

HIGHLIGHTS

Tax Revenue Implications of Decarbonising Road Transport

Scenarios for Slovenia



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The underlying report was approved by the Committee on Fiscal Affairs and the Environment Policy Committee on 19 April 2019, and prepared for publication by the OECD Secretariat and the International Transport Forum (ITF).

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Tax Revenue Implications of Decarbonising Road Transport: Scenarios for Slovenia shows that tax revenue from diesel and gasoline use in private cars is likely to decline substantially in the coming decades. This would put stress on government budgets, particularly in countries where fuel tax revenues represent a large share of total revenue. A gradual shift from fuel taxes to distance-based charges can contribute to making tax policy more sustainable.

Excise duties on fuel used in road transport represent a significant share of tax revenue in several countries. Under current policy settings, this tax revenue base will shrink as the fuel-efficiency of internal combustion engines improves and the electrification of the transport sector progresses. Eroding tax bases lead to declining revenues, which puts stress on government budgets in the long run. Policymakers need to anticipate the potential decline of fuel tax revenues and decide whether and how to respond.

The report analyses the revenue implications of potential reductions of fuel consumption in road transport, and investigates potential policy responses assuming that the objective is to maintain total tax revenue associated with road transport.

In the Republic of Slovenia, 14.6% of total tax revenue collected at the central government level in 2016 came from excise duties and carbon taxes levied on diesel and gasoline used in road transport. The report provides an in-depth assessment of the Slovenian transport tax

system, focusing on the three main tax bases in the sector: vehicles, fuel use and road use. It explores revenue impacts under current policy settings and for different scenarios on the take-up of new vehicle technologies. Against this background, it then analyses different tax policy reforms with a 2050 horizon. The tax reforms include changes to fuel and carbon taxes, vehicle taxes and distance-based charges, and consider the potential behavioural responses to tax reform.

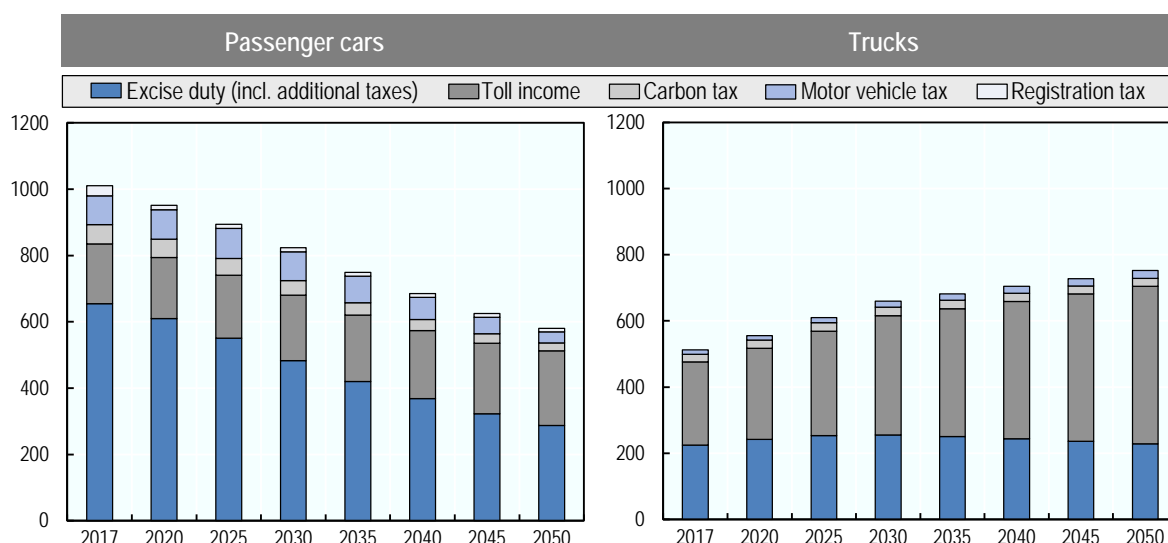
The analysis is based on a model developed for the purpose of this study and which links tax revenues to potential developments of tax bases in the long run. The model combines detailed micro- and administrative data with scenarios of technology take-up. It is applicable to a wider set of countries with different characteristics and tax policy questions.

Key findings

Under current policies, tax revenues from diesel and gasoline use in private cars is likely to decline substantially in the coming decades.

- Under the assumption that alternative fuel technologies account for roughly 60% of new car purchases in 2050, total tax revenues from fuel used in passenger cars in Slovenia would drop by 56% between 2017 and 2050 if demand for cars and car use develops as expected.
- The picture for trucks is different, with a less pronounced drop in fossil fuel use over the 2050 horizon, due to a slower expected take-up of alternative technologies. Furthermore, Slovenia's current toll system for trucks provides an effective means to raise revenue independently of fuel use.

Figure 1. Tax revenue from passenger cars and trucks for the baseline scenario, 2017-2050



Source: OECD/ITF (2019), Tax revenue implications of decarbonising road transport: Scenarios for Slovenia, OECD Publishing, Paris, <https://doi.org/10.1787/87b39a2f-en>.

Gradually reforming the tax system, starting now, allows for a smooth adaptation to technological changes in the vehicle fleet and the timely implementation of accompanying measures.

- Technological changes, e.g. a transition towards more fuel-efficient and alternative fuel technologies, take time to percolate through the car fleet. Therefore, fuel tax revenues from private cars erode only gradually over time, which leaves leeway to adapt tax policy.

- For example, a relatively modest charge on all kilometres driven on Slovenian motorways that gradually increases over time may cover the revenue loss from fuel taxes on passenger cars. For the main technology scenario and assuming motorway use develops as expected, this charge would start at a level of 0.7 Eurocent/km in 2020 and increase to 4.6 Eurocent/km in 2050.

Table 1. Kilometre tax equivalent to cover revenue loss from fuel and carbon taxes on diesel and gasoline used in cars, 2020-2050

	2020	2025	2030	2035	2040	2045	2050
Development of fuel tax revenue from cars relative to 2017 baseline for main technology scenario	-7%	-16%	-26%	-36%	-44%	-51%	-56%
Km-equivalent; car and truck kilometres; motorway only (Eurocent per vkm)	0.71	1.58	2.47	3.30	3.89	4.33	4.58

Note: The kilometre tax equivalent is derived by dividing the revenue loss from fuel used in passenger car by the number of kilometres driven by all vehicles (passenger cars and trucks) on Slovenian motorways. The main technology scenario for the penetration of alternative fuel vehicles that is used throughout the analysis is based on the International Energy Agency's "2°C Scenario for Europe".

Source: OECD/ITF (2019), Tax revenue implications of decarbonising road transport: Scenarios for Slovenia, OECD Publishing, Paris, <https://doi.org/10.1787/87b39a2f-en>.

- However, reform implementation also takes time and requires preparation and discussion with stakeholders. Early preparation and a gradual approach will reduce the risk of disruption. It will also create room for carefully designing policies, tailoring communication and developing the necessary accompanying measures.
- Accompanying measures could encourage the development of alternative travel modes, such as public transport, or take the form of support to those households that are affected disproportionately by the reform in the short run, but cannot easily adapt to the reform due to budget constraints.

Shifting from taxes on fuels to taxes on distances driven can contribute to more sustainable tax policy over the long term, improving environmental and mobility outcomes.

- In the long run, revenues can be sustained by gradually increasing fuel or carbon taxes, to cover the external costs closely related with fossil fuel use, and by phasing-in

distance-based charges for cars, to reflect external costs closely related with distances driven. Such a tax system would gradually shift revenues to an alternative and likely more stable tax base, distance driven, while further reducing distortions.

- An efficient distance-based system for passenger cars would provide a direct link to the amount of kilometres driven, instead of charging an "all-you-can-drive" access fee to the road network. This requires phasing out the current vignette system for cars and adopting a distance-based system, as currently applies to trucks.
- Maintaining total transport tax revenue may not be the foremost objective of a sustainable tax policy strategy. Efficiency considerations imply aligning tax rates with external costs closely related to vehicle, fuel use and road use. Options for tax reform outside the road sector are available too and may further improve the efficiency and effectiveness of the overall tax system.

Table 2. Summary of impact evaluation by tax type

	Fuel or carbon tax	Vehicle tax	Distance-based charges
Long-run revenue stability	☹️	😊	😊
External cost management			
- CO ₂ emissions	😊	☹️	😊
- Air pollution	😊	☹️	😊
- Driving-related external costs (e.g., accidents, congestion, noise and air pollution exposure, road damage, use of public space)	☹️	☹️	😊
Administrative and implementation costs	😊	😊	☹️

Source: OECD/ITF (2019), Tax revenue implications of decarbonising road transport: Scenarios for Slovenia, OECD Publishing, Paris, <https://doi.org/10.1787/87b39a2f-en>.

Further Reading

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For more information

<https://www.itf-oecd.org/decarbonising-transport>
<http://oe.cd/tax-and-environment>
<http://oe.cd/tax-decarb-transport-slovenia>
<https://www.itf-oecd.org/tax-revenue-decarbonising-road-transport-slovenia>

Please cite as

OECD/ITF (2019), "Tax revenue implications of decarbonising road transport: Scenarios for Slovenia", OECD Publishing, Paris,
<https://doi.org/10.1787/87b39a2f-en>

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