

The HDV CO₂ standards Europe needs for climate neutrality

BACKGROUND

Heavy-duty vehicles (HDVs) in Europe are responsible for 25% of road transport CO₂ emissions, yet they make up just 2.5% of on-road vehicles. To deal with growing emissions from the sector, Europe introduced its first ever CO₂ standards for HDVs in 2019, which mandate a reduction in the emissions of most new trucks of 15% in 2025 and 30% in 2030, relative to a 2019/2020 baseline. In their current form, the standards are not sufficient to curb emissions from the sector, as they only cover 65% of HDV sales and are expected to be largely offset by growth in freight activity.

The standards will be reviewed at the end of 2022, providing an opportunity to tighten the target for 2030 and introduce targets for 2035 and 2040. As they stand, the standards fall well short of the emissions reduction necessary to equitably contribute towards the 2050 climate neutrality target in the European Climate law. A recent ICCT paper identifies the targets necessary to align the HDV sector with the deep decarbonization necessary to comply with the target.

KEY FINDINGS

Total CO₂ emissions from HDVs need to be reduced by 98% by 2050 to contribute to climate neutrality. Europe has advanced a binding framework through the European Climate Law which mandates climate neutrality by 2050. The European Commission announced that the contribution of the transport sector to this target should be a 90% emissions reduction by 2050 relative to 1990. Accounting for the challenges posed by decarbonizing aviation and maritime, the HDV sector will need to reduce its annual CO₂ emissions by 98% by 2050 to equitably contribute towards this target.

Adopted policies achieve very little overall CO₂ benefit. Under the currently adopted CO₂ standards, total HDV emissions are projected to increase by 8% over the 2019–2050 timeframe, driven predominantly by increasing levels of activity.

Manufacturer commitments to zero-emission HDVs go far beyond current targets. In the past few years, most manufacturers have announced targets for the deployment of zero-emission HDVs (see Table 1). Weighting these commitments by the sales share of each manufacturer presents an average zero-emission HDV target of 38% in 2030 and 100% in 2040. If manufacturers follow through on these commitments, CO₂ emissions in the HDV sector would decrease by 96% by 2050 relative to today, falling closely in line with what is required by the European Climate Law.

Table 1. Manufacturer announcements for the phase-in of Zero Emission and Fossil Free HDVs.

	Manufacturer	2025	2030	2039	2040	2020 Sales Share
Fleet Zero Emission Vehicle Targets	DAF	-	-	-	100%	18%
	Iveco	-	-	-	100%	6%
	MAN	-	40% LH 60% RD	-	100%	15%
	Daimler Trucks	-	60%	100%	100%	18%
	Renault Trucks	10%	35%	-	100%	9%
	Scania	10%	50%	-	100%	18%
	Volvo Trucks	7%	50%	-	100%	16%

Notes: LH - Long-Haul, RD - Regional Delivery. The 2030 announcement by Daimler is worded as “up to 60%”.

RECOMMENDATIONS

Revise the CO₂ reduction target for 2030 from 30% to at least 60%. Deployment of zero-emission HDVs in line with the commitments of manufacturers, complemented by efficiency improvements required by the current standards, translates to a 60% CO₂ emissions reduction target in 2030. This target needs to be set for all HDVs, and not just those covered by the standard in its current form.

Introduce CO₂ reduction targets of at least 90% for 2035 and 100% for 2040.

Currently, no HDV CO₂ standards exists beyond 2030. The review of the standards later this year presents an opportunity to introduce targets for 2035 and 2040. All major HDV manufacturers in Europe have committed to the phase out fossil-fuel vehicles. Introducing an emissions reduction target of 90% for 2035 and 100% for 2040 would lock in the long-term commitments set by manufacturers for zero-emission vehicles, and would reduce fleet wide HDV emissions by 96% by 2050 relative to today.

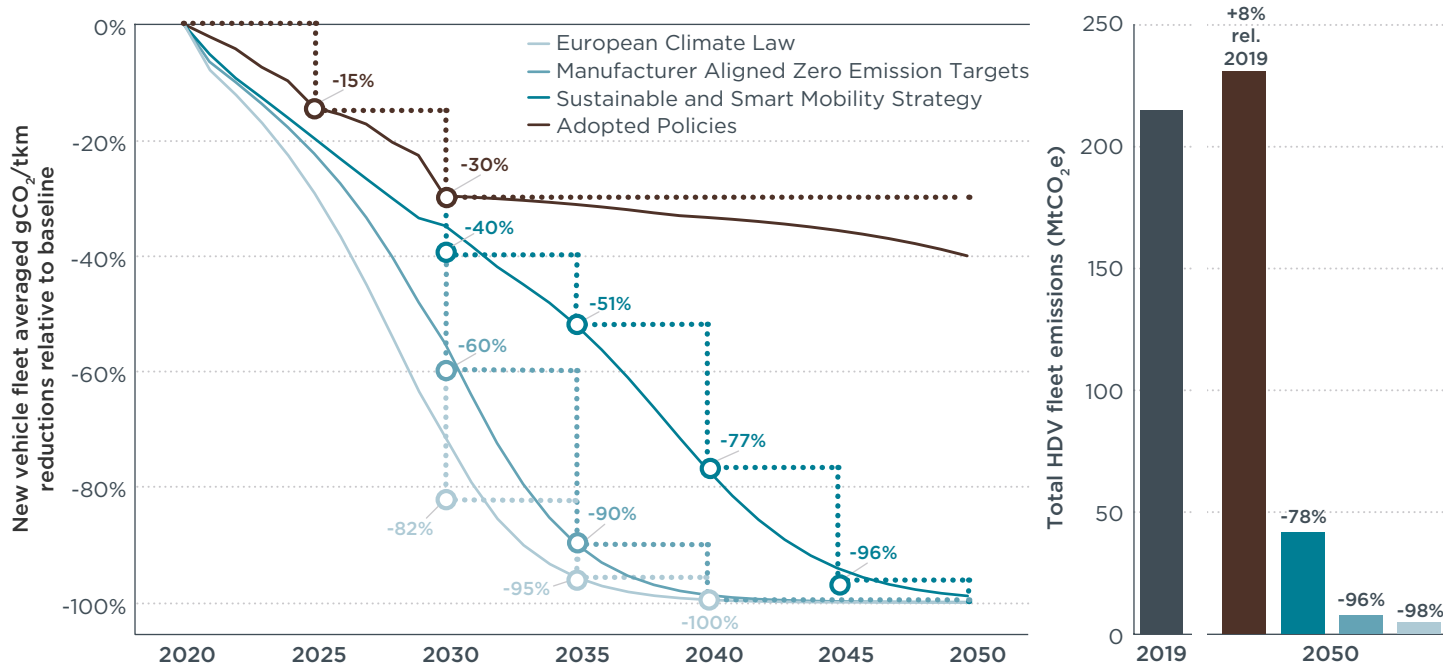


Figure 1. New vehicle fleet averaged annual emissions reduction relative to 2020 and corresponding 5-year targets. The bars on the right denote the annual emissions reduction in HDVs in 2019 and by 2050.

Extend the scope of the regulation to include all sales of HDVs, to the extent

feasible. The scope of the current standards is limited to approximately 65% of annual HDV sales. This scope should be extended to cover all sales of HDVs where possible. This is particularly feasible for HDVs that are required to report CO₂ emissions under the CO₂ certification regulation, which covers nearly 75% of annual HDV sales, but are not currently mandated under the CO₂ standards.

Phase out the fleet-wide multipliers for zero- and low-emission vehicles from 2030.

Allowances are granted to manufactures who produce a certain share of ZE-HDVs through a zero- and low-emissions vehicle (ZLEV) factor which reduces the overall CO₂ emissions reduction target by a maximum of 3%. The deployment targets set by manufacturers already greatly exceeds this cap, and so the ZLEV factor would only reduce the overall stringency of the CO₂ standards. The ZLEV factor should be phased out in 2030, as was proposed for the light-duty vehicles standards.

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