Discussion Starter for Shippers: Achieving Zero Emissions in Road Freight

Who should read this?
This document is a starting point for buyers of road freight services across the globe to engage and collaborate with their service providers on mitigating climate change impact from their trucking operations.

Why act now?
- Society is increasingly aware of products with a reduced carbon footprint (including logistics).
- Regulations related to road freight emissions and mechanisms to price carbon such as ‘Fit for 55’ (EU) are becoming more coherent and stricter.
- Heavy duty road freight activity is expected to more than double and greenhouse gas emissions to almost double by 2050.
- Road freight has only about 25% of its carbon budget to stay within the 1.5°C scenario until 2050.
- A combination of vehicle and operational efficiency improvements, zero emission technology and logistics operation interventions can set the industry on the much needed path to reduce emissions by 10 to 30% by 2030.

Key takeaway
- Markets have shifted in favor of clean technology, meaning shipper's have the power to drive fleet decarbonization.
- By working with their carriers, shippers can lead a transition away from the transportation sector's high carbon future.
- Shippers can encourage carriers to make best use of the existing policy framework, which largely favors zero emission vehicle technology.

Shippers can decarbonize together with their carriers by focusing on three main areas.

A. Switching to low carbon fuels AND where feasible zero-emission vehicles

B. Improving truck and logistics operational efficiency

C. Supporting and working together within a zero-emissions freight policy framework.

A. Switching your fuel or powertrain can reduce your lifecycle greenhouse gas emissions significantly

Potential well-to-wheel CO₂ equivalent emissions reduction compared to diesel truck operations (%)

- Hybridization Retrofits
- Sustainable Biofuels
- Battery Electric Truck
- Hydrogen Fuel Cell Electric Truck

Procurement should consider the lifecycle emissions of the actual fuel consumed.

- Existing diesel trucks refitted with electric powertrains provide benefits dependent on specific retrofit configurations and the type of duty cycle used.
- Biofuel type and feedstock are main determinants of emission reductions. While biofuels made from waste and residue have the best outcomes, global availability is very limited.
- Battery electric trucks are great especially for short to medium range operations. The graph depicts reduction based on the EU’s average grid emissions factor to 100% renewables.
- Fuel cell trucks are suited for long range operations. The graph depicts reduction from certified blue hydrogen to green hydrogen. Be aware that grey hydrogen from natural gas emits more CO₂ than diesel fuel!
B. Making your company’s trucks and operations more efficient will reduce emissions and save you money.

Policy on truck emissions and sales

Policy on alternative fuel or charging infrastructure

Policy on energy mix in transport

Vehicle access regulations

Financial incentive for purchase of zero-tailpipe emission vehicle

Financial incentive for low- or zero-tailpipe-emissions fuel supply

Member-state level, Eurovignette based on CO₂ Emissions.

Member-state level based on RED II carbon credits (e.g., NL, FR, DE). Upcoming EU ETS for Road. Fit for 55

EU-wide CO₂ standards for heavy-duty vehicles, Euro VII proposal.

EU-wide AFI Directive, upcoming Regulation

EU-wide RED II; Targets at Member State level

City-level

Member-state level

States level only: CA, NY

States level only: CA, NY

Upcoming Executive Order

Upcoming Executive order

Federal RFS States: LCFS and other states

None

None known

None known

None known

Vehicle platooning

Load consolidation, back hauling, load optimisation

Long and heavy vehicles: up to 65 tonne gross combined weight, eco-combi, duo-trailer

30%

10-20%

7-14%

5-11%

15-41%

Commercially available

Permitted in some regions

R&D phase

Tractor & trailer aerodynamics, low rolling resistance tires

Idling reduction technology: (automatic start-stop; cold ironing)

Intelligent eco-driving

Best practices to emulate

1. **Hewlett Packard Enterprise’s** logistics service provider started moving 50 to 100 HPE shipments per month from their distribution hub in Vienna to their customer’s hub in Slovakia using electric trucks.

2. **IKEA’s** local transport service provider used 100% biofuels made from waste and residue resulting in an emissions reduction of 90%, i.e., 2,900 tonnes of CO₂ eq.

3. **UPS** operates at least 57 long and heavy Eco-Trucks in Europe driving almost 5.4 million kilometers less.

4. **Breytner** operates a successful zero-emissions urban and regional road freight service working closely with shippers, OEMs and making smart use of subsidies and research initiatives in the start-up phase.

C. A comprehensive zero-emissions road freight policy framework and supporting institutions will be key to success