

HOELLER
THE STACK COMPANY

NEXT GENERATION PEM ELECTROLYZER STACKS

MADE IN GERMANY

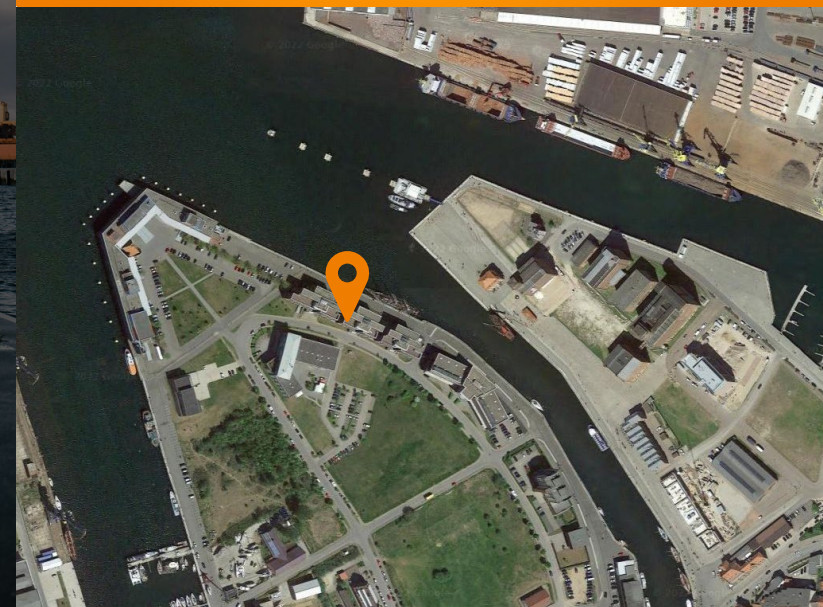
HOELLER
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OUR GOAL:
**GREEN HYDROGEN FOR
LESS THAN EUR 4 / KG**



HOELLER
ELECTROLYZER GMBH
Alter Holzhafen 17b
23966 Wismar, Germany



OUR MISSION

MANAGEMENT TEAM

WE DEVELOP THE NEXT
GENERATION OF HYDROGEN
ELECTROLYSIS STACKS,
THE CORE COMPONENT OF
ELECTROLYZERS

A WEALTH OF EXPERIENCE IN ELECTROLYZERS

MANAGEMENT TEAM



Dipl.-Ing. (FH)
Stefan Höller

- + Founder, CEO and CTO
- + Hydrogen pioneer since 1991
- + Founder of H-TEC Systems

Lic.oec.HSG, MBA
Matthias Kramer

- + CFO and COO
- + ex BCG, KPMG, Volkswagen

KEY MILESTONES

1997

- + H-TEC Systems founded

2000

- + initial patent filings for improving fuel cells and electrolysis

2007

- + first H-TEC stack produced

2011

- + GP Joule
Shareholder of H-TEC

2016

- + Hoeller Electrolyzer founded

2017

- + initial patent filings
- + Proof of concept @ Fraunhofer ISE

2018

- + Relocation to Wismar

2020

- + IT-PEM funding from 7th Energy Research Program BMWi
- + Selected as one of 32 start-ups for "Tech Tour Energy in Transition"

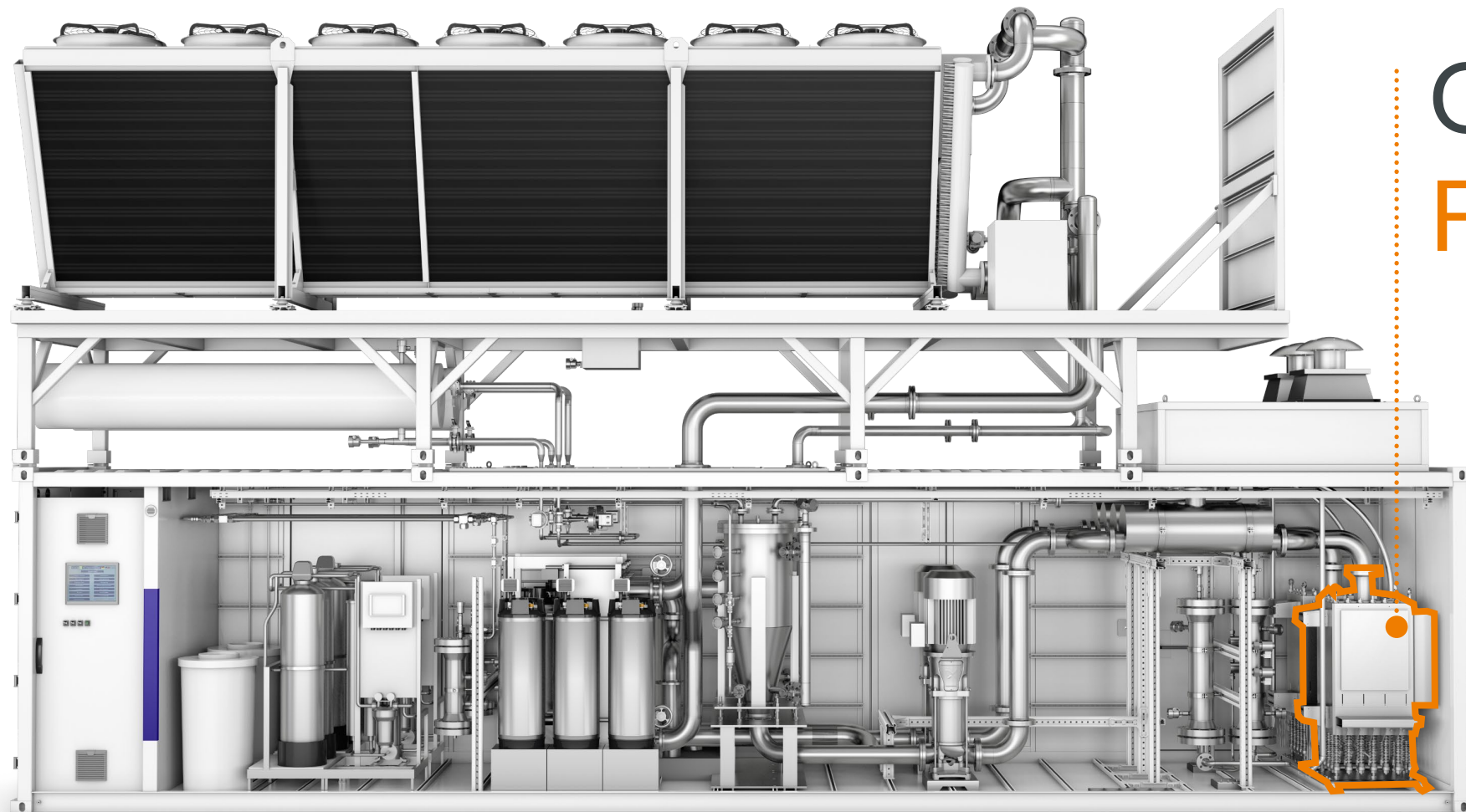
2022

- + Rolls-Royce Power Systems becomes investor and strategic partner
- + Winner of the Ludwig – Bölkow Technology Price

PRODUCT

THE STACK IS THE HEART OF THE ELECTROLYZER

HOELLER
THE STACK COMPANY



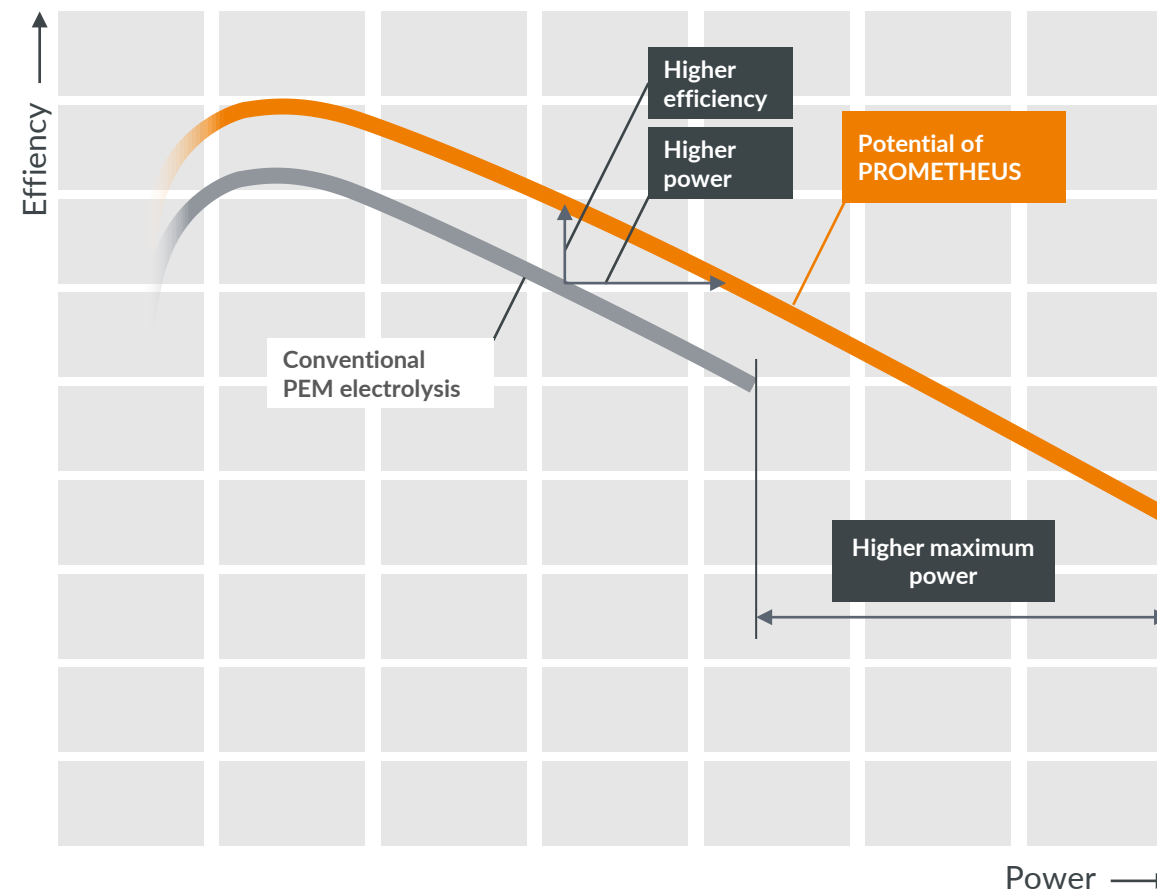
OUR
FOCUS

NEXT GENERATION PEM STACKS

KEY IMPROVEMENT LEVERS

- + MEMBRANE ELECTRODE ASSEMBLY – Better connectivity to reduce catalyst need
- + END PLATE – Advanced design to optimize installation space
- + POROUS TRANSPORT LAYER – Lower resistance to increase power and efficiency
- + BIPOLAR PLATE – Optimization of the flow field to maximize power
- + HIGHER OUTPUT PRESSURE – Simplification of the system

POTENTIAL OF THE HOELLER PEM ELECTROLYSIS



PROMETHEUS

OUR INNOVATIVE PEM STACKS

FIRST GENERATION



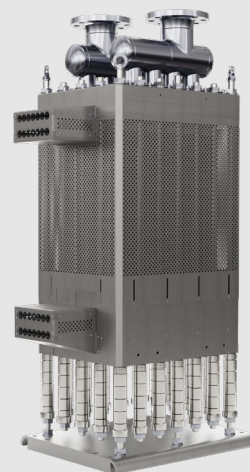
Prometheus S

25 x 21 cm

100 kW

21Nm³ / h (47kg/d) @ 40 bar

3Q2023



Prometheus L

60 x 48 cm

1.5 MW

316Nm³ / h (680kg/d) @ 40 bar

2Q2024

SECOND GENERATION

- + Higher Hydrogen Output Pressure (target 75-80 bar)
- + Increased temperature (target 120 degrees C)

Foot print

Rated power

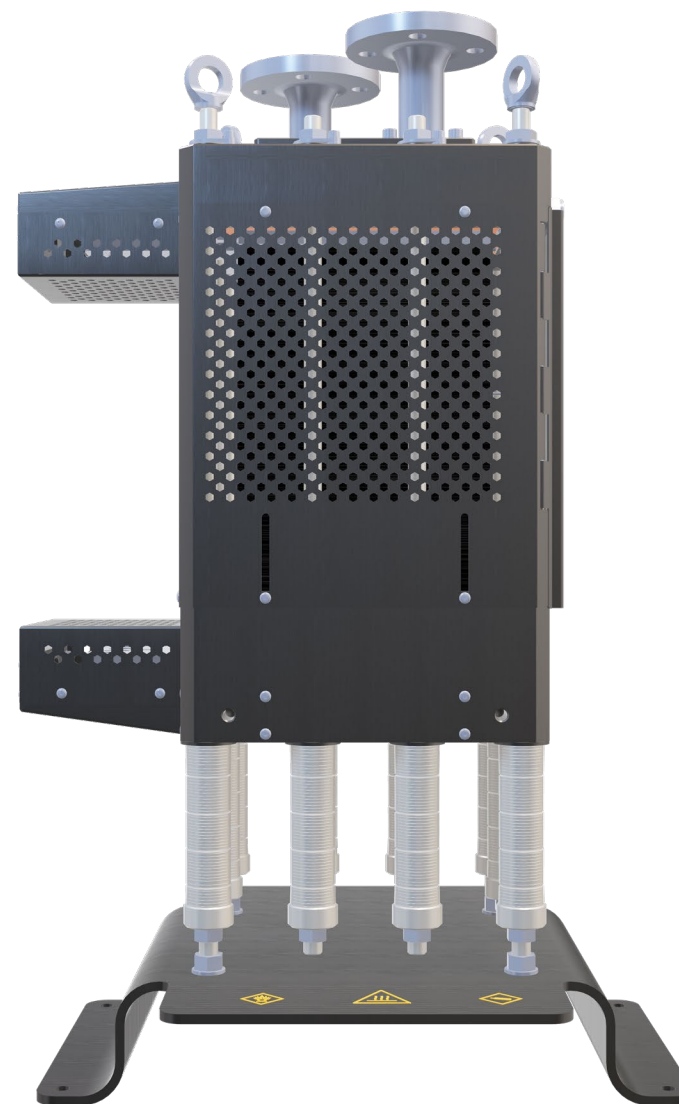
H₂ production

SOP

PROMETHEUS S

Technical information

Power consumption	up to 100 kW with approx. 150 cells
Active surface	Approx. 124 cm ² / cell
Voltage and current	up to DC 400 Volt, 300 Ampere
AC power consumption at full capacity	Approx. 4,5 kWh / Nm ³ (stack)
Degradation	Stacks are designed to last a minimum of 80.000 hours of operation
Dimensions (length * width * height)	610 * 560 * 930 mm
Stack Weight	approx. 250kg
Nitrogen purge	Stack will feature nitrogen purge.
Water consumption	Less than 1 liter per Nm ³ H ₂
Response time	Less than 10 seconds in both directions
Hydrogen production	Up to 44 KG / day Operating pressure 40 bar
Stack operating temperature	80 degrees Celsius max.
Start of production	Q3 2023



PROMETHEUS L

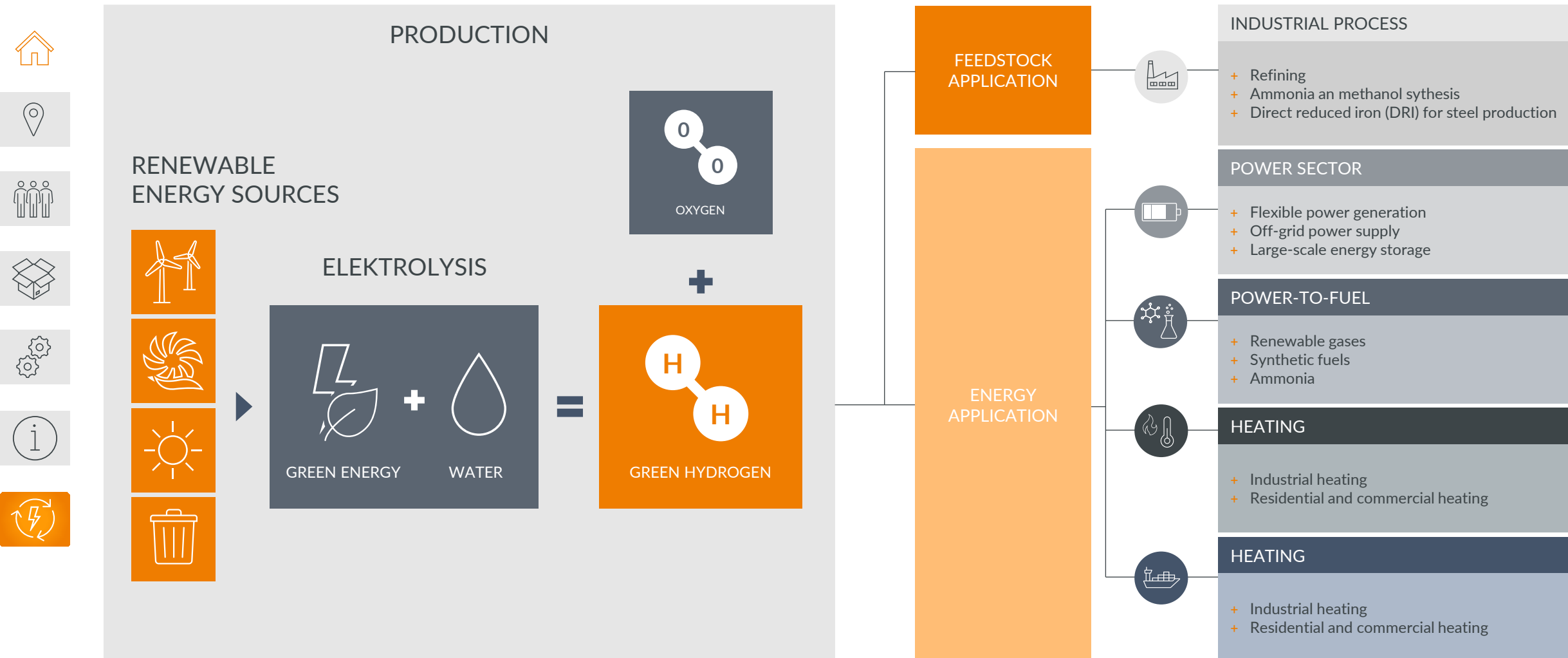
Technical information

Power consumption	up to 1.5 MW with approx. 312 cells
Active surface	Approx. 1.180 cm ² / cell
Voltage and current	up to DC 750 Volt, 2.500 Ampere
AC power consumption at full capacity	Approx. 4,5 kWh / Nm ³ (stack)
Degradation	Stacks are designed to last a minimum of 80.000 hours of operation
Dimensions (length * width * height)	1030 * 830 * 2260 mm
Stack Weight	approx. 1600kg
Nitrogen purge	Stack will feature nitrogen purge.
Water consumption	Less than 1 liter per Nm ³ H ₂
Response time	Less than 10 seconds in both directions
Hydrogen production	Up to 680 KG / day Operating pressure 40 bar
Stack operating temperature	80 degrees Celsius max.
Start of production	Q2 2024



STACKS FOR MANY USE CASES

WE HELP THE ENERGY TRANSITION



THANK YOU FOR
YOUR ATTENTION!

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