

# How do we decarbonize the transport sector to meet air quality and climate goals?

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CEC JPAC Public Forum

## About the ICCT and our mission

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- An independent nonprofit research organization since 2005
- Providing exceptional, objective, timely analysis to environmental regulators
- Empowering them to improve the environmental performance of transportation to benefit public health and mitigate climate change
- We want global leaders to use our expert research to develop ambitious, coordinated policies to stop transportation pollution.
- We help create policy consistent with limiting warming to well below 2°C and pursuing efforts to limit warming to 1.5°C this century.

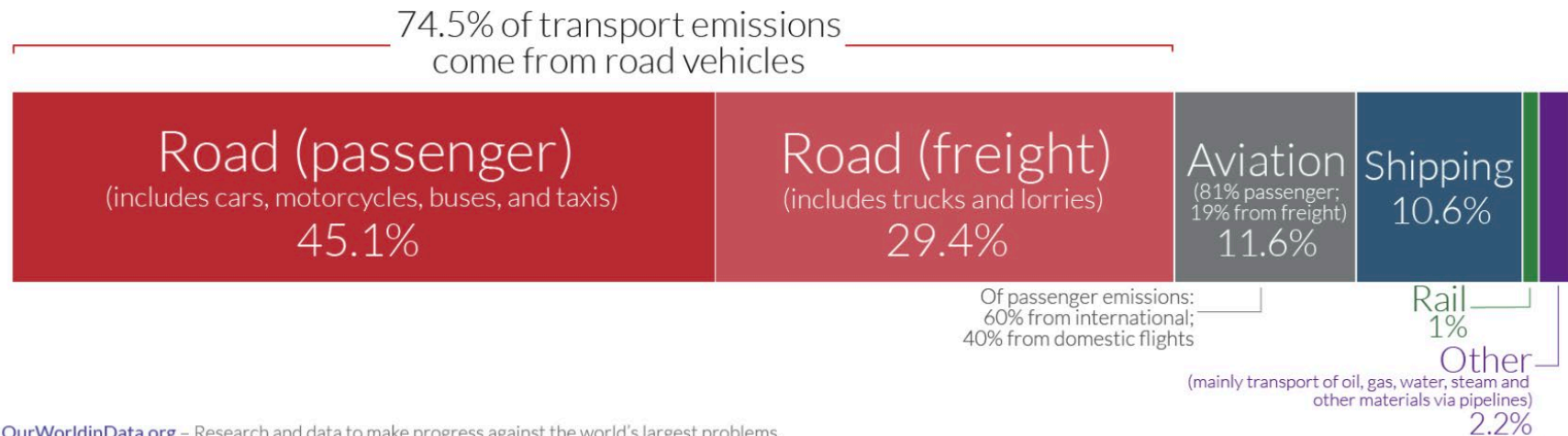
## Why do we need to decarbonize transport?

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- Transport accounts for roughly  $\frac{1}{4}$  of GHG emissions from energy globally
- Transport emissions continue to grow – tied with industry as the fastest-growing sectors from 1990–2022
- 91% of transport energy comes from oil
- Transport accounts for roughly 380,000 annual air pollution deaths each year

# What is the breakdown of transport sector GHG emissions?

Light-duty vehicles represent the greatest fraction, but freight, aviation, and shipping are growing most quickly

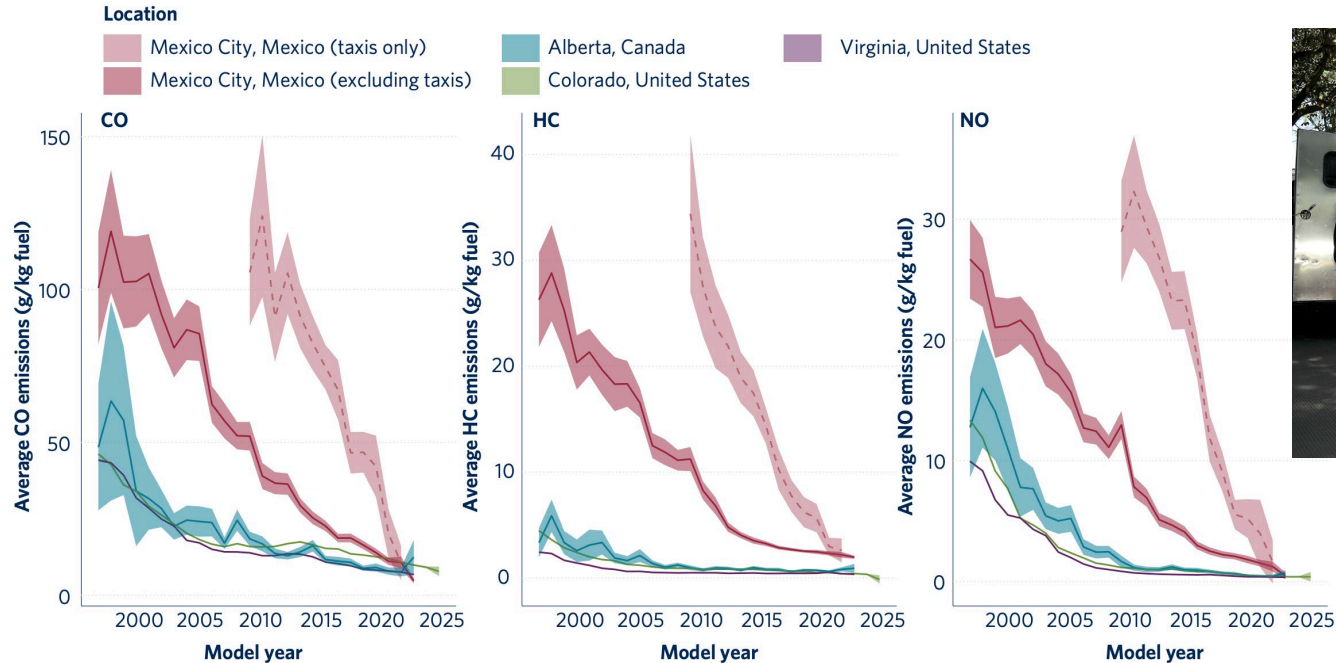


OurWorldinData.org – Research and data to make progress against the world's largest problems.

Data Source: Our World in Data based on International Energy Agency (IEA) and the International Council on Clean Transportation (ICCT).

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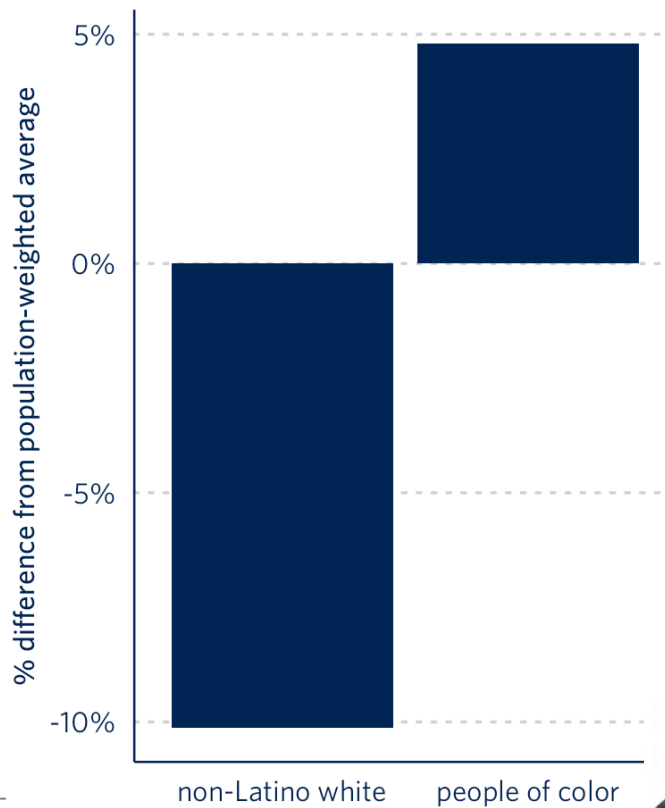
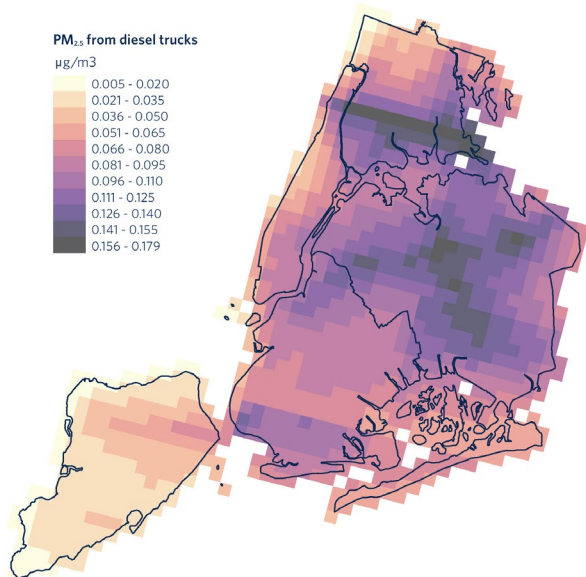
# Real-world vehicle emission testing programs show impacts of regulation and technology development



Source: <https://www.trueinitiative.org/publications/reports/assessment-of-real-world-passenger-vehicle-and-taxi-emissions-in-mexico-city>

# Despite improvements, pollution from gasoline and diesel vehicles continues to negatively impact air quality and human health

Spatial analyses indicate that people of color are disproportionately exposed to PM<sub>2.5</sub> from diesel trucks in New York City



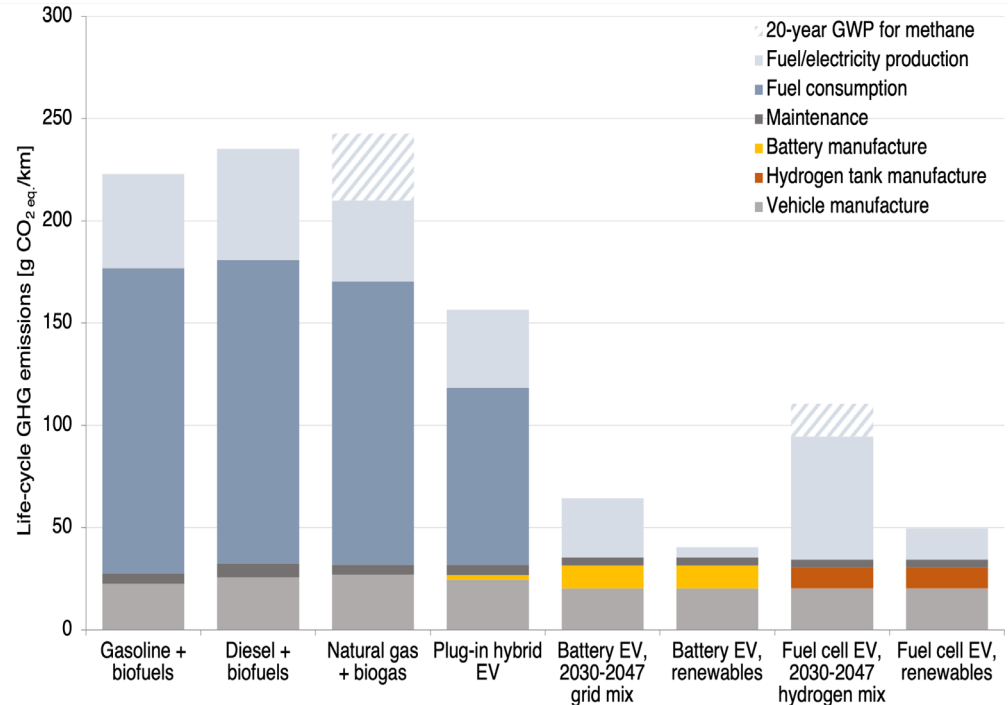
# Only battery-electric and hydrogen fuel cell vehicles have the potential to achieve zero tailpipe emissions and near-zero life-cycle GHG emissions

There is no scalable pathway to decarbonize the internal combustion engine

Even today, zero-emission vehicles (ZEVs) have by far the lowest lifetime GHG emissions compared to all other technologies.

As electric power becomes lower carbon, GHG emissions from electric vehicles will decline further.

Lifecycle GHG emissions for typical passenger car sold in 2030

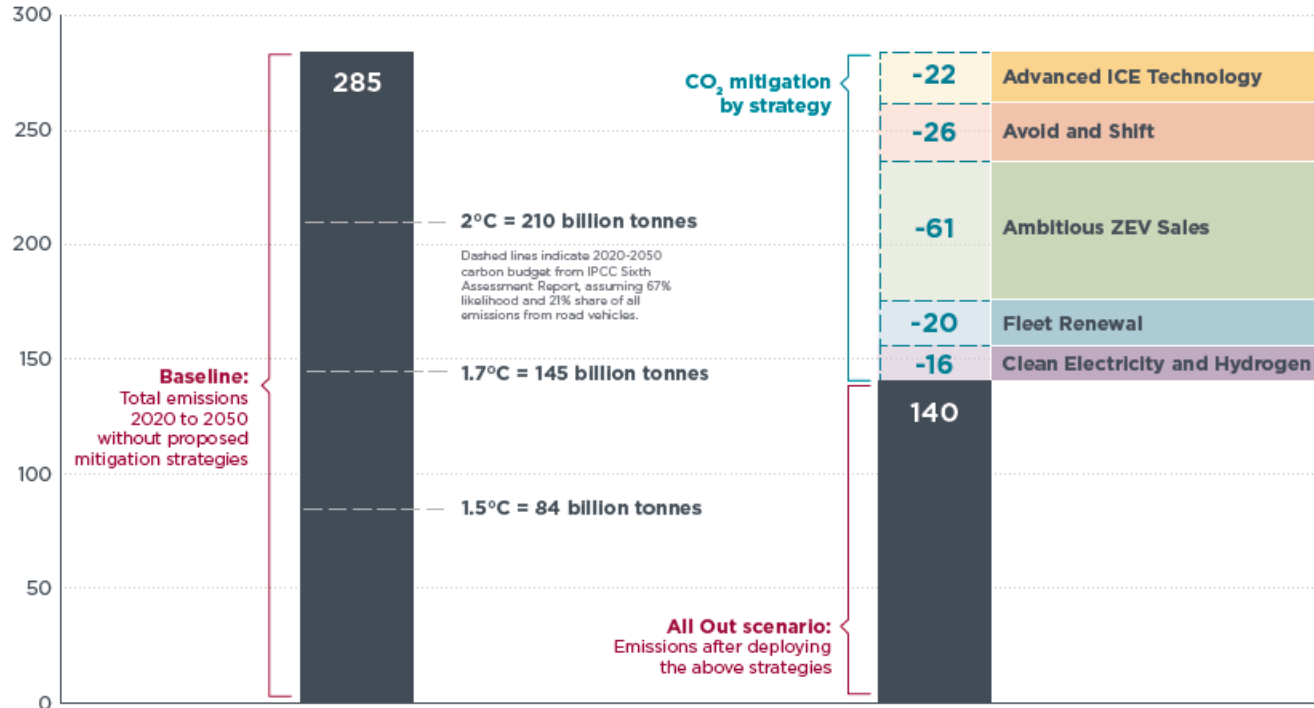


Source: <https://theicct.org/wp-content/uploads/2021/12/zevtc-decarbonizing-by-2050-Jul2021%E2%80%AF.pdf>

# A rapid global transition to ZEVs along with complimentary strategies can keep Paris Agreement goals within reach

## Mitigation potential of ambitious but feasible strategies

Cumulative well-to-wheel CO<sub>2</sub> transportation emissions (billion tonnes) projected from 2020 to 2050





## 5 key policy areas for the ZEV Transition



**Phase-out targets:** Setting a vision and market signal to phase out combustion vehicles



**Binding regulations:** Ensuring model availability and supply



**Financial incentives:** Making ZEVs cost-effective today



**Charging infrastructure:** Maximizing ZEVs' convenience



**Consumer awareness/Fleet purchase requirements:** Building understanding of ZEVs' benefits and creating demand

**About:** The ZEVTC was formed as the world's first strategic forum through which ministers and government representatives meet to collaborate to accelerate the pace of the global transition to zero emission vehicles.

**Approach:**

- Promote political dialogue among the countries to align strategies on electrification
- Create diplomatic avenues for leading governments to promote faster ZEV transitions
- Provide a platform for likeminded governments to work together on major questions and challenges for the ZEV transition
- Provide direct support for ZEV transitions in emerging economies

## Zero Emission Vehicles Transition Council *ZEV Transition Council | ZEVTC*

**Founded:** November 2020

**Members:** California, **Canada**, Denmark, European Commission, France, Germany, India, Italy, Japan, **Mexico**, Netherlands, Norway, Spain, South Korea, Sweden, United Kingdom, **United States**

**Co-Chairs:**

- United Kingdom
- United States

**ICCT Role:** Secretariat and technical advisor

**2024 Key Events:**

- Transforming Transportation; Washington DC
- ITF Summit; Leipzig, Germany
- COP 29; Baku, Azerbaijan

**Thank you!**  
**Please send questions to: [t.dallmann@theicct.org](mailto:t.dallmann@theicct.org)**

