Fuelling pan-European road transport with renewable gas

Business Forum on bio-methane and green hydrogen

Matthias Maedge
Secretary General

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CNG-LNG fuel prices September 2022

PRICE OF FOSSIL CNG/LNG vs DIESEL

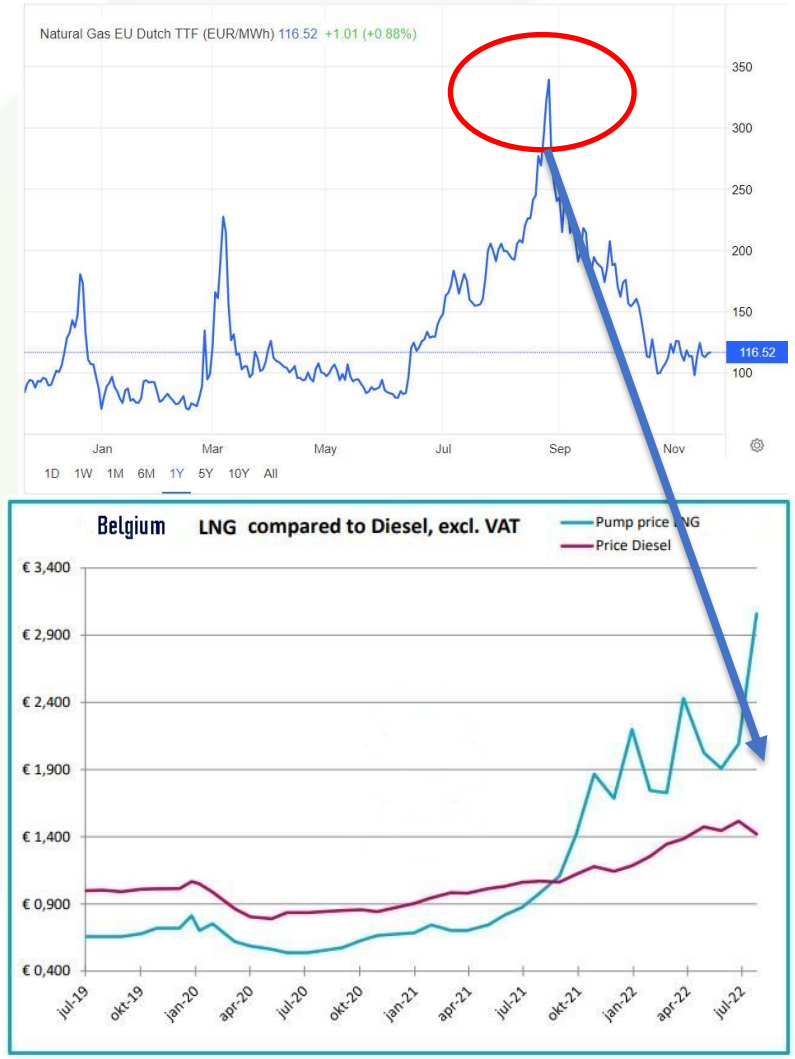
UP TO **+70%** MORE EXPENSIVE

PRICE OF RENEWABLE CNG/LNG vs DIESEL

UP TO **-60%** LESS EXPENSIVE

CNG price Belgium (fossil gas)

CNG price Germany (renewable gas)



Source: NGVA Europe

New biomethane projects

bioLNG liquefication plant in Cologne, Germany under construction – capacity 100kt bioLNG per year

German food company EDEKA switches its fleet to bioLNG (700 trucks first phase)

“Waste to energy”
€50 M private investment in bio-LNG plant in Fulda, Germany

Enough biomethane to power over 100,000 trucks by 2030

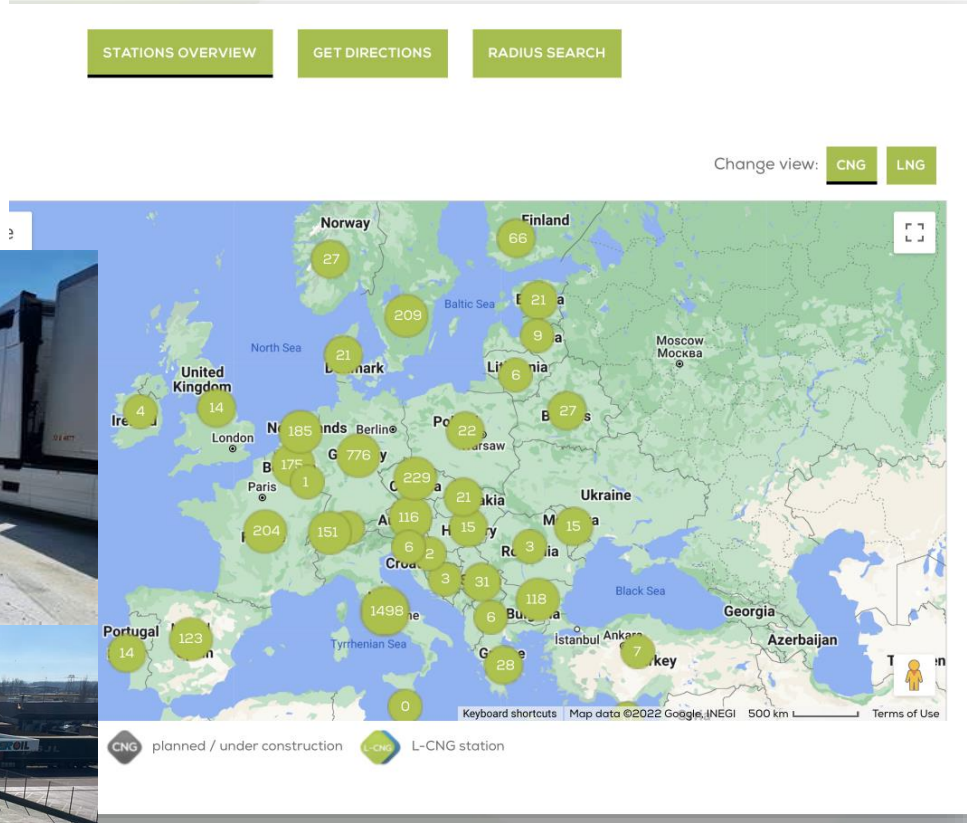
Source: Shell, Avanca/Reefuelery

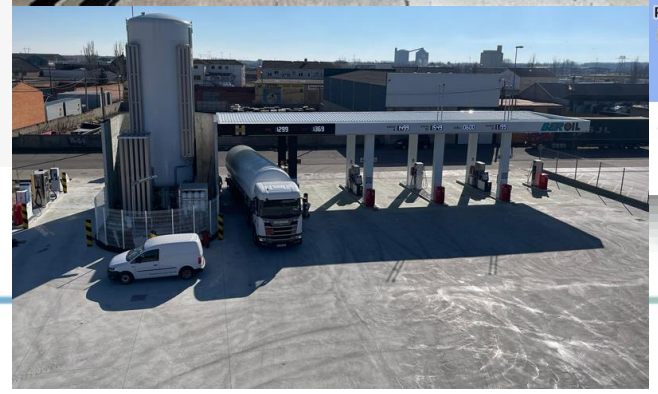
NGV infrastructure, most developed alternative

Climate-neutral mobility is needed today, not just in the future.
gmobility is here to show how this can be made possible.

+ All transport corridors covered

+4.872 NGV stations





GAS FUELLING STATIONS

4173 CNG stations

699 LNG stations

Source: NGVA Europe, HAM

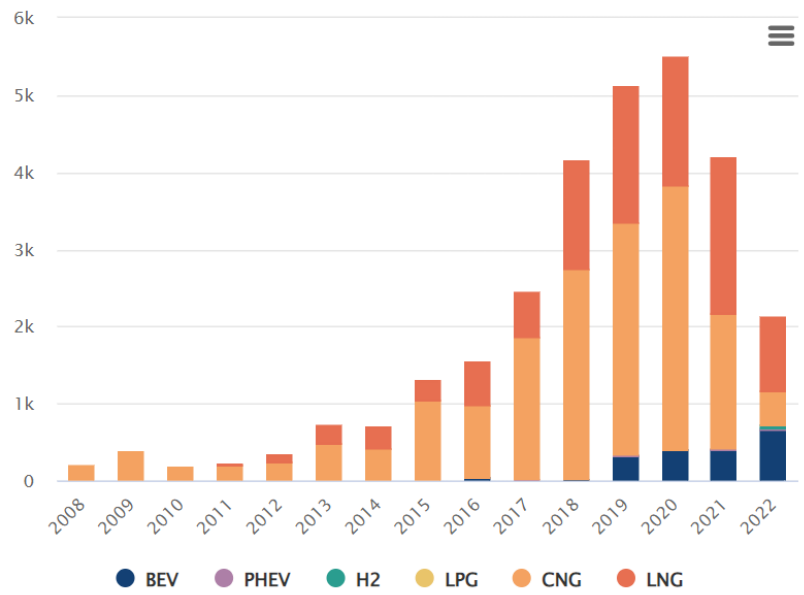
New alternatively fuelled vehicle registrations

7,117 new units (2022)
~45 000 gas trucks in use in 2023

3,248 new units (2022)
~26 500 gas buses in use in 2023

AF New registrations (N2&N3)

Number of newly registered alternative fuelled (BEV, PHEV, H2, LPG, CNG, LNG) trucks (N2&N3).



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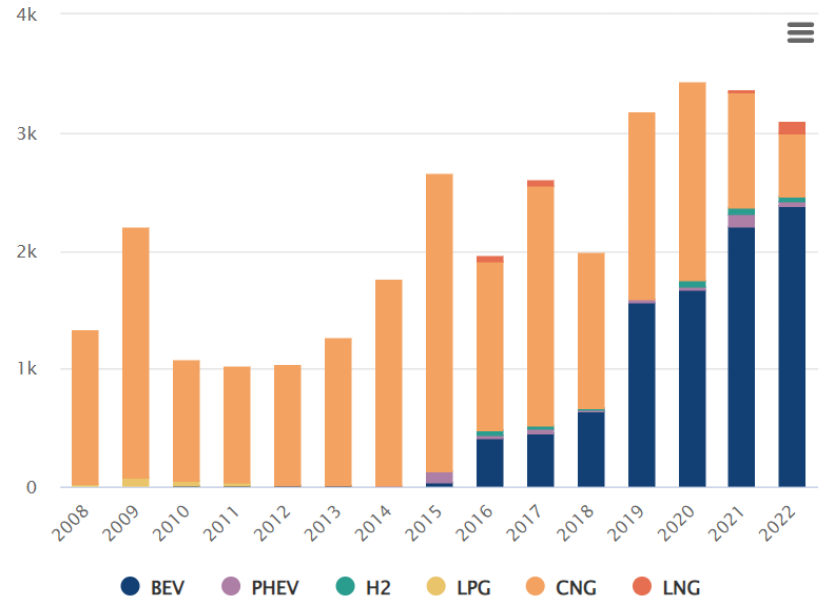
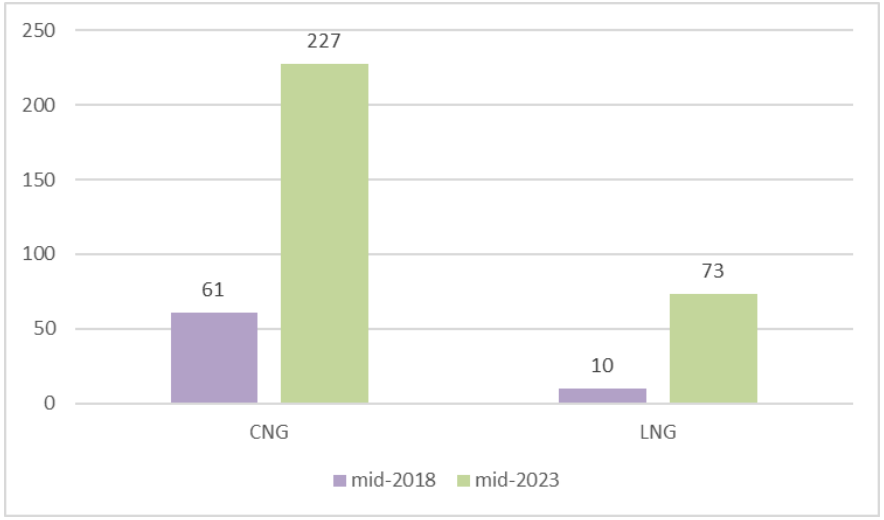


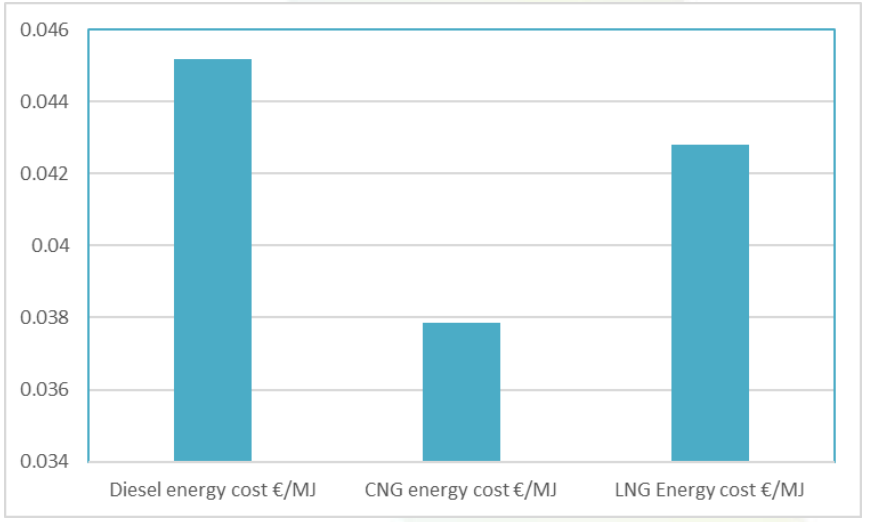
Source: EAFO

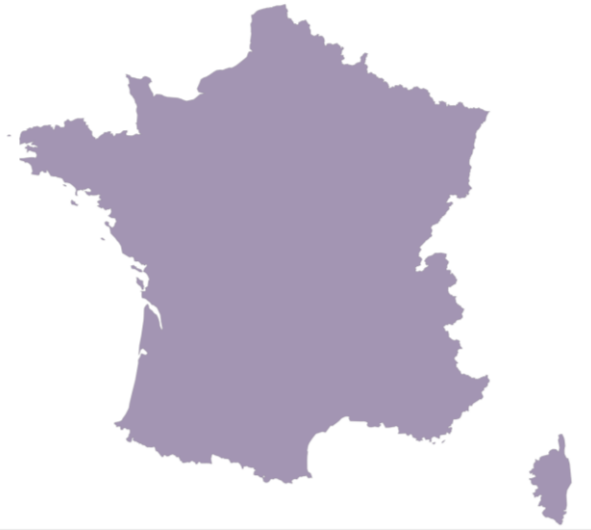
France. 100% biomethane in road transport by 2033

〉 Growing number of CNG and LNG stations



〉 Average CNG and LNG prices versus diesel





〉 +1800 gas powered trucks in 2022

〉 + 1600 gas powered buses in 2022

Source: GibGas, NGVA Europe

The gas engine powered by renewable gas

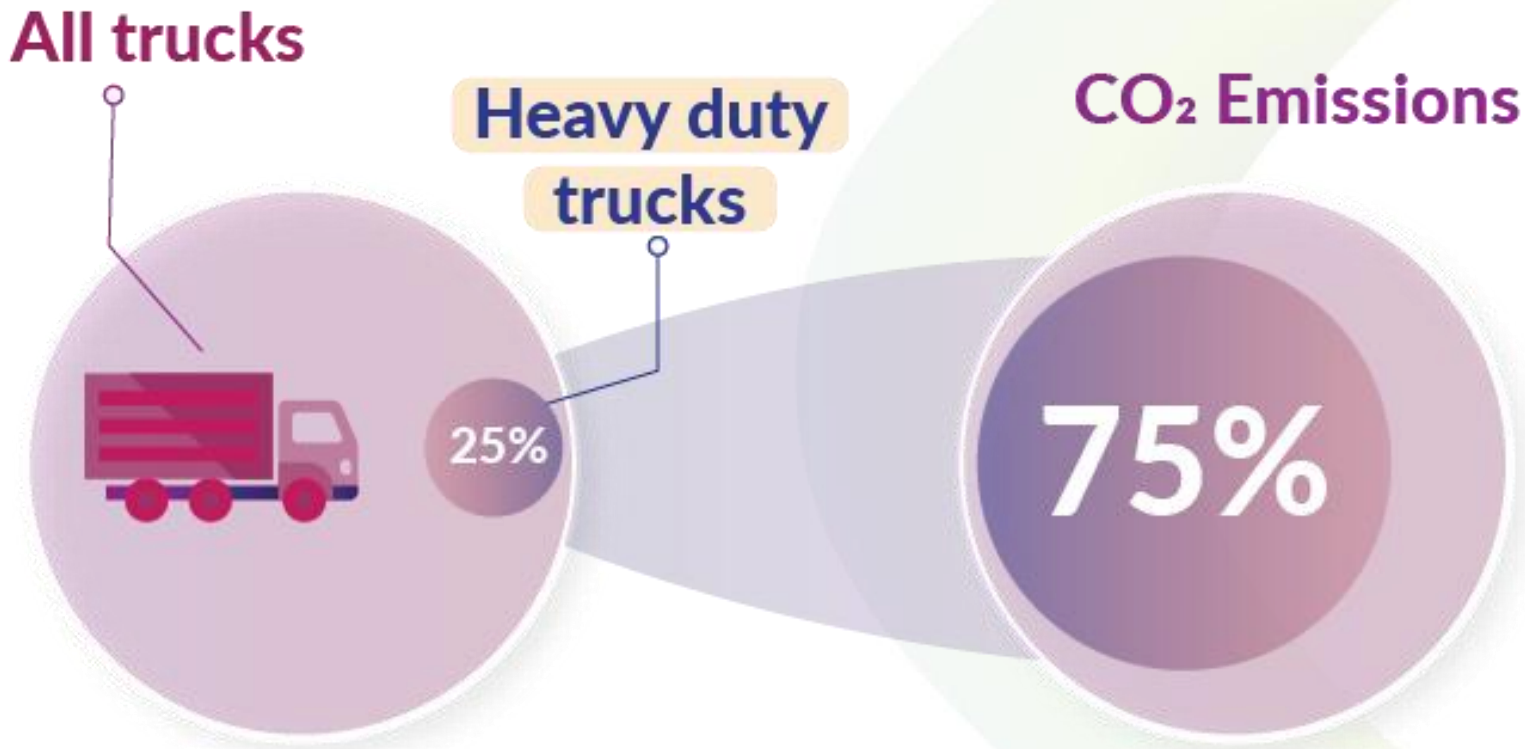
bioCNG and bioLNG

H_2 ICE based on gas engine

- **BioCNG and bioLNG as immediate alternative**
- **Gas engine on H2 next step**

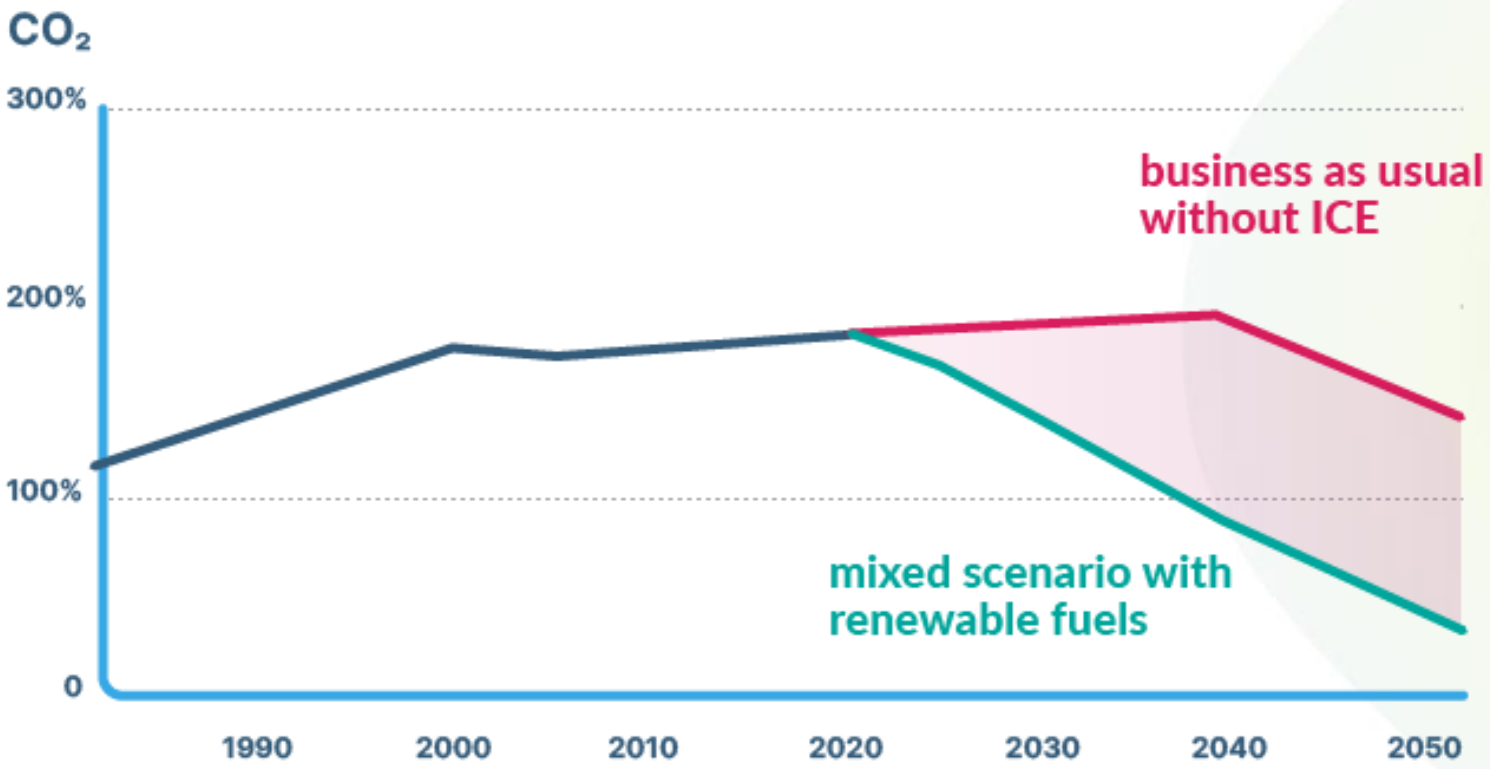
Source: Iveco, Scania, Volvo, Westport

HD trucks account for vast majority of CO_2 emissions



Source: ICCT, ITF

Effectiveness of CO2 reduction over time



The challenges

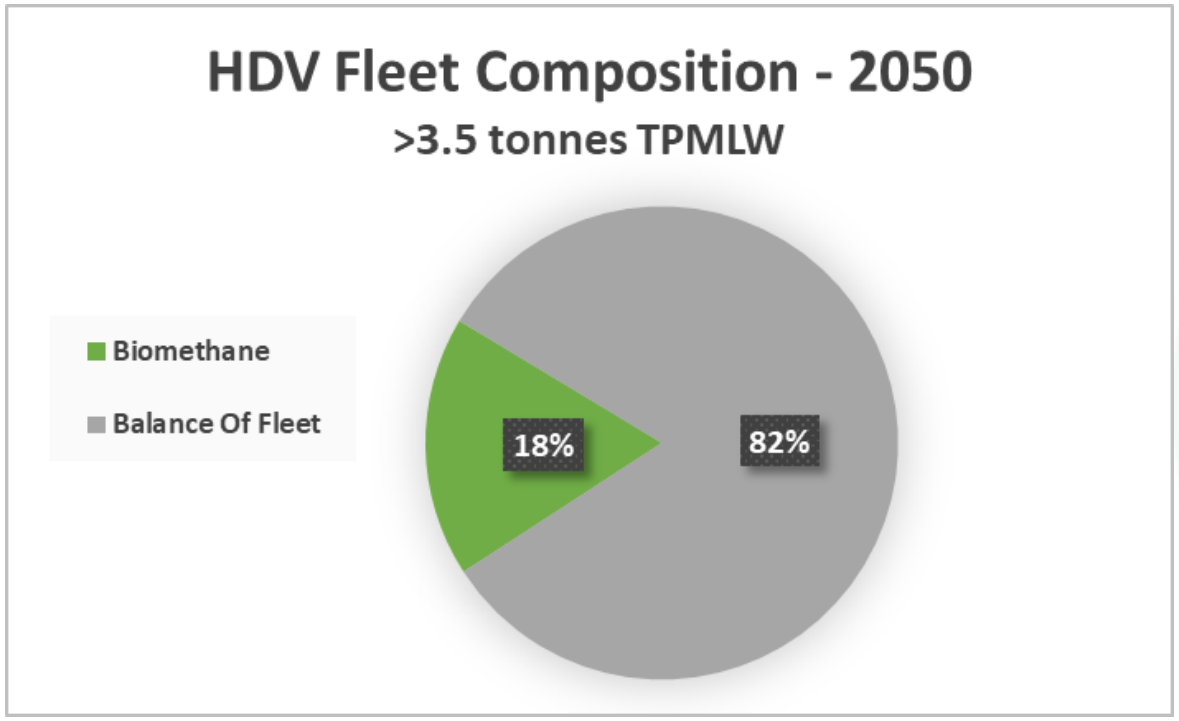
- speed of adoption
- tailpipe emissions
- resource dependency
- security of supply
- growing demand

More ZEV = more electricity needed

consumption needs

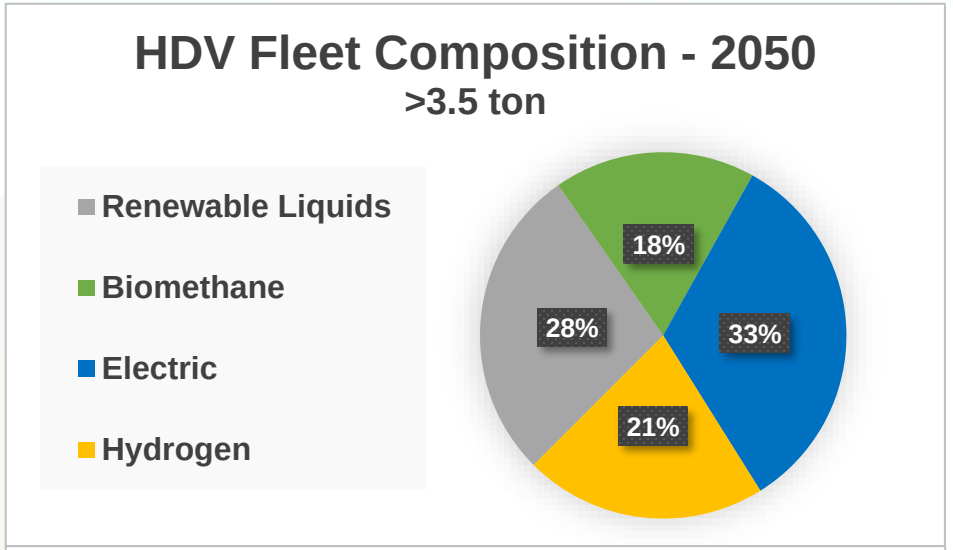
Source: NGVA Europe

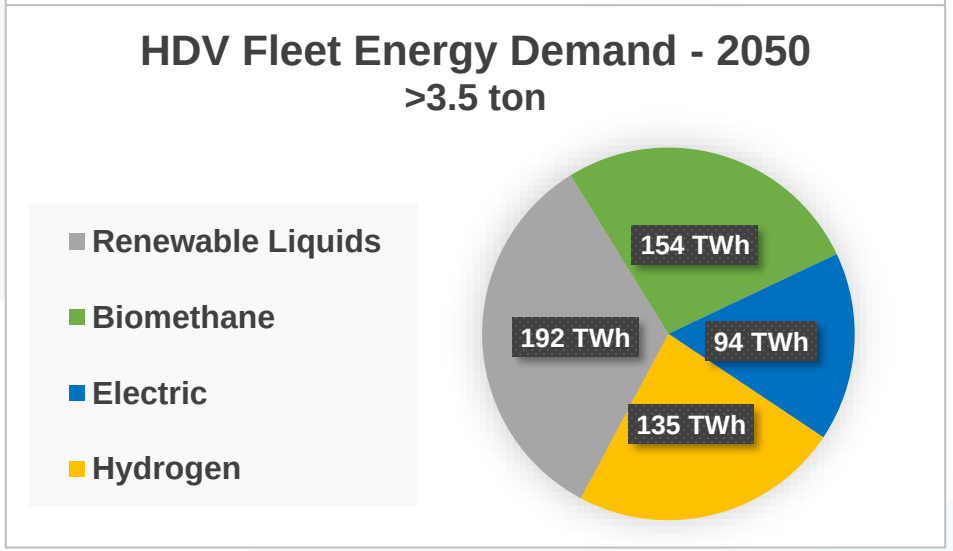
Mixed Technology Scenario for HDV sector



18% share of HDV fleet using biomethane would require:
154 TWh of final energy = **~15 bcm** biomethane

Source: NGVA Europe, calculations based on EU reference model





Gmobility Roadmap to carbon neutrality

Our roadmap

biomethane blend rates

55% - 75% - 100%

2030 2040 2050

15bcm

150 bcm

biomethane production potential in Europe

15 bcm

sufficient to power nearly 20% of the EU`s heavy-duty truck fleet

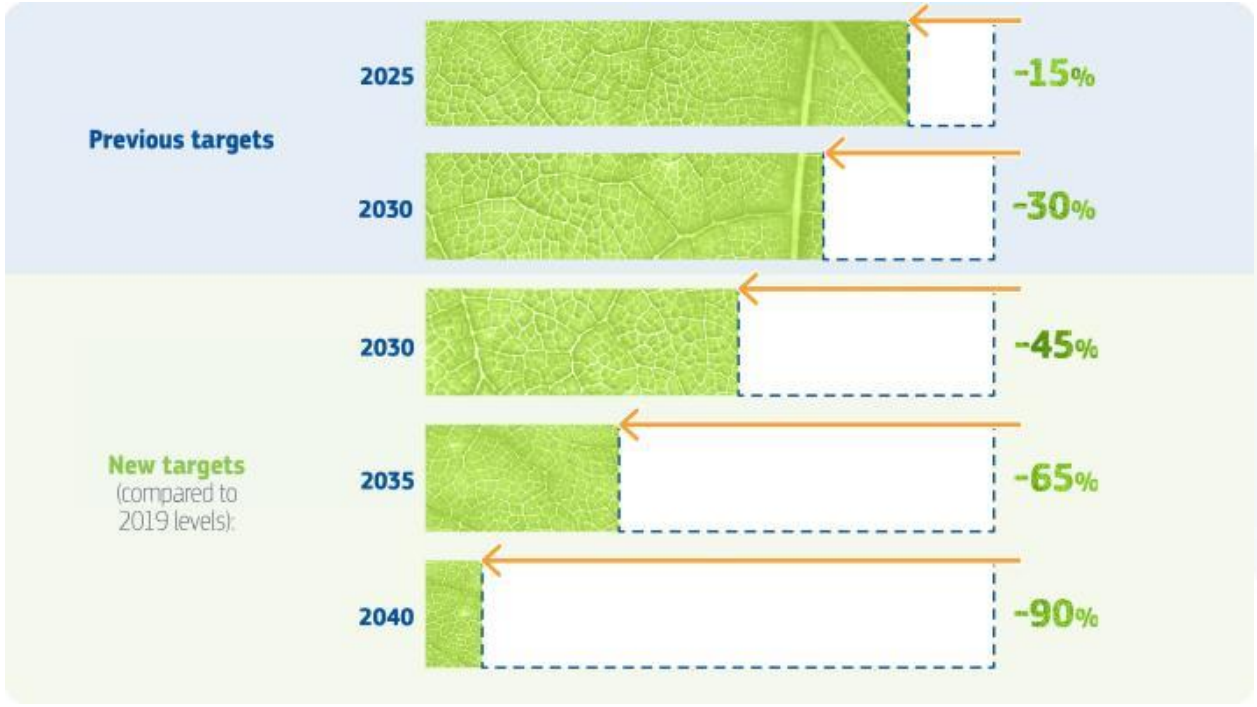
42 million tonnes CO_2 saved by 2050

- The potential of production of renewable methane is **10 times higher** the consumption in transport sector.
- **1.1 million HDVs** can powered with biomethane, mostly concentrated in the segment **> 30 ton vehicles**

Source: EBA, Gas For Climate, NGVA Europe

HDV CO2 Regulation – state of play (2023)

Proposal European Commission (tailpipe)



Alternative proposal (Carbon Correction Factor)

Tailpipe CO_2 emissions

+

CO_2 Correction Factor - CCF

Corrected CO_2 value for average fleet emissions computation

Source: European Commission, European Parliament

Call to action: signed by 120 organisations and 93 scientists

Open letter

Joint statement of the EU industry: CO_2 Regulation for Heavy-Duty Vehicles should recognise decarbonisation potential of sustainable and renewable fuels

As European industry, including fuel and automotive suppliers, vehicle manufacturers, dealers, repairers and transport operators we eagerly anticipate the European Commission proposal on the revision of the CO_2 Regulation for Heavy-Duty Vehicles (HDVs). Heavy-Duty transport is a vital sector for the functioning of the internal market and a suitable regulatory framework shall support the development of clean vehicles using different technologies and fuels. Decarbonisation is an immediate challenge and all options that can have a rapid impact need to be enabled.

Sustainable and renewable fuels can speed up the process and contribute to achievement of the "Fit for 55" and the full decarbonisation targets in road transport.

The signatories of this letter welcome the revision of the CO_2 standards for HDVs in line with the "Fit for 55" objectives and believe that a recognition of all CO_2 emission reduction pathways along the entire value chain is critical. Transport operators and vehicle manufacturers must be encouraged to consider cleaner fuel alternatives to fossil fuels, immediately available today, including liquid and gaseous renewable and synthetic fuels. Depending on use cases, technology diversity is needed where all technologies, including electrification/hybridisation, hydrogen and sustainable and renewable fuels can play a role.

The undersigned organisations recommend that sustainable and renewable fuels are considered for compliance in the CO_2 Regulation for HDVs. Including such a provision in the Regulation would support the EU's Green Deal objectives and accelerate the decarbonisation of the commercial transport sector.

Signatories:

Source: Fuel coalition

Conclusions

- **There is ample biomethane potential to power large, critical, segments of the HDV fleet**
- The potential of production of renewable methane is **10 times higher** the consumption in transport sector
- **Ukraine** has a considerably **big untapped biomethane potential**, but faces trade restrictions and lack of development of the biomethane market, especially in transport
- A total of **1.1 million vehicles** will be potentially powered with biomethane, mostly concentrated in the segment **> 30 ton vehicles** (international/long-distance trucking!!!)
- Huge quantity of diesel-based CO2 eliminated annually by biomethane: **42 million ton**
- However, the current policy framework in the EU may discourage that this potential can be realised

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+ 32 2 894 48 39 info@ngva.eu www.ngva.eu @NGVAEurope