Sustainable and Smart Mobility

Klimafreundliche Nutzfahrzeuge

-

eine europäische Perspektive

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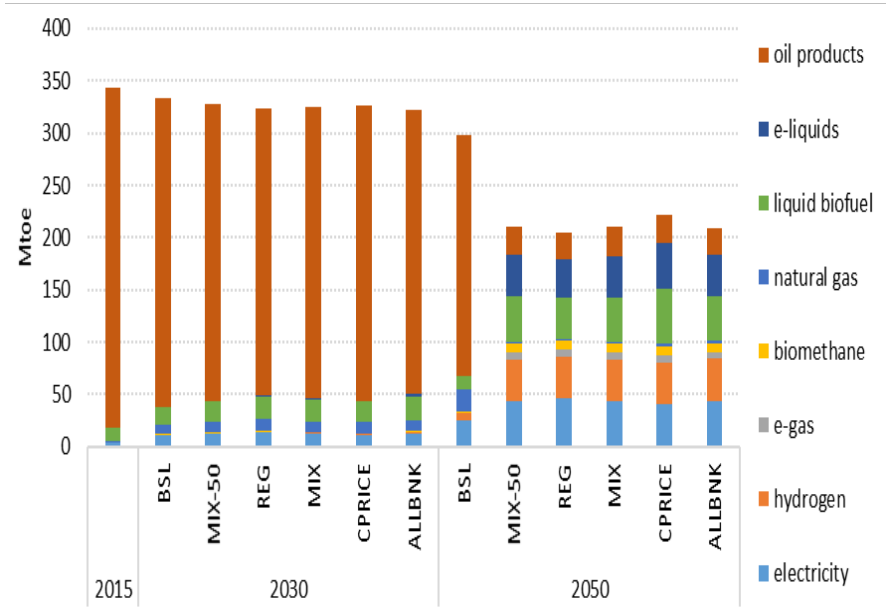
European Commission | Mobility and Transport

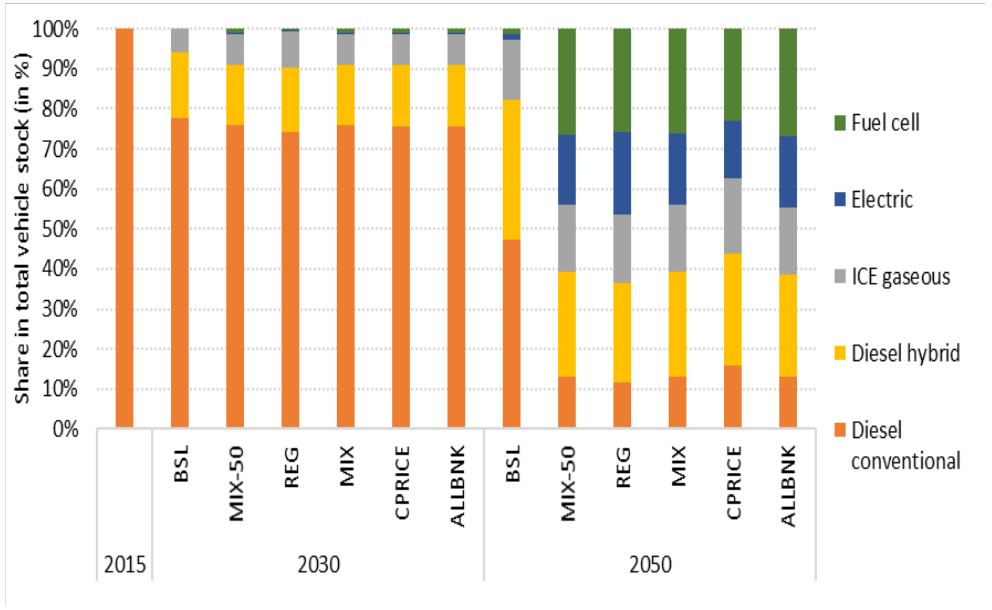
A new power base for the transport sector

- By 2050, the large majority of fossil fuels should be replaced by renewable and low-carbon fuels.
- All sustainable alternative fuels needed, but to different degree in different modes of transport.
- Trucks correspond to more than a quarter of road transport emissions – quick action needed

Scenarios for future fuel mix in the transport sector



Projections for HDV vehicle stock



Source: Staff Working Document underpinning the SSMS

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State of play and challenges

- Very ambitious market forecasts for zero-emission trucks and use of renewable and low-carbon fuels
- Market at present immature still
  - Technology to address broad majority of use case is there – but it needs rollout
  - No publicly accessible infrastructure
- Some key challenges
  - Vehicles ramp-up
  - Infrastructure rollout
  - Standardisation
  - Grid integration

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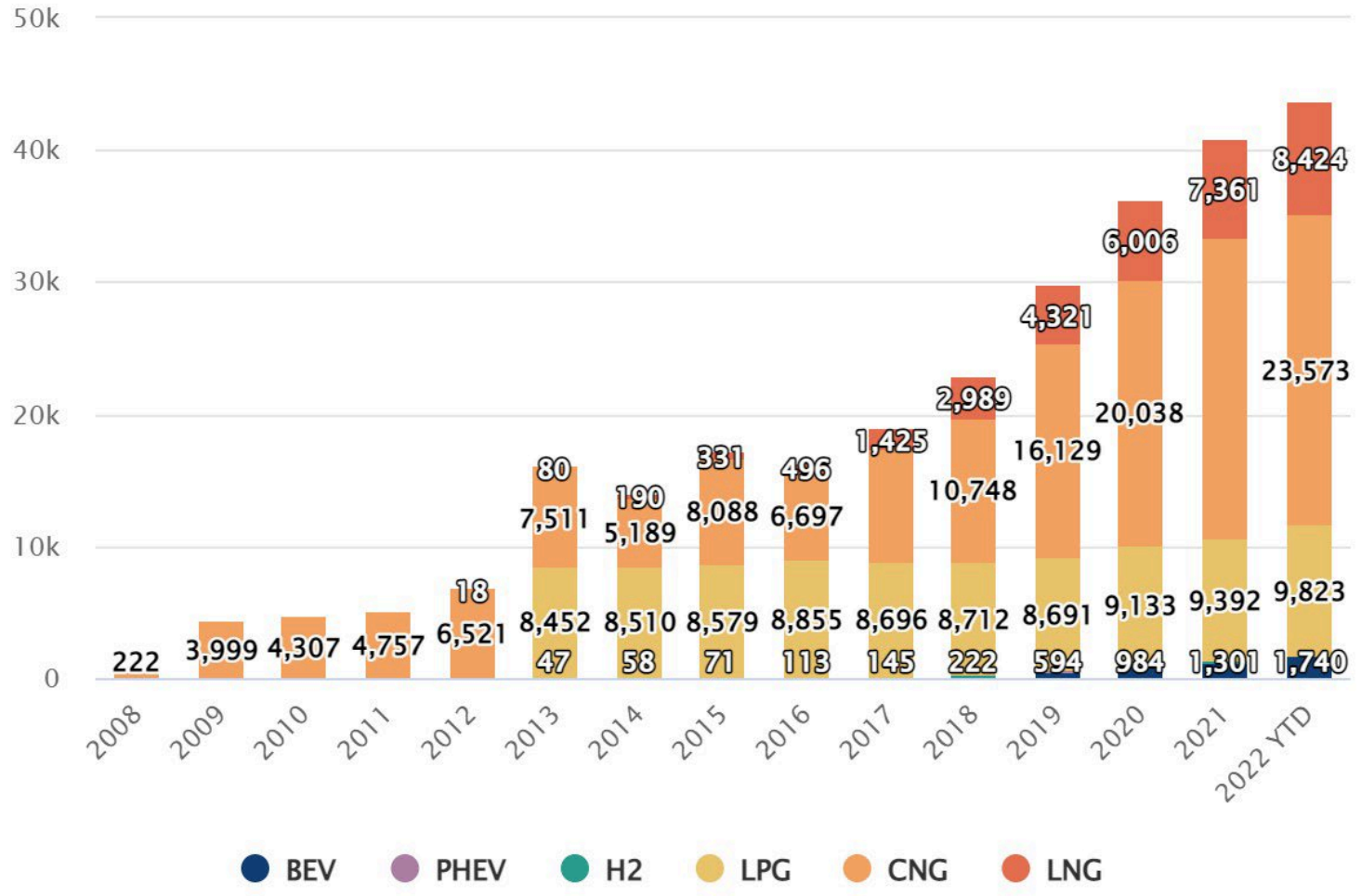

CO_2 standards for HDV

Current approach

- Targets for reducing average emissions from new large lorries, covering about 65-70% of all HDV emissions:
  - 2025: -15% (compared to EU average in the reference period (1.7.19-30.6.2020)
  - 2030: -30%
- Incentive scheme for ZEVs and LEVs
- Real-world fuel consumption data

Revision

- Proposal is being finalised, including looking at the relevant level of ambition for 2030 and beyond and an extension of scope (ie buses, coaches, smaller lorries, trailers)

Alternative Fuels Infrastructure Regulation

- 1st market wave will vastly use depot-charging, but real success in scaling markets requires publicly accessible infrastructure that is interoperable and easy to use
- Hardly any dedicated HDV infrastructure in place
- Lack of coherence of roll-out, inter-operability and full user information and services can become an obstacle to the vehicle uptake, and to overall competitiveness
- Proposal for a complete overhaul of the policy framework on alternative fuels infrastructure at EU level
  - Change from a Directive to a Regulation
  - Change from Member States setting targets to mandatory minimum targets for trucks recharging and refuelling on the TEN-T
  - Strengthening of interoperability and user service requirements
  - Strengthening of reporting and monitoring

HDV distance-based targets (EV)

Year	TEN-T network	Commission proposal	EP Mandate	Council GA	
2025	Core	Distance: 60 km Pool:1400 kW Station: 1 w. 350 kW	Distance: 60 km Pool: ***2000*** kW Station: ***2*** w. ***800*** kW	Distance: ***120*** km Pool:1400 kW ***Point***: 1 w. 350 kW	***On 15% of TEN-T network*** *(Core + Comprehensive)*
	Comprehensive	-	-		
2027	Core	-	-	Distance: ***120*** km Pool: ***2800*** kW ***Point***: 2 w. 350 kW	***On 40% of TEN-T network*** *(Core + Comprehensive)*
	Comprehensive	-	-	Distance: ***120*** km Pool:1400 kW ***Point***: 1 w. 350 kW	
2030	Core	Distance: 60 km Pool:3500 kW Station: 2 w. 350 kW	Distance: 60 km Pool: ***5000*** kW Station: ***4*** w. ***800*** kW	Distance: 60 km Pool:3500 kW ***Point***: 2 w. 350 kW	
	Comprehensive	Distance: 100 km Pool:1400 kW Station: 1 w. 350 kW	Distance: 100 km Pool: ***2000*** kW Station: ***2*** w. ***800*** kW	Distance: 100 km Pool:1400 kW ***Point***: 1 w. 350 kW	
2035	Comprehensive	Distance: 100 km Pool:3500 kW Station: 2 w. 350 kW	Distance: 100 km Pool: ***5000*** kW Station: ***4*** w. ***800*** kW	-	

Flexibilities:

- **EP Mandate:**
  Possible derogations for outermost regions and islands
- **Council GA:**
  Roads with < 2,000 HDVs/day (AADT): derogations on minimum total power requirements
  Roads with < 800 HDVs/day (AADT): derogation on maximum distance (increased to 100km)

HDV location-based targets (EV)

Location	Year	Commission proposal	EP Mandate	Council GA
Safe and secure parking	2027	-	***2*** stations w. 100 kW	-
	2030	1 station w. 100 kW	***4*** stations w. 100 kW	1 station w. 100 kW
Urban nodes	2025	Individual: 150 kW Aggregated: 600 kW	Individual: ***350*** kW Aggregated: ***1400*** kW	Individual: 150 kW Aggregated: 600 kW
	2030	Individual: 150 kW Aggregated: 1200 kW	Individual: ***350*** kW Aggregated: ***3500*** kW	Individual: 150 kW Aggregated: 1200 kW

Hydrogen targets

	Commission proposal	EP Mandate	Council GA
Timing	2030	***2027***	2030
Coverage	TEN-T core & comprehensive	TEN-T core & comprehensive	***TEN-T core***
Distance	150 km	***100*** km	***200*** km
Capacity	2 t/day	2 t/day	-
Liquid hydrogen	Every 450 km	Every ***400*** km	-
Urban nodes	1 station by 2030	1 station by ***2027***	-

- **EP Mandate:** possible derogations for outermost regions and islands

Which charging technology?

- Megawatt charging systems (MCS) standard under development – intense EU-US collaboration
- Expected for 2024 – will bring the needed full spectrum of charging possibilities.
- Commission had adopted a new standardisation mandate
- … but: no need to wait with rollout, because CCS will continue to play a relevant role
  - Vast majority of operations is <600 km. With rest times regulation (4.5 hours) and average speed (80 km), many operations could still be handled with CCS, provided the right organisation of the charging space (truck normally will not arrive fully charged at destination)
  - Where relevant, retrofitting also an option
  - Pool planning to focus on overall power output, grid/flexibility requirements and outlets
- Central role for review of AFIR (~2026 preceded by a technological readiness report)

Grid connection and planning

- Trucks are projected to consume a small share of the total electricity demand of the fleet by 2030 (while overall energy efficiency requirements kick in for all sectors) -> however, there can be local issues as regards grid impact and particularly bottlenecks for planning and permitting.
- Need to better understand issues around grid connection and planning, for both depot conversion and publicly accessible recharging pools
- Art 13 (k) of AFIR proposal (national policy frameworks): Member States shall take measures to remove possible obstacles with regard to planning, permitting and procuring of alternative fuels infrastructure
- Further action possible in the context of other instruments, e.g. Electricity Market Design (in particular Electricity Directive).

An outlook to further action needs

- Commission Work Programme 2023:
  - Greening freight package (including revision of Weights and Dimensions Directive, revision of combined transport Directive) – Q2 2023
  - Corporate fleets initiative (legislative or non-legislative) – Q3 2023
- Implementation of the Alternative Fuels Infrastructure Finance Facility under CEFII: make better use of opportunities for truck recharging and refuelling infrastructure support (EU budget review)

Thank you!

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