

CO2 STANDARDS FOR HEAVY-DUTY VEHICLES

REVIEW REGULATION
(EU) 2019/1242

22 Nov 2022

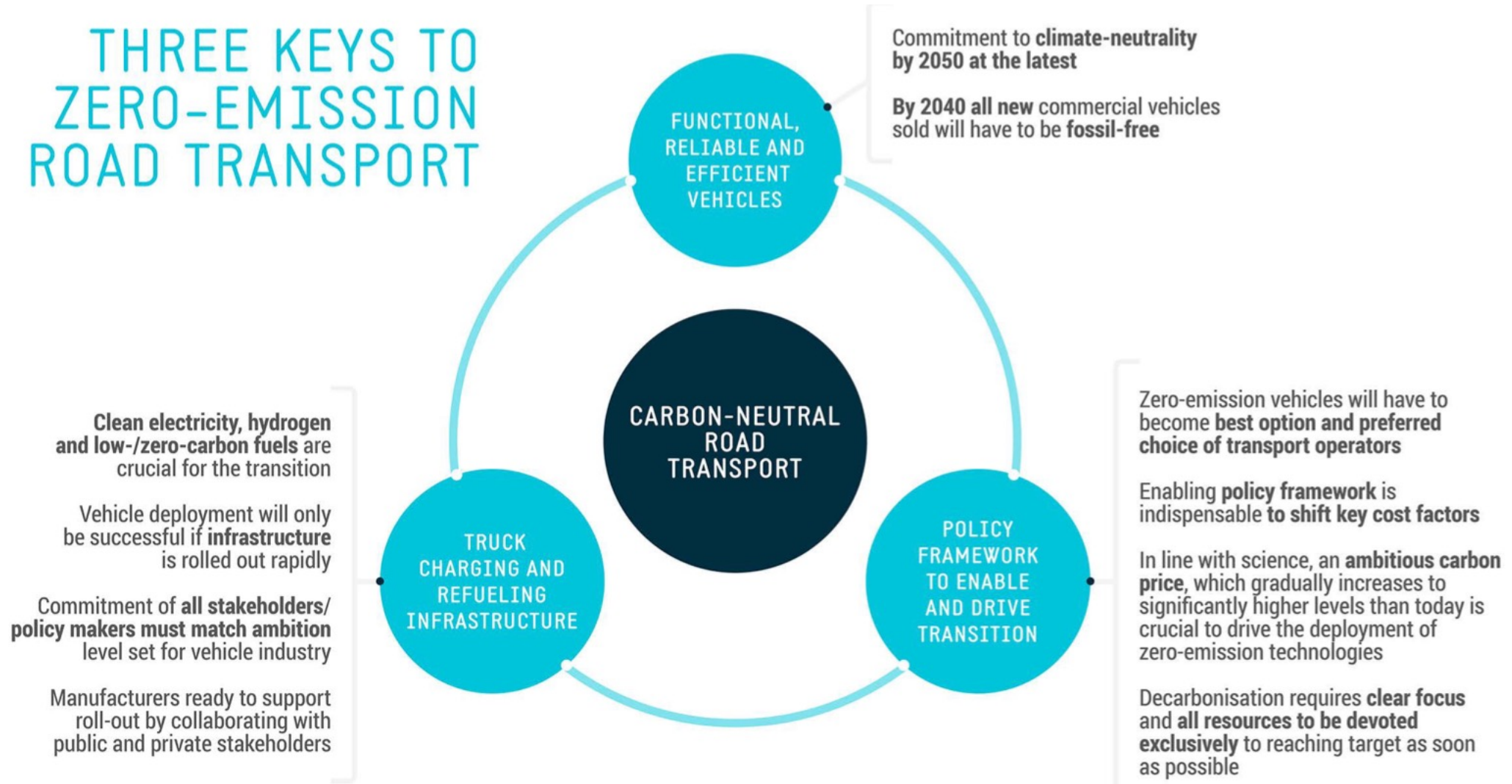
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DECARBONISING ROAD TRANSPORT

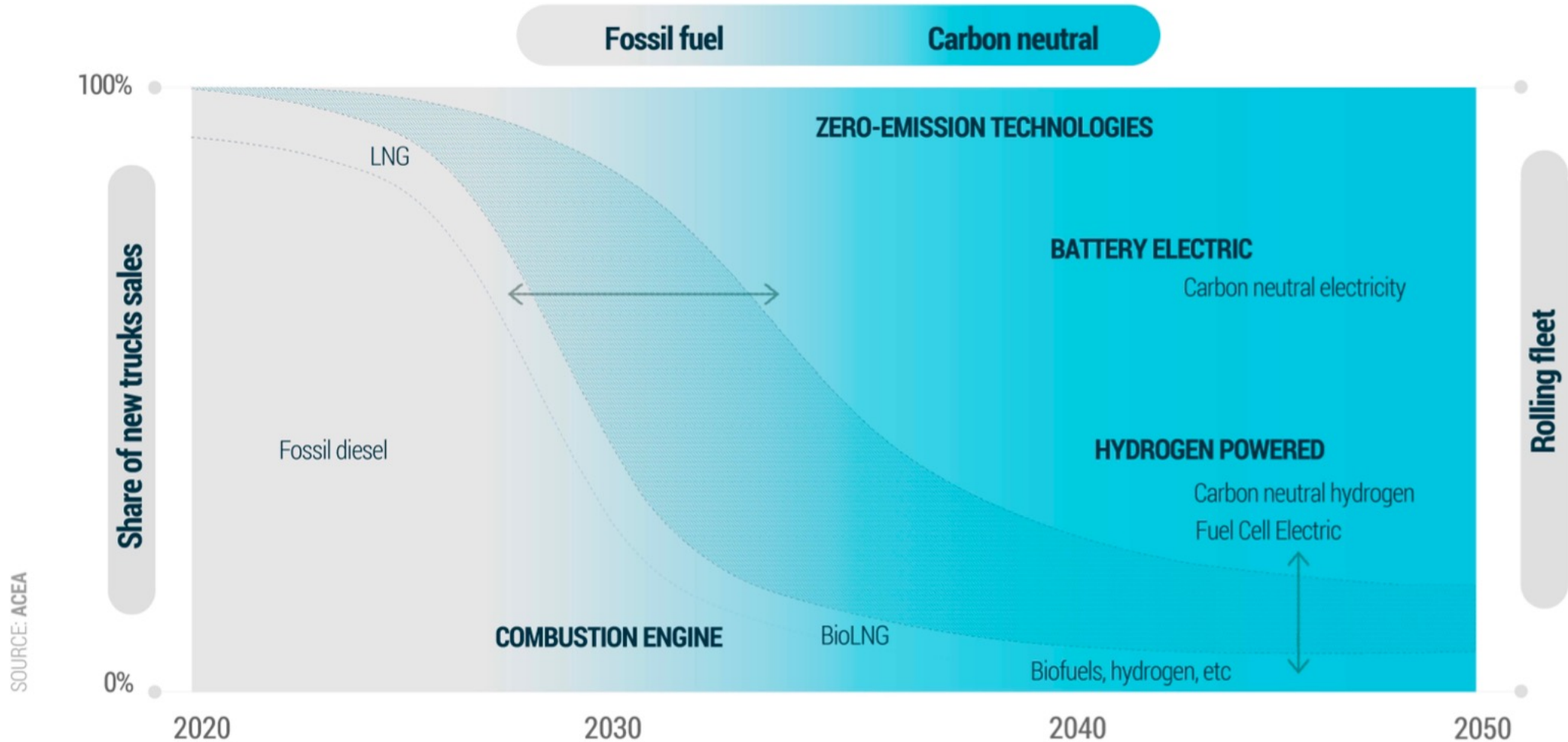
DECARBONISING ROAD TRANSPORT

THREE KEYS TO ZERO-EMISSION ROAD TRANSPORT




DECARBONISATION PATHWAYS

FOSSIL-FREE BY 2040



VEHICLES WILL NOT BE THE BOTTLENECK

 Zero and low-emission heavy-duty vehicles (trucks)						
Name		GVW (t)	GTW (t)*	Application	Range (km)**	Availability
Iveco						
Nikola Tre	BEV	40t		General Haulage	up to 550	2022
Nikola Tre	FCEV	40t		General Haulage	>800	2023
DAF						
LF Electric	BEV	19t		Urban/National distribution	240-270km	Series production
CF Electric	BEV	20t	37t	Urban/National distribution	200-230km	Series production
CF Electric	BEV	29t	37t	Urban/ National distribution	200-230km	Series production
CF Hybrid	HEV	20t	40t	National distribution	50km electric	Field trial
XF Hydrogen	ICE H2	20t	44t	National distribution/ long-haul	600-800km	prototype
Daimler Truck						
eCanter	BEV	7.49t		Urban delivery	100 km	Series production since 2017
eActros 300	BEV	19t - 27t	40t	Regional delivery	300 km	Series production since 2021
eActros 400	BEV	27t		Regional delivery	400 km	Series production since 2021
eEconic 300	BEV	27t		Municipality / urban delivery	100 - 150 km	2022
eActros Longhaul	BEV		40t	Regional delivery/long haul	500 km	Series announced for 2024
GenH2	FCEV		40t	Long haul		Prototypes
GenH2	FCEV		40t	Long haul	up to 1,000 km	Series announced for 2027
MAN						
eTGM	BEV	26		Distribution	up to 180 km	Short Series
eTruck	BEV	tbd.	tbd.	Distribution	tbd.	Series Production announced for 2024
Bayernflotte	FCEV	tbd.	tbd.	Long Haul	tbd.	Customer demo fleet 2024
Scania						
	HEV		36	Long haul / distribution	15	Series Production
	PHEV		36	Distribution	60	Series Production
25L or 25P	BEV	19		Distribution	100	Series Production
25L or 25P	BEV		29	Distribution	250	Series Production
R- or S-	BEV	29	64	Regional	Up to 420	Sales start 2022
	BEV	29	64	Distribution/ Regional/ Long haul/ Construction	Up to 490	Series production 2024
Volvo Trucks						
FH Electric	BEV		44	Regional	300	Sales start 2021
FM Electric	BEV		44	Regional	380	Sales start 2021

 Zero and low-emission heavy-duty vehicles (buses and coaches)					
Name		GVW (t)	Application	Range (km)*	Availability
Iveco					
EWAY	BEV	20/30 t	City bus		Series production
CREALIS	Trolleybus	30 t	City bus BRT	unlimited	Series production
CROSSWAY LE	BEV	20 t	City bus		2023
CROSSWAY LE	BEV	20 t	Intercity bus		2023
Daimler Truck					
eCitaro Solo	BEV	20t	City Bus	200 - 320	Series production
eCitaro Artic.	BEV	20t	City Bus	180 - 220	Series production
eO500U	BEV		City Bus	up to 250	announced 2022
MAN					
Lion's City 12 E	BEV		City Bus	up to 350 km	Series Production
Lion's City 18 E	BEV		City Bus	up to 350 km	Series Production
Lion's City 12 E	BEV		City Bus	up to 350 km	Series Production
Scania					
Citywide	HEV	20t	City Bus		Series Production
Citywide	BEV		City Bus	250	Series Production
Volvo Trucks					
7900 Electric	BEV	19,5	City bus		
7900 Electric Articulated	BEV	30	City bus		
7900 S-Charge	HEV	19	City bus		
7901 S-Charge Articulated	HEV	29	City bus		
BZL Electric	BEV	19,5			
* Currently, there is no official methodology how the range of alternatively powered vehicles should be determined. Figures are based on the manufacturers' individual assessment.					

https://www.acea.auto/files/ACEA-position-paper-2022_HDV-CO2-Review.pdf

ZERO-EMISSION TRUCKS

RAPID ROLLOUT STARTING NOW

- 2025: At least **40,000 BEV trucks** in operation
 - 10,000 medium-duty trucks (3.5-16t)
 - 30,000 heavy-duty trucks (>16t)
- 2030: At least **330,000 BEV / FCEV trucks** in operation
 - 70,000 medium-duty BEV (3.5t – 16t)
 - 200,000 heavy-duty BEV (>16t)
 - 60,000 FCEV
- **Pre-Green Deal assessment (!)**



HDV CO2 STANDARDS

REVIEW OF (EU) 2019/1242

REVIEW OF HDV CO2 STANDARDS

ACEA POSITION

- Vehicles will not be the bottleneck
- Set fixed ambition level for 2030 now
- Set targets for 2035 and 2040 now
 - But review them again in view of enabling conditions
- No interim target before 2030
- No 100%-target or ICE phase-out for all vehicle groups at this point in time
- Put strong incentives schemes for zero-emission vehicles in place
- Improve and extend credit/ debit system beyond 2030
- Additional vehicle groups can be included if...
 - CO2 certification framework is in place and individual baselines are established

DECARBONISATION OF ROAD TRANSPORT

ICE AND THE ROLE OF RENEWABLE FUELS

- **Going fossil-free** requires more than “just” the electrification of vehicles
 - Close cooperation between all stakeholders needed to enable fossil-free transportation and infrastructure industry
- **ICE will continue to play an important, long-term role** despite focus on zero-emission technologies
 - Decarbonisation of all energy carriers is a crucial cornerstone
 - Transition of the transport sector will take time
 - Emission reductions from vehicle stock will be needed
 - If powered by fossil-free fuels, ICE will have a future in heavy-duty trucking until 2040 and beyond
- **Renewable fuels will have to play a (rapidly) increasing role** in road transport
- **Current regulatory framework is insufficient** to ensure widespread availability in necessary quantities

ICE PHASE-OUT

- Setting a **general ICE phase-out date for all heavy-duty vehicle segments** now would not increase the confidence of market actors, nor increase the pace of the transition to zero-emissions.
- Focus would be (wrongly) on the **supply-side** only (OEMs), while neglecting the role of the **demand-side** (transport operators).
- **Both sides are equally crucial** for a successful transition to climate neutrality and must therefore both be addressed in the regulatory framework.

ZEV MANDATES

- Manufacturers have **strong reservations** about zero-emission vehicle (ZEV) mandates, since they potentially create **significant market distortions**.
 - They focus on the supply side (vehicle manufacturers) without simultaneously addressing the demand side (transport operators) with similar ambition levels.
 - The demand side would gain one-sided advantages and could potentially strategically delay investments in zero-emission vehicles, which a manufacturer would have to sell to meet the requirements of the ZEV mandate.
 - Carries risks of significant market distortion and could also incentivise transport operators to delay investment decisions, thereby slowing down fleet renewal.

DEBIT/CREDIT SYSTEM

- Debit/ credit system is largely ineffective and should therefore be modified:
 - Remove the current fixed expiration dates of 2025 and 2030 and instead use a five-year rolling plan. Debits created one year must be balanced 5 years later at the latest. (credits generated in 2019 should be used in 2025, ie after six years).
 - No final end-date should be set now. The system should be in place as long the standards regulation is in force.
- Justification
 - Actual market uptake of zero-emission vehicles largely depends on factors outside manufacturers' direct control, eg development of a sufficiently dense truck-suitable charging and refuelling infrastructure network remains uncertain
 - Every transition to an entirely new (powertrain) technology follows a step function and is not linear. A functioning credit/ debit system will help mitigate the uncertainties of the transition for manufacturers, while not reducing the ambition level nor the CO2 emission reductions that can be achieved.

ZLEV INCENTIVE SCHEME

- ZLEV incentive scheme should take range as a parameter into consideration, while maintaining the current principles until 2030.
 - Exact timing should be discussed further but for the period after 2030 a [review around 2028](#) should be used to adjust the details.
 - Incentives should [focus on long haul-vehicle operations](#).
 - The incentive [scheme should promote longer range from a certain reference range](#) (eg 400 km) up to maximum range (eg 800 km).
 - The incentive coefficient per vehicle should be set around 1.25 for maximum range.
 - The range should be determined by VECTO. Determined range values could include compensation for battery deterioration predicted for a mid-life battery capacity.
 - On top of the proposed linear incentive factor there should be a cap on total percentage impact on the total fleet average.
- [Numbers](#) given in the above example [should be discussed further](#). They should [reflect the market situation expected around 2025](#). A later introduction would need other numbers for the incentives to be effective.
- A minimum range per class shall be set as minimum requirement to qualify electric vehicles as being accounted as ZEV according to Annex I, article 2.3.1. However, this minimum range should be significantly lower than the reference range for the incentive calculation.

BUSES & COACHES

- Bus **manufacturing industry is diverse** with different business models
 - Complete buses (by OEMs and some body builders)
 - Bus chassis (by OEMs)
 - Complete(d) buses (by OEMs and body builders)
- Based on chassis it is not clear if the final product will be a city bus, an inter-urban bus or coach, nor if it will be designed as a single- or double-deck vehicle.
- CO2 regulation must consider multi-stage production process
 - CO2 standards should include actual data of the bodywork
 - Last-stage vehicle manufacturer is the responsible party for part of the final bus and should hence also be responsible for CO2 target compliance
 - The 'big 5' manufacturers would remain responsible for about 80%
- **Significant share of zero-emission vehicles** is already in operation in the European city bus markets because of **favourable conditions** (public procurement, Clean Vehicle Directive, charging infrastructure limited to depots)
 - A relatively higher ambition level compared to other vehicle groups seems therefore justified
- Coaches similar to trucks with strong focus on TCOs and publicly accessible charging/ refuelling infrastructure

ADDITIONAL VEHICLE SEGMENTS

- Small and medium lorries make **relatively low contributions to the total CO2 emissions** of the road transport sector.
- The segment represents a rather **small number of vehicles**, many of which include customised and tailor-fit multi-stage vehicles.
- **ACEA supports inclusion of additional vehicle groups** in the CO2 emission standards regulation where a **CO2 certification framework** is in place, and provided that the specificities of the different vehicle segments (ie **individual baselines**) are fully accounted for.
- CO2 certification framework is currently only available for vehicles above 5t (TPLM).



CONCLUSIONS

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FOCUS ON KEY ENABLING FACTORS

- **Decarbonising road transport requires more than “just” CO2 standards**
 1. Zero-emission vehicles
 2. Green energy carriers and charging and refueling infrastructure (→ RED, AFIR ...)
 3. Cost parity (→ ETS-2, Eurovignette ...)
- **Coherent policy framework to support transition**



REPRESENTS EUROPE'S 16 MAJOR CAR, VAN, TRUCK AND BUS MANUFACTURERS

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