


13 - 15 February 2024

Nordic Hydrogen Week

 9.00 - 17.30



Oulu Region, Finland



Rob Castien

CEO

robcastien@resato-hydrogen.com

Resato



PURPOSE

We Accelerate the Energy Transition by Driving Zero Emission Mobility

CORE VALUES



Be Passionate



Team Up



Yes! We Can



Be Ambitious | Aim High



Work Reliable

We built Hydrogen Refueling Stations



HYDROGEN TECH

● FSS – Full Size Station

● FOS – Fleet Owner Station

Selection of customers²⁾



WWW.RESATO-HYDROGEN.COM



Maarn - Netherlands



Zuidwending - Netherlands



Coevorden - Netherlands



Temse - Belgium



Nieuwegein - Netherlands



Lübeck - Germany



Groningen - Netherlands

Building the HRS installed base



Groningen - Netherlands

The Hague - Netherlands



Wilrijk - Belgium



Rostock - Germany



RESATO IN NUMBERS



125
employees



33 mio
revenue



500%
growth
2020-2023



BHAG: 1000
stations
by 2030

What's coming to Finland



Alternative Fuels Infrastructure Regulation (AFIR)



AFIR sets **mandatory** deployment targets for electric recharging and hydrogen refuelling infrastructure for the road sector within the EU



It obligates EU countries to have a HRS in **all** urban nodes and every **200km** along the TEN-T core network before **2030**



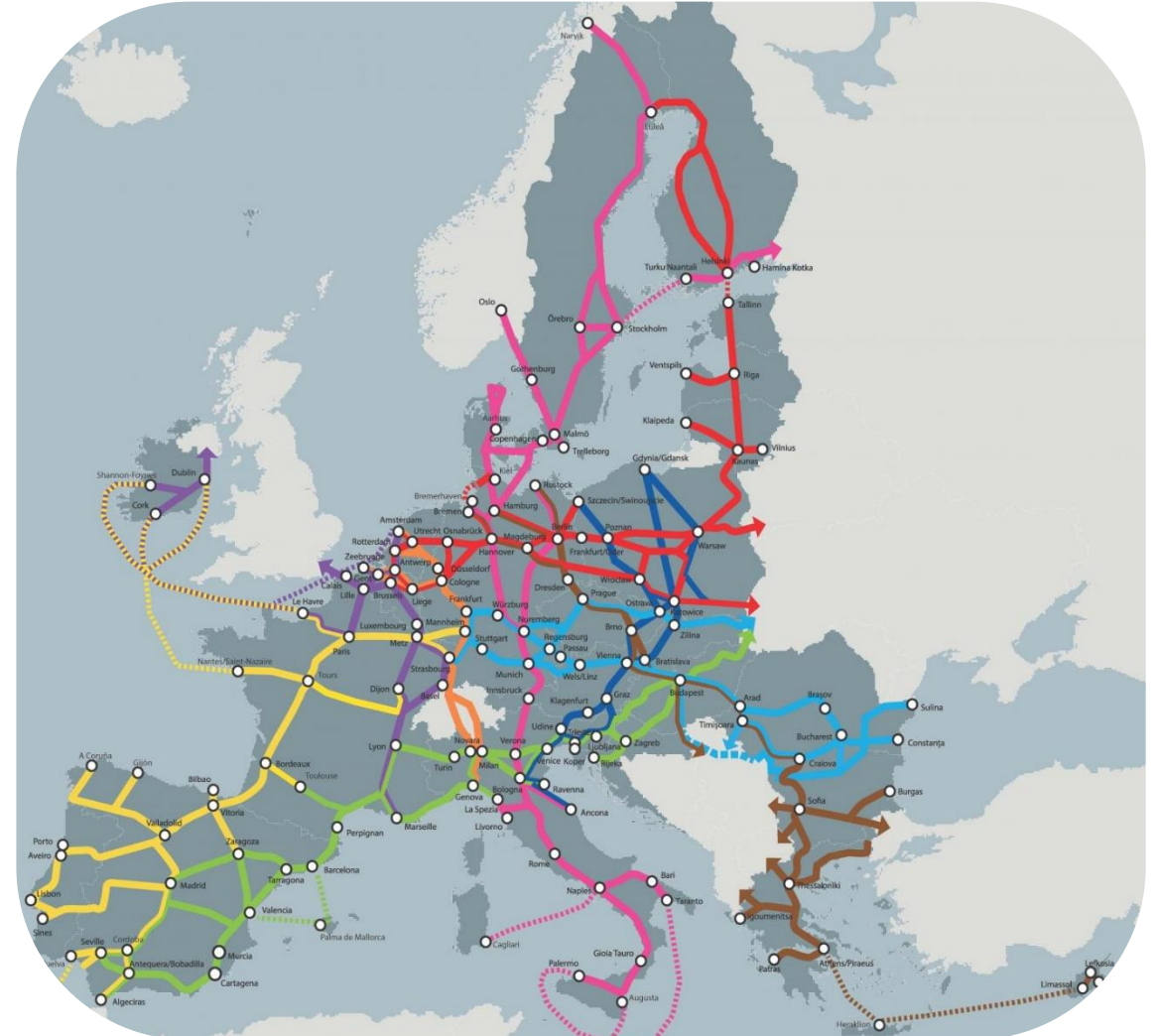
All member states must prepare an **HRS deployment plan** by **2027** that will satisfy the needs of hydrogen powered road mobility



Resato H2's HRS are already fully AFIR compliant and their capacity exceeds the mandatory minimum of 1000kg per day



TEN-T network



References



Umea

Skelleftea kraft / OKQ8

Storuman

Skelleftea kraft / OKQ8

Uppsala

Uppsala Vatten

Göteborg

E-CON / Skelleftea kraft / OKQ8

Göteborg

E-CON / Skelleftea kraft / OKQ8

Oskarsahmn

PS Energi

Ljungby

PS Energi



Tallinn

Alexela / Utilitas

Tallinn

Alexela / Utilitas



The Finnish perspective

- 2027 Plans need to be in place
- 2030 HRS needs to be operational
- Vehicles are expensive
- Green hydrogen availability
- What's the business case?
- How to deploy?
 - Taxi fleet in Helsinki?
 - Slowly extend corridor from North to South?
 - Use Tallinn connection?

Kiruna

Gällivare

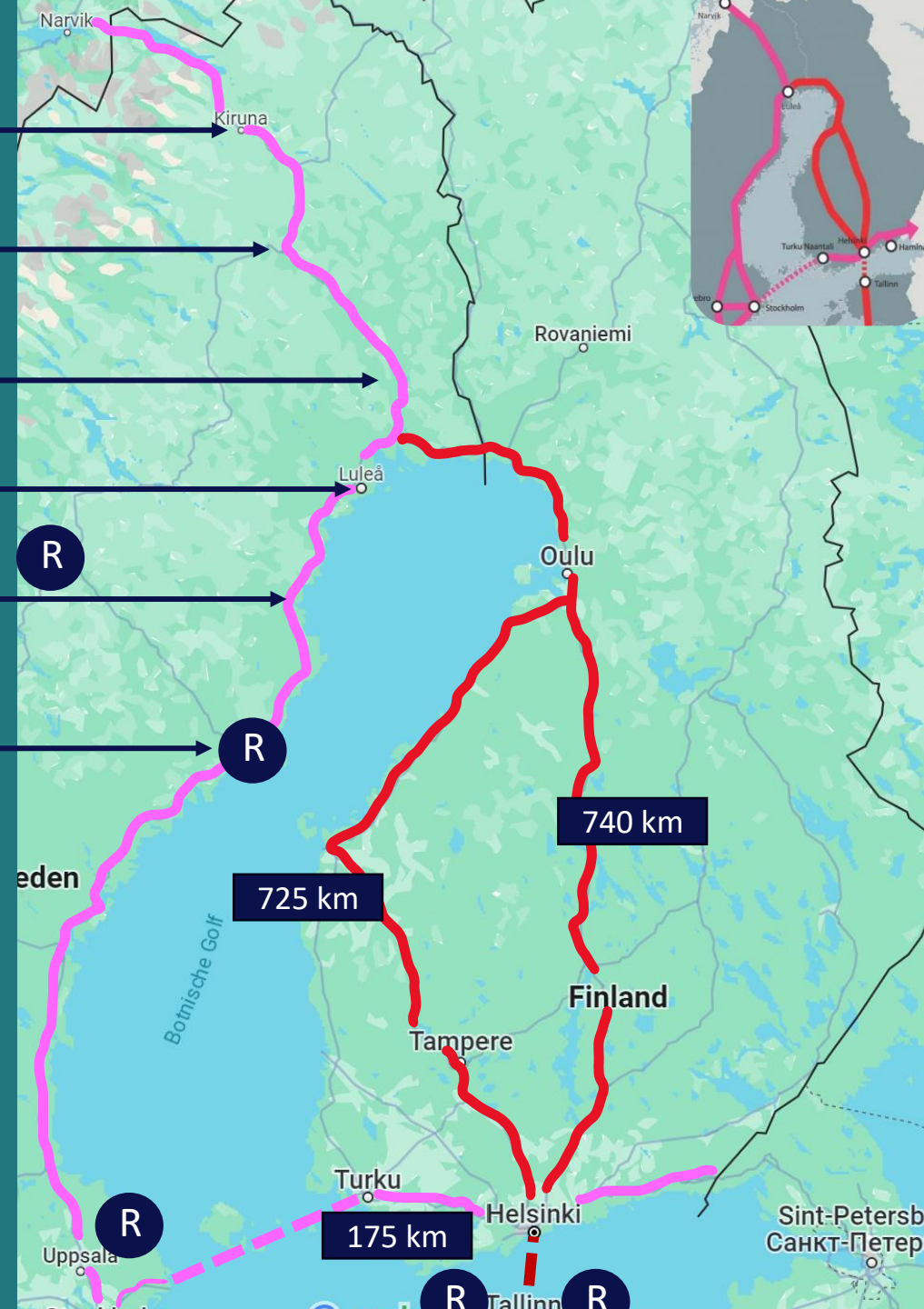
Överkalix

Luleå

Skellefteå

Umeå

Tender H1-2024
Opening 2025/2026





Vehicles by



HOLTHAUSEN
CLEAN TECHNOLOGY



Trucks are coming up north

- Hydrogen: 100 kg
- Pressure: 350 bar
- Fuelcell: 250 kW
- Battery: 140 kW
- Electric motor: 450 kW
- Max weight: 60 ton
- Range: 850 km
- Arctic conditioned



www.maserfrakt.se

FULL SIZE STATIONS

- AFIR compliant
- 1,000 to 3,000 kg/d
- Unlimited back-to-back LDV
- -40 degC to +40 degC
- Proven technology
- H70 and H35 refueling
- Simultaneous refueling
- Inlet pressure 10-500 bar
 - Enabling electrolyzers & tube trailers

AFIR Compliant



Solutions for different industries

SARLIN

Solutions for industry



Compressed air solutions

Industrial compressed air production, optimization, maintenance and service.



Gas and energy solutions

Carbon-neutral, renewable and low-emission gas and energy solutions.



Automation and digital solutions

Production and automation know-how, components and data collection and processing.

Conclusions

- Finland needs 10 HRS (at least?)
- 2030: HRS needs to be operational
- Vehicles & hydrogen availability challenging
- What's the business case?
- How to get fresh fish from Narvik to Helsinki with 0-emissions?

