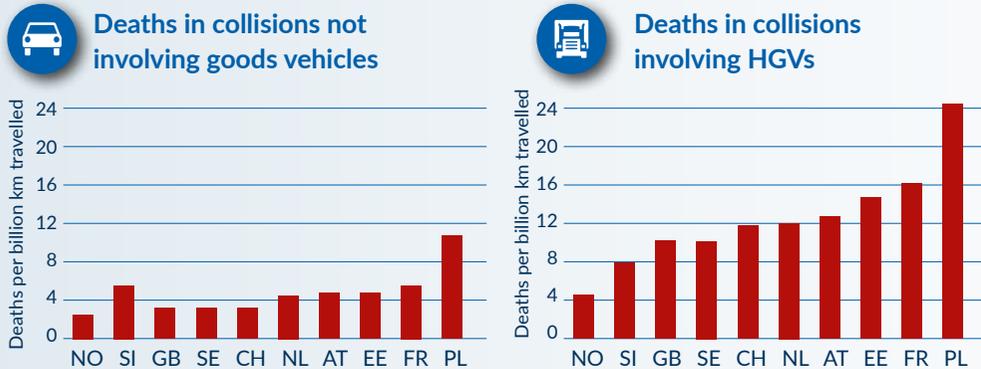


Bigger & Heavier Trucks: Facts & Figures

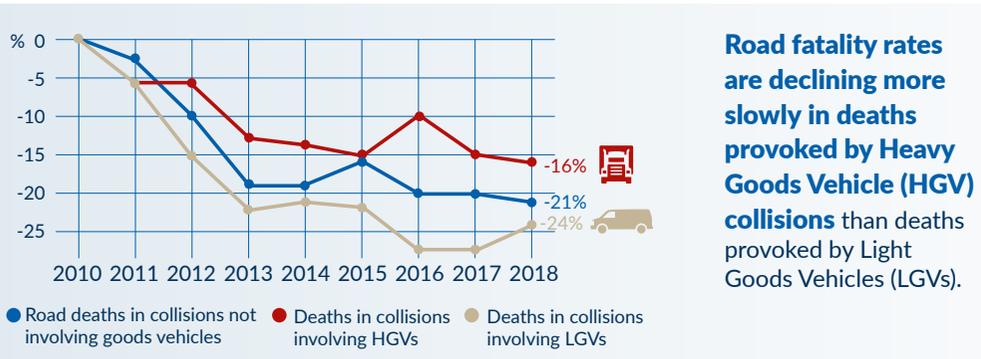
As the European Commission revises the maximum allowances for the weight and dimensions of road vehicles, it is important to consider the risk of shifting traffic away from less polluting transport modes, and the wider impact on safety, transport infrastructure and coherence with European climate goals.

Impact on Road Safety



European Transport Safety Council (ETSC) 2020 data shows that death rates are much higher in collisions involving Heavy Goods Vehicles (HGVs).

Source: ETSC (European Transport Safety Council) - <https://etsc.eu/goods-vehicles/>



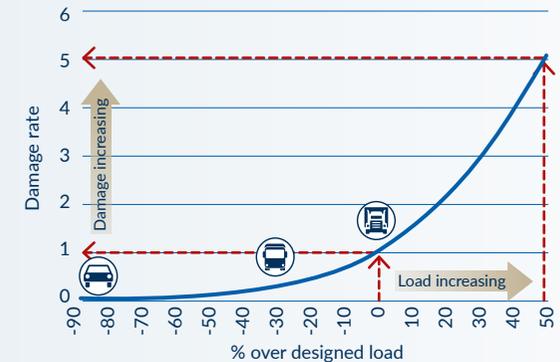
Road fatality rates are declining more slowly in deaths provoked by Heavy Goods Vehicle (HGV) collisions than deaths provoked by Light Goods Vehicles (LGVs).

Source: ETSC (European Transport Safety Council) - <https://etsc.eu/goods-vehicles/>

Impact on Road Infrastructure

Road damages increase exponentially with heavier loads, to a power of 4. This is known as the “Fourth Power Law”.

- 10% load increase induces **46%** more damage.
- 50% load increase results in **5x** more damage.



Source: PIARC - Overweight Vehicles: Impact On Road Infrastructure And Safety - www.piarc.org

Investments and maintenance costs needed to adapt and maintain road infrastructure are significant and multifaceted:

	ADDITIONAL MAINTENANCE COSTS (EU27) when allowing increase from 40 to 44 tons (assuming 25% penetration)	ADDITIONAL INFRASTRUCTURE ADAPTATION COSTS (EU27) when allowing increase from 40 to 44 tons & from 18.5m to 25.25m
For pavement	€1.7 bn/year ¹	N/A
For bridges	Up to €5 bn/year ¹	€80 M. for 44-ton trucks (solely on highways & expressways in Austria) ² Extrapolation to EU27 would amount to over €3-4bn
For roundabouts	N/A	Adaptations needed for longer trucks
For rail level crossings	100,000 level crossings to be adjusted in EU27 (14,000 in Germany alone with a capability to upgrade them limited to max. 100/year) ³	
For tunnels	Adaptations needed on curves & gauges, notably for “longer” and “higher” vehicles	

Sources: 1. PIARC - Overweight Vehicles: Impact On Road Infrastructure And Safety (p.63)

2. Austrian Curatorship for Road Safety - Gigaliner mit 44 und 48t - Auswirkungen auf die hochrangige Verkehrsinfrastruktur

3. Deutsche Bahn

Impact on Overall Transport System

Use of heavier, longer trucks on long distances causes **reverse modal shift***



Up to
-13% loss
in **Rail-Road**
Combined Transport



Up to
-38% loss
in **Single**
Wagonload

*Source: FRAUENHOFER ISI & K+P, Study on the Effects of the Introduction of LHV's on Combined Road-Rail Transport and Single Wagonload Rail Freight Traffic (2011)

Impact on Energy use

Road energy consumption will remain higher than rail energy consumption:

Rail is **7x more energy-efficient** than road due to physical advantages such as lower rolling and air resistance.



Distance per energy unit consumed

Rail accounts for just **1.8%** of EU energy consumption in transport, to carry 17% of freight and around 8% of passengers of EU27 inland transport (pre-COVID).

Source: calculated from data in "EU Transport in Figures - Statistical Pocketbook 2021" (Eurostat - EC)

Can we MITIGATE some of these impacts?



YES, by ensuring that trucks' weights and dimensions are compatible with combined transport:



- Combined transport reconciles the energy- and CO₂-efficiency of long-distance rail and inland navigation with trucks' flexibility to reach final destinations.



- As **80% of rail traffic in Europe is run on electrified lines***, the technology to make transport more energy- and CO₂-efficient is already there.



- Trucks used on the **short-distance road legs (last-mile)** of rail-road combined transport naturally need less energy autonomy than conventional long-distance trucks (once electrified they will need smaller batteries than conventional trucks).



- Combined transport also addresses the **shortage of truck drivers** - only 1 train driver is needed where 40 truck drivers are mobilised - and preserves truck **drivers' work-life balance** (as they cover short distances and can return to the comfort of their homes every evening).

*Source: Eurostat and European Alternative Fuels Observatory, <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/rail>



The Weights & Dimensions and Combined Transport Directives should be revised together.