

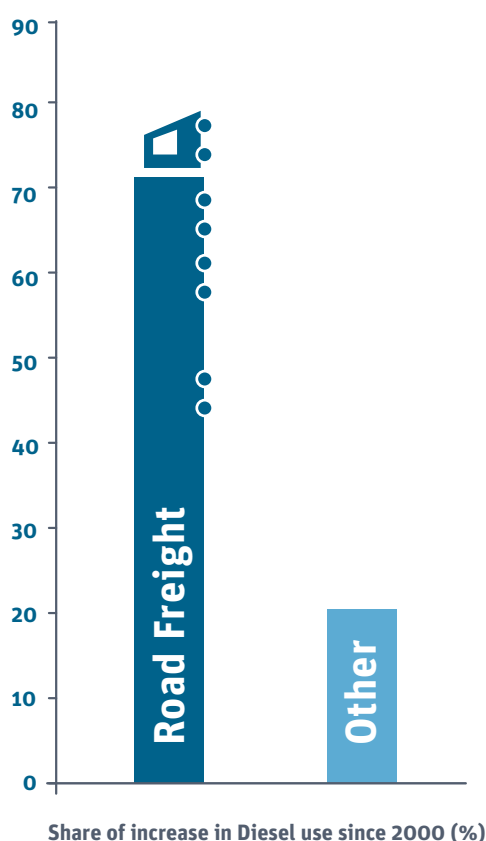


Is Low-Carbon Road Freight Possible?

Road freight is a backbone of the economy, irreplaceable for moving goods. But it burns 17 million barrels of oil per day, and growing. What levers can bring down road transport's CO₂ emissions?

The issue

Fully 80% of the global net increase in diesel use since 2000 came from road freight



Diesel Guzzlers

Road freight is the fastest-growing CO₂ emitter

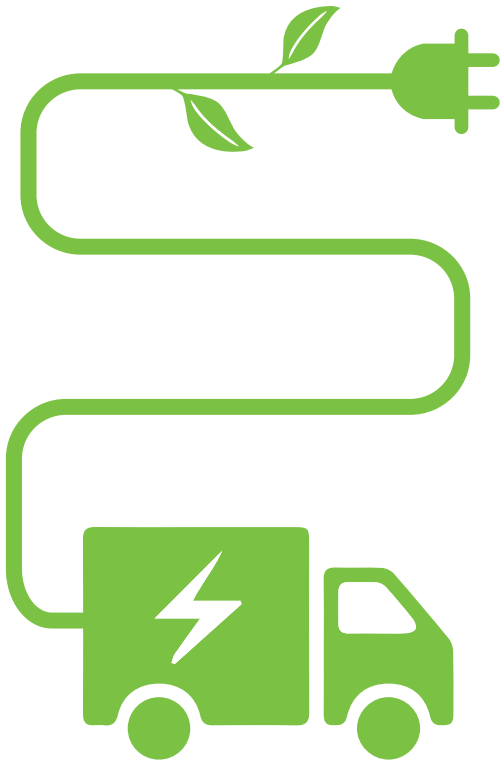
Moving goods by road consumes about 50% of all diesel produced. Fully 80% of the global net increase in diesel use since 2000 come from road freight. And road freight activity is set to more than double from 2015 to 2050. This will offset any expected efficiency gains and lead to an increase in emissions by 2050, not a reduction. Trucks are in fact the fastest growing source of global oil demand. They account for 40% of the expected increase in oil demand to 2050 and 15% of the increase in global CO₂ emissions. Trucks will even surpass passenger cars as the major oil consumers.

Decarbonising road freight is low on policy agendas

Transport is one of the main sectors responsible for climate change. It accounts for 23% of energy-related CO₂ emissions. And unlike other sectors, it has not yet succeeded to reduce its carbon intensity. In the European Union, total CO₂ emissions fell 20% from 1990 to 2016, transport emission increased by 27%. Within the transport sector, less policy pressure has been exerted on road freight than on passenger cars. Fuel economy standards apply to more than 80% of light-duty vehicles. Yet only four countries (Canada, China, Japan and the US) currently have fuel economy standards for trucks, covering 51% of the global road freight market.

Key insights

Road freight will more than double to 2050. The increased demand will offset any CO₂ reductions from efficiency gains



Decarbonising road freight needs carbon-free fuels

Heavy trucks on long-haul trips generate most of road freight's CO₂ emissions. But cost-effective alternatives are lacking. Road offers a level of flexibility, accessibility and overall service level at competitive costs that limit the possibilities of modal shift. More efficient logistics and vehicles are part of the roadmap toward decarbonisation, but alone are not enough to reach climate target reductions. Thus, to reach climate targets, zero-emissions truck fuels would need to be in general use by 2050.

There is no single alternative truck fuel

A silver bullet to replace diesel in trucks is not in sight. Given the current state of research and commercial deployment, none of the known zero-emissions truck fuels will see widespread use in the short to medium term. "Electric roads" could efficiently power long-haul trucks, but they will only cover some trips. Hydrogen, electric batteries and advanced biofuels also have inherent limitations. They can complement each other, however. Policies should ensure that synergies are exploited to maximise any CO₂ reductions possible even in the short to medium term. More research and pilot projects will give flexibility to scale up technologies that deliver on public policy objectives. Priorities will be needed, e.g. for investments in supply infrastructure. Future breakthroughs in advanced biofuels, synthetic renewable fuels or carbon storage and sequestration may happen. Sound policy will not bank on this, however.

To Dos

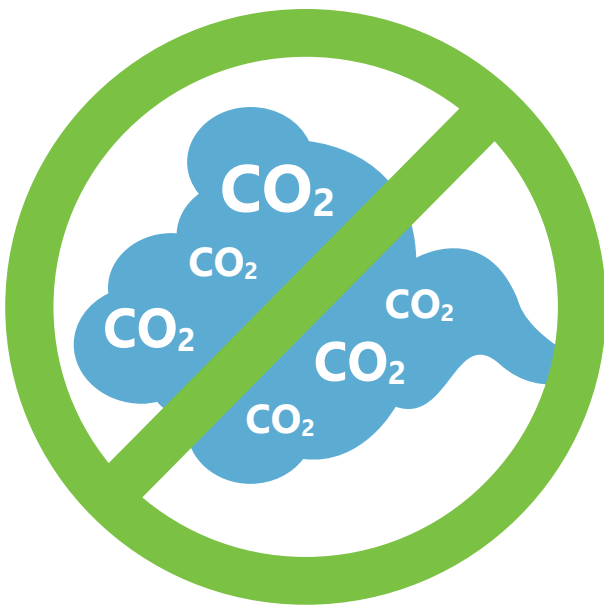
Logistics data offers huge potential to calibrate decarbonisation policies based on evidence

Scale up tested decarbonisation measures for trucks

Improving the fuel efficiency of heavy goods vehicles is a core component of decarbonising road freight. Aerodynamic retrofits, reduced-rolling resistance of tyres, vehicle weight reduction, increased engine efficiency and hybridisation all work. Widespread deployment will be helped by ambitious standards for fuel economy and CO₂ emissions. These must include heavy freight trucks. For urban freight, alternative fuels provide a solution. Policy should consider pricing mechanisms, stricter emissions standards, zero-emissions zones and recharging infrastructure. Incentives for the adoption of alternative fuels by large fleets can deliver scale.

Use more data to take evidence-based decisions

Data are at the heart of logistics. This offers huge potential to calibrate decarbonisation policies based on evidence. Vital indicators for policy decisions, e.g. for vehicle capacity utilisation, exist, but are usually owned by private businesses. Access to such information for public policy purposes is critical. Ways to use it without infringing on privacy and commercial interests can be found. Data analysis should also be improved. New modelling tools and more disaggregated approaches would provide more relevant insights for policy makers and industry.



Further reading:

Towards Road Freight Decarbonisation (ITF 2018)

About



Who we are

The International Transport Forum at the OECD is an intergovernmental organisation with 59 member countries. It acts as a think tank for transport policy and organises the Annual Summit of transport ministers. ITF is the only global body that covers all transport modes. The ITF is administratively integrated with the OECD, yet politically autonomous.

What we do

The ITF works for transport policies that improve peoples' lives. Our mission is to foster a deeper understanding of the role of transport in economic growth, environmental sustainability and social inclusion and to raise the public profile of transport policy.

How we do it

The ITF organises global dialogue for better transport. We act as a platform for discussion and pre-negotiation of policy issues across all transport modes. We analyse trends, share knowledge and promote exchange among transport decision-makers and civil society. The ITF's Annual Summit is the world's largest gathering of transport ministers and the leading global platform for dialogue on transport policy.

Decarbonising Transport initiative

The Decarbonising Transport initiative

promotes carbon-neutral mobility to help stop climate change. It provides decision makers with tools to select CO₂ mitigation measures that deliver on their climate commitment.

Climate change affects lives around the globe. Rising temperatures cause draughts, rising sea levels threaten low-lying regions, ever more extreme weather leads to severe disruptions. Climate change cannot be stopped without decarbonising transport. Transport emits around 23% of the energy-related CO₂ that feeds global warming.

Without immediate action, its share could reach 40% by 2030. Transport emissions have grown faster than those of any other sector over the past 50 years. Demand for transport will continue to grow massively in the coming decades. As a result, CO₂ emissions from transport activity will not fall, but could increase by 60% by 2050. And because transport relies on oil for 92% of its energy, it is particularly hard to decarbonise.

The initiative is funded by voluntary contributions from a number of sources including ITF member countries, Corporate Partnership Board, multilateral development banks, as well as industry associations and foundations.

www.itf-oecd.org/decarbonising-transport

