

Stargate Hydrogen

enabling the industry of tomorrow

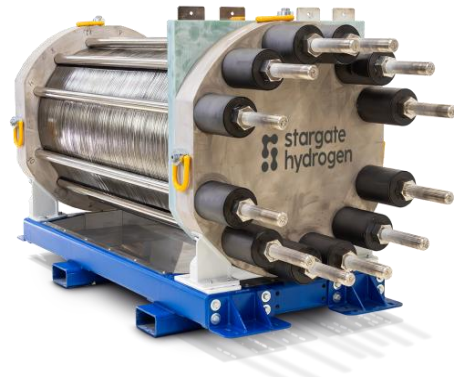
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Stargate Hydrogen



Unique electrolysis technology (9 patent families) using ceramic-based catalyst materials and proprietary stack design, making the technology more scalable than competitors.



One of the few electrolyser manufacturers that received **IPCEI support from the European Commission** for its scale-up project.



Team of **65+ top professionals** with previous experience from Haldor Topsoe, Volvo Trucks, McPhy Energy, GenCell, Nel Hydrogen and Mitsubishi Heavy Industries.



Strategic partners include **ABB, Fortum, Utilitas, Repsol, Neom** and many others beyond European Union.



Stargate Hydrogen has **50+ mEUR** of committed funding to realise its scale-up plan. Starting with the new Megafactory which has 140MW yearly capacity.

World of electrolysers today



Lack of
**fundamental
innovation** on
material level



Scale-up
**before
demand**

**What is
going
wrong?**

Massive
cash burn
rates



Little or no
specialization



Bringing down the cost of green hydrogen

The cost of H₂ depends on:

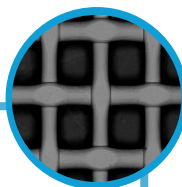
1. Electricity price
2. **Electrolyser efficiency**
3. **Electrolyser capital cost**
4. **Lifetime/reliability**
5. Electrolyser utilisation



Stargate solution:



Novel **electrode** material



Electrode Level



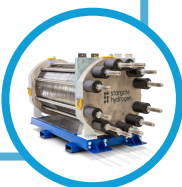
Optimised for **manufacturability**



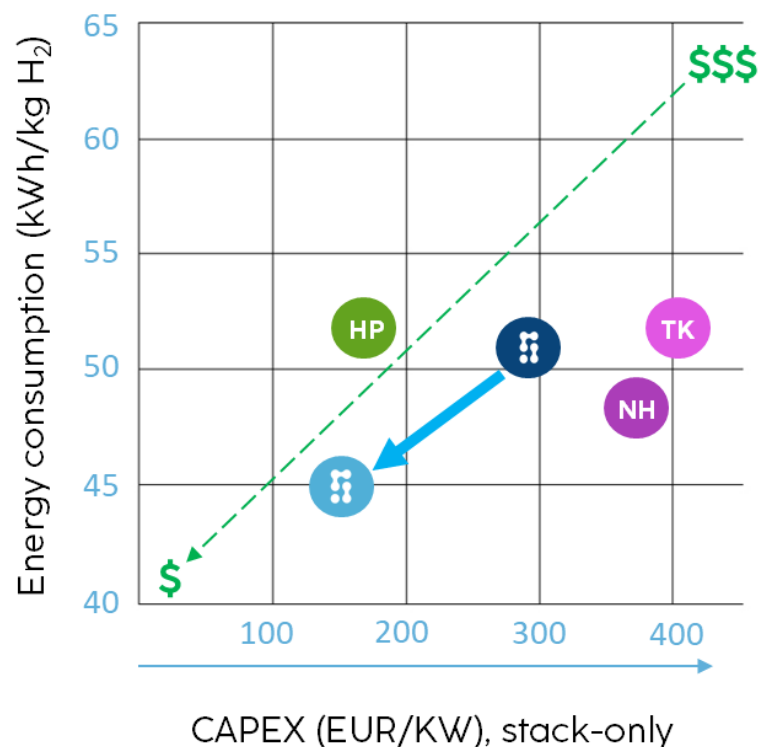
Higher reliability



Fewer components



Stack Level



-  Stargate (Gen 1) 
-  Stargate (Gen 2)
-  ThyssenKrupp Nucera 
-  Nel Hydrogen 
-  HydrogenPro 

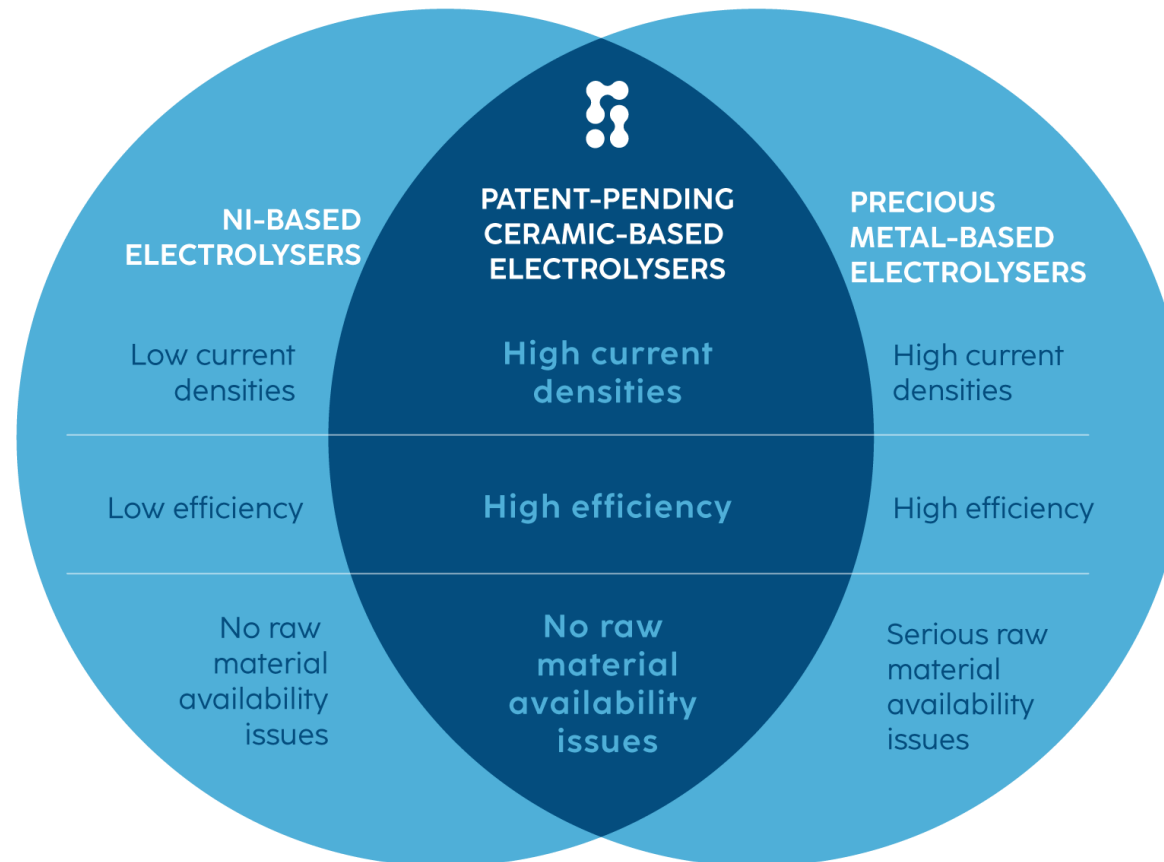




Electrode technology



Beyond the state-of-the-art technology





Products & Commercial progress



Customer stack deliveries

2x STR70

Installed in a system in Germany



STR35

Installed in a system by Rockfin



Customer system deliveries



Estonia, 1 MW



Status: Commercial operations



Finland, 1 MW



Status: Factory Acceptance Testing

The first full
value chain demo of
Green Hydrogen
production in the Baltics.

Refueling Station

Tube Trailer Parking Area

Buffer Storage

H₂ Purification System

High Pressure Compressor

Heat Exchanger

Substation & Transformers

2x Alkaline Stacks 0.5MW

Process Equipment

Electronics & Controls



Selected Partnerships

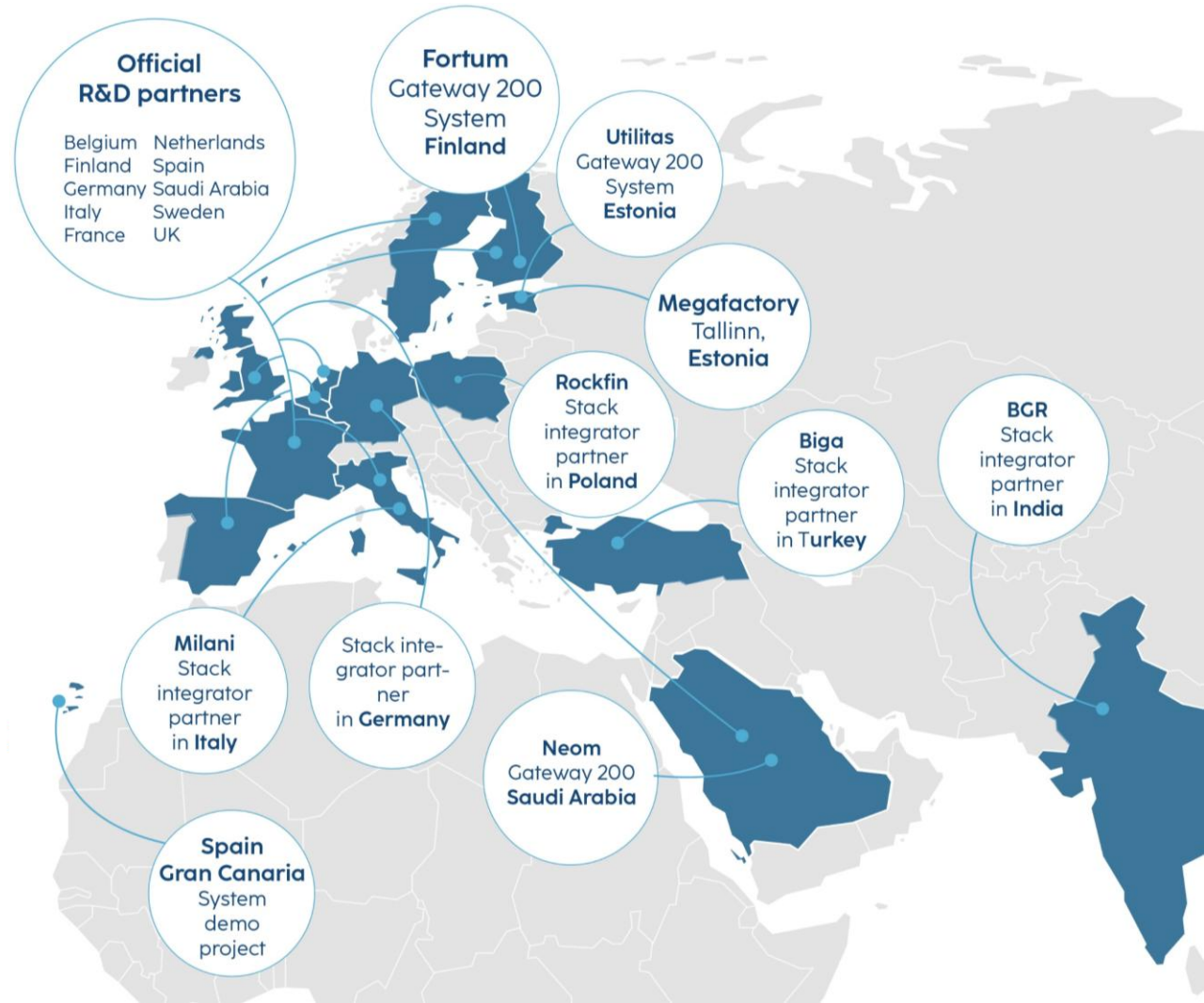


Commercial and R&D partnerships

Commercial Partners



R&D Partners





Go to Market Strategy



Product portfolio

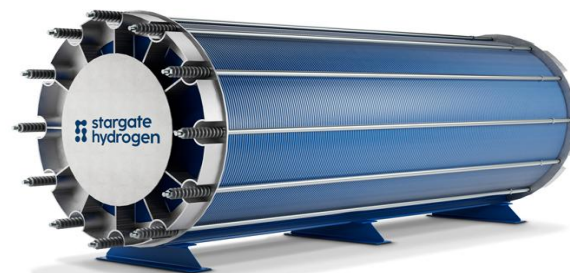
stellar EDGE

**0.5 MW Alkaline Electrolyser
Stacks**
for system integrators



starbase SERIES

**5 MW Alkaline Electrolyser
Stacks**
for system integrators



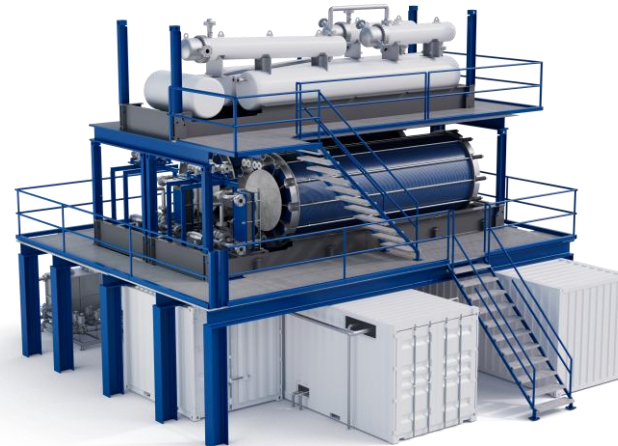
gateway SERIES

**1MW Turn-key H₂
production systems**
for project developers



aurora SERIES

**10 MW Alkaline
Electrolyser Systems**
for project developers



Industrial products

THE STARBASE Alkaline Electrolyser **STACK**



5MW

Single STACK design with unparallel **light weight** for easy transportation and on site installation.

EUROPEAN MADE



Manufactured in **EUROPE**, with the highest quality standards.



16 BARG

Output hydrogen **pressure** is **compatible** with most of industrial use cases of hydrogen.

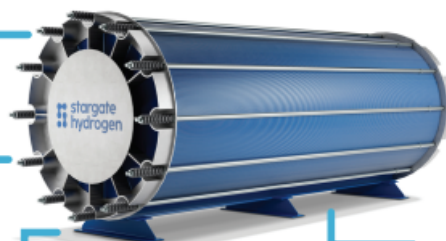


EASY TO INSTALL

Detailed documentation pack with battery limits and **clear guidelines** for easy integration.

ENGINEERING SUPPORT

Real partnership with **full engineering support** providing a smooth, reliable process from site acceptance testing all the way to initial hydrogen production.



THE AURORA Alkaline Electrolyser **SYSTEM**

Complete containerised balance of plant **ready to reliably operate** in the harshest conditions.



10MW

EUROPEAN MADE



Manufactured in **EUROPE**, with the highest quality standards.

ROBUST



An outdoor-ready solution that requires no buildings, engineered to withstand extreme temperatures.

MODULAR



They can be connected in parallel, enabling rapid upscale to Giga Capacity of hydrogen production.

LOWEST m2/MW

Only 14.4m2/MW footprint.

PRE-FAB



Pre-manufactured for cost saving, highest quality and easy installation on site.



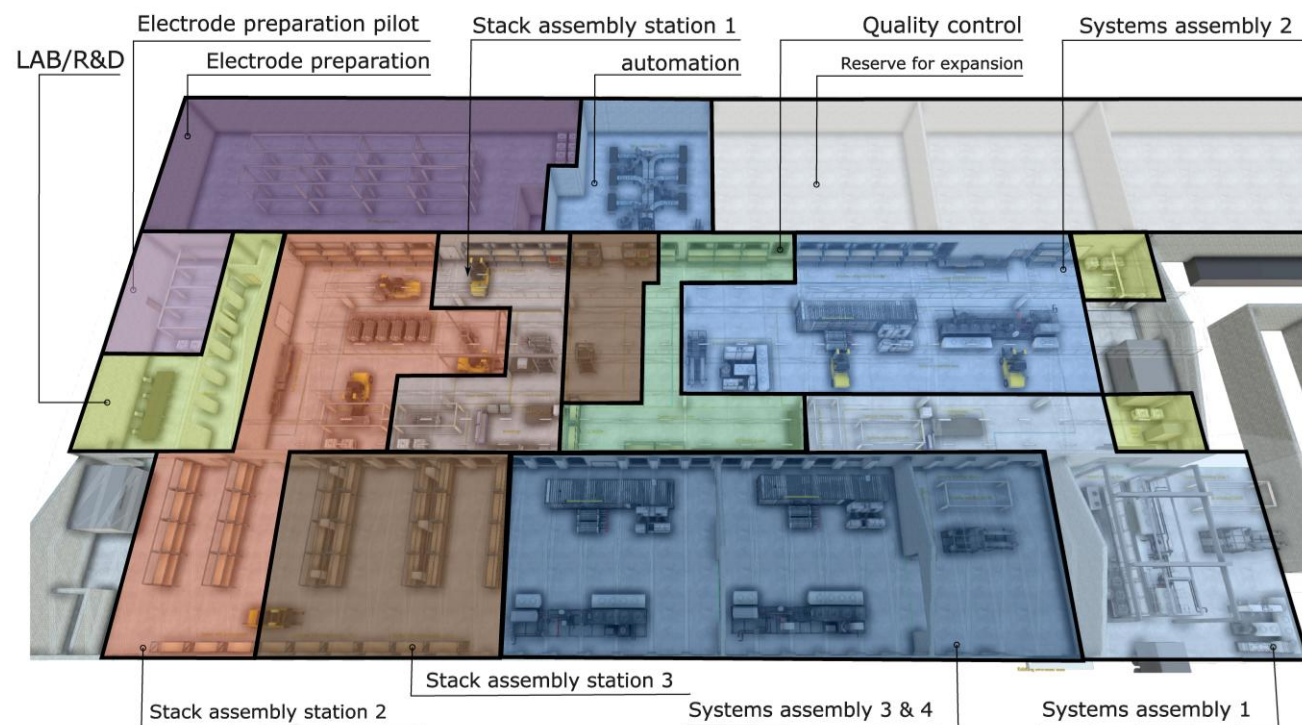


Stargate facilities



New Mega-factory

Production capacity: By 2026, we will have **140MW** of stack production capacity - This project has been co-funded by the Republic of Estonia through the revenue from the Emissions Trading Scheme.



Production layout





Funding



Stargate Hydrogen is backed by strong investors



One of the leading family offices in the Baltics, focused on energy and sustainability-related investments.



SmartCap is a state-backed Venture Capital fund, investing into funds and Greentech scale-ups with global ambitions.



Repsol is a global multi-energy company, present across the entire energy value chain and operating in nearly 100 countries.



Giga is an Estonian family office, investing into manufacturing companies, real estate and growth companies with global ambitions.



Taavi
Madiberk
skeleton+

CEO and Co-Founder of Skeleton Technologies, the global leader in graphene-based supercapacitor and battery energy storage.



Fuel resilience in focus

- This creates a **risk of liquid fuel supply** in case of conflict.
- Solution: decentralised fuel production based on renewables, CO₂, water.

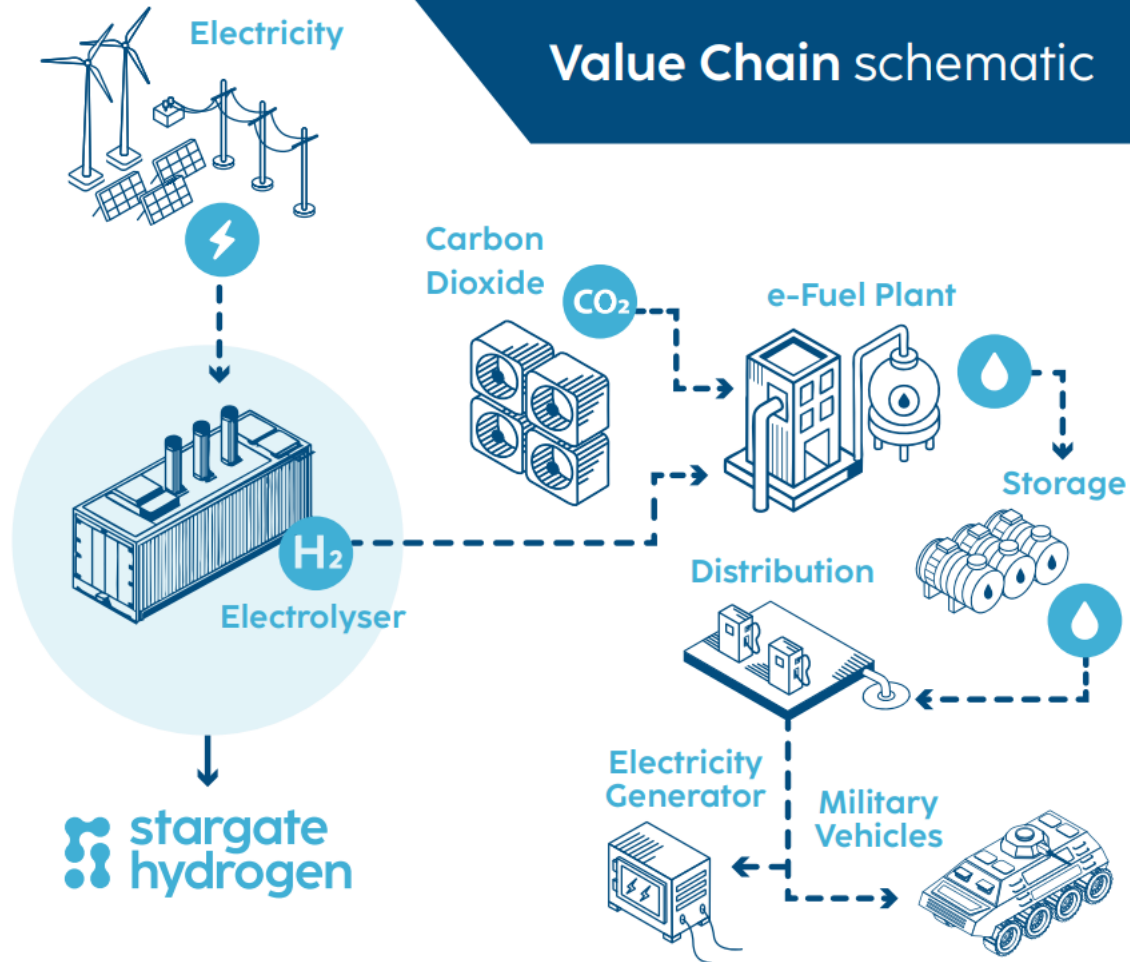
“The Baltic region relies on just two major oil refineries in Finland & Lithuania.”



Fuel resilience in focus



Fuel resilience in focus



Value Chain schematic

The outcomes for defence forces



Drop-in fuel
compatible
with existing
engines



Harder to
disrupt
decentralised
operation



Lower
acoustic &
thermal
signatures



Rapidly on
demand
scalability
capacity



Let's stay connected

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