time-based to distance-based road charging for heavy duty vehicles is introduced, to be implemented by 2030 at the latest. Furthermore, a mandatory CO₂ differentiation of charges for HGVs is introduced as well, incentivising the use of low- and zero-emission trucks.

In order to better align the EU legal framework on transport pricing instruments with the decarbonisation objectives of the EU, the Commission recently proposed to revise the ETD by removing the disadvantages for clean technologies and introducing higher levels of taxation for inefficient and polluting fuels. Furthermore, the Commission proposed to launch a new, separate emission trading scheme (ETS) for road transport (and buildings).

Impacts of pricing instruments

Pricing instruments have a broad range of impacts on the transport sector and society in general. Some relevant impacts are:

- *Impacts on road transport CO₂ emissions.* Pricing instruments are effective in reducing CO₂ emissions. Fuel taxes and ETS can be considered as first best instruments, as they incentivise

¹ The ETD covers the taxation of all energy products, but in this briefing we only consider the rules set for transport fuels.

all relevant CO₂ reduction options. CO₂ based purchase taxes may provide a significant additional incentive for the uptake of low- and zero-emission vehicles.

- *Impacts on budget revenue.* Transport taxes contribute, on average, about 5-10% to the overall tax revenues of national governments in the EU. The rise of the number of low- and zero-emission vehicles may significantly lower the income from fuel taxes and CO₂ based vehicle taxes. Keeping tax income at a stable level may become an important challenge for national governments in the next decade.
- *Impacts on transport prices.* Current transport taxes and charges contribute significantly to transport prices for passenger and (to a lesser extent) freight road transport. The introduction of an ETS for road transport and the revision of the ETD will have a limited additional impact on transport prices (about 4% to 10%, based on CO₂ price of € 50 per tonne).
- *Distributional impacts.* Pricing instruments on road transport CO₂ emissions will probably have a regressive impact, implying that the relative impact on disposable income is higher for low-income households as for high-income households. There may also be large differences in fiscal burden for people living in rural areas (who are more car-dependent) and urban areas. Because of these effects, some countries are more severely affected by pricing instruments than others.
- *Impacts on competitiveness and employment.* In general, pricing instruments on road transport CO₂ emissions are expected to have relatively limited impacts on competitiveness of the road transport sector and the production sectors and on employment rates. However, more significant impacts may occur at the level of individual economic sectors (or countries), which may require mitigation actions.

Policy recommendations

To optimise the use of pricing instruments in decarbonising the road transport sector, it is important to:

- *Develop a balanced mix of pricing instruments.* Fuel taxes and/or an ETS would be the cornerstone(s) of an effective package of pricing instruments on CO₂ emissions. However, CO₂ based purchase taxes may provide an effective additional incentive for the uptake of low- and zero-emission vehicles.
- *Integrate pricing instruments in a broader package of CO₂ reduction policies.* As pricing instruments are largely complementary to other climate policies, like CO₂ vehicle standards, they should be preferably combined in an overall climate policy for (road) transport.
- *Consider political and social acceptance of pricing instruments.* Large distributional impacts may negatively affect the political and social acceptance of pricing instruments. Developing mitigation measures for these impacts is therefore key, e.g. by designing effective recycling channels for the revenues of pricing instruments.
- *Regularly re-adjust the pricing instruments.* In order to maintain the effectiveness and revenue of pricing instruments, regular updates of CO₂ based pricing instruments are required, taking trends in the car industry (e.g. decreasing average CO₂ emissions of vehicles) and consumer preferences (e.g. increased preferences for zero-emission vehicles) into account.
- *Consider other transport externalities as well.* An overall transport pricing policy should not only consider CO₂ emissions, but also other externalities like air pollution and congestion. Differentiated distance-based road infrastructure charges may play an important role in this respect.

Further information

This executive summary is available in the following languages: English, French, German, Italian and Spanish. The study, which is available in English, and the summaries can be downloaded at: <https://bit.ly/382Gccx>

More information on Policy Department research for TRAN: <https://research4committees.blog/tran/>



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