



Resato Hydrogen Technology BV

Mission Hydrogen

Worldwide Technology leader for
Hydrogen Refueling Stations.

- Flawless refueling experience for customers
- Best business tool for hydrogen refueling station owners
- Top-Notch sustainable company



Resato uniquely positioned to serve HRS market



High pressure specialist



- 30+ years of experience in designing, producing, and maintaining high-pressure systems up to 14,000 bar worldwide
- Long-term experience via the waterjet business with reliable, heavy-duty high-pressure application. "It needs to work day-in, day-out."
- Full technology owner. In-house capabilities in mechanical, electrical and software engineering. This allows for optimization of the entire product performance and manufacturability
- All Resato H2 products are compliant with all relevant Hydrogen safety standards

Technology owner



- Resato H2 is technology owner with a lean manufacturing approach. The technology is developed in-house but "hard-core" manufacturing like milling, lathing, sheet metal working is outsourced
- The company does assembly and testing of the systems.
- This approach allows for low CAPEX and high flexibility in scaling up manufacturing
- The Resato-group sells and delivers in 80+ countries across the globe, underlining its international capabilities

Comprehensive product suite



- The **Fleet Owner Station (FOS)** is the ideal way to start exploring hydrogen refuelling, as it is attractively priced at EUR 200k
- The initial prototype runs since 2017 and over 6,000 vehicles are already filled. 20 are FOS currently employed
- The **Full Size Station (FSS)** is positioned as the public HRS, With a 1000+ kg/day capacity and unlimited back-to-back refuelling
- The prototype unit (2019) is (among) the busiest public HRS's in Europe. By mid-2022 8 or more units will be operational providing product proof for the market
- For both the **FOS** and the **FSS**, IoT monitoring will provide valuable feedback for the service and R&D department as well as the customer.
- Further roll out of **FOS's** and **FSS's** will lead to more data and further optimisation of the product, both mechanically (new models), as well as backbone (software)

H2Refuel Fleet Owner Station Maarn



H2Refuel Full Sized Station Holthausen Energy Points – Groningen



Hydrogen refueling stations

Ultra High Capacity 1.0

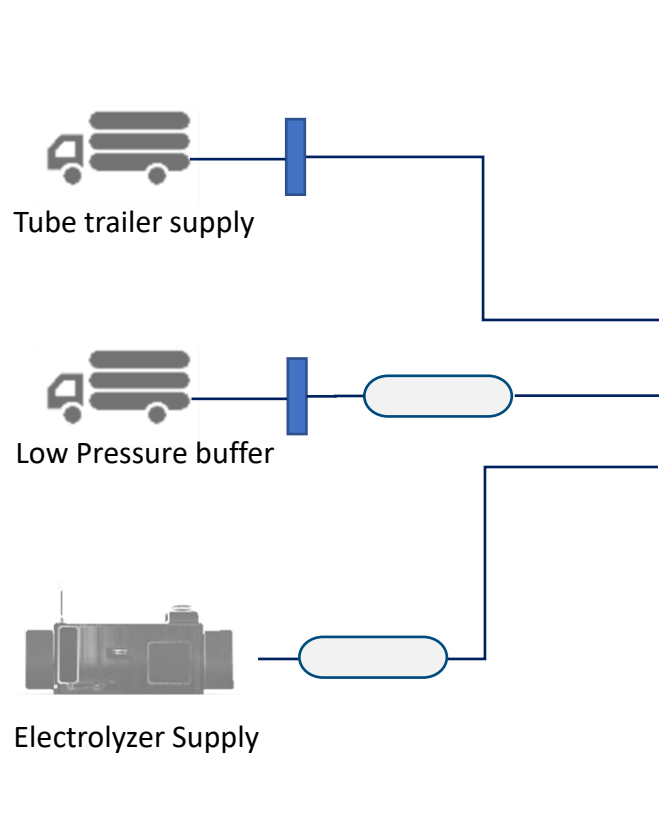
Public refuel station:

- 💧 10,000+ kg/day
- 💧 Continuous Back-to-Back LDV and HDV
 - 💧 Enabling high sales volume
- 💧 Hydrogen Supply
 - 💧 On site storage, tube trailer, electrolyzer (10-500 bar inlet pressure)
- 💧 Simultaneous Refueling
 - 💧 700 and/or 350 bar LDV and HDV



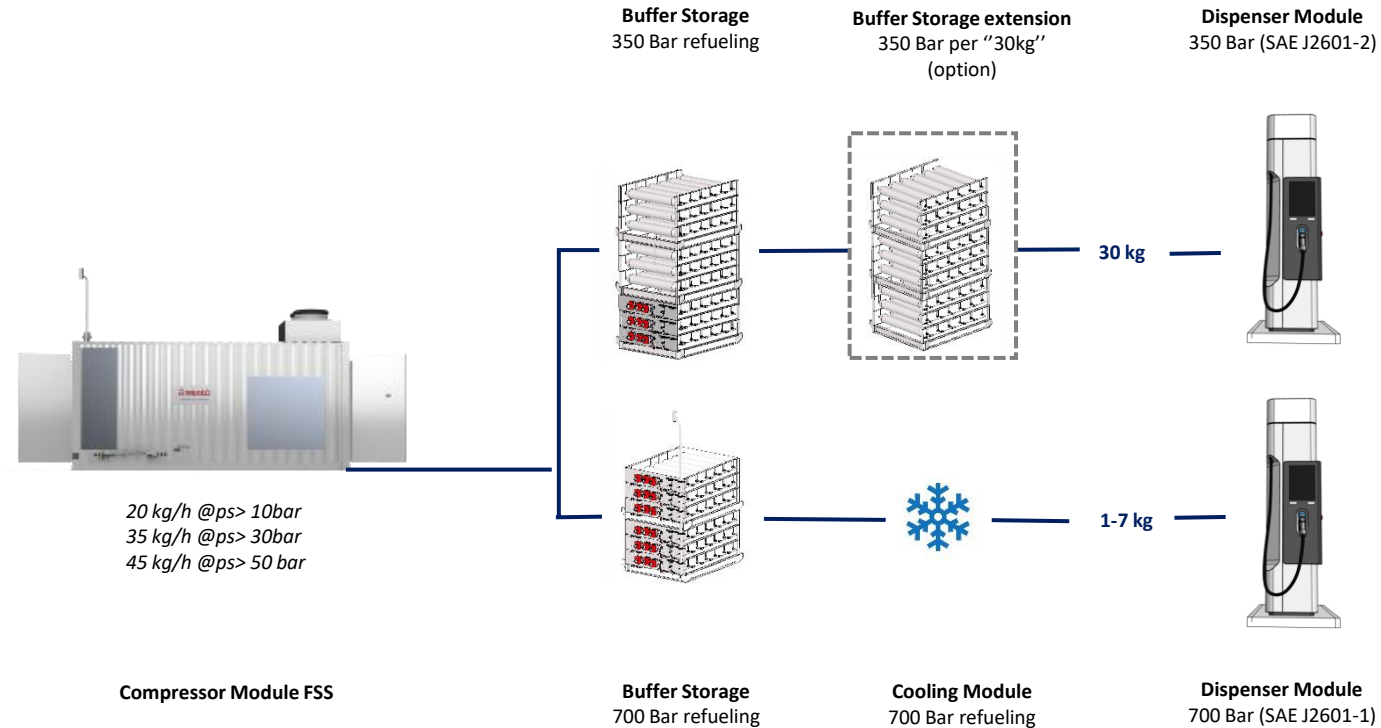
H2Refuel Full Size Station

Quick fill. Extendable.



1

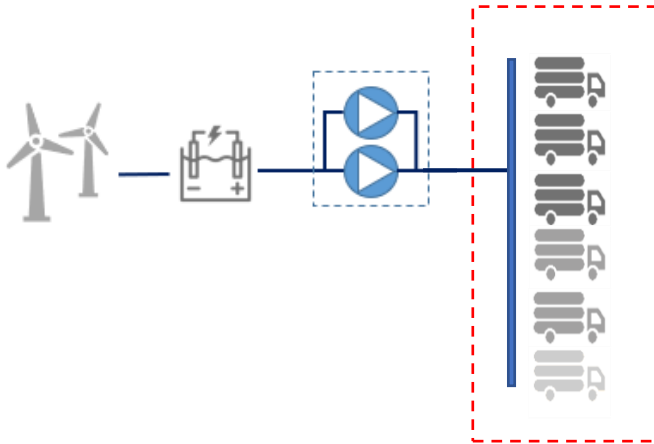
Change supply type



2

Add more fueling capacity

High Pressure loading modules



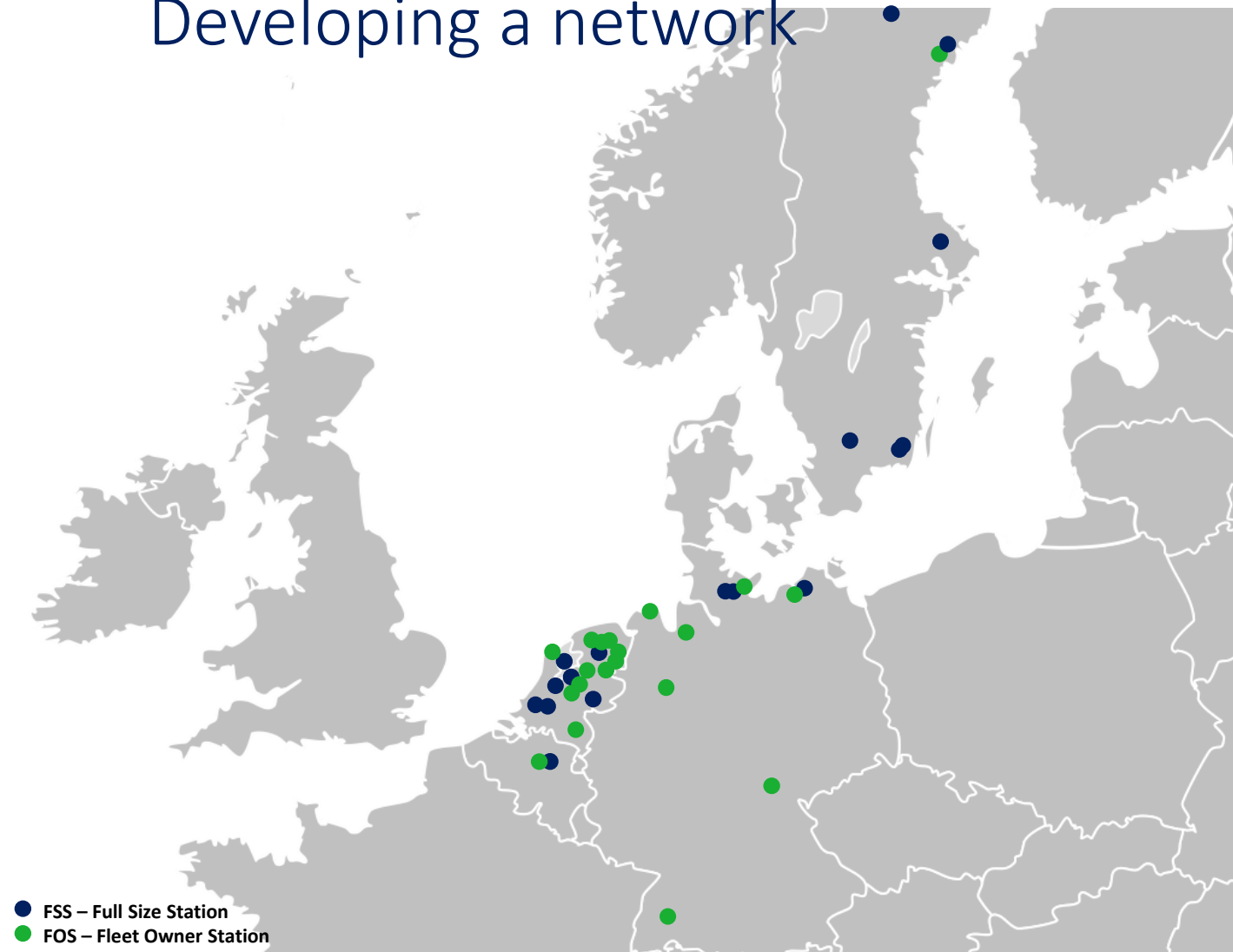
Keywords:

- Automation levels
- TTFS pressures (200-300-380-450-500-... [bar])
- Tube trailer types (single and/or multi element)
- Amount tube trailer docks
- Compression technology: Static **vs** dynamic use
- H2 quality assurance
- Quantity registration & billing systems
- Availability – redundancy – reliability
- Aftersales support
- ...



From small to large scale stations

Developing a network



#	FSS – Public HRS	Location	System	Year of installation
1	Netherlands	The Hague	FSS 1.0 (700/350)	03/2020
2	Netherlands	Groningen	FSS 2.0 (700/350)	11/2021
3	Belgium	Wilrijk	FSS 2.0 (700/350)	06/2021
4	Netherlands	Doetinchem	FSS 2.0 (700/350)	12/2021
5	Netherlands	Amsterdam	FSS 2.0 (700/350)	02/2022
6	Germany	Rostock - Laage	FSS 2.0 (700/350)	02/2022
7	Netherlands	Zuid Holland	FSS 2.0 (700/350)	Commissioning
8	Netherlands	Noord Holland	FSS 2.0 (700/350)	Commissioning
9	Netherlands	Zuid Holland	FSS 2.0 (700/350)	In production
10	Germany	Neumünster	FSS 2.2 (700/350/350)	In production
11	Sweden	Ljungby	FSS 2.2 (700/350)	In production
12	Sweden	Oskarshamm	FSS 2.2 (700/350/350)	In Production
13	Netherlands	Utrecht	FSS 2.2 (700/350)	In Production
14	Sweden	Umea	FSS 2.2 (700/350)	In Production
15	Sweden	Storuman	FSS 2.2 (700/350)	In Production
16	Sweden	Uppsala	FSS 2.2 (700/350)	In Production

#	FOS – Fleet Owner Station	Location	System	Year of installation
1	Netherlands	Groningen	FOS (700)	06/2018
2	Netherlands	Maarn	FOS (700)	11/2018
3	Netherlands	Amsterdam	FOS (700)	01/2019
4	Netherlands	Nieuwegein	FOS (700)	06/2019
5	Netherlands	Assen	FOS (700)	08/2019
6	Netherlands	Veendam	FOS (700)	06/2020
7	Netherlands	Coevorden	FOS (700)	06/2020
8	Germany	Rostock - Laage	FOS (700)	06/2020
9	Belgium	Temse	FOS (700)	11/2020
10	Germany	Balingen	FOS (700)	12/2020
11	Netherlands	Barneveld	FOS (700)	12/2021
12	Netherlands	Heerenveen	FOS (700/350)	Delivered /2021
13	Netherlands	Heerenveen	FOS (700)	Delivered /2021
14	Sweden	Sweden	FOS (700)	12/2021
15	Netherlands	Kolhorn	FOS (700)	03/2022
16	Netherlands	Horst	FOS (700/350)	02/2022
17	Netherlands	Winschoten	FOS (700/350)	03/2022
18	Germany	Bremerhaven	FOS (700/350)	10/2022
19	Germany	Borkum	FOS (700/350)	10/2022
20	Germany	Paderborn	FOS (700/350)	In Production
21	Canada	Montreal	FOS (700)	In Production
22	Germany	Sachsen-Anhalt Süd	FOS (700)	In Production
23	Germany	Sierksdorf	FOS (700)	In Production

Challenges/perceptions

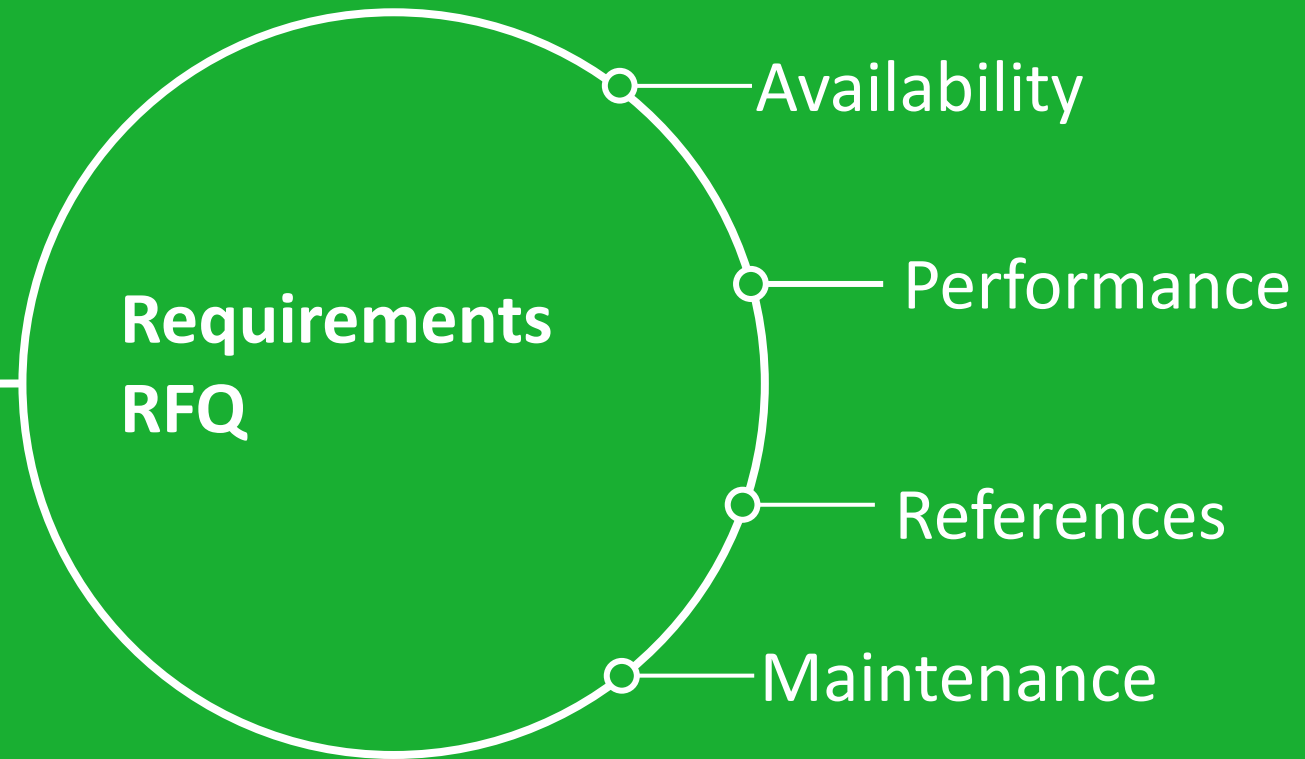


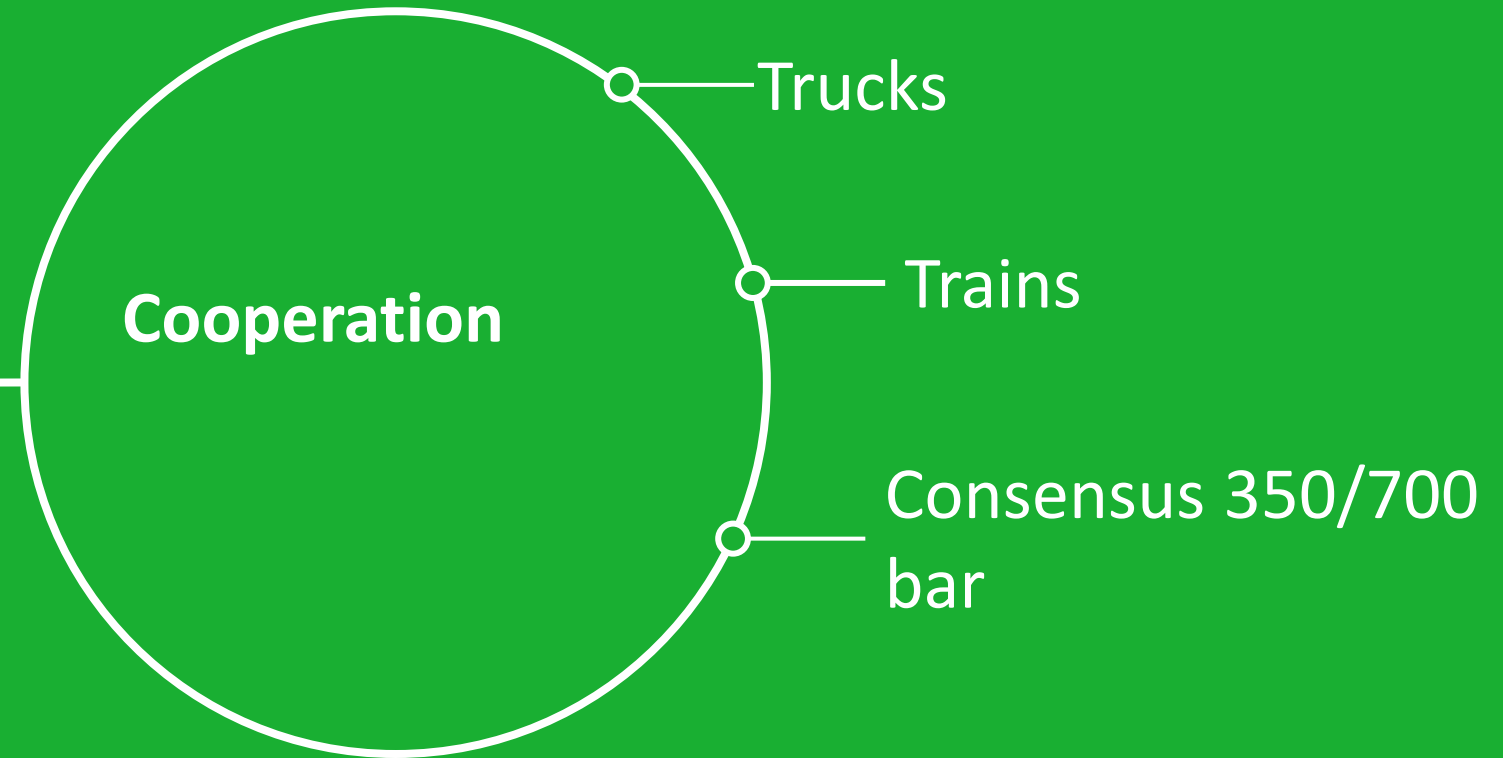
What do we face?

Requirements RFQ

Cooperation

Protocol





Protocol

No cooling 350 bar HD

BC customer
central



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