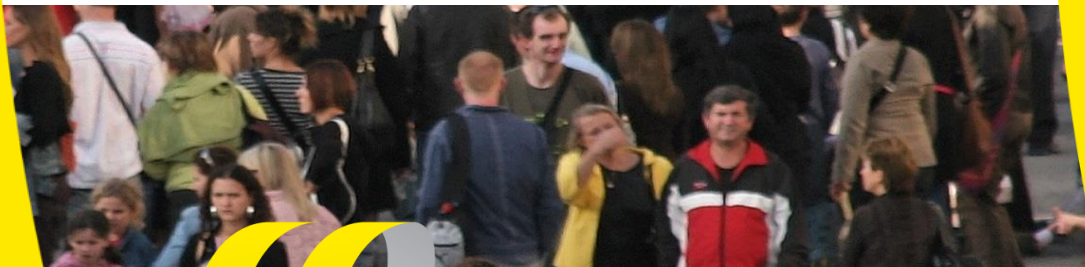




# Infrastructure and external cost coverage of road freight transport on EU28 motorways

Summary



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## Context and objective of the study

### The European Commission intends to revise the Eurovignette Directive

The Eurovignette Directive provides EU Member States the opportunity to leverage infrastructure and external costs (air pollution, noise) of heavy goods vehicles (HGVs) through tolls and vignettes. It is one of the main instruments of the European Commission to stimulate Member States to implement the ‘polluter-pays’ and ‘user-pays’ principles in transport taxes and charges. In light of the planned revision of this Directive, IRU commissioned CE Delft to assess to what extent the social costs caused by road freight transport are covered by tax/charge revenues levied on this sector.

### Objective and scope

In this study we have examined the total infrastructure and external costs of road freight transport on EU28 motorways versus the total revenue that is collected from taxes and charges paid by this sector, both for 2013 (all figures are PPP corrected). We have done this for several scenarios, differentiating between the types of external costs to be covered and the type of vehicles (i.e. HGVs, vans) considered.

This report provides a summary of a more detailed study on the infrastructure and external cost coverage of road freight transport on EU28 motorways. More information and results can be found in the main report of this study.



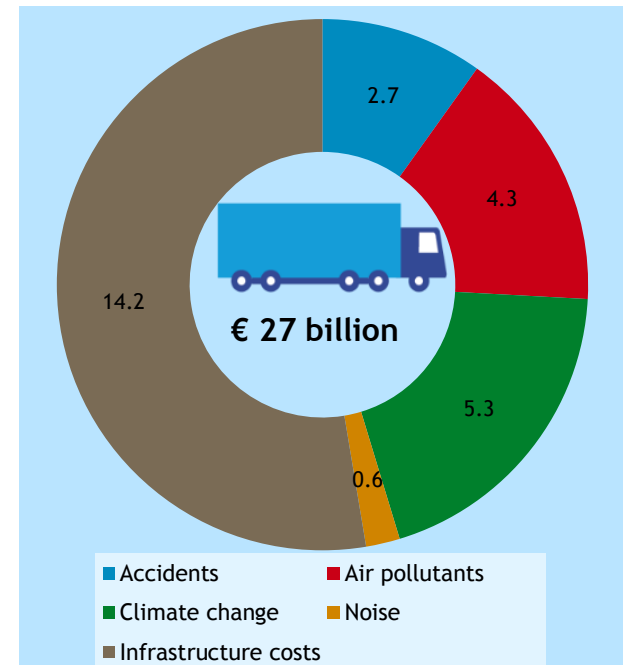
# Total infrastructure and external costs of HGVs

## The total infrastructure and external costs of HGVs on EU28 motorways in 2013 are € 27 billion

From the total infrastructure and external (accidents, air pollution, climate change, noise) costs of HGVs on EU28 motorways, the main part (about 53%) is related to the costs of constructing and maintaining motorway infrastructure.

As congestion costs are (partly) borne by the same parties causing them, it is not completely clear to what extent they can be regarded external from a total perspective. These costs (about € 4 billion for HGVs) are therefore presented separately in this report. The costs of upstream emissions (€ 3 billion for HGVs) are presented separately as well, as these effects are indirectly related to road transport.

Figure 1 Total external and infrastructure costs (excl. congestion and upstream emissions of HGVs on EU28 motorways in 2013 (billion €<sub>2013</sub>)



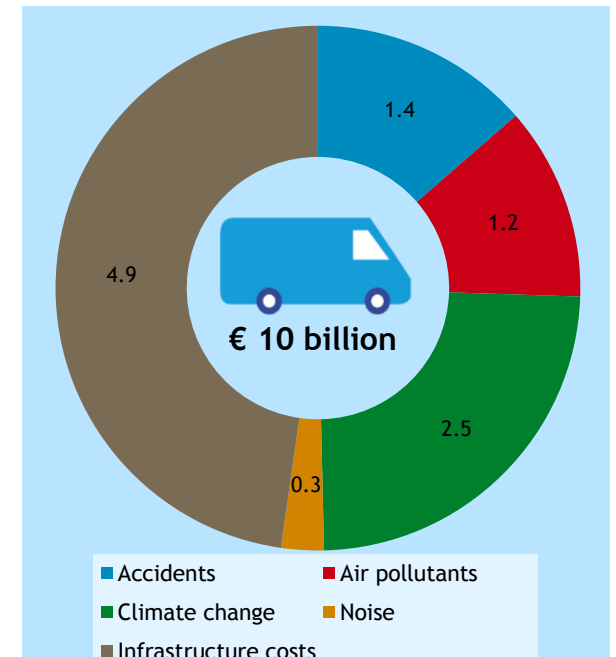
# Total infrastructure and external costs of vans

The total infrastructure and external costs of vans on EU28 motorways in 2013 are € 10 billion

As for HGVs, the main contributor to the total infrastructure and external costs of vans on EU28 motorways are the infrastructure costs, followed by climate change costs and accident costs.

The congestion costs and costs of upstream emissions are presented separately, as explained on the previous slide. These are € 3 billion and € 1 billion for vans, respectively.

Figure 2 Total external and infrastructure costs (excl. congestion and upstream emissions of HGVs on EU28 motorways in 2013 (billion €<sub>2013</sub>)



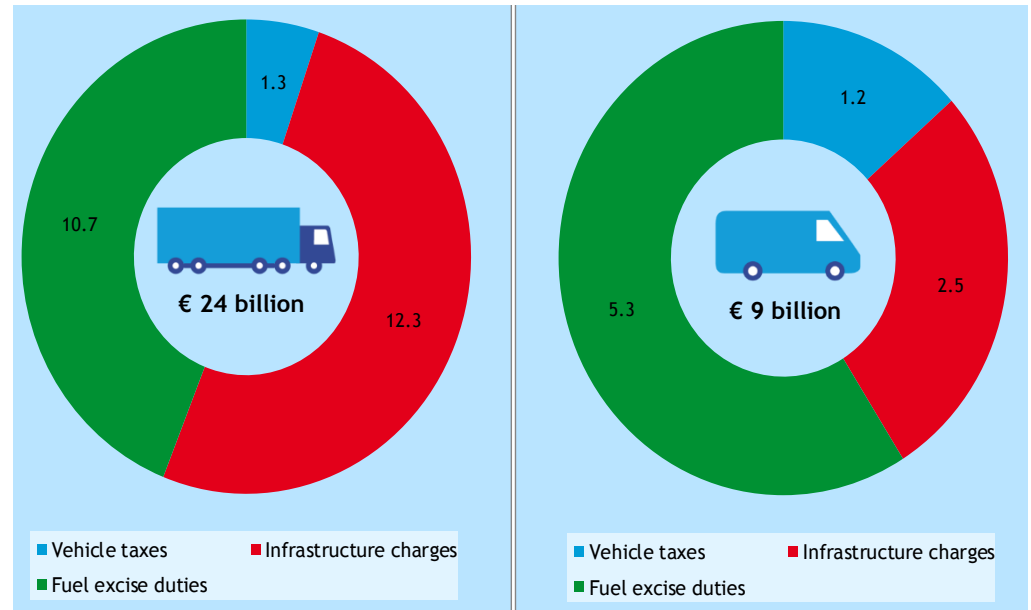
# Total revenue from road freight transport taxes and charges

The revenue from transport taxes and charges for HGVs and vans in 2013 is € 24 and € 9 billion, respectively

Several taxes and charges (registration tax, ownership tax, insurance tax, road infrastructure charges and fuel excise duties) are levied on HGVs and vans in the EU28. Only the share of the revenue of these taxes/charges that can be related to the kilometres driven on motorways is taken into account.

Infrastructure charges (HGVs) and fuel excise duties (vans) contribute most to total revenue, while the revenue from vehicle taxes is rather limited.

Figure 3 Total tax/charge revenue from HGVs and vans associated of HGVs on EU28 motorways in 2013 (billion €<sub>2013</sub>)

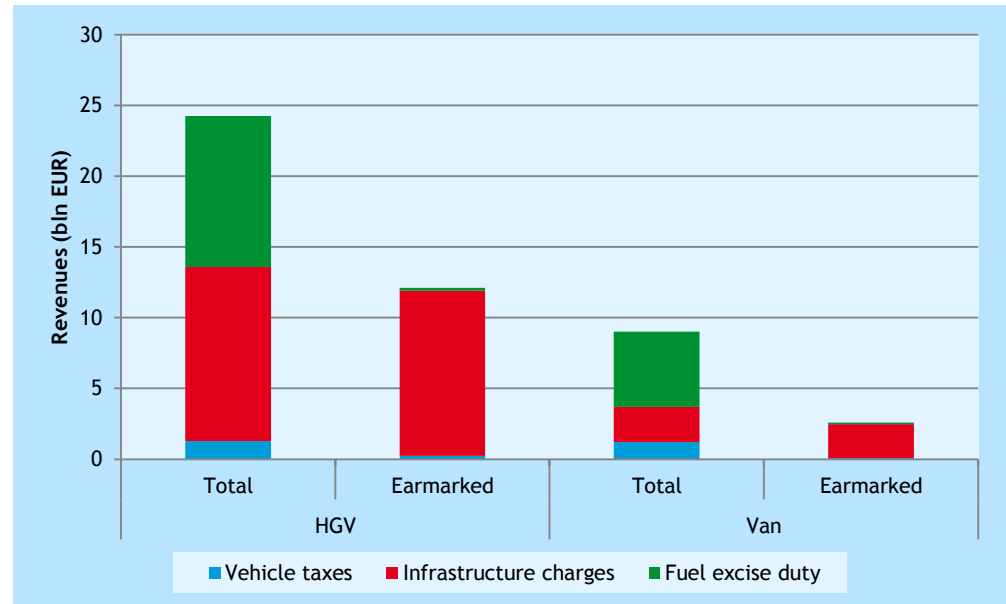


## Earmarked road freight transport tax/charge revenue

Part of the revenue of road freight transport taxes/charges are earmarked for investments in road infrastructure and/or mitigation measures of external costs

For HGVs, 35% of the total tax/charge revenue related to kilometres driven on EU motorways has been earmarked, while for vans this share is about 20%. The majority of this earmarked revenue is coming from road infrastructure charges; in contrast to vehicle taxes and fuel excise duties, the revenue of this instrument is earmarked in most EU countries.

Figure 4 Share of earmarked revenue in total revenue from taxes/charges associated to kilometres driven by HGVs and vans on EU28 motorways in 2013

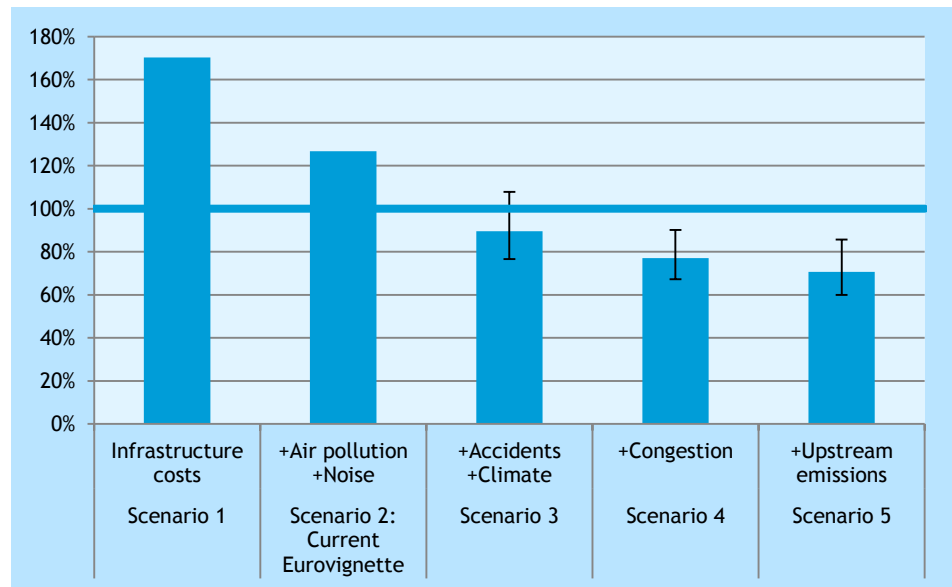


# Coverage of infrastructure and external costs of HGVs by taxes/charges

A significant part of the infrastructure and external costs of HGVs are covered by taxes/charges

The revenue from current taxes and charges related to the kilometres driven by HGVs on EU28 motorways do cover the categories that are included in the current Eurovignette Directive (infrastructure cost, air pollution and noise). The revenue exceeds these costs by 28%. However, the current revenue do not cover all infrastructure and external costs (but 90%). Including congestion and upstream emission costs as well would increase the difference between costs and revenue.

Figure 5 Cost coverage ratios for all scenarios for HGVs on EU28 motorways in 2013



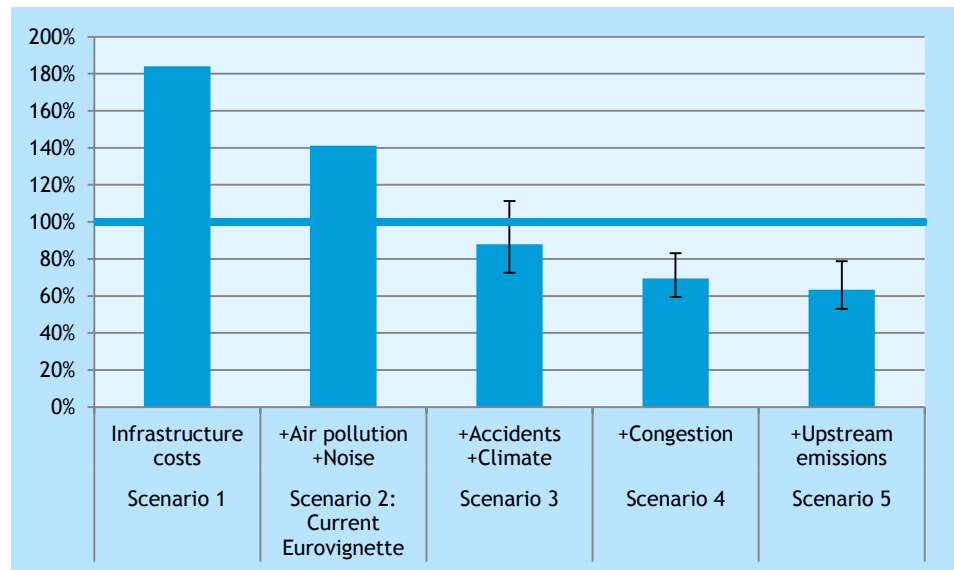


# Coverage of infrastructure and external costs of vans by taxes/charges

## Cost coverage ratios for vans are comparable to the ones for HGVs

As for HGVs, the revenue from current taxes and charges related to the kilometres driven by vans on EU28 motorways exceed the cost categories included in the current Eurovignette Directive (by 42%). Total infrastructure and external costs are not covered, though. These costs exceed the revenue by about 12%. Inclusion of congestion costs (Scenario 4) and costs of upstream emissions (Scenario 5) would increase this difference between costs and revenue further.

Figure 6 Cost coverage ratios for all scenarios for vans on EU28 motorways in 2013



## Robustness of results

### The general conclusions presented in this study are considered to be robust

Although the results of this study contain some uncertainties, the order of magnitude are reliable and hence the general conclusions are considered to be robust. However, it is good to keep in mind the main uncertainties of this study:

- Congestion costs: no EU wide consistent congestion indicators are available, such that the congestion cost estimates had to be based on model exercises;
- Climate change costs: the social costs of climate change (and hence the CO<sub>2</sub> price) are uncertain, which is reflected in the climate change costs estimates. To reflect this large uncertainty in the results, a bandwidth of the costs of climate change is presented (see Figure 5 and 6).

- Infrastructure costs: the availability of detailed data on infrastructure expenditures differ widely between EU countries. Particularly for many Eastern European countries limited data is available, resulting in relatively significant uncertainties in the infrastructure costs estimates for EU28 motorways.

More information on the uncertainties in other cost and revenue categories can be found in the main report.



## Colophon

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