

Increase the share of door-to-door combined transport in total freight transport: significantly reduce CO₂ emissions to achieve the EU Green Deal climate targets



Background

While greenhouse gas (GHG) emissions have fallen significantly in the EU over the past two decades, the transport sector's share of emissions has increased from 14.8% to 28.3%. Heavy goods vehicles are responsible for over a quarter of all transport emissions.

In order to achieve the European targets of 55% GHG reduction until 2030 and full climate neutrality by 2050, freight transport must also reach a substantial reduction of its carbon footprint.

Door-to-door combined transport offers an efficient option that can be implemented now: contemporary Combined Transport's CO₂ emissions are lower by 60-90% and its energy efficiency better by 40-70 % compared to unimodal long-distance truck transport powered by Euro 6 diesel engines ⁽¹⁾. The main reasons are (i) the energy efficiency advantage of the electrically powered trains compared to diesel-powered trucks coupled with (ii) the efficiency of the intermodal transshipment technique.

New study: More energy efficiency, more climate protection, less dependency

Especially today, energy efficiency is a powerful lever to reduce Europe's dependence on external fossil energy supplies. In a study prepared for the International Union for Road-Rail Combined Transport (UIRR) the savings potential of carbon-free door-to-door combined transport are examined ⁽²⁾. The consulting company d-fine GmbH of Frankfurt, commissioned by UIRR, analyzed the aspects of energy efficiency, alternative drives, battery technologies and CO₂-free power generation. Core results:

- A shift to more energy-efficient and low-emission battery-electric trucking in the road legs and an overall expansion of door-to-door combined transport could reduce CO₂ emissions more than any improvement of unimodal road freight transport is projected to be capable of.
- Rail transport is inherently more efficient than road transport (low rolling resistance, aerodynamic advantages, topology advantages). Further energy savings can be achieved with longer trains (740 meters) and the new Digital Automatic Coupling (DAC).
- Zero-carbon door-to-door combined transport is already possible today. Cargo handling at the *Cargo City Wien Süd* and *Megahub Lehrte* terminals, for example, is already CO₂-free - thanks to the use of green electricity and shunting-free operation.
- The key factors for a fully zero-carbon EU freight transport are: CO₂-free power generation, full electrification of rail transport, electrical equipment of the transshipment stations, battery-powered vehicles for short road sections (which are typically shorter than 70 km).
- According to forecasts, battery prices will fall by up to 70 percent in the future. The same applies to the costs of battery-powered transport vehicles due to the increasing series production.

Conclusion: The technical potential is there, political decisions are required

In view of the challenges of the climate crisis, it is important to reduce greenhouse gas emissions as quickly as possible. As the present study shows, zero-carbon door-to-door combined transport can make a significant contribution to realizing the EU's ambitious climate plans. As zero-carbon combined door-to-door-transport is already technically and operationally feasible today, political decisions are now required to fully exploit this potential:

- The share of door-to-door combined transport in total freight transport must be increased.
- Sufficient measures should be taken to expand the existing zero-carbon transport services into a comprehensive zero-carbon transport network.

As the technology for zero-carbon door-to-door combined transport is not only available but has already proven its suitability in numerous industrial applications, European decision-makers should now push this efficient and quickly realizable climate-friendly solution with all determination.

¹⁾ UIRR-Study1 (April)

²⁾ UIRR-Study 2 ("Zero-Carbon Combined Transport") 2 (May)