



Industry perspectives on technology and regulatory framework

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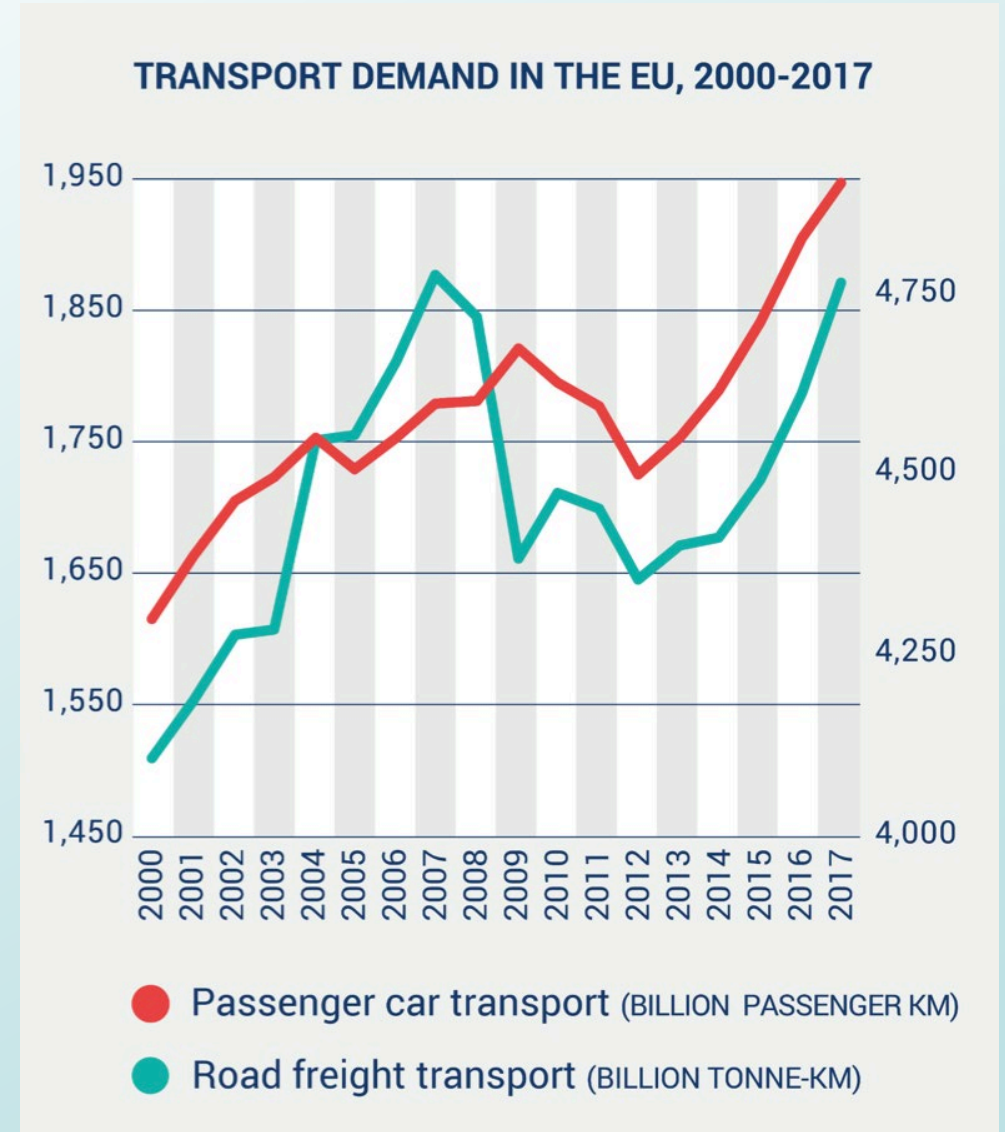
GRPE workshop on low- and zero- emissions heavy duty vehicles

June 2nd, 2021



GROWING TRANSPORT DEMAND

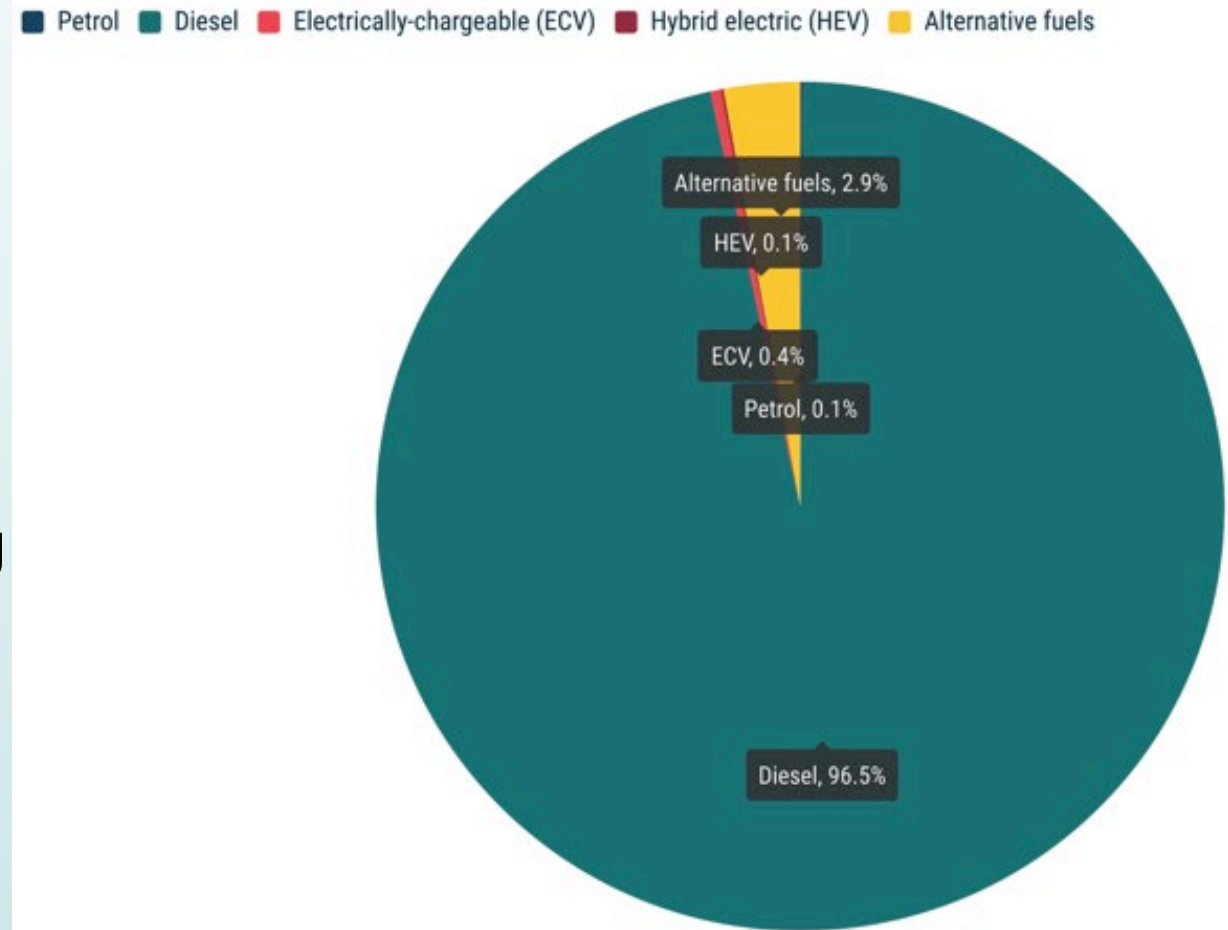
- **Reduction in new-vehicle CO₂ emissions have been offset by growing transport demand**
 - Average improvement of vehicle fuel-efficiency ~ >1.0% pa
 - Growth in road freight transport >20% since 2000



@ | 96.5% OF ALL TRUCKS RUN ON DIESEL

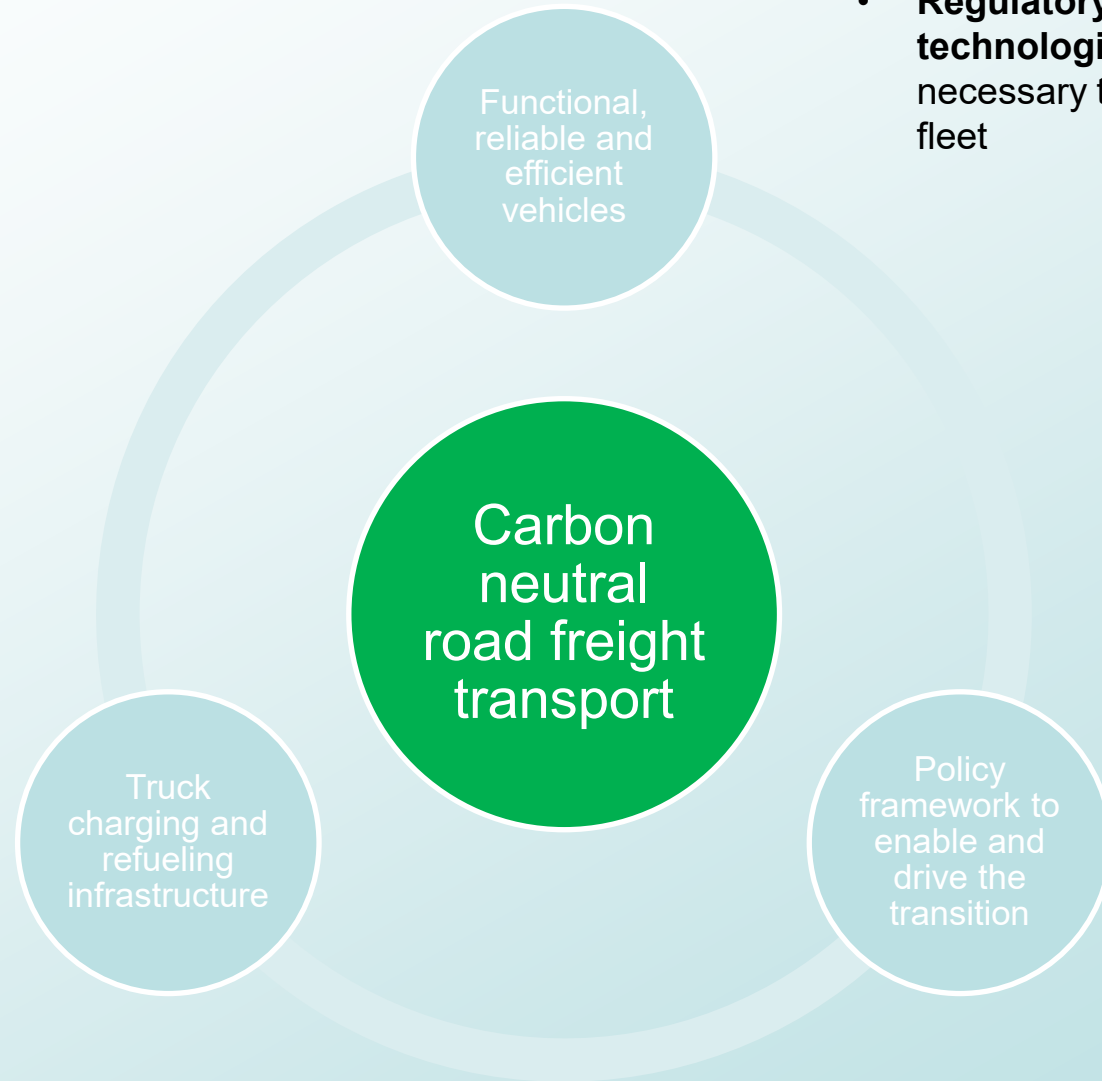
- 1 out of every 10,000 vehicles in EU is electrically chargeable
- 2.9% of all trucks run on natural gas
- Manufacturers focus on zero-emission vehicles but market uptake requires coherent enabling policy framework

Trucks by fuel type, 2020



KEY MESSAGES

- **Clean electricity, hydrogen and low-/ zero-carbon fuels** are crucial for the transition
- Vehicle deployment will only be successful if **infrastructure** is rolled out rapidly
- Commitment of **all stakeholders/ policy makers must match ambition** level set for vehicle industry
- OEMs ready to support roll-out by collaborating with public and private stakeholders



- Commitment to **carbon-neutrality by 2050 at the latest.**
- **Regulatory focus on zero-emission technologies** but low-/ zero-carbon fuels necessary to decarbonize current vehicle fleet

- Zero-emission vehicles will have to become **best option and preferred choice of transport operators.**
- Enabling **policy framework** is indispensable **to close TCO-gap**
- Carbon Pricing policy is depending on the area.
- Decarbonisation requires **clear focus** and **all resources to be devoted exclusively** to reaching target as soon as possible.



TECHNOLOGY ROADMAP

- **Regulatory framework requires low-/ zero-emission technologies to backbone of road freight transport fast**
 - BEV
 - FCEV
 - H₂ ICE
 - Other
- **In parallel, decarbonisation of all energy carriers is crucial**



CONCLUSIONS

- **HDV CO₂ regulations effectively push for low-/ zero-emission vehicles**
- **Complementary enabling policy framework still largely missing**
 - Truck-suitable charging and refuelling infrastructure
 - Carbon Pricing policy is depending on the area.
- **International harmonisation should be pursued urgently**