Hydrogen as an Alternative Fuel in the Heavy Duty Transport Sector

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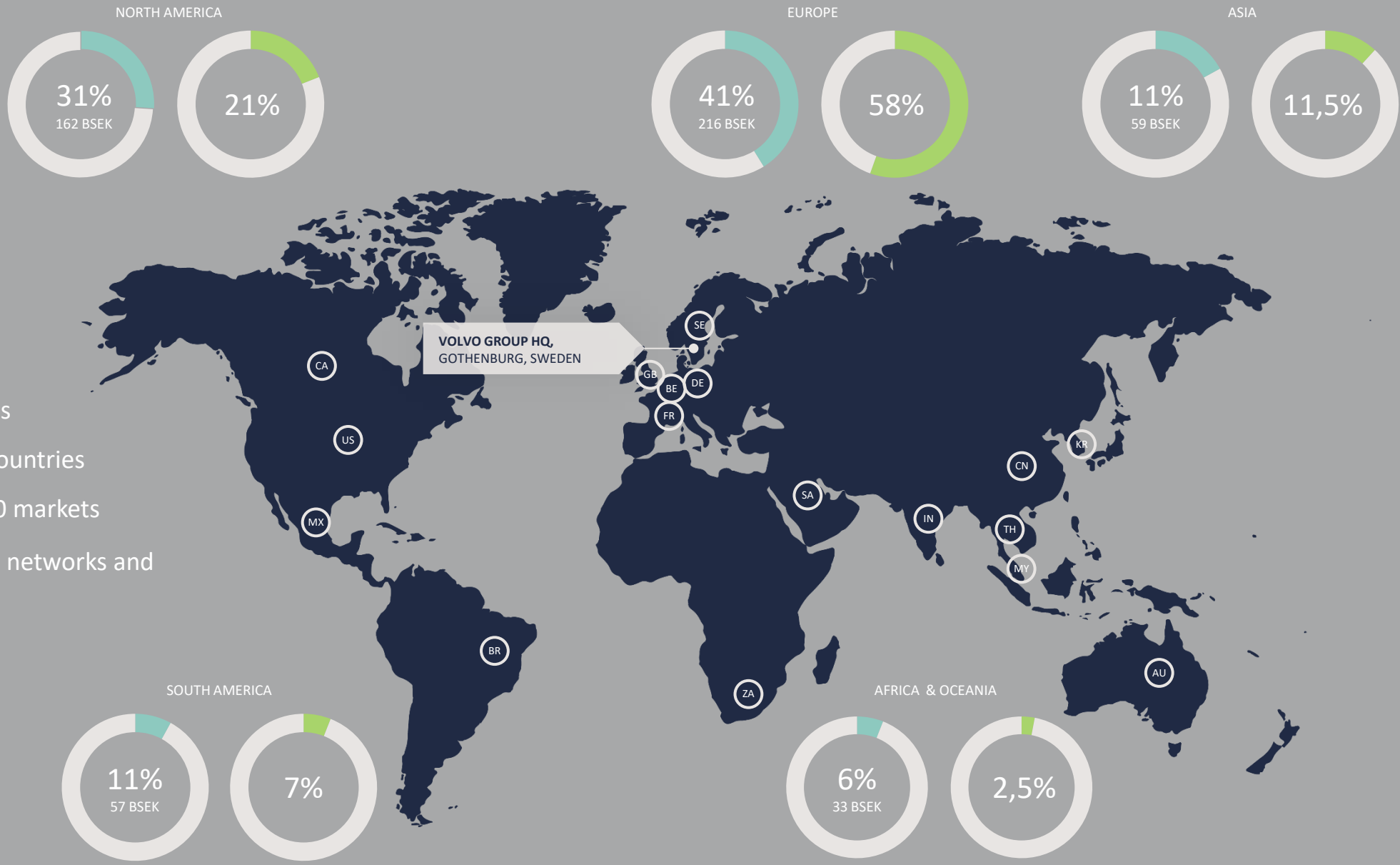
Presentation content

- Volvo’s climate targets
- Hydrogen as one alternative fuel
- Hydrogen at Volvo
- Public Hydrogen projects where Volvo is engaged
- Summary

Global presence

- → 102,000 employees
- → Production in 17 countries
- → Sales in almost 180 markets
- → Worldwide service networks and dealerships



Share of net sales by market (2024)

Share of total employees (2024)

Countries with Volvo Group production

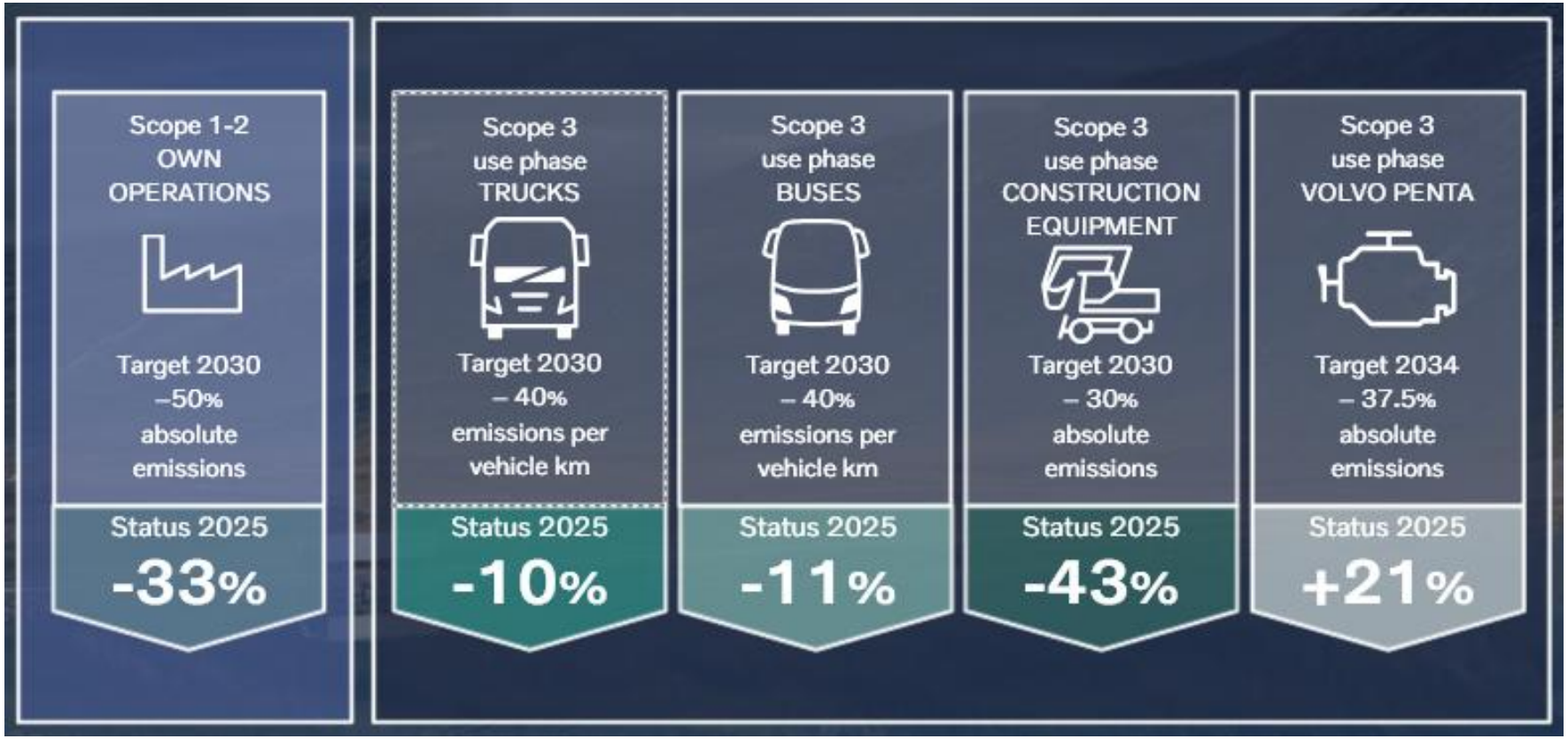
What we do

Volvo Group offers trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity.

We develop and offer electrified and autonomous solutions for the benefit of customers, society and for the environment.

Volvo, Paris Agreement and Science Based Target

- Volvo has committed to the Paris agreement
- Science based target (SBT) helps organizations to set target in line with Paris agreement
- How to further reduce the emissions?



What drives the reduction in CO_2 for SBT?

For fulfillment, all drivers need to be used

Product mix

Zero emission trucks

Gas trucks

Markets

Segments

…

More than 95%

Energy carbon intensity

Low fossil electricity

Low carbon fuels

Low fossil hydrogen

…

Mainly external

Energy savings

Driveline improvements

Aerodynamics

Tires

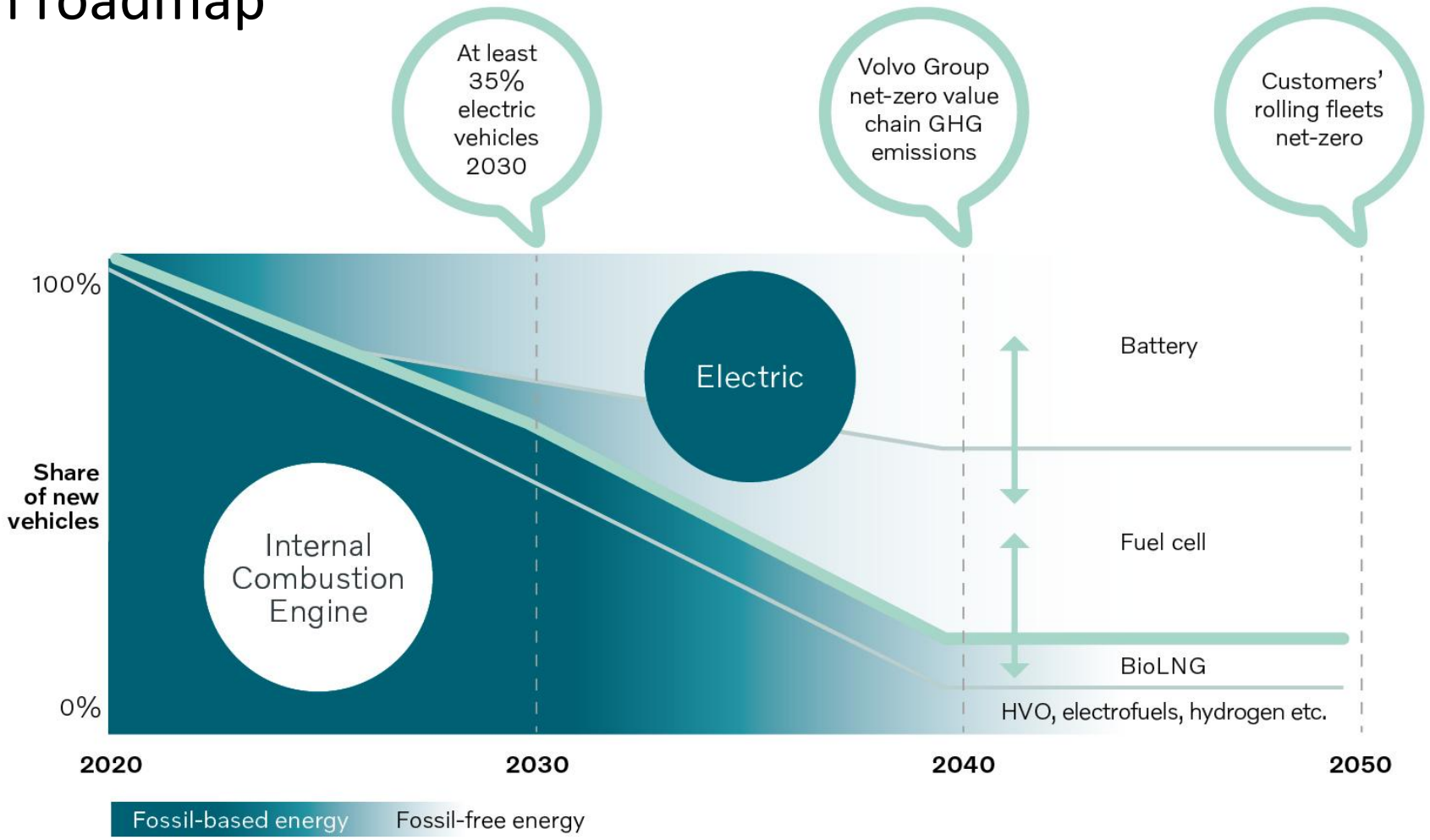
Driver performance

Improvements outside truck

…

Mainly internal

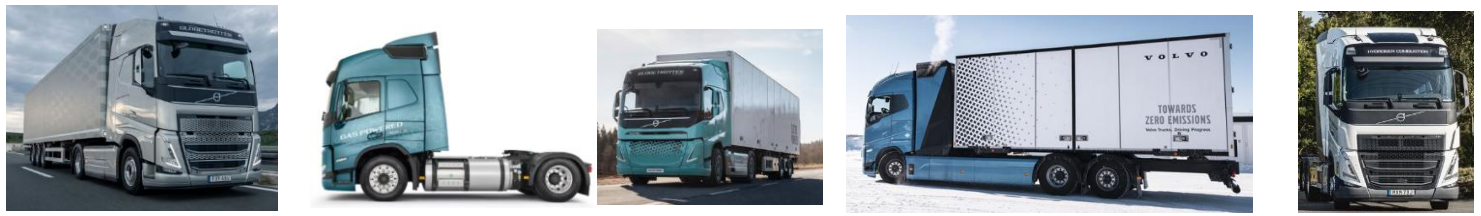
Transition roadmap

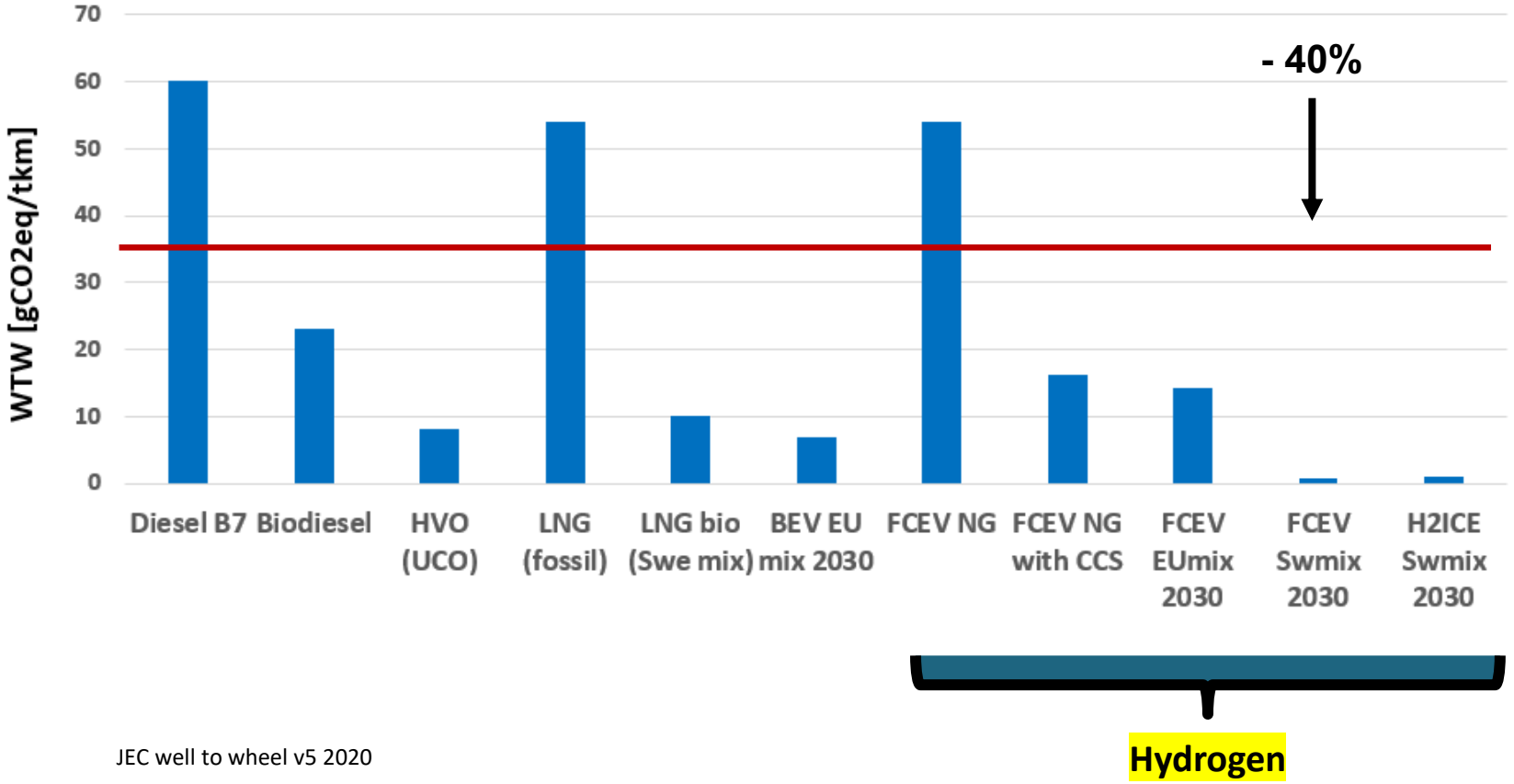


100% fossil free Volvo Group vehicles from 2040

Well to wheel CO2 eq emissions

- Production of fuel
- Use of fuel in a long-haul truck
- Comparison kg CO2 eq / ton km driven
- Well to wheel are included in Science based target





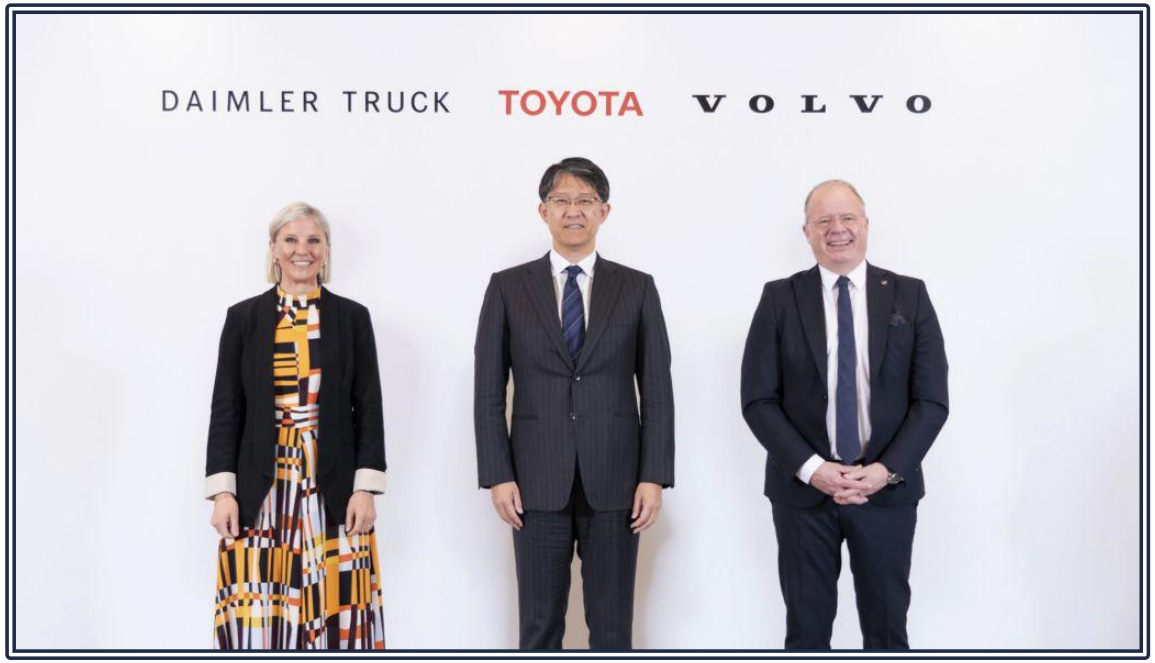
JEC well to wheel v5 2020

Well-to-Wheel analysis for emissions from heavy-duty trucks operating on different fuels

cellcentric

Since March 2021

News: 2026-03-31



Fuel Cell Electric Vehicle (FCEV)

Hydrogen in combustion engines

Cespira is a joint venture between Volvo Group and Westport Fuel Systems

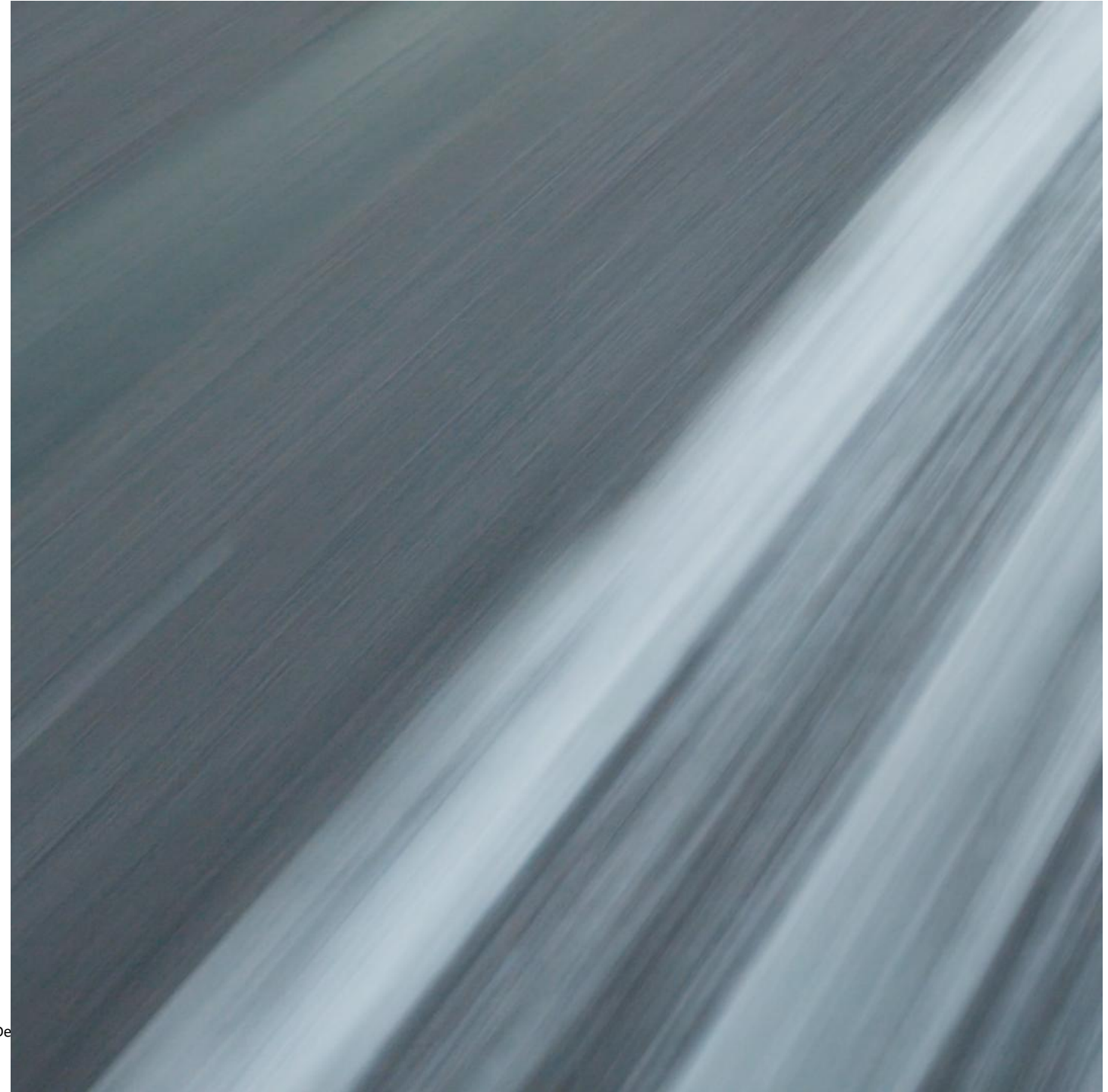
HPDI LNG

Fully OEM integrated LNG/bioLNG fuel system offering industry leading fuel costs and CO_2 emissions savings for heavy duty vehicles.

HPDI H_2

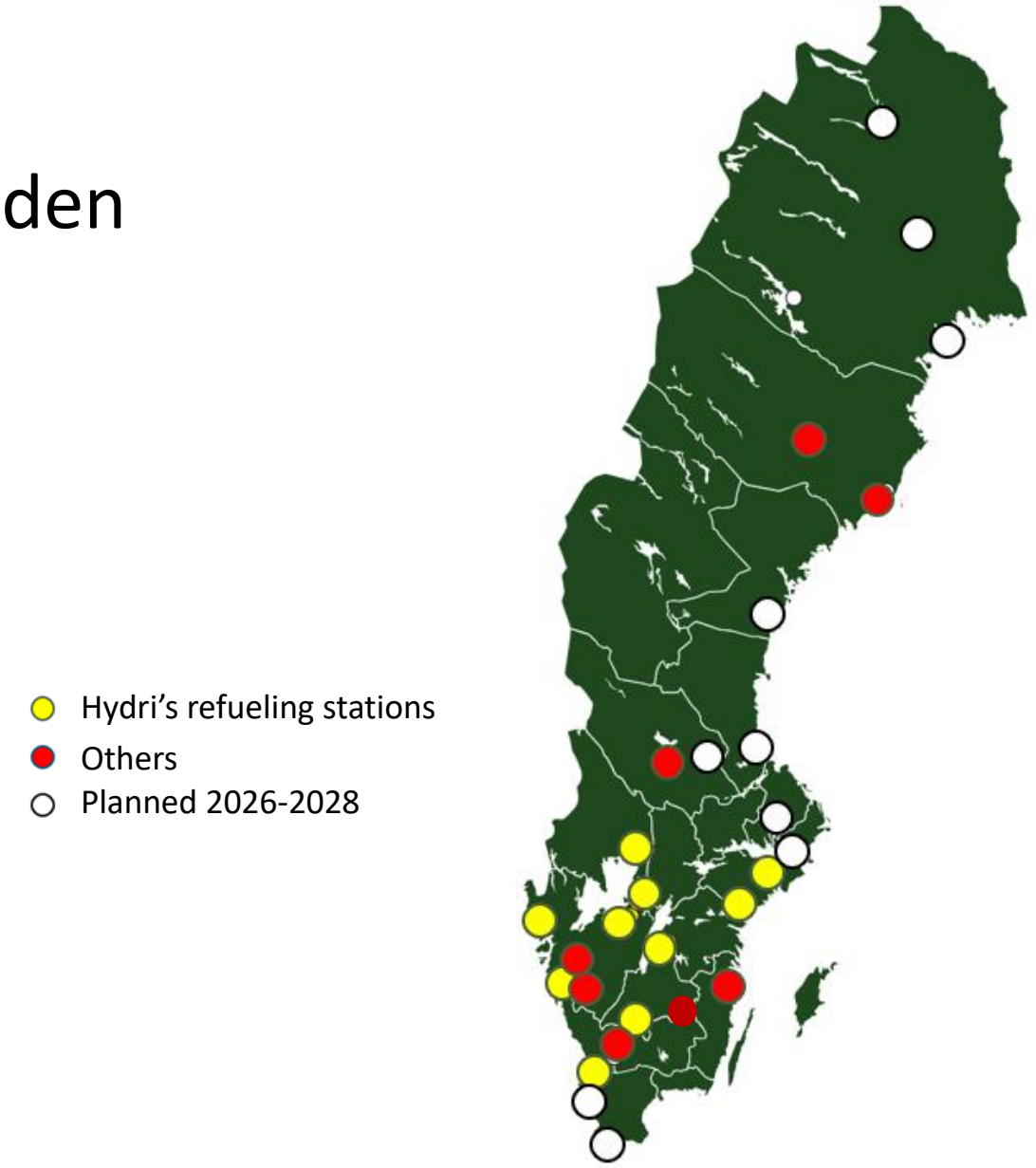
Hydrogen HPDI™ system: a practical, efficient, cost effective and robust solution for hydrogen mobility.

April 1st 2026



Hydrogen Refueling Stations in Sweden

- 18 stations in Sweden for Trucks are in operation
- Hydri is the main actor
- Others are OKQ8, PS Energi and Uppvidinge Vätgas



Interreg North Sea
Co-funded by the European Union
H2ignite

H2ignite creates a positive environment for the uptake of hydrogen in heavy duty transportation ecosystem by piloting solutions in the North Sea Region evaluating researching, and sharing knowledge

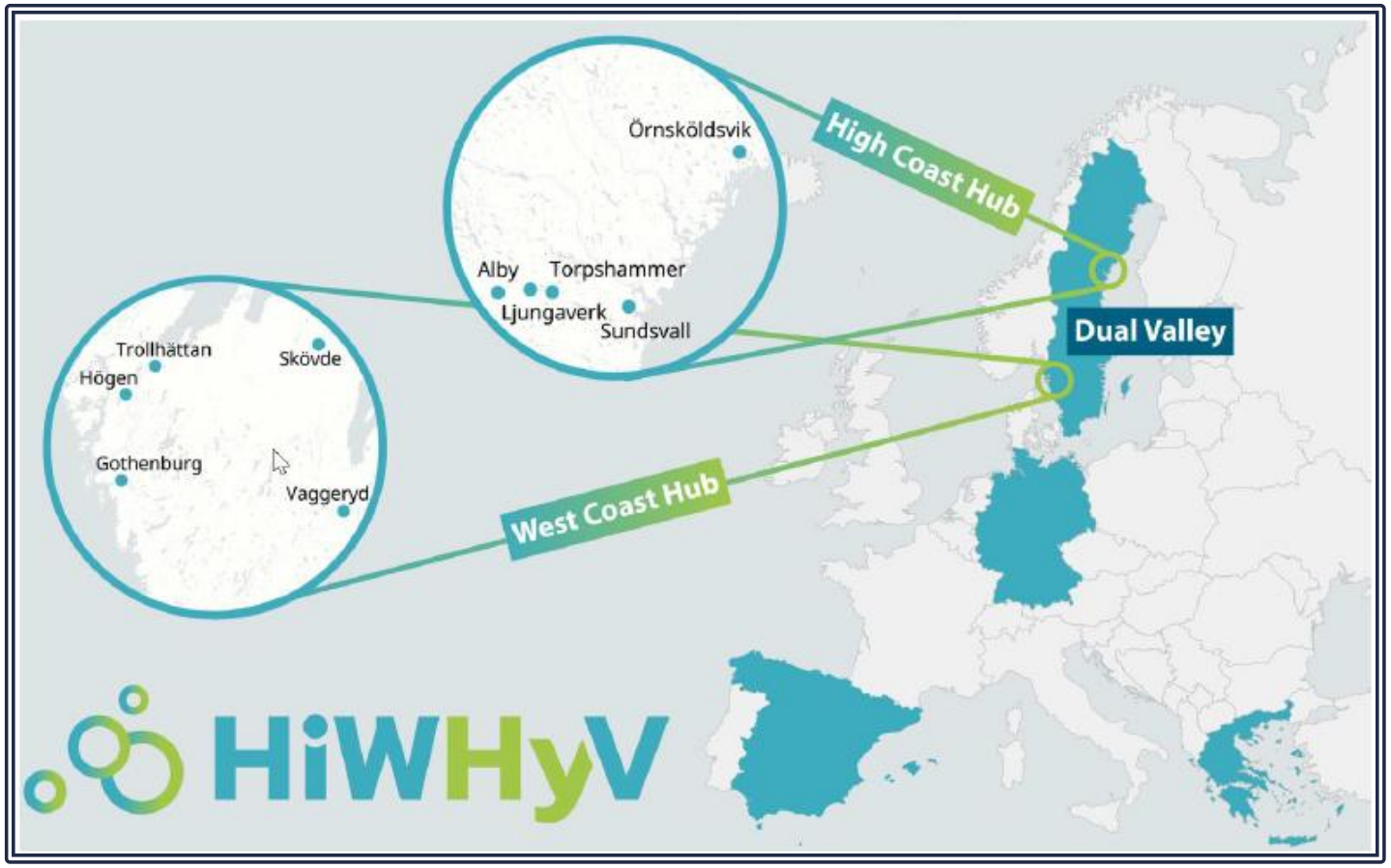
interregnorthsea.eu/h2ignite

ZEFES – FCEV Truck operation

H2 ACCELERATE Trucks – Build and Deploy FCEV

High Coast to West Coast Hydrogen Valley in Sweden

- HiWhyV could produce up to 123.000 tonnes of renewable hydrogen annually
- Applications include e-fuels, green fertilisers, sponge iron, and hydrogen-based transport
- Residual oxygen and waste heat will be reused in aquaculture and district heating
- Close connection to valleys in Spain, Germany and Greece
- International connection – California



Senith project

SENITH –
Sharing Experiences to Navigate the Introduction of Trucks using Hydrogen

CHALMERS

A collaboration between:

ITS UCDAVIS UNIVERSITY OF CALIFORNIA

CHALMERS UNIVERSITY OF TECHNOLOGY

SCANIA

VOLVO

Lindholmen Science Park

hydri

Studying the rollout of hydrogen trucks in Sweden and the USA (focusing on California), to:

- Share insights and perspectives
- Lower barriers to market introduction

With funding from:

FULBRIGHT

VINNOVA Sweden's Innovation Agency

FUTURE MOBILITY

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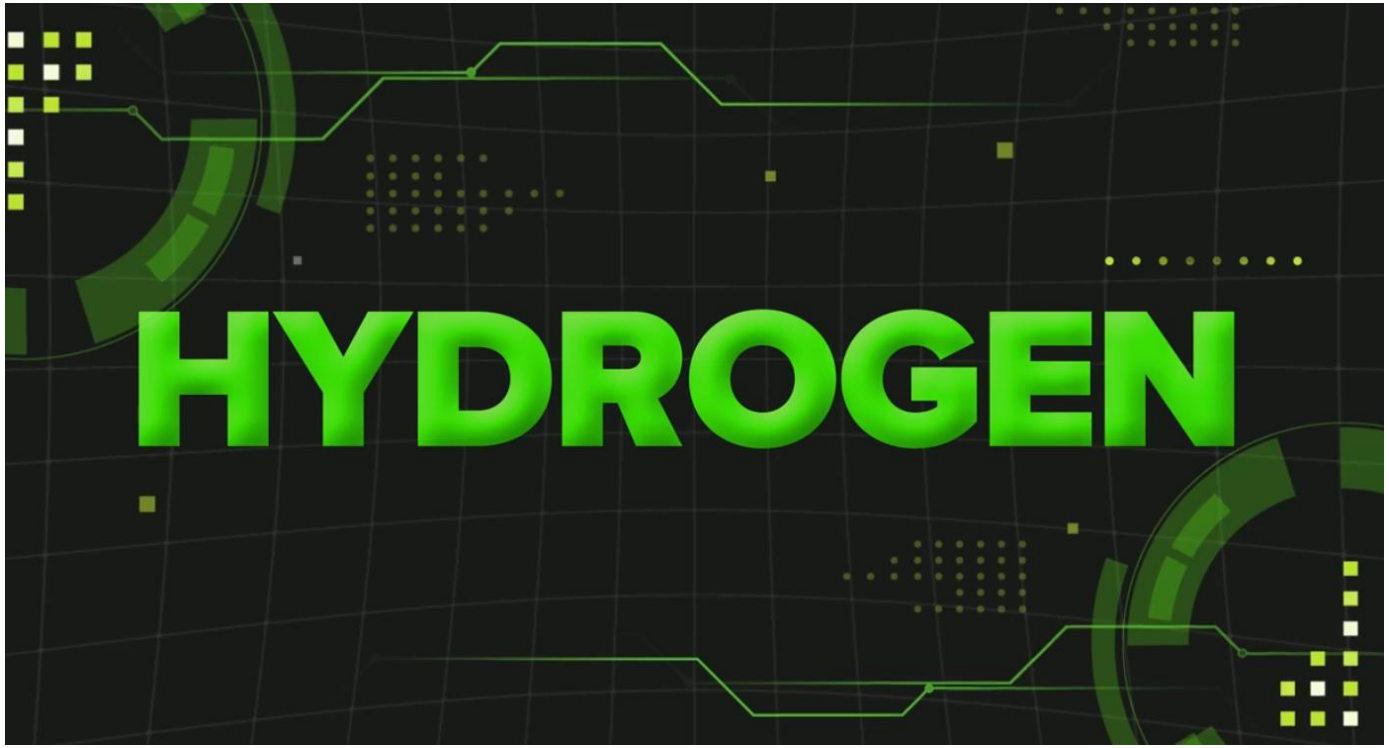
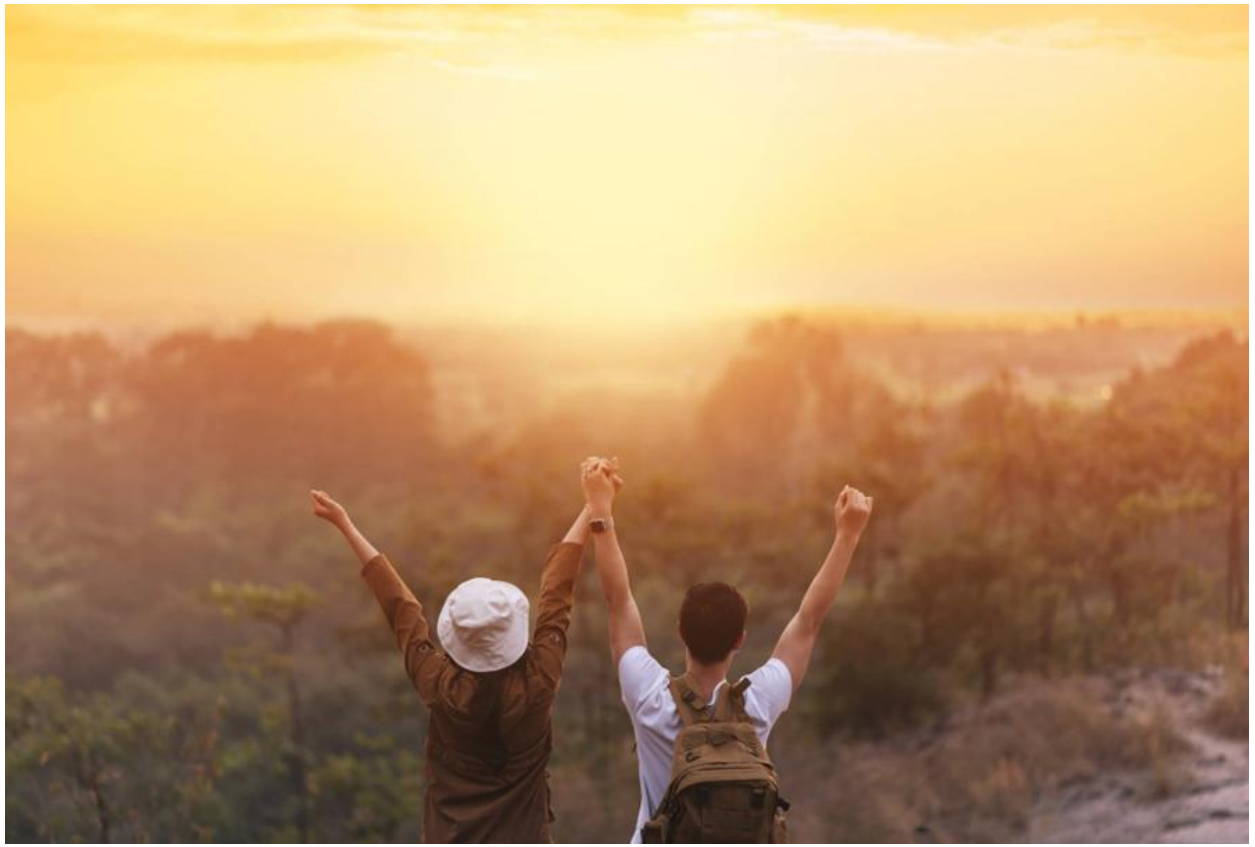


https://www.youtube.com/watch?v=we50q_7c4MA

Conclusions

- Volvo Group is on a transition path towards net-zero
- Three different technologies
  - battery electric vehicles
  - fuel cell electric vehicles and
  - internal combustion engines operated on renewable fuels (and hydrogen)
- Hydrogen is a fuel with high potential to meet climate targets
- H2ICE and H2 FCEV are two hydrogen types of vehicles Volvo will introduce before end of this decade
- R&D efforts are being made to demonstrate transition solutions, often as a common effort within public funded projects and universities



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