

Infinite renewable energy cycle with hydrogen from water and sun

5000x

Solar energy alone delivers
5000 times the energy
consumed globally per year.

ENDLESS ENERGY

5%

All global energy need
can be produced with
solar on 5% of the
available desert area.

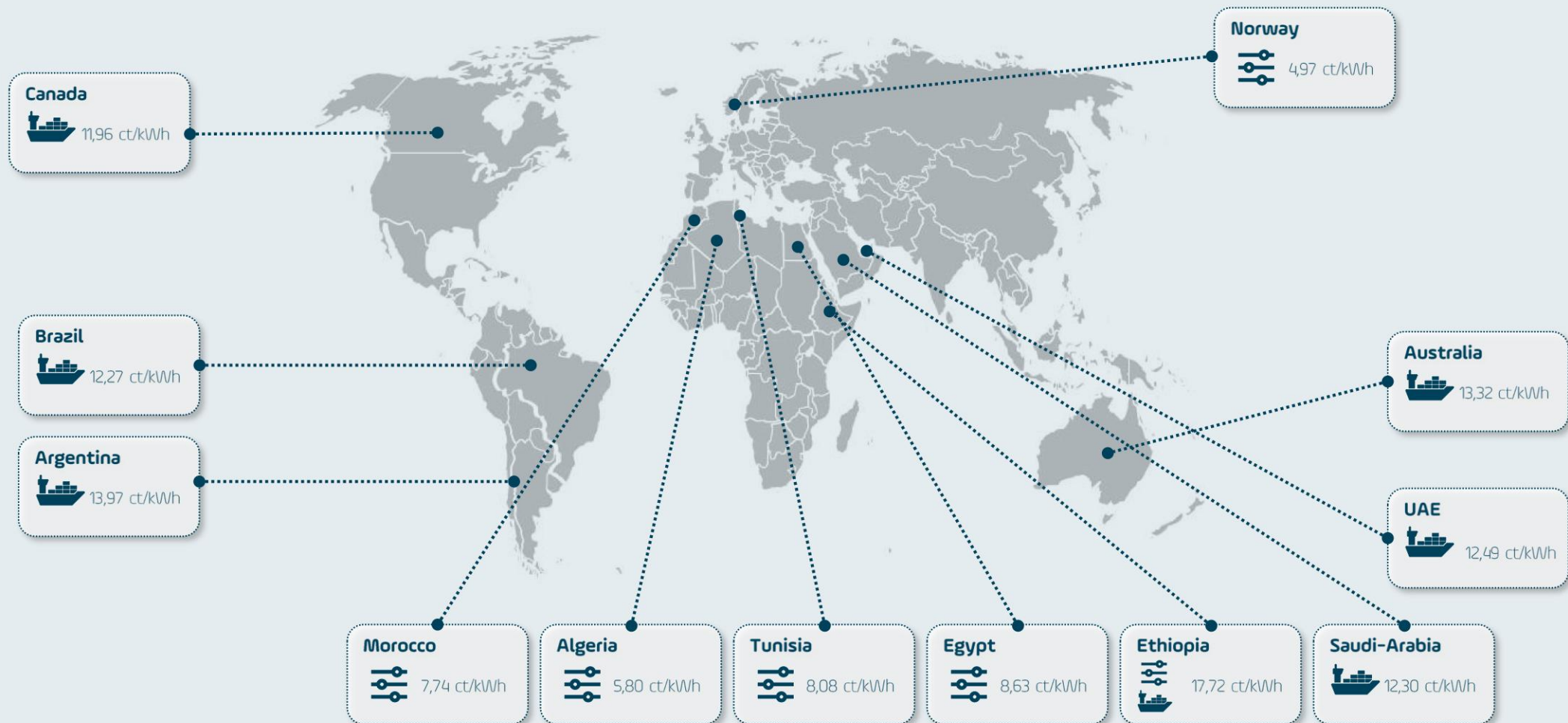
3 Ct/KWh

All global fuel demand
can be delivered with
hydrogen at 3 Ct/KWh
production cost

Global cumulative renewable power, TW Average LCOE onshore wind + solar
expressed in real 2020 \$/MWh for tier 1 renewables (best spots), 2030 estimates
Source: Hydrogen Council, IEA

Hydrogen: Most cost-efficient Energy Carrier in the Future

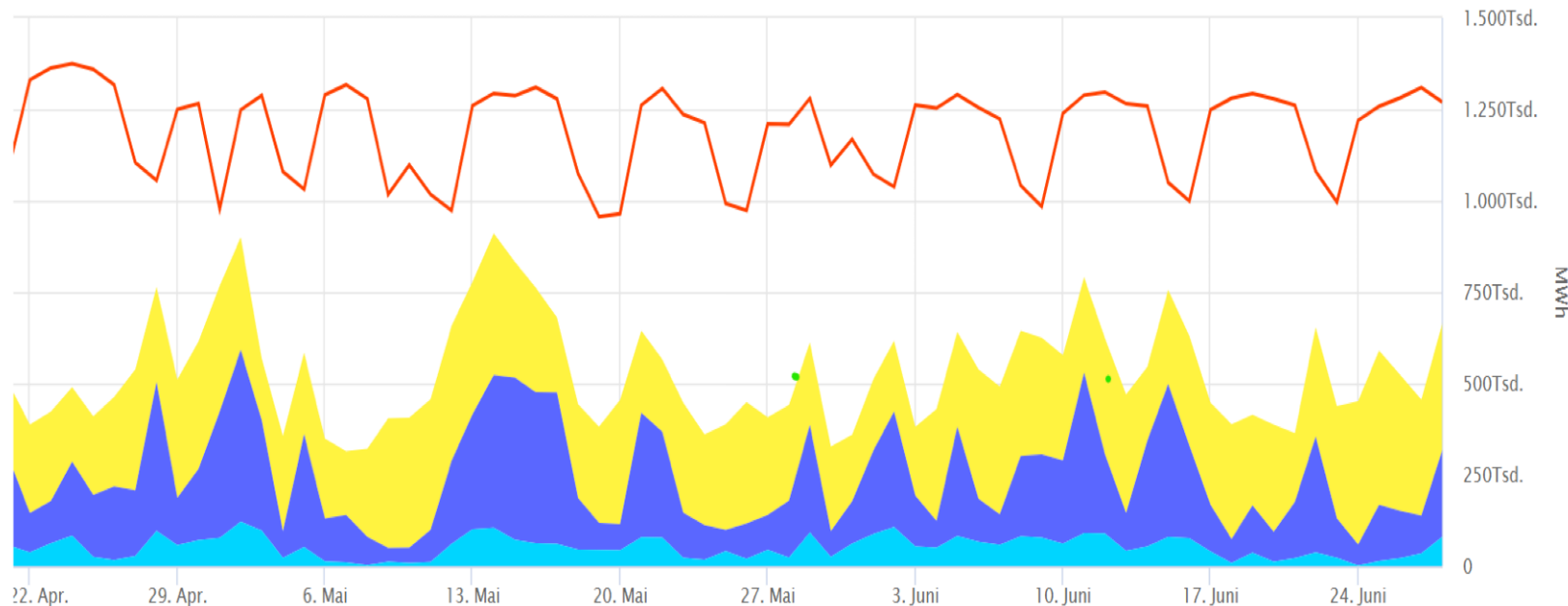
However, pipeline requires reliable, high hydrogen demand



Source: adelphi consult GmbH et al. for Bundesministerium für Wirtschaft und Energie (BMWi): Grüner Wasserstoff - Internationale Kooperationspotenziale für Deutschland - Kurzanalyse zu ausgewählten Aspekten potenzieller Nicht-EU Partnerländer, Berlin, 2020

Renewable energy production too volatile for consumption

Energy storage (and distribution) needed to reduce risk of curtailment



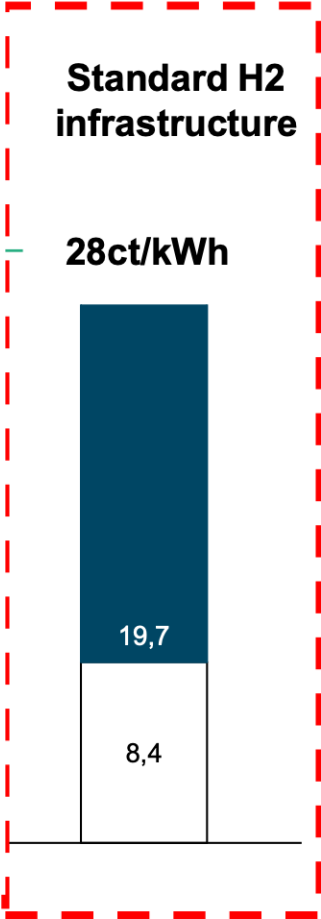
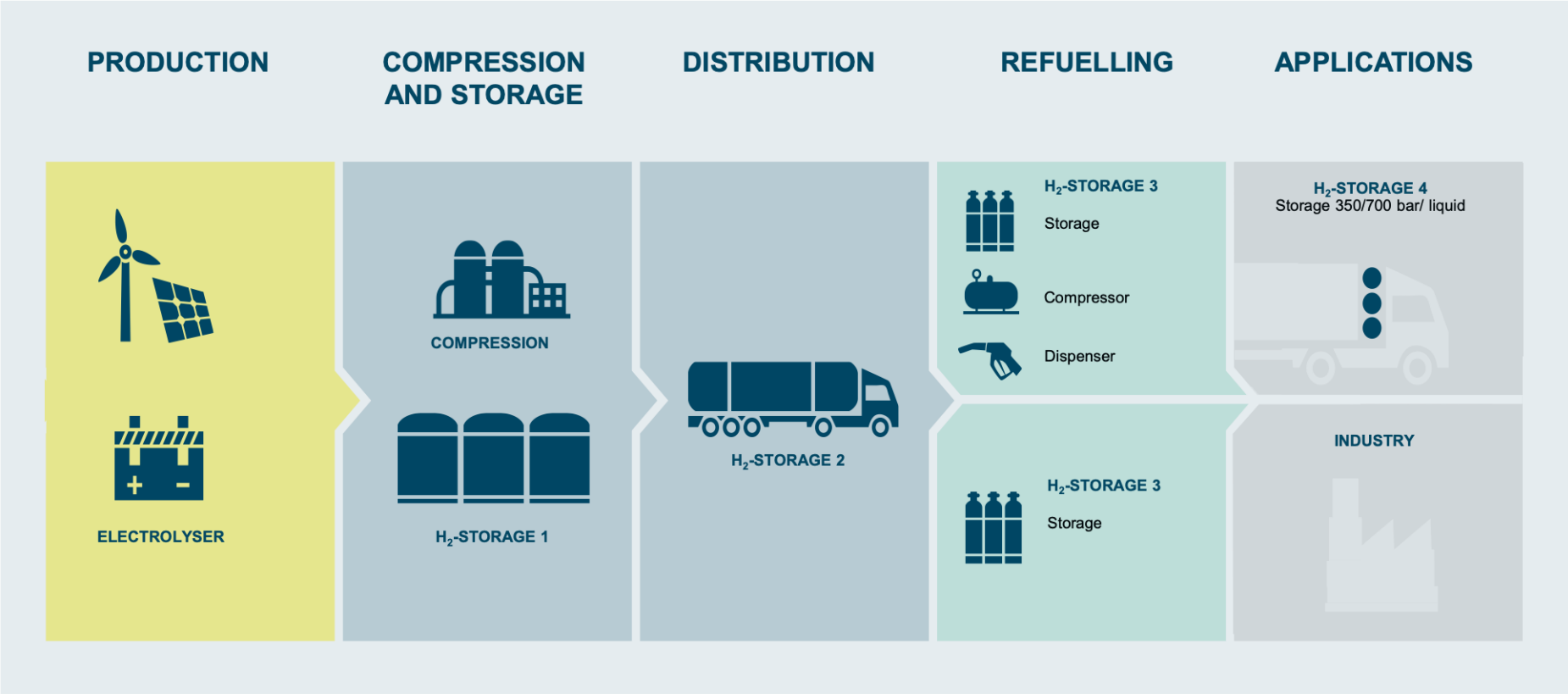
Energy consumption
(per day) varies **up to
300 GWh** - but stable

Renewable energy
production (per day)
varies **up to 600 GWh** –
and is floating!

European renewables had **€9bn** of curtailment losses. In **2040** **100 - 310 TWh** of renewable generation are estimated to be **at risk of being curtailed** due to grid bottlenecks

Why is hydrogen economy not picking up?

Current H2 storage & infrastructure is complex, and costs are prohibitively high!



□ H2 costs ■ Added processing costs

Note: H2 & infrastructure costs based on energy source costs of 5 ct/kWh
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Innovation leap for a successful energy transformation

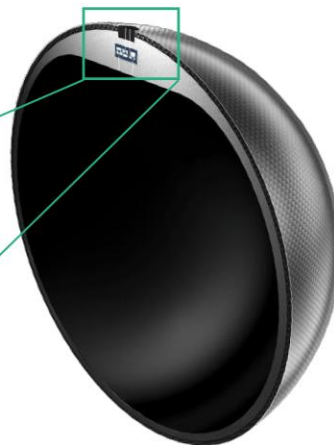
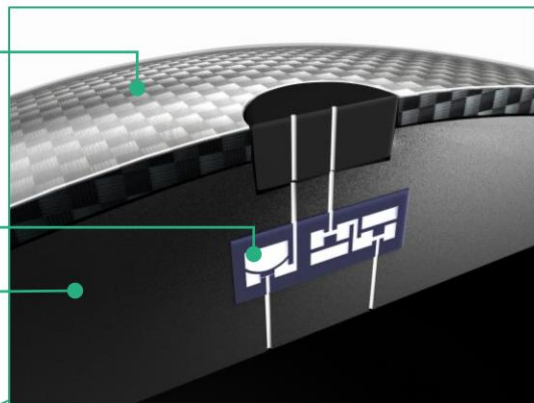
H2-SFEER

Miniaturized high pressure cell (up to 1,000 bar)
→ High safety redundancy

Carbon Fiber Shell

Intelligent Micro
Valve System (IMVS)
regulating pressure

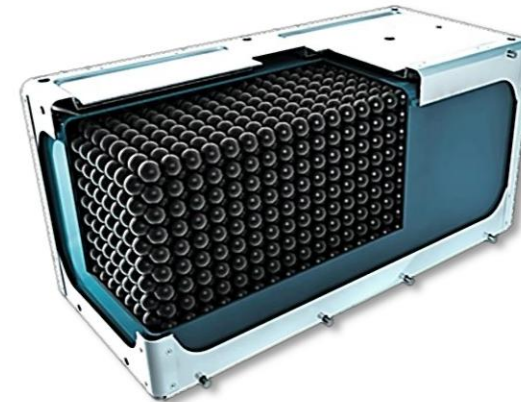
Liner



- **Spherical shape:** 50% less carbon fiber
- Passive **micro-mechanical** pressure control

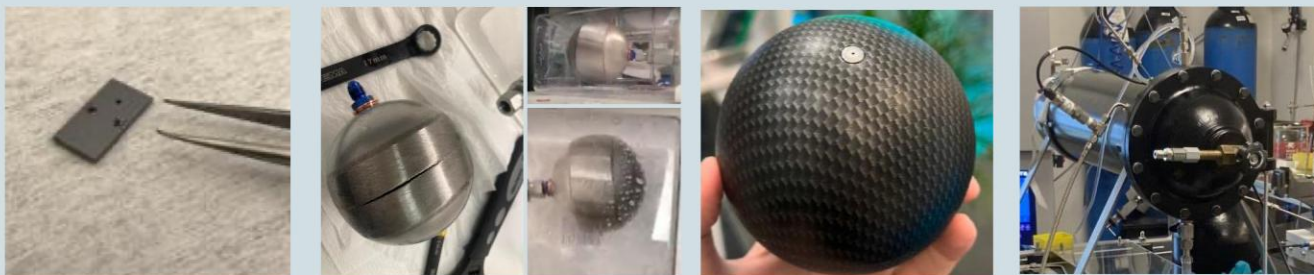
H2 BATTERY

Low pressure tank (4-15 bar) containing SFEERs
→ Easy handling, low-cost, high-energy capacity



- **Swappable** for fast & economic fuel refill
- **Size and shape adapted** to available spaces

Progress to date – our technological achievements



Demonstration of all relevant operational phases (filling, storing and emptying)

IP Protection

- ✓ Handling of gaseous fuels (granted)
- ✓ Pressurecontrolled gas storage (granted)
- ✓ Micromechanical high-pressure check valve (granted)
- ✓ Micro-electro mechanical fluid control system (pending)
- ✓ Internal structure of H2 Battery (in registration)

Conventional Pressure Regulator vs. Micro Valve System

The MEMS Chip comprise all fluid control components, valves and a 5-stage pressure regulator



Conventional Regulator

- Single stage pressure regulator

MEMS Valve System holds

- Multi stage pressure regulator
- 4 different check valves
- Target size 4x4x2.5 mm

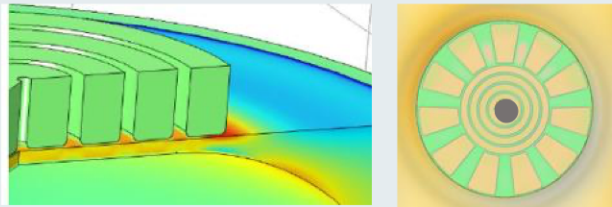
4 x 4 x 2.5 mm

Intelligent Micro-Valve System (MEMS Chip)

Multiple small hydrogen tanks are working independent from each other together like one big tank unit

Controls the process to **charge** the SFEER with **high-Pressure H2 gas**

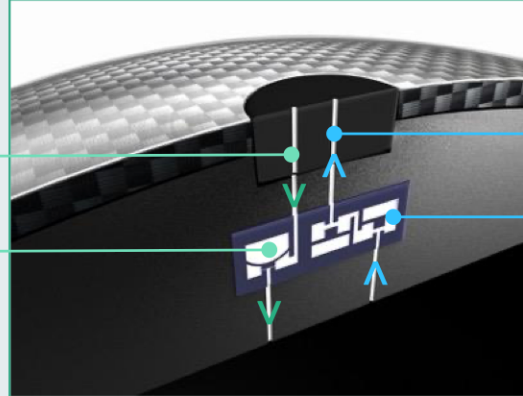
INLET BRANCH



Main Component:
HIGH-PRESSURE VALVE

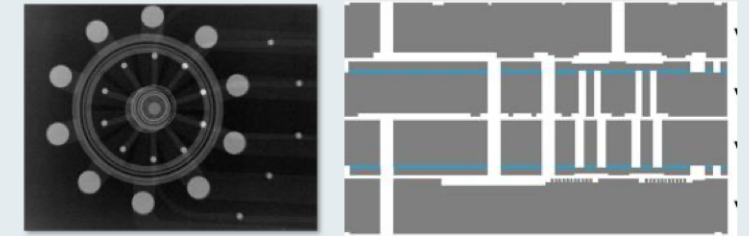
It is a unidirectional normally-open valve that closes when, within a pre-defined range, the internal pressure inside the SFEER exceeds the external pressure.

Other Key Components:
Low- and Medium-Pressure Check Valves



Controls the process to **release H2 gas** from the SFEER into the external **low-Pressure volume**.

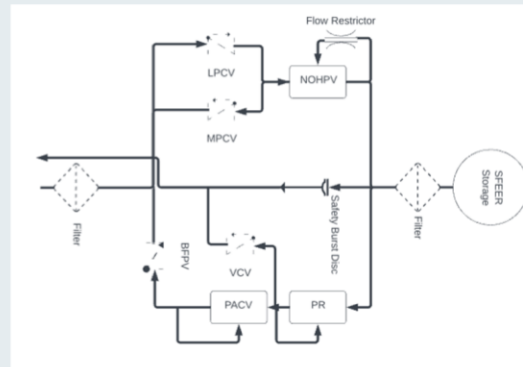
OUTLET BRANCH



Main Component:
PRESSURE REGULATOR

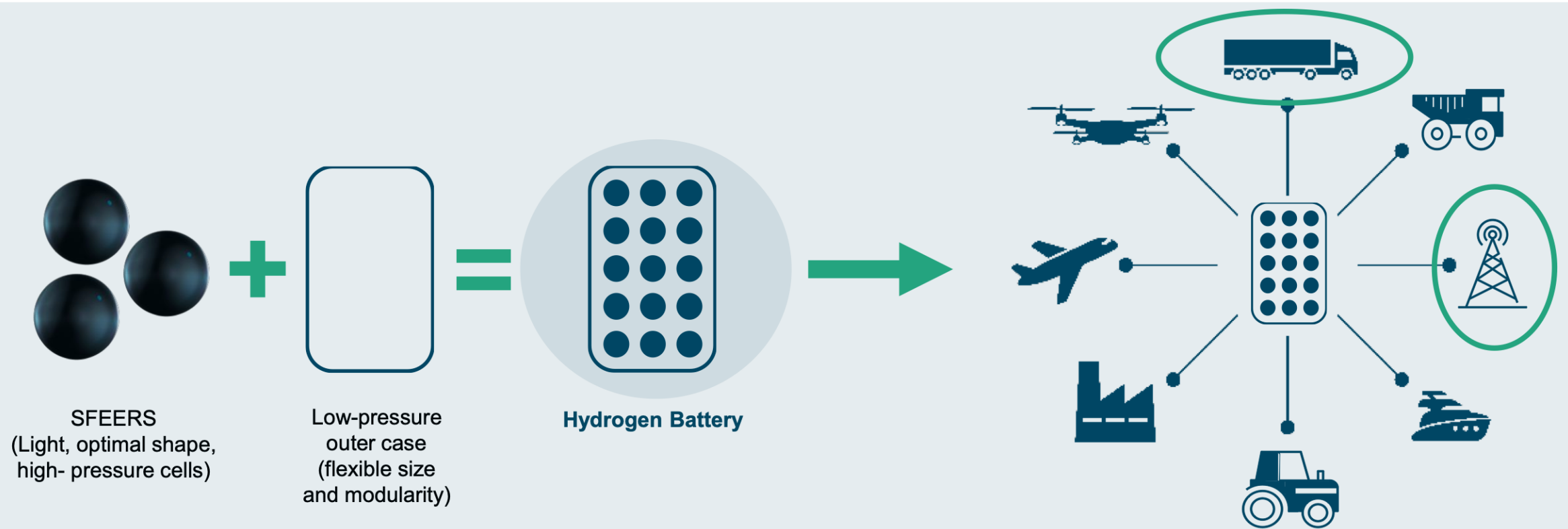
It consists of a cascade of several pressure control stages that successfully regulate the H2 gas from a maximum allowed pressure inside the SFEER into low-pressure outside.

Other Key Component:
Pressure-Assisted Check Valve



Our solution: 2 in 1 storage & infrastructure solution

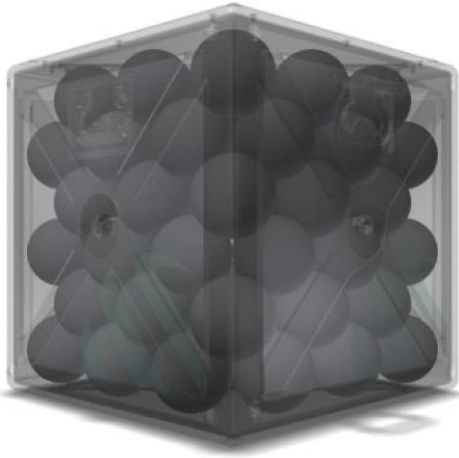
First Of A Kind – a sustainable swap system that can drive the energy transition



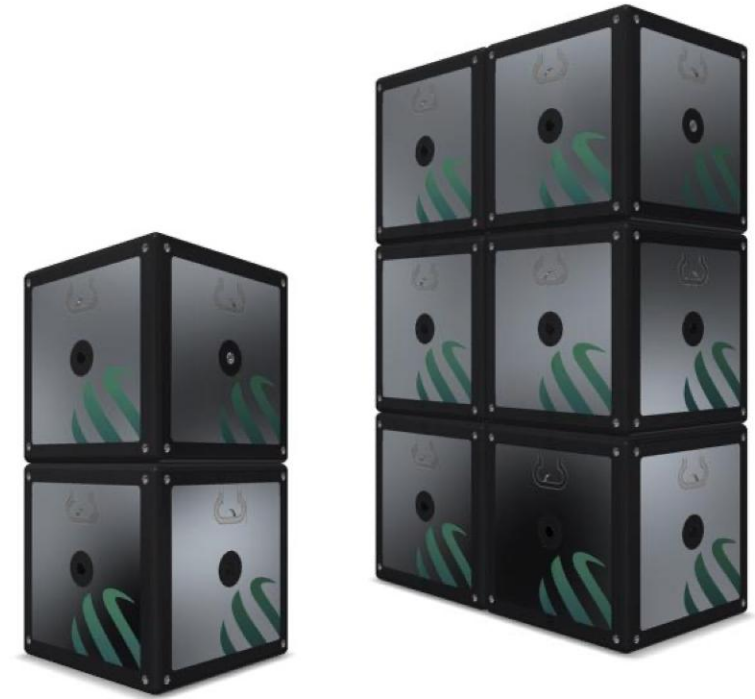
The hydrogen battery is a **highly modular system** that enables a variety of **mobile as well as stationary applications** to switch to renewables

Stationary – 1st market entry 2027

Stationary H2 STORAGE



PORTABLE



MODULAR

HIGH CAPACITY

LOW WEIGHT

LOW COST

0.5 m³ Cube

2.5 kg H₂

83 kWh

30 kg

< 5 €/KWh

40 ft Container

2 ton H₂

67 MWh







SCALABLE

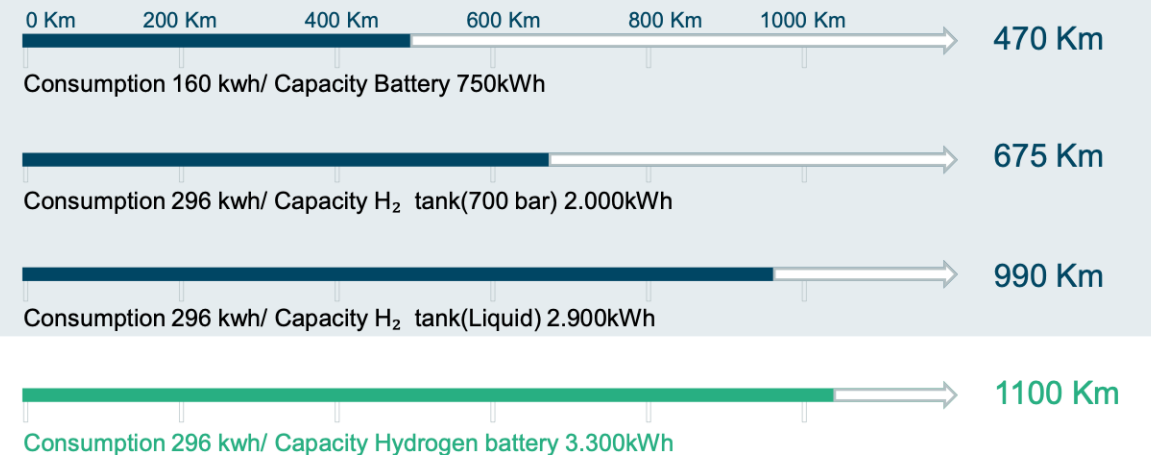
Mobility : H₂ battery with considerable advantages

Lower costs and higher performance compared to competitive energy storage

Energy storage costs (long haul truck)

		€ per 100 km cruising range	€ / kwh
	Lithium-ion battery	24.000 €	150 €
	Conventional H ₂ tank (700 bar)	6.500 €	22 €
	Liquid H ₂ tank	4.750 €	16 €
	H ₂ Battery	1.500 €	5 €

Cruising range (long haul truck)



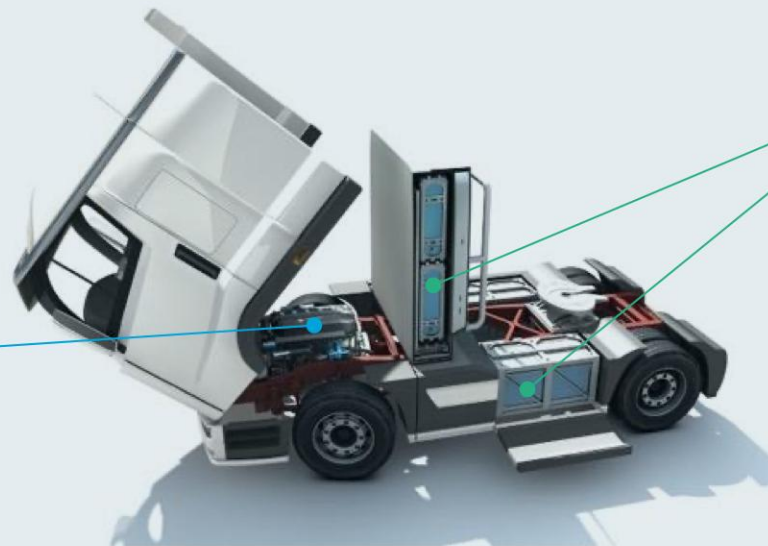
The hydrogen battery: high performance & cost-efficient energy storage technology

Diesel competitive H2 vehicles

Upgrade diesel engine to H2 and eliminate hydrogen tank cost from vehicle



DIESEL-COMPETITIVE APPLICATIONS

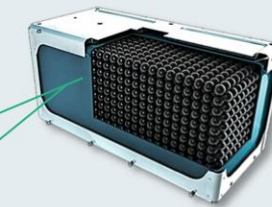


Example: Long Haul On-Road Trucks

- + H₂ Storage Cost Transferred out from vehicle to the fuel
- + High Driving Range through optimized usage of available space for H₂ Storage

H₂ BATTERY

Low Pressure H₂ Storage System holding SFEERS

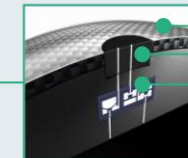
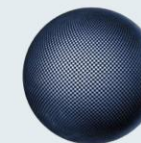


- + Easy and Safe Handling
- + Low Cost
- + High Energy Capacity



H₂ SFEER

Spherical High Pressure H₂ Cell



Carbon Fiber Shell
Integration Component
Intelligent Micro Valve System (IMVS)
Liner



water stuff & sun

we move hydrogen – you move the world

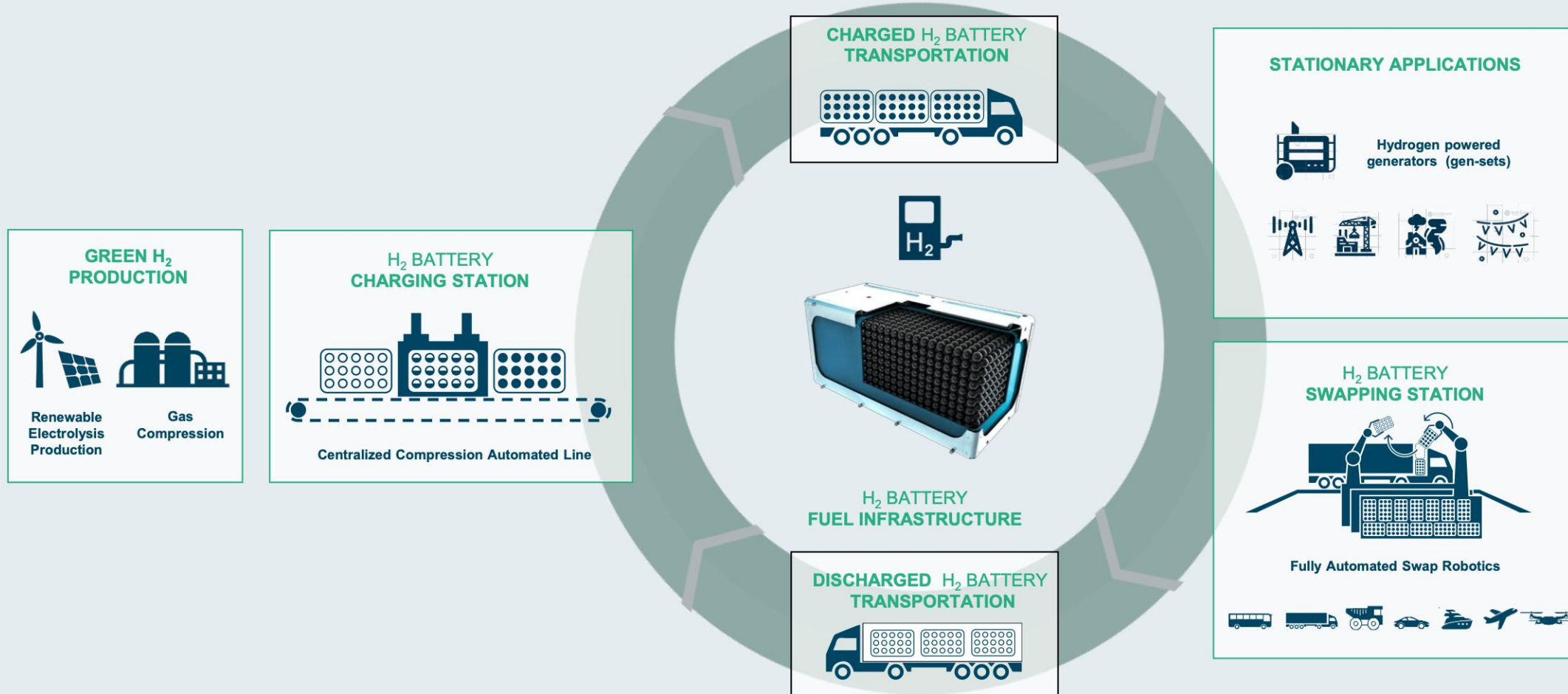


water stuff & sun

we move hydrogen – you move the world

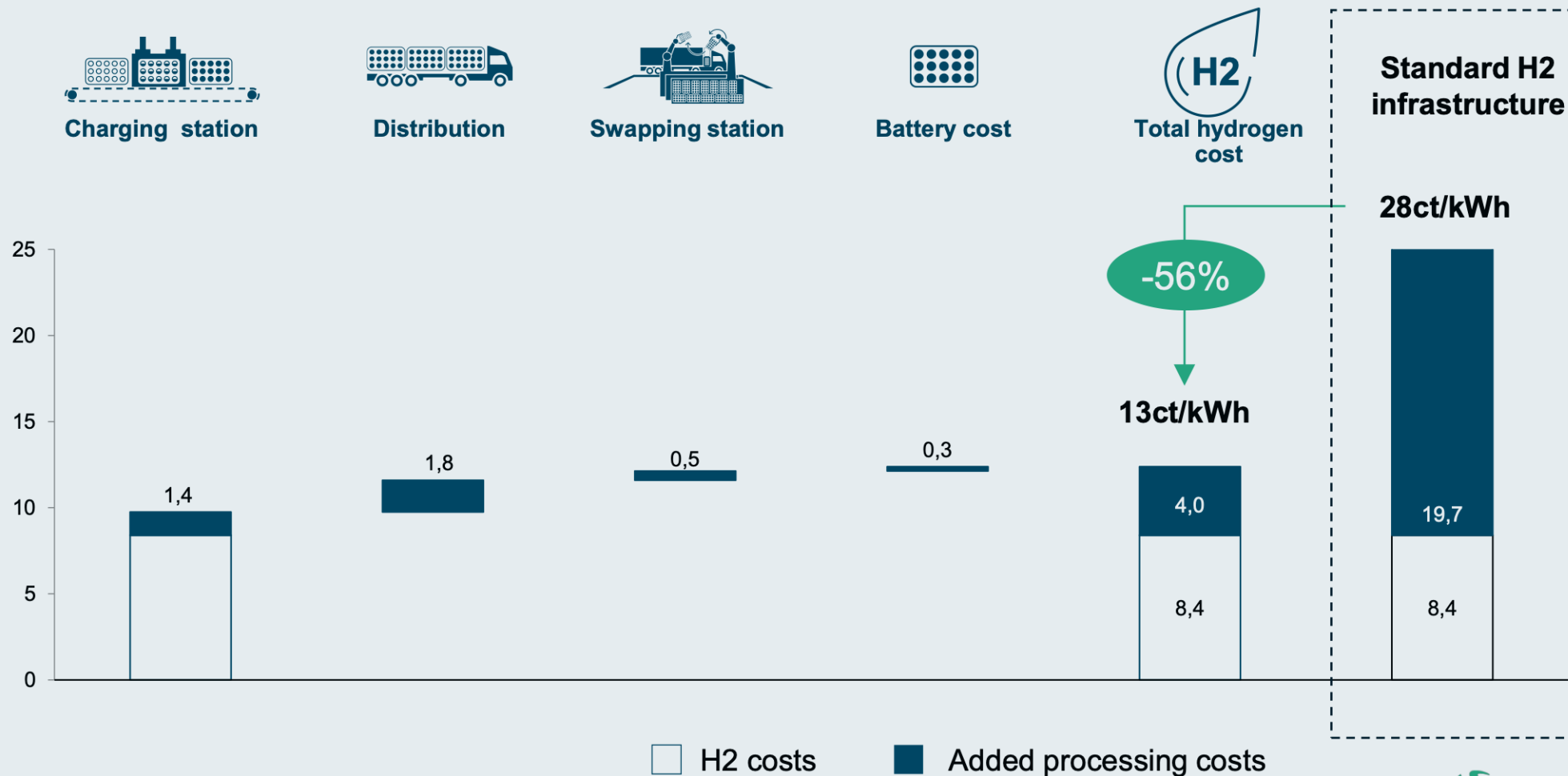
A transformative enabler for the hydrogen supply chain

CO₂-free and diesel-competitive vehicles/machines operations in mobile and stationary products



Most of current infrastructure costs can be saved!

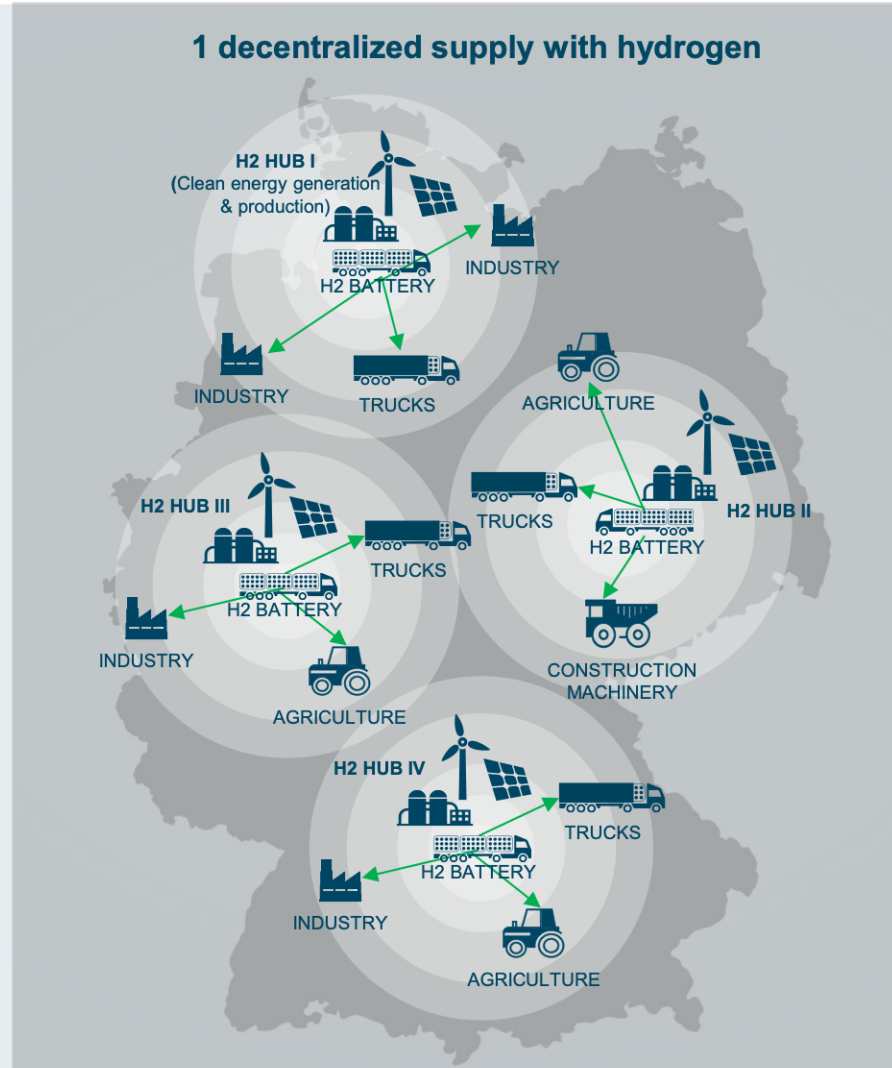
H2 battery: most efficient distribution of renewable energy in mobility and industry



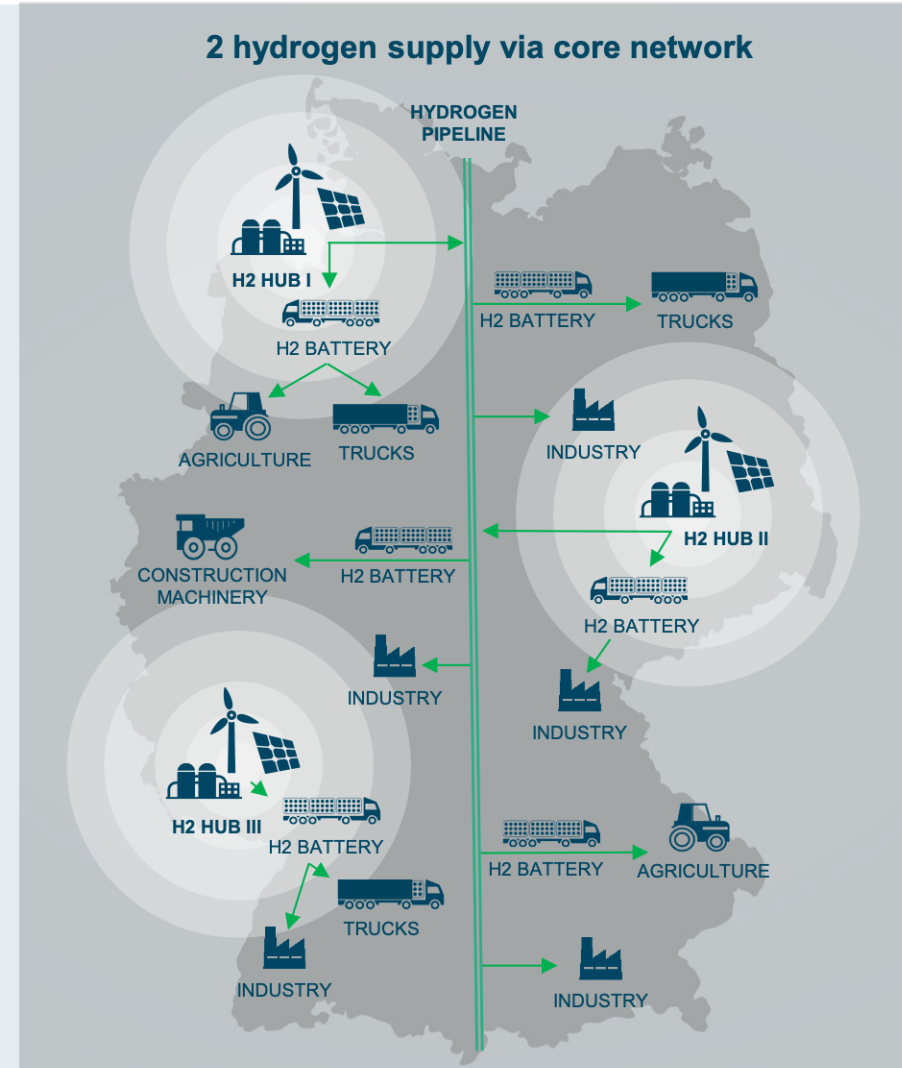
Note: H2 & infrastructure costs based on energy source costs of 5 ct/kWh
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H2 Battery infrastructure models

Total cost of energy at customer can be below 13 Cent/kWh



AND



Business model

Entry market (stationary applications)

- Sales of CUUB H2 Batteries to end users
- Single annual service fee for H2 charging and quality checking

Target market (on-road & off-road applications)

- One time license fee
- H2 fee paid at a swapping station

Willingness to Pay and Collaborate



Aerospace company



Further truck companies



Agricultural machinery company



Deutsches Zentrum für Luft- und Raumfahrt



Off-road machinery company

EC initiatives and UN SDGs

- European Green Deal
- RePowerEU Plan
- Hydrogen Strategy
- RED II & RED III
- EU Hydrogen Strategy
- Fit for 55
- Sustainable and Smart Mobility Strategy



Broad impact

Increasing safety of storing and distributing hydrogen

Reducing dependence on imported fossil fuels

Avoiding CO₂ emissions

Water stuff & sun – a team to revolutionize hydrogen economy

Experts and long-standing experience from various industries shape our team



Thomas Korn
CEO & founder

H₂ expert since 1990ies, former R&D lead for fuel cells at **BMW**; entrepreneur of rewarded and established H₂ engine start-up **KEYOU**.



Alvaro Sousa
CSO & founder

Passioned **H₂ engineer**, lead of the technical team of the 1st developed H₂ fleet series at **BMW**, developer of the 1st time ever produced H₂ racing car for **Aston Martin**, university lecturer on clean vehicle technologies, co-founder of **KEYOU**.



Jonas Flädjemark
COO & founder

Swedish **racing car driver**, **serial inventor** and innovator with numerous patents, as well as several products succeeding in a variety of markets.



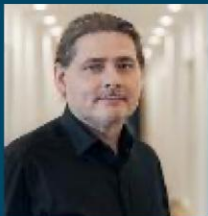
Lukas Kalt
Head of Technology

Expert for type IV pressure vessel development and hydrogen vehicle system design. Former Segment-Leader for hydrogen transportation and infrastructure of a world-leading vessel manufacturer.



Dr. Dirk Schilder
Head of Corporate Finance

15 years of experience in corporate finance and strategy at the Boston Consulting Group, served international clients with corporate finance, capital market and strategy related projects.



Thank you for your attention!

Thomas Korn

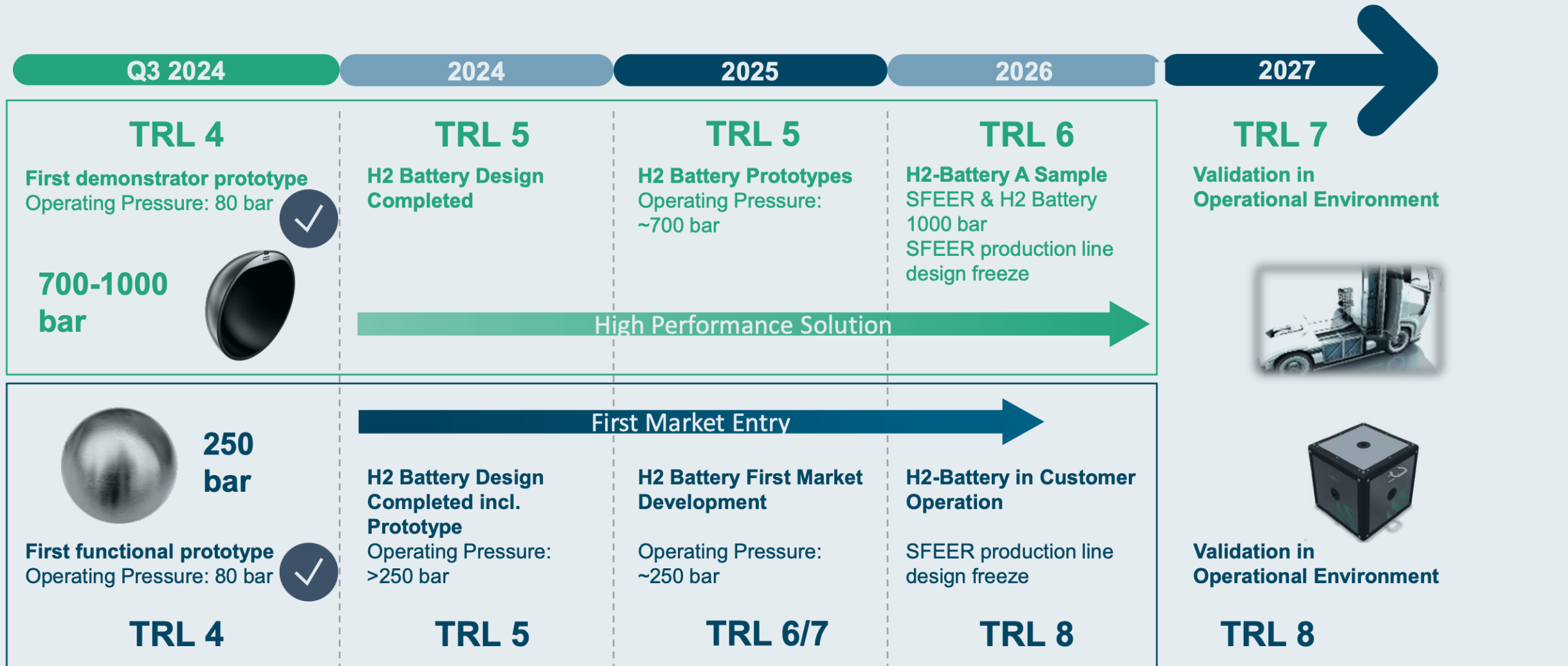
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Additional slides

Development roadmap

250 bar version will soon be on the market



Go-to-market strategy

Market entry (2027)

- **Entering the stationary hydrogen applications (CUUB)**
- Partnering with a fuel cell provider to offer gen-sets
- Supply of H2 charging and post-sales services

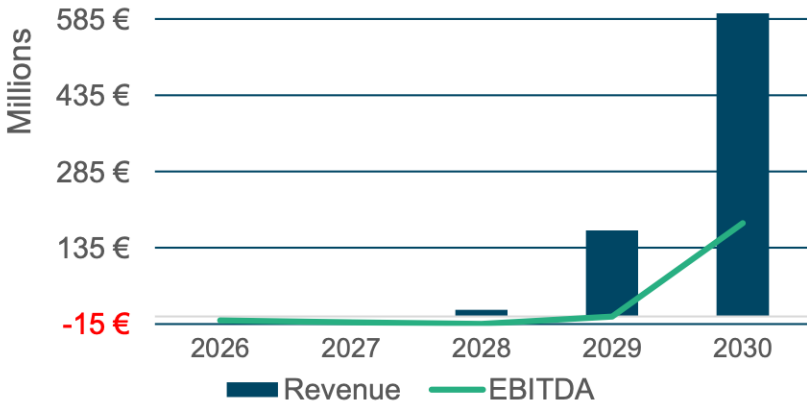
Market expansion (2029)

- **Entry in the on-road & off-road sector**
- Establishing charging and swapping infrastructure
- Collaborative offering with on-road & off-road manufacturers

Commercialization Plan

	2025-27	2028-29	2029/30	2030/31
Funding	Series A1 € 10 Mio.	Series A2 € 18 Mio.	Series B	
Technology	CUUB (stationary market)	H2 Battery (on-road & off-road)	H2 Battery (for other sectors)	
Commercial activities	<ul style="list-style-type: none"> • Finalising supply chain • First of services in the stationary market (backup power) 	<ul style="list-style-type: none"> • Upscaling sales • First contracts in the mobility and machinery markets 	<ul style="list-style-type: none"> • Enhancing collaboration with on-road & off-road OEMs 	<ul style="list-style-type: none"> • Establishing collaboration with customers in other sectors

Revenue and EBITDA projections



Market

Global hydrogen storage market for 50-5,000 kWh systems covering stationary and mobility applications (in 2032)

~ € 6B

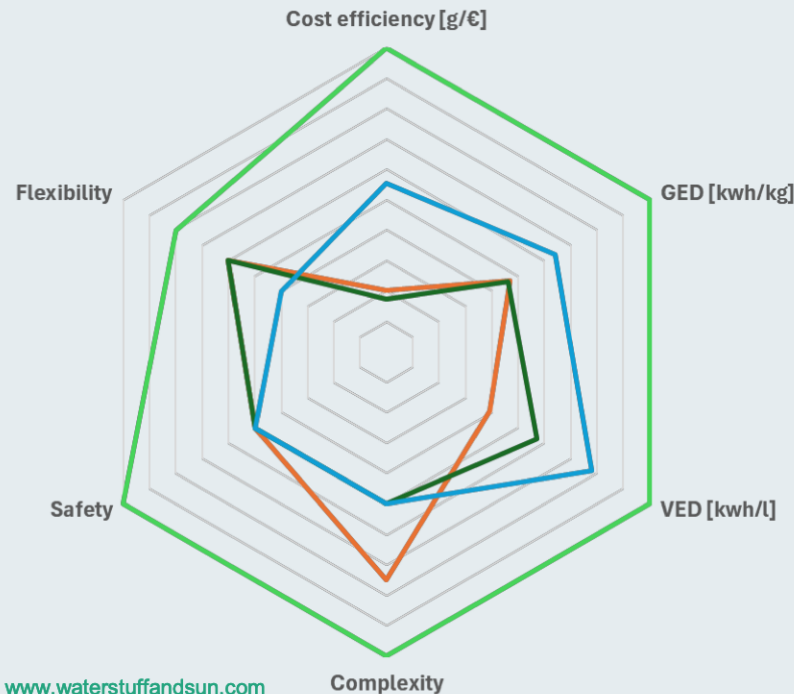
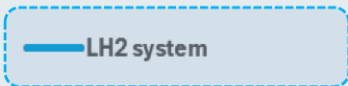
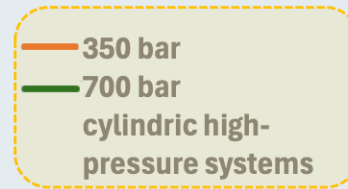
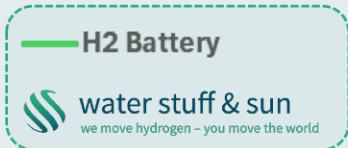
16% CAGR



~ € 0.5B

Entry market for power backup systems (mobile antennas) in Nordics and Germany

Competition



UNIQUE SELLING POINTS



No risk for environment & for humans in case of accident

Safer



- Up to 70% lower storage cost in product
- Up to ~40% cost savings¹ per kg/H₂

Affordable



Only one conversion step and high modularity of storage system

Simpler



Smaller increments allow smaller volumes and faster ramp up

Scalable



water stuff & sun

we move hydrogen – you move the world

CONFIDENTIAL investment teaser – for internal usage only – March 2025

SFEERS & the Hydrogen Battery

Reshaping the Way we Store, Transport & Use Renewable Energy

