Supply-side regulations for heavy-duty vehicles

Felipe Rodríguez, PhD. Deputy Managing Director ICCT Europe

Global MOU Summit 2025

June 2, Arnhem

icct
THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

The ICCT is an independent, nonprofit research organization advancing clean transportation globally.

We conduct research, provide technical expertise, and advance policies to reduce greenhouse gas emissions and air pollution from the transportation sector.

170+
DIVERSE STAFF

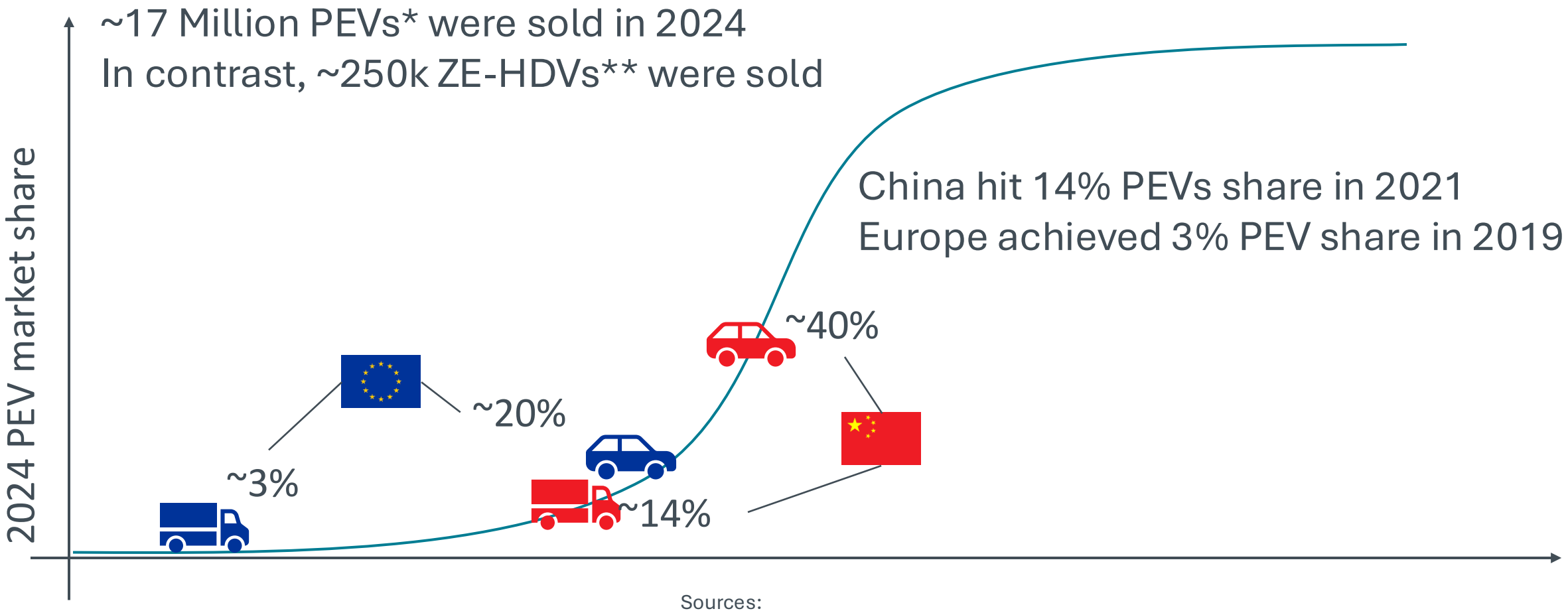
4
CONTINENTS

250+
ORIGINAL RESEARCH PUBLICATIONS ANNUALLY

50+
POLICIES AND REGULATIONS DIRECTLY SHAPED BY OUR WORK IN THE PAST 5 YEARS ALONE

2+ BILLION
TONS OF CO_2 ABATED

E-truck transition lags electric cars by about 3-5 years

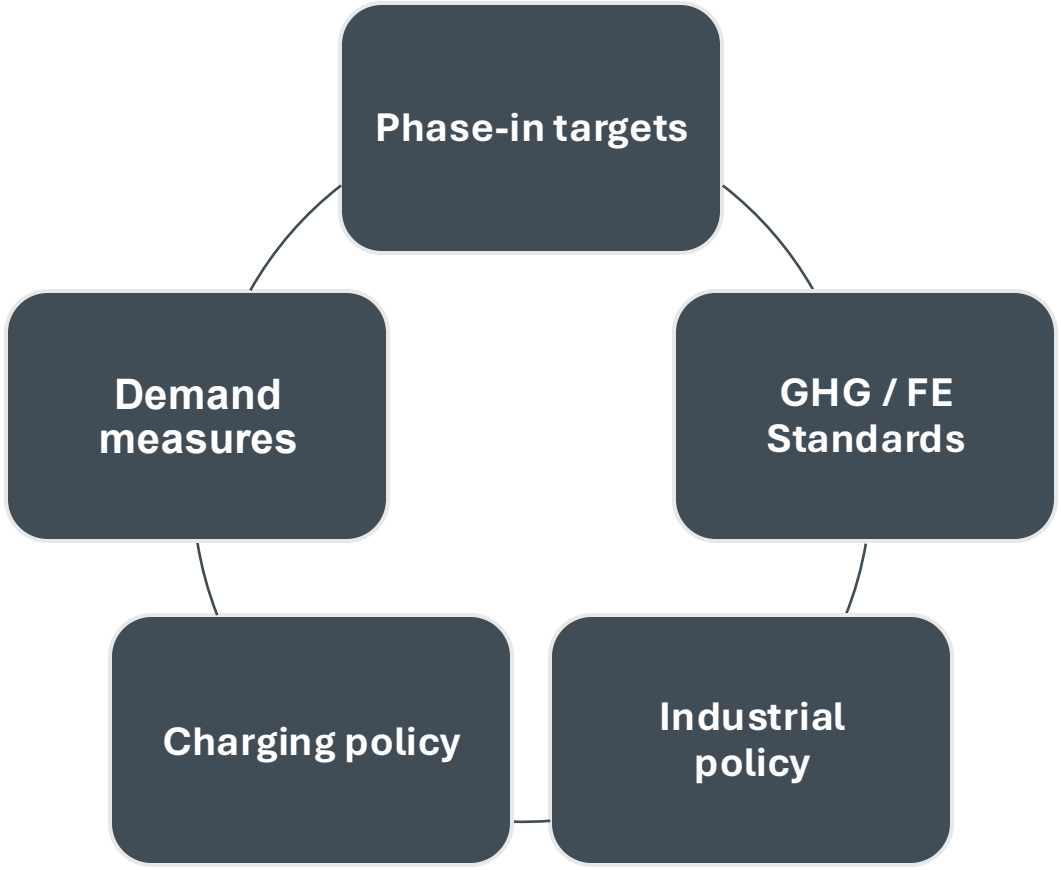


*BEV+PHEV, below 3.5 tonnes
**BEV+FCEV, above 3.5 tonnes.

Sources:
ICCT, https://theicct.org/publication/global-ev-market-monitor-ldv-2024-h1-dec24/
ICCT, https://theicct.org/publication/r2z-eu-hdv-market-development-quarterly-jan-dec-2024-feb25/
ICCT, https://theicct.org/publication/ze-mhdv-market-china-january-june-2024-nov24/

What can we learn from the EV transition in cars?

- Clear political ambition provides long-term certainty for industry and consumers.
- Coordinated policies drive supply, demand, and infrastructure for electrification.
- Manufacturing incentives through effective industrial ensure EV production at scale.
- Purchase incentives and fiscal policies accelerate market adoption.
- Charging infrastructure investment enables real-world fleet deployment.



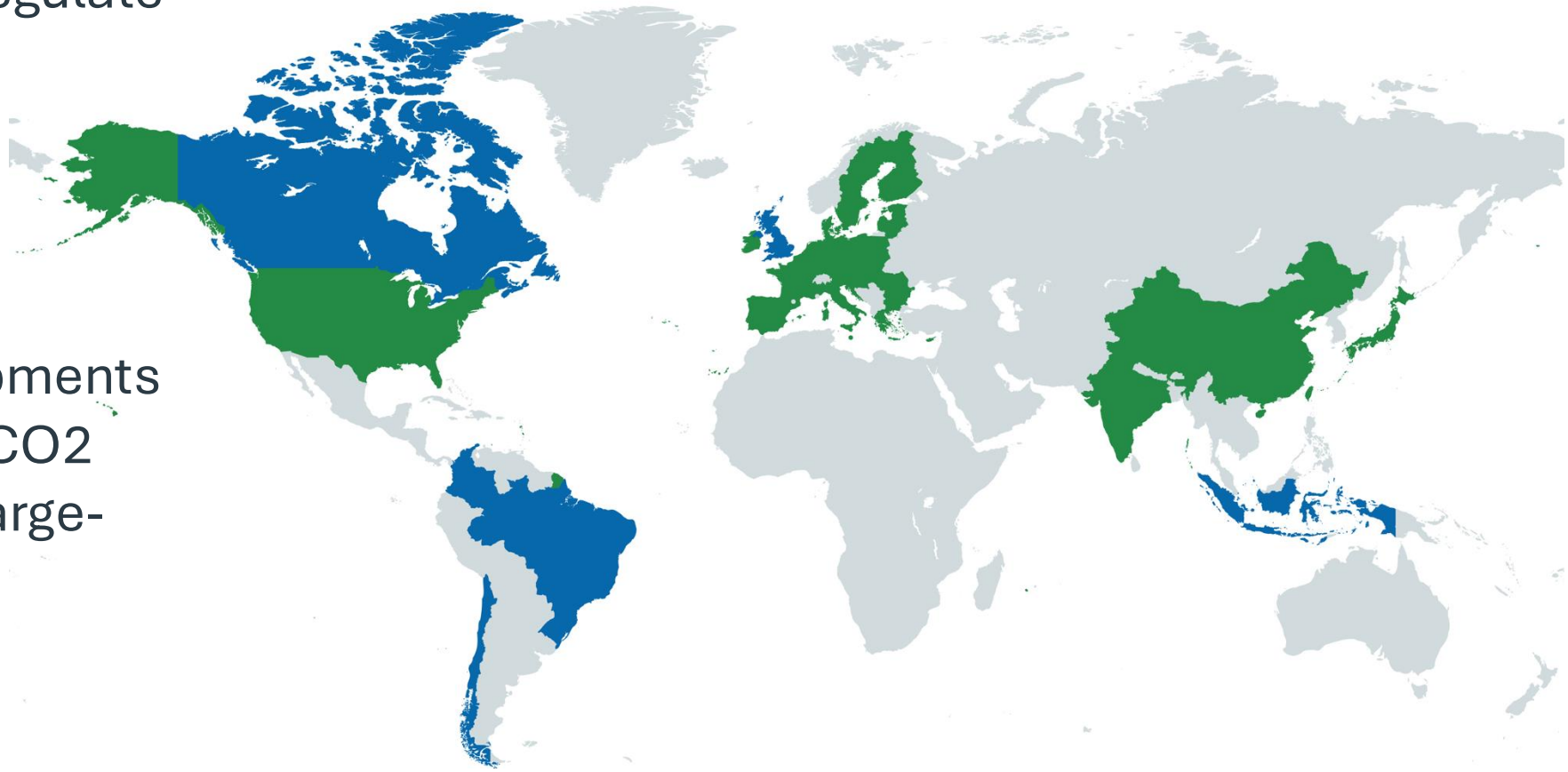
Source: ICCT, https://theicct.org/publication/zevtc-effective-policies-dec2021/

Where are the truck supply-side regs. happening?

Most major markets regulate truck efficiency improvements.

Recent policy developments aim to reduce freight CO2 emissions and drive large-scale electrification.

Truck Efficiency and Electrification Regulations Green – Adopted, Blue – Emerging



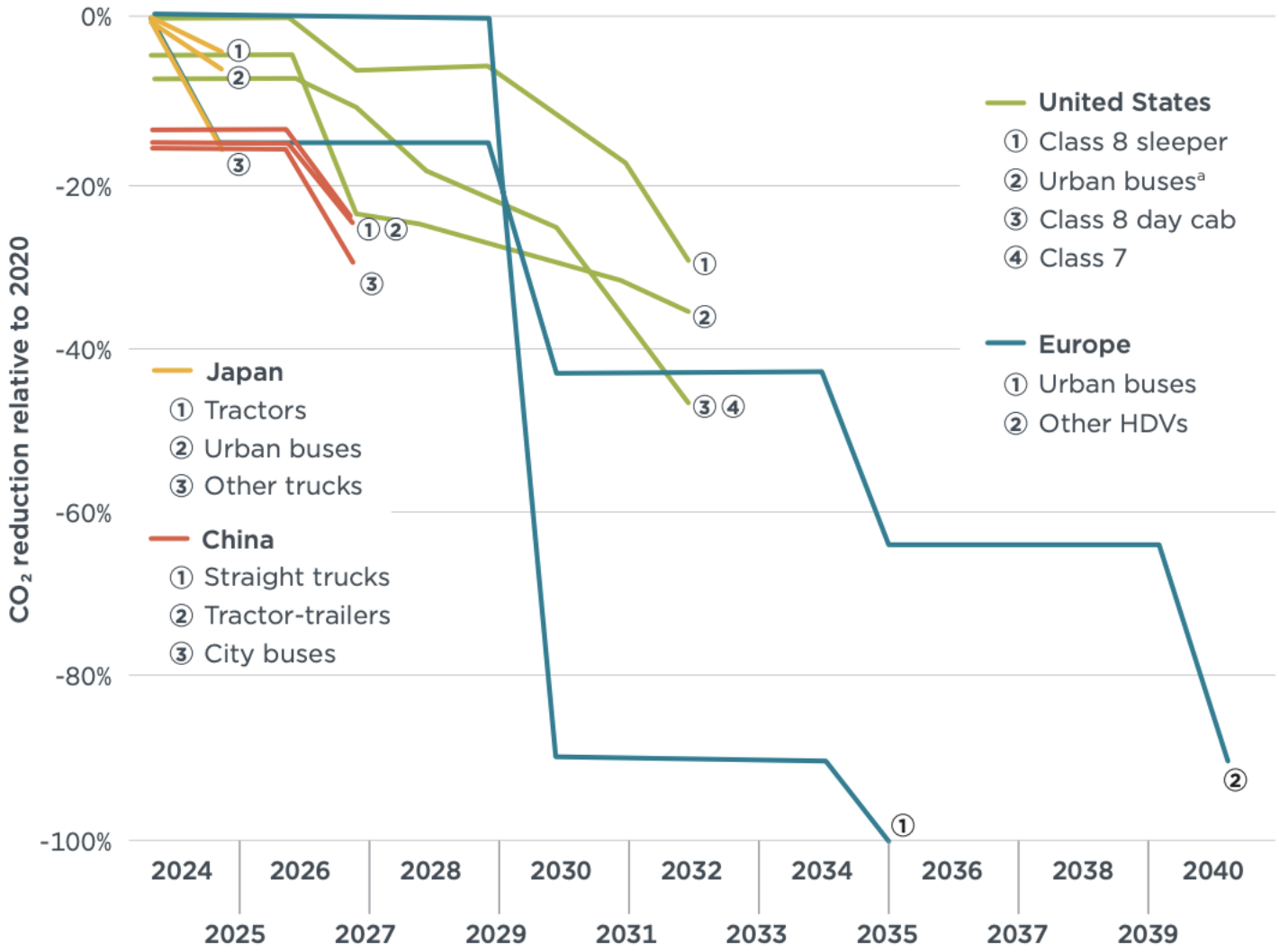
Source: ICCT, https://theicct.org/zev-phase-ins/

Examples of SSR's scopes

Jurisdiction	Years *(proposed in italics)*	Regulation type; metric	Vehicles covered
Canada	2018–2027[a]	Manufacturer average GHG and fuel efficiency; g CO_2/ton-mile and gallons/100 miles	Buses and trucks with GVW ≥ 8,500 lbs
China	2019–2021, *2022–2026*	Vehicle fuel consumption limit; L/100 km	Vehicles with GVW ≥ 3.5 tonnes
EU	2019–2040	Manufacturer average GHG; g CO_2/tonne-km	Rigid and tractor trucks with maximum mass over 16 tonnes, buses
India	2021	Vehicle fuel consumption limit; L/100 km	Diesel vehicles with GVW ≥ 3.5 tonnes
Japan	2019–2025	Manufacturer average fuel efficiency; km/L	Diesel trucks and buses with GVW ≥ 3.5 tonnes
UK	2019–2025	Manufacturer average GHG; g CO_2/tonne-km	Rigid and tractor trucks with maximum mass over 16 tonnes
U.S.	2018–2032[a]	Manufacturer average GHG and fuel efficiency; g CO_2/ton-mile and gallons/100 miles Engine CO_2 emissions and fuel consumption; g CO_2/bhp-hour and gallons/100 bhp-hour	Buses and trucks with GVW ≥ 8,500 lbs

Source: ICCT, https://theicct.org/publication/aligning-regulations-and-standards-with-zev-targets-sept24/

Stringency of selected SSRs



Source: ICCT, https://theicct.org/publication/china-stage-4-fuel-consumption-standard-hdvs-dec24/

RESEARCH BRIEF

FEBRUARY 2025

© 2025 INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION (ID 298)

Supply-side regulations to accelerate the market for zero-emission heavy-duty vehicles: Best practices from major policies

Yihao Xie

BRIEFING PAPER SEPTEMBER 2024

ZEV TRANSITION COUNCIL

Meeting the mark:
Aligning regulations and standards with ZEV targets

DALE HALL

icct

THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION

Dr. Felipe Rodríguez
f.rodriguez@theicct.org

