

Latest iterations of HDV Fuel Economy standards

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Hybrid GRPE workshop on the global harmonization of heavy-duty fuel economy, energy consumption and range determination

Global Overview of Heavy- Duty Fuel Economy Standards



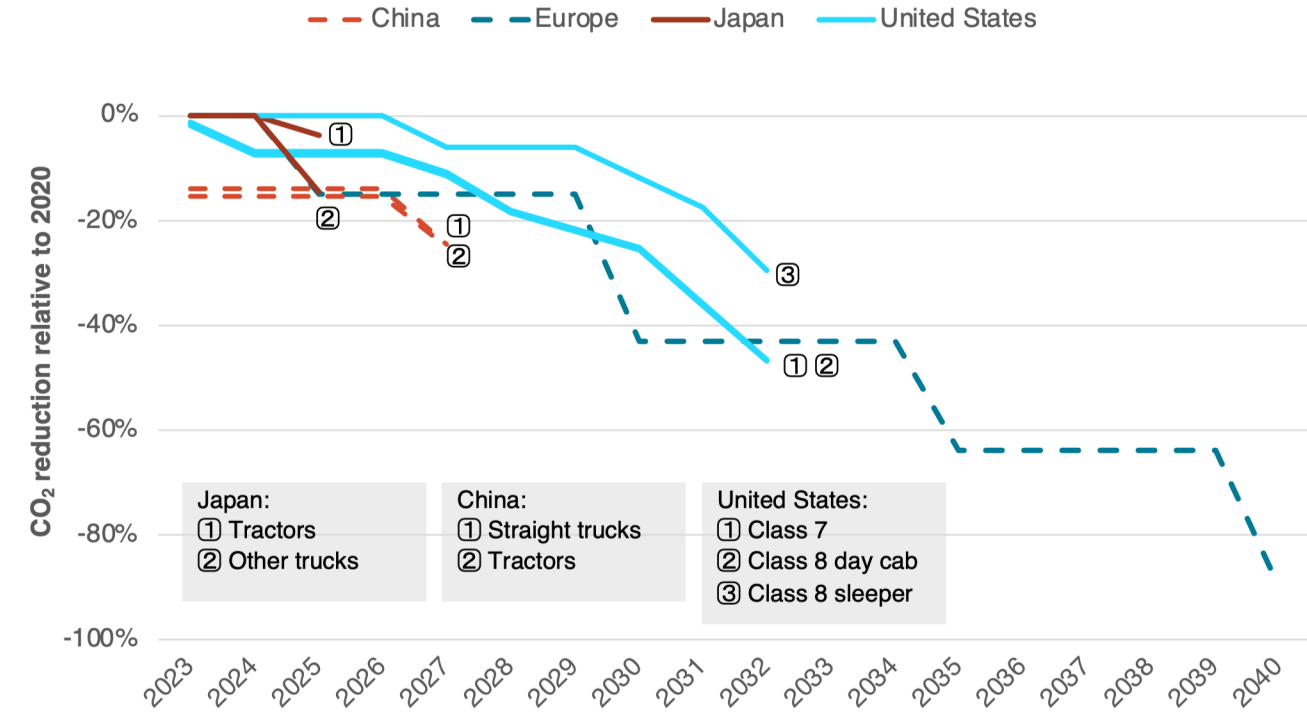
Summary of Heavy-Duty Vehicle GHG and Fuel Efficiency Regulations

Jurisdiction	Years (<i>proposed in italics</i>)	Regulation type; metric	Vehicles covered
EU	2019–2025, 2025–2040	GHG; gCO ₂ /tonne-km	Rigid and tractor trucks with maximum mass over 16 tonnes, buses
UK	2019–2025	GHG; gCO ₂ /tonne-km	Rigid and tractor trucks with maximum mass over 16 tonnes
U.S.	2018–2027, 2027–2032 ^a	GHG and fuel efficiency; g CO ₂ /ton-mile and gallons/100 miles	Vehicles with GVW ≥ 8,500 lbs
Canada	2018–2027 ^a	GHG and fuel efficiency; g CO ₂ /ton-mile and gallons/100 miles	Vehicles with GVW ≥ 8,500 lbs
China	2019–2021	Fuel consumption; L/100 km	Vehicles with GVW ≥ 3.5 tonnes
India	2021	Fuel consumption; L/100 km	Diesel vehicles with GVW ≥ 3.5 tonnes
Japan	2019–2025	Fuel efficiency; km/L	Diesel trucks and buses with GVW ≥ 3.5 tonnes

Notes: GVW = Gross vehicle weight

^a Requirements in these regulations are based on model year rather than calendar year

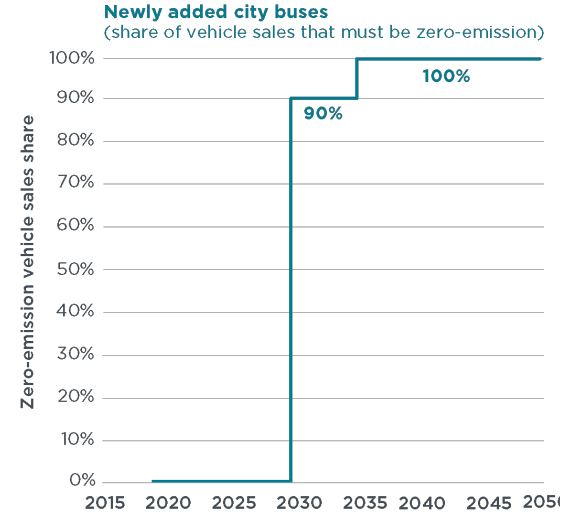
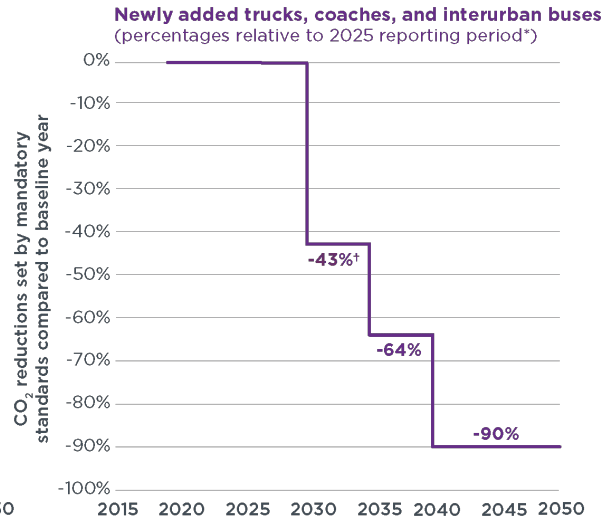
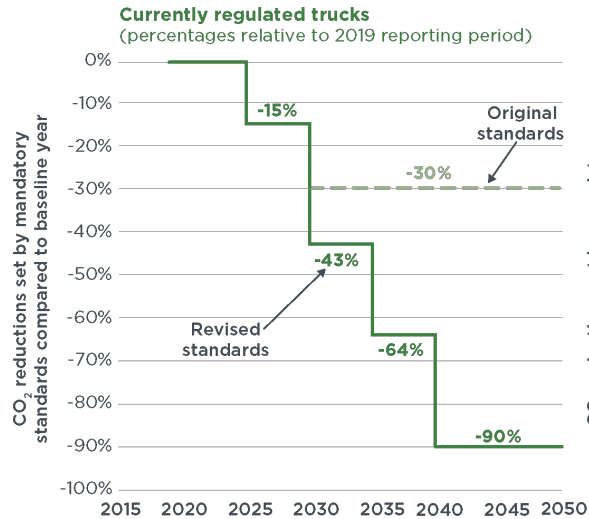
Summary of Improvements Required for HDVs Relative to 2020 Standard or Baseline



E.U.



CO₂ Reduction Standards for HDVs



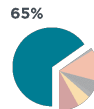
Scope of Vehicles Covered Under the CO2 Standards

Vehicle segments
(axle configuration
in brackets)

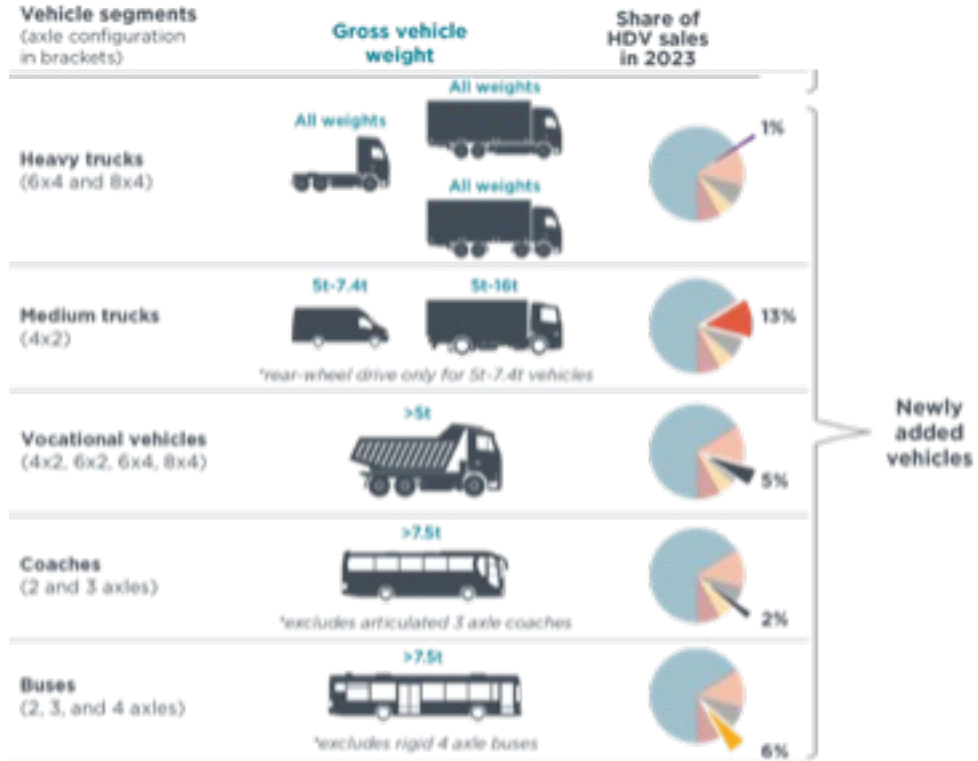
Gross vehicle
weight

Share of
HDV sales
in 2023

Heavy trucks
(6x2 and 4x2)



Covered
under the
original
standards



U.S.

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EPA Phase 3 Proposal for HDVs

TABLE ES-1—PROPOSED MY 2032 AND LATER VOCATIONAL VEHICLE CO₂ EMISSION STANDARDS (GRAMS/TON-MILE) BY REGULATORY SUBCATEGORY

	CI light heavy	CI medium heavy	CI heavy heavy	SI light heavy	SI medium heavy
Urban Vehicles	179	176	177	225	215
Multi-Purpose Vehicles	142	153	138	184	186
Regional Vehicles	103	136	97	131	165

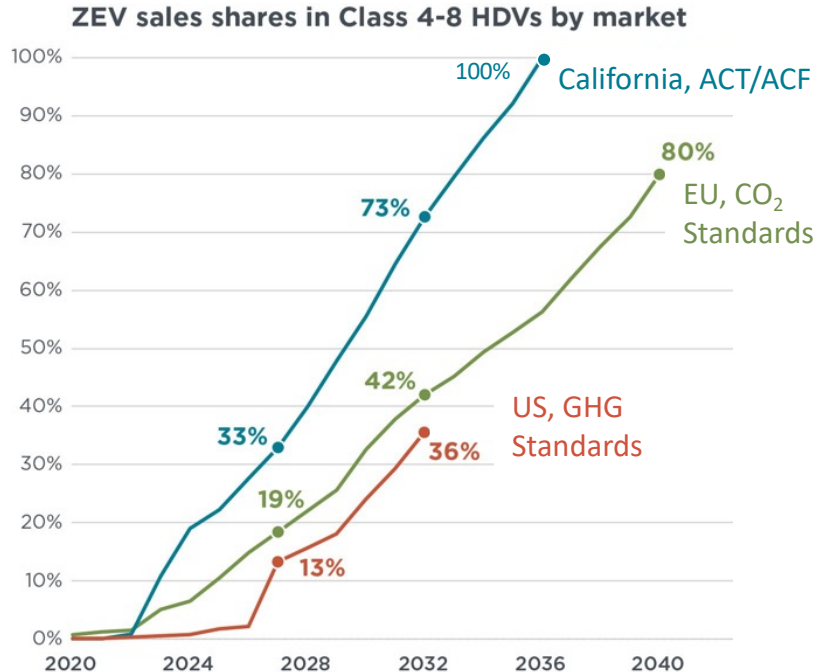
Note: Please see Section II.F.4 for the full set of proposed standards, including for optional custom chassis vehicles.

TABLE ES-2—PROPOSED MY 2032 AND LATER TRACTOR CO₂ EMISSION STANDARDS (GRAMS/TON-MILE) BY REGULATORY SUBCATEGORY

	Class 7 all cab styles	Class 8 day cab	Class 8 sleeper cab
Low Roof Tractor	63.5	48.4	48.1
Mid Roof Tractor	68.2	51.5	52.2
High Roof Tractor	66.0	50.0	48.2

Note: Please see Section II.F.4 for the full set of proposed standards, including for heavy-haul tractors.

Standards can drive truck fleet electrification



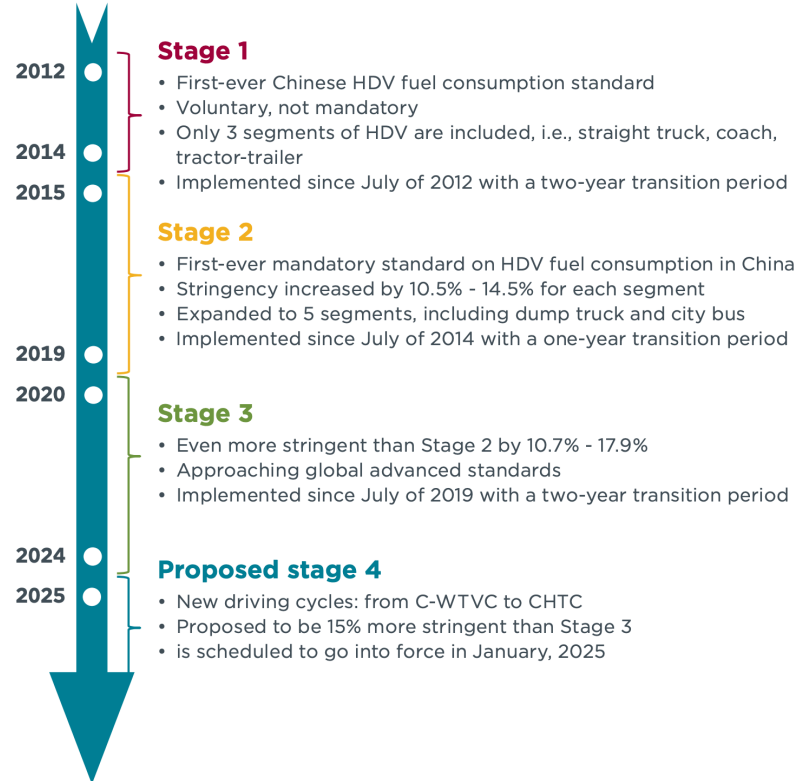
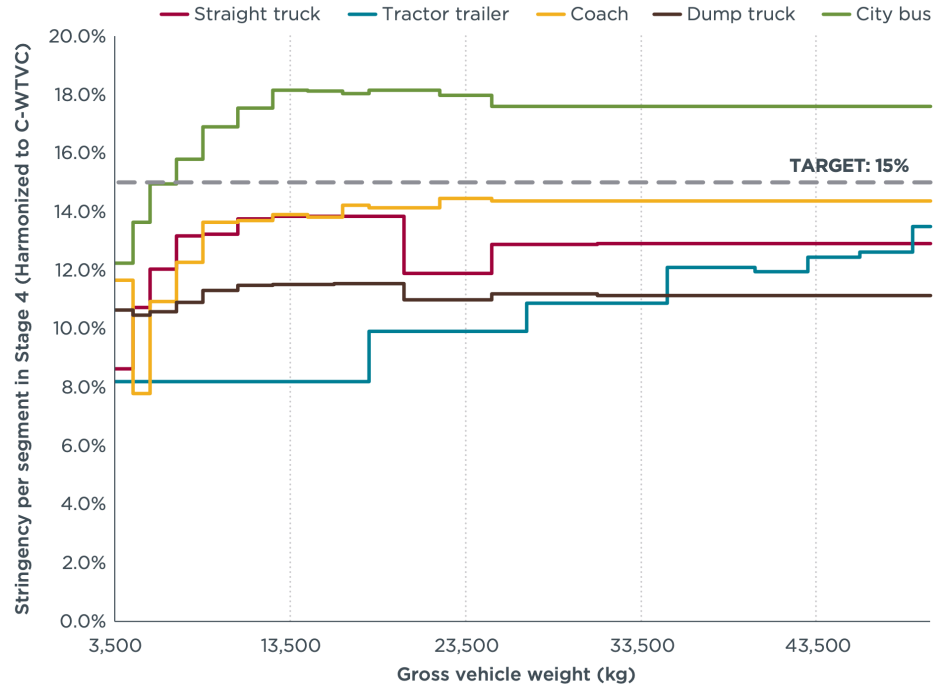
Policies driving zero-emission vehicles:

- California
 - ACT: ZEV sales requirement
 - ACF: ZEV purchase requirement
- European Union and United States
 - CO₂/GHG standards

China

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China: Fuel Economy Standards (1/2)



China 7 and HD-NEV Carbon-Credit Policy (2/2)

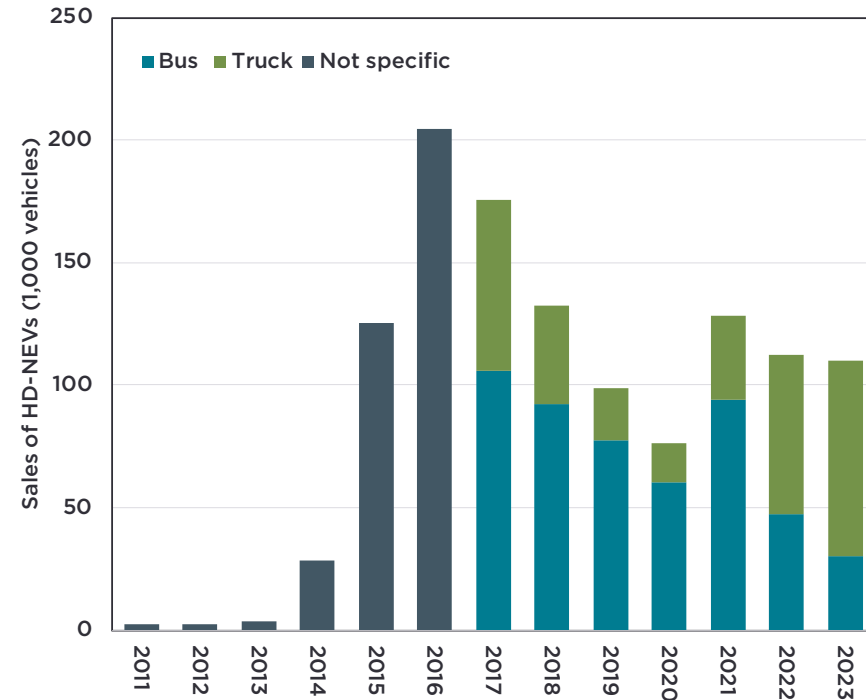
Timelines are uncertain: Proposals in '25-'26?

China 7 - MEE

- Multi-pollutant standard (i.e., with GHG)
- Fleet averaging limits -> NEV promotion
- Inspiration from EU on CO2
- Looking more towards the U.S. for pollutants

Carbon credit policy - MIIT

- Based on the car's NEV dual-credit reg.
- Basically, an HD-NEV sales requirement
- 20-25% target in 2026-2028?
- Drive ~150k NEV trucks in that timeframe



India

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India's HDV Fuel Consumption Standards



Chile

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Chile's Current Policy Windows

- Fuel efficiency standards ([Energy Efficiency Law 21.305](#))
- ZEV targets ([National Electromobility Strategy](#))

Segment	Milestone	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
LDV	Efficiency standard finalized	█																							
	Efficiency standard implementation			█	█	█	█	█	█	█															
	100% ZEV target														█										
LCV	Efficiency standard finalized			█																					
	Efficiency standard implementation				█	█	█	█	█	█															
	100% ZEV target														█										
HDV	Efficiency standard finalized					█																			
	Efficiency standard implementation						█	█	█	█															
	30% ZEV target (Global MOU)									█															
	100% ZEV target																								█

Mexico, Colombia, and Brazil



Brazil

- **ROTA 2030:**
 - An initiative of the Federal Government, described in Federal Law No. 13.755/2018 to stimulate investment and to strengthen the Brazilian companies in the automotive sector through the development and application of new technologies.
- **MOVER**
 - Combination of industrial policy and vehicle standards.
 - Emphasis on LDV standards first.
 - HDV standards to follow

Colombia and Mexico

- **Colombia:**
 - LDV Efficiency standards are in development.
 - HDV standards will follow.

- **Mexico**
 - No HDV CO2 standards.
 - Standards have been proposed in the past.
 - Upcoming elections in June 2nd

Indonesia

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The Indonesian Ministry of Energy and Mineral Resources (MEMR) announced the adoption of HDV FE standards.

- The technical structure is being explored at the moment.
- No decisions have been made.
- IEA and ICCT are helping MEMR to identify the right regulatory approach to implement the standards.
- No official timeline has been announced.

Canada

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Canada is Assessing Next Steps Regarding HDV Regulations

- No updates beyond 2027 (US EPA Phase 2)
- **Emissions Reduction Plan:**
- Canada and Quebec are working on a ZEV mandate for MHDV (35% by 2030).
- The impact on GHG emissions standards is unclear.
- 100% MHDV sales to be ZEVs by 2040 for a subset of vehicle types based on feasibility, with interim 2030 regulated sales requirements that would vary for different vehicle categories based on feasibility, and explore interim targets for the mid-2020s.
- Not clear when to expect a draft!

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