

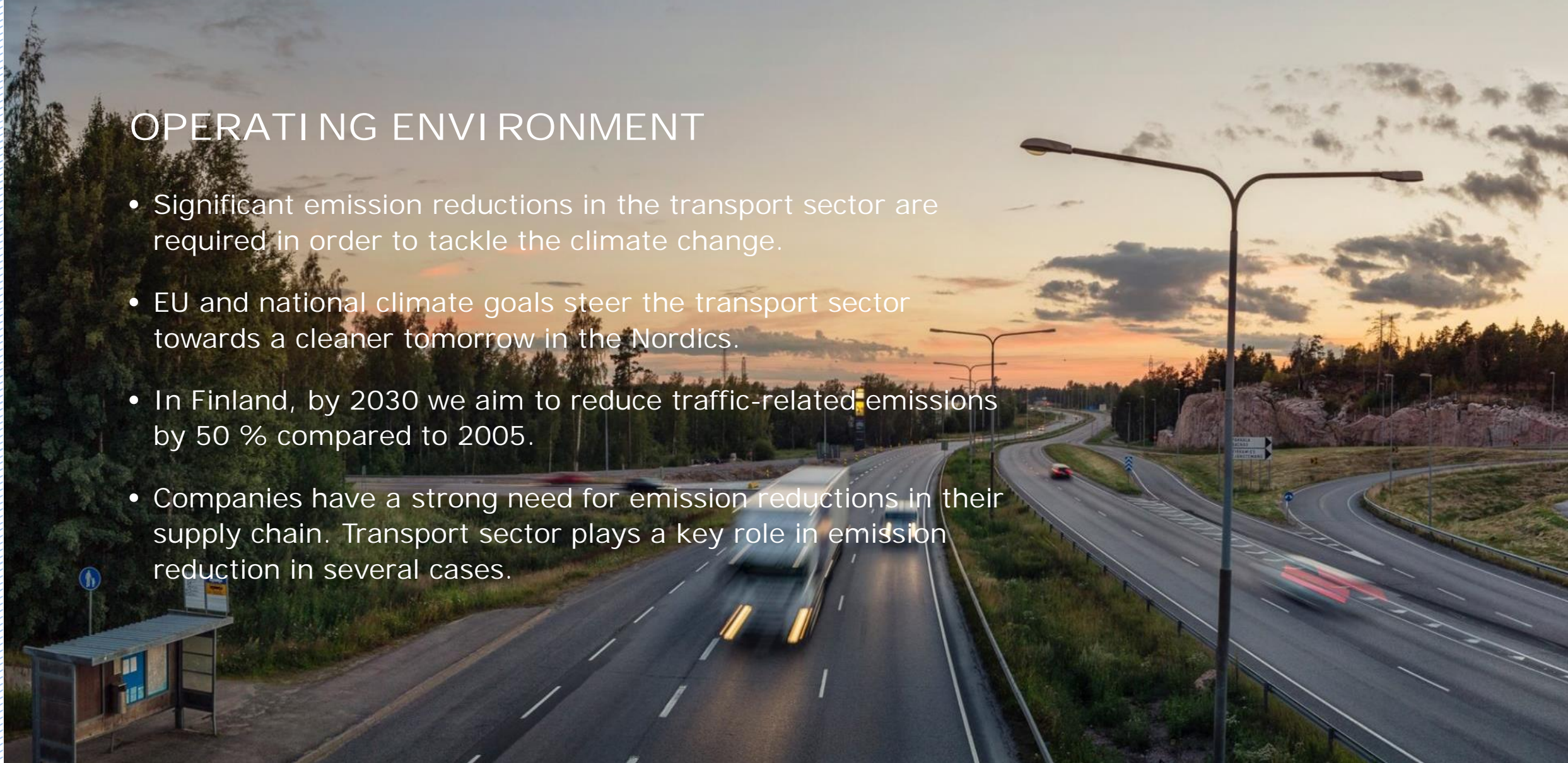
Nordic Gas Ecosystem Developing

The Potential of Gas for Heavy Duty Vehicles/Heavy Road Transport



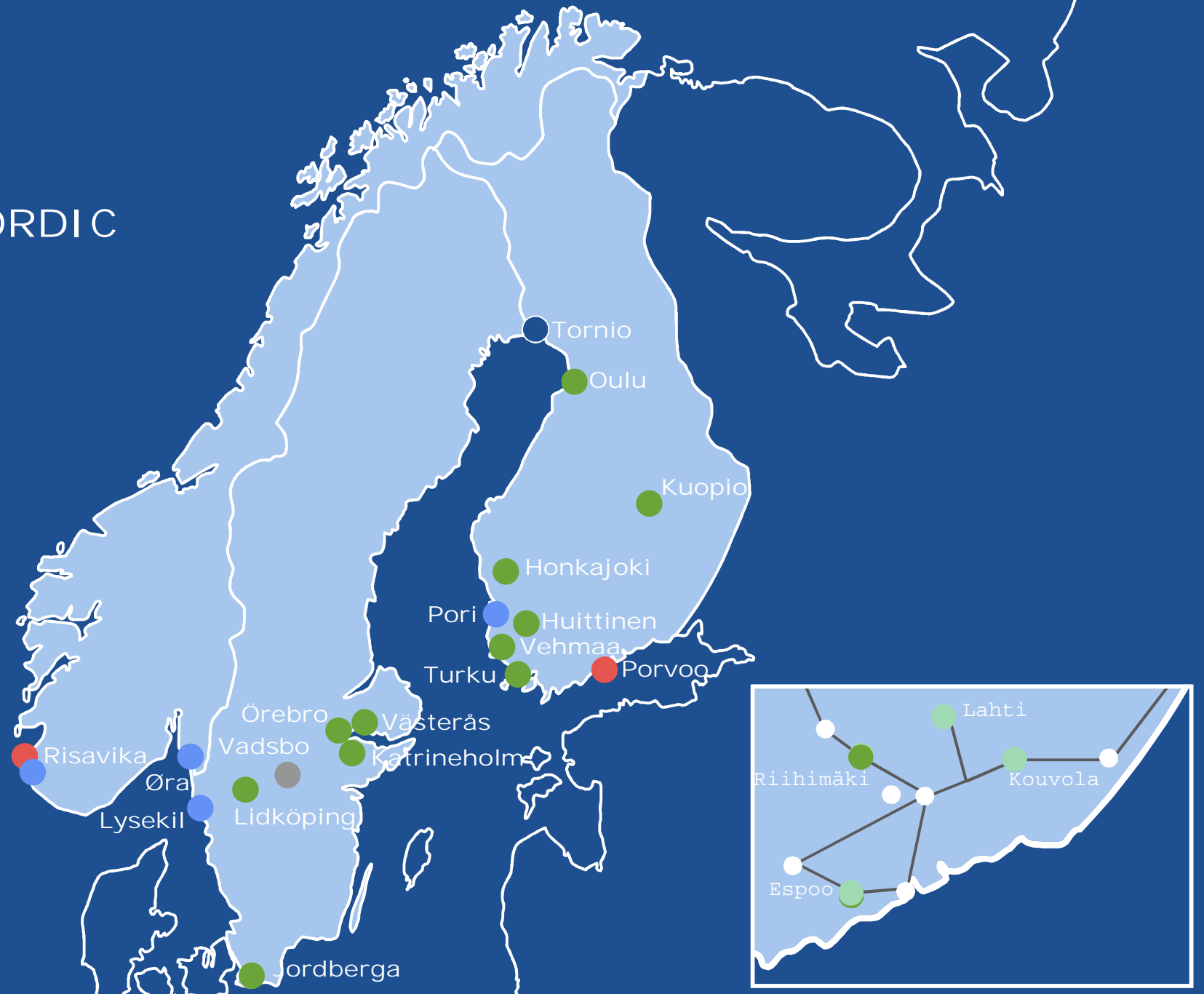
OPERATING ENVIRONMENT

- Significant emission reductions in the transport sector are required in order to tackle the climate change.
- EU and national climate goals steer the transport sector towards a cleaner tomorrow in the Nordics.
- In Finland, by 2030 we aim to reduce traffic-related emissions by 50 % compared to 2005.
- Companies have a strong need for emission reductions in their supply chain. Transport sector plays a key role in emission reduction in several cases.



GASUM IS ACTIVELY DEVELOPING THE NORDIC GAS ECOSYSTEM

- LNG production plant
- LNG terminal
- LNG terminal (joint project)
- Gasum, biogas
- Gasum, biowaste and biogas
- Biogas production plant (joint project)



LNG – a clean solution

- *heavy road transport*



INFRASTRUCTURE FOR HEAVY-DUTY VEHICLES

- LNG infrastructure is developing rapidly all over Europe.
- LNG offer cost-efficient way to decrease carbon footprint in logistical chain and utilize local resources in biogas production.
- Currently, there are a total of 40 gas filling stations in Finland, of which Gasum has 27 and LNG is available in Turku, Helsinki, Vantaa, Jyväskylä.
- Gasum is investing heavily in gas filling station network in the Nordics
 - In 2016, EU granted 2.7M€ funding for Gasum's project to develop HDV LNG fueling station network in Finland.
 - In 2018, the Swedish Environmental Protection Agency granted Gasum 9.3 M€ for 16 new LNG/LBG filling stations around Sweden.
 - Program for 35 new filling stations in Finland incl CNG and LNG stations

Gas-driven vehicles currently available in the Nordic HDV market



Mercedes-Benz
Eonic NGT
KW 222, HP 302

IVECO

IVECO
Stralis LNG & CNG
KW 243, HP 330
Stralis LNG & CNG
KW 294, HP 400
Eurocargo CNG
KW 154, HP 210

New release: Iveco Stralis
460 HP



Scania
P/G 280/340 LNG
KW 250, HP 340
P/G 280/340 CNG
KW 205, HP 280/250/340

New release: Scania 410
HP

VOLVO

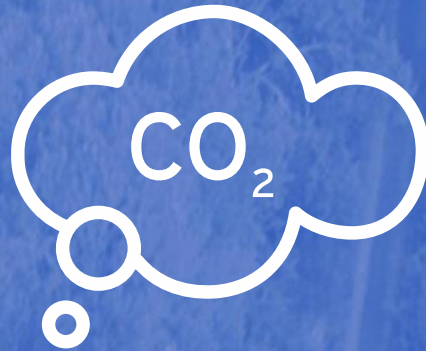
Volvo
FE CNG
KW 235, HP 320

New release: FH (420 HP)
and FM (460 HP)

CREATING A POSITIVE CYCLE WITH BIOGAS – CIRCULAR ECONOMY FUEL



100% local and
domestic



Environmentally
friendly



Helps create
jobs

WHY CHOOSE GAS FOR HEAVY DUTY VEHICLES?

Technically available

- Technology for natural gas engines has continued to develop, closing the performance gap to diesel
- New generation of vehicles are becoming more attractive for operators

Competitive road fuel

- Gas pricing is based on a stable pricing model, which gives a strong commercial incentive for switch to LNG over oil-based fuels
- Fueling network is expanding

Helps cut emissions

- No fine particulate emissions, low nitrogen oxide and carbon dioxide emissions
- Enables circular economy – biogas

WE ♥ GAS

Thank you



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