

Key Challenges for Commercial Vehicles

In the Strategic Commercial Vehicles Platform, co-funded research supports the development of truck and bus specific technologies, which are not covered in the three main EUCAR Strategic Pillars: Sustainable Propulsion, Safe & Integrated Mobility and Affordability & Competitiveness. The Strategic Platform Commercial Vehicles EUCAR recognises the following key challenges and research recommendations:

Urban commercial vehicle 2030

It is expected that more and more people are living in urban agglomeration in the future. This has a major effect on future transport needs, especially in urban environments. To maintain a good air quality in cities where more and more transport movements are required, an increase of energy efficiency and reduction of emissions is necessary and needs further support and research efforts. These efforts will pave the way towards competitive zero-emission urban commercial vehicles.

Despite the fact that urban areas are more densely populated, road-safety shall not be compromised and even increase further. In urban areas, commercial vehicle drivers benefit from a good knowledge and oversight of their surrounding environment. Therefore, additional measures and sensors need to be found to increase safety. In addition, increasing levels of automation will contribute to having less accidents in cities on the longer term.

Higher levels of automation will support decongestion and increase availability of roads. To increase the optimization potential, the differentiation between urban commercial vehicles and long-distance transport is necessary. A connected and integrated European logistic network can provide a framework for optimal urban commercial vehicle operation. It will optimise the whole logistics network.

How to fulfil the future requirements of the urban environment on air quality & noise, health, safety, energy and traffic flow while increasing the amount of required transport movements?

Long-haul commercial vehicle 2030

The growing economy is closely linked with increasing need for transportation. It is clear that road transport is vital to satisfy this demand and provide means for transportation specifically where other modes cannot grow so fast and so flexible. Despite this increasing demand, emissions and energy use from transportation shall decrease significantly. Therefore, further research for more sustainable long-distance propulsion is needed, as well as vehicles with more flexibility with respect to weight, dimensions and shape to increase the efficiency of a long-haul commercial vehicles.

Higher levels of automation in long-haul transport will support the driver to fulfil the tasks with higher efficiency and improved safety. Fully autonomous or even driver-less long-haul commercial vehicles could provide solutions for future long-distance transport, driving time regulation and safety. Still, societal aspects such as professional driver concerns need to be addressed.

However, the prospects of higher levels of automation for long distance transport, contributing to optimize road use, decreasing congestion and ultimately reducing CO2 emissions through automation are exciting.

Connected long-haul commercial vehicles are better integrated in the European logistic networks, leading to higher utilization ratios. Because of the long distances and the high amount of cargo moved this will

have a significant impact on emissions, energy consumption and road use for the entire European commercial vehicle fleet.

How to fulfil the future requirements on air quality, road-safety, energy and traffic flow while increasing the amount of required long-haul transport movements?

Integrated logistic system

The integrated European logistic system, connecting future urban and long-haul commercial vehicles with each other and other data sources, is key for the optimized transport of people and goods. Connected to this logistic system, the vehicles are operated in a more effective way. The utilization rate of commercial vehicles can be increased by having more people or goods moved per vehicle and also by reducing the amount of empty kilometres driven. Such a largely integrated approach requires the possibility to physically share and distribute cargo among vehicle platforms and therefore unified loading units are essential. Further, efficient processes (e.g. transport documents, data management) to improve handling of goods between modes and within one mode at the right location is key for the successful integrated logistic system.

How to provide commercial vehicles fulfilling the needs from a truly integrated transport system, considering future infrastructure and contributing to sustainable and efficient logistic?