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The Role of Road Transport in Decarbonisation and Sustainability

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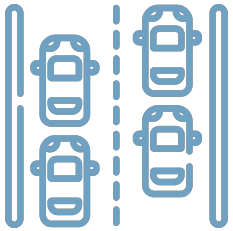
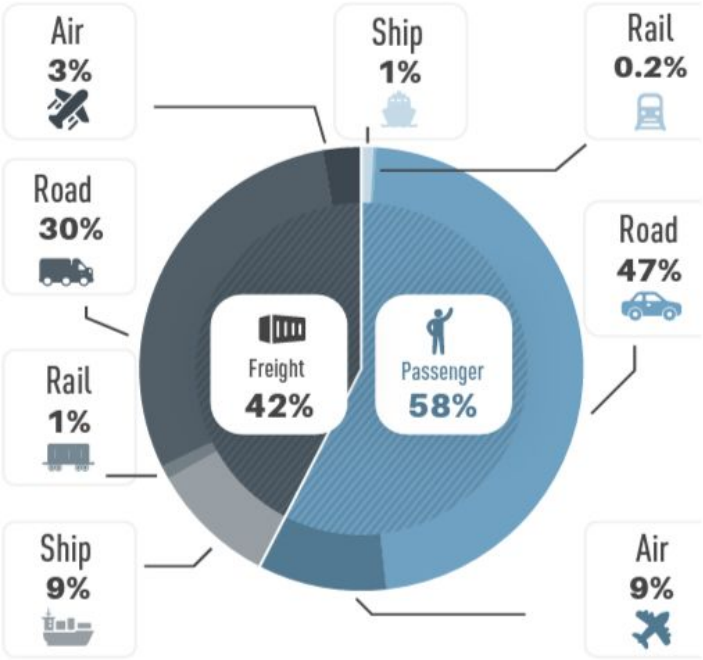


Road transport contributes the largest GHG emissions among all transport modes.

Road transport (passenger & freight) contributed **more than three-quarters of transport CO_2** emissions in 2019.

Rising road transport demand leads to traffic congestion with significant economic and public health costs.

Transport CO_2 emissions by activity and mode, 2019



Source: Shell (2020), The Energy Transformation Scenarios, https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/the-energy-transformation-scenarios.html (accessed 20 August 2022)

Reductions of transport emissions are urgently required to achieve decarbonised pathways

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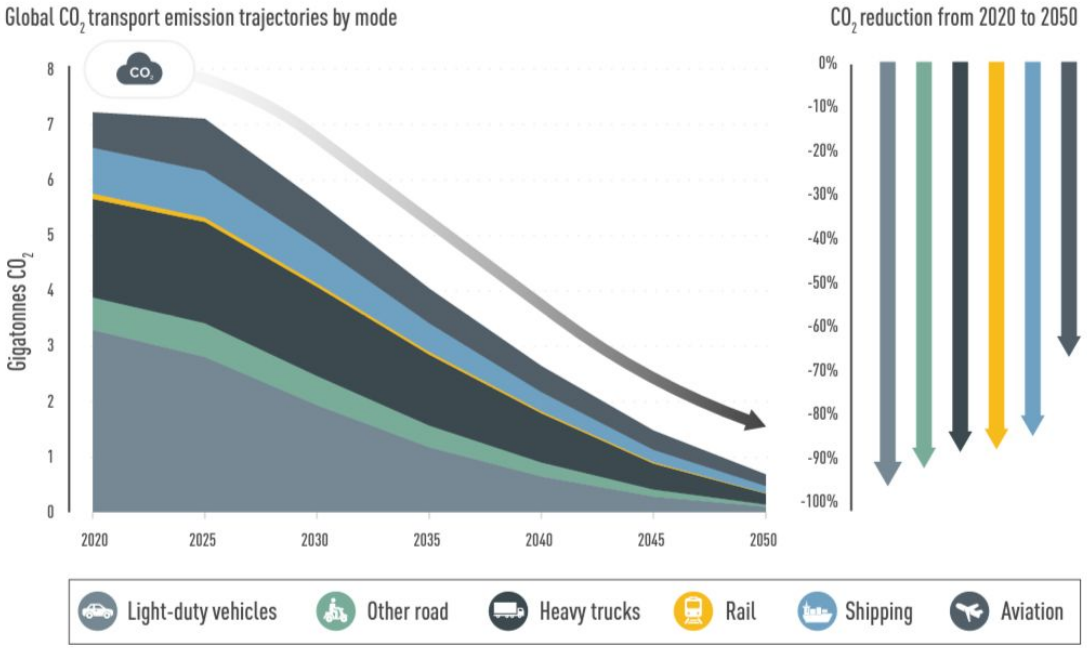
Transport pathways that limit global warming to **1.5°C with no or limited overshoot** will require a **59% reduction of CO_2 emissions from transport by 2050**, compared to 2020 levels.

The **IEA net-zero emission scenario** will require a **90% reduction of CO_2 emissions from transport by 2050,** compared to 2020 levels.

Different modes will require different decarbonisation levels.
i.e. road vehicles contribute more than rail, shipping and aviation.

Global transport CO_2 emission trajectories by mode, 2020 to 2050



Source: IEA (2021), Net Zero by 2050, IEA, Paris, https://www.iea.org/reports/net-zero-by-2050 (accessed 20 January 2023)

Impacts of road transport on our lives

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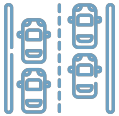


Land traffic contributes 5% of the mortality from $PM_{2.5}$ globally.

➔ 32% in North America

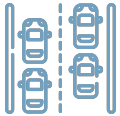
Indirect costs of fossil fuel subsidies (e.g. respiratory diseases, traffic crashes) are **10 times greater than direct financial costs**.

Traffic crashes: Leading cause of death among 5-29 year-olds worldwide; 93% of them in LMICs

➔ **No reduction in traffic deaths for a decade** despite ambitious targets.

➔ Investment in **public transport** can reduce crashes by attracting private vehicle users.

1 in 4 adults and 4 in 5 adolescents are **not sufficiently active** due to **infrastructure that prioritises vehicles, not people**.



Post-pandemic horizon:
By 2021, **congestion** had returned to pre-pandemic levels in many cities, and in some places it worsened.

At a minimum, to transform our transport and mobility systems, we know we need to:

Implement **integrated, inter-modal and multi-dimensional** approaches across passenger and freight transport

Put **walking, cycling and public transport** at the heart of passenger transport strategies, and end the unsustainable car-centric model

Increase **vehicle efficiency** and **reduce vehicle size and volume**

Expand the uptake of **electric vehicles beyond cars** and increase **charging infrastructure**

End **fossil fuel dependency** in transport and increase the uptake of **renewable energy**, with policies that support an **equitable and just transition**

Scale up financing for sustainable, low carbon transport solutions and redouble efforts on the **adaptation and resilience** of transport systems

Repurpose funds currently going towards fossil fuels subsidies in transport or other polluting activities

Fill the **capacity needs** to harness opportunities, ensuring a just transition and equitable access to transport, jobs and services

Improve **data and data literacy**

Mobilise **multi-stakeholder action and ambition**

Collective, active and electrified transport is key for a more equitable, accessible, healthy, green, sustainable and resilient transport future

SLOCAT Transport, Climate and Sustainability Global Status Report 3rd edition

Global and regional stories of where we are and where we need to get to urgently

One-stop shop for the latest available data, targets and developments

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SLOCAT-VREF Young Leaders in Sustainable Transport

The SLOCAT Partnership and the Volvo Research and Educational Foundations (VREF) convene the **Young Leaders in Sustainable Transport** to build bridges between the transport community and young people and to explore new perspectives by creating an interface between knowledge and policy.

Find out more here: https://slocat.net/youngleaders/

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