Hälg Group OSTERWALDER H2energy Empa

Visualisation. Installation is carried out according to customer requirements if necessary.

Hydrogen and fuel cells for peak load supply in buildings, neighbourhoods and industry

The **Hälg Group, Osterwalder AG** and **H2 Energy** offer a joint complete solution for CO2-free peak load supply for buildings.

Renewable hydrogen produced in Switzerland and a fuel cell system integrated into the building technology ensure that peak load requirements for private, commercial and industrial heating and electricity applications are met. Especially in winter, this covers the increased power and energy requirements of heat pumps and battery chargers, for example, and avoids additional grid loads.

The solution helps municipalities, industries and companies achieve their net-zero emissions targets. It also helps avoid lengthy and expensive grid expansion. The system was validated at **Empa** as part of the SFOE-funded H2 District project and is now available as a turnkey solution.

The Kvyreen: A flexible and powerful fuel cell solution

kvyreen 80 GSC-Genset-Charger delivered to SMT Netherlands

kvyreen 80/160 CG Charger

DC fast charger with 80/160 kW

- CCS-2 interface
- OCCP v1.6 Backend integration

kvyreen 80/160 GS Genset

80/160 kW mobile power supply

- 3 phase, 400V, 50Hz AC output
- 1/2 x 125A CEE socket(s)

kvyreen 80/160 GSC Genset Charger

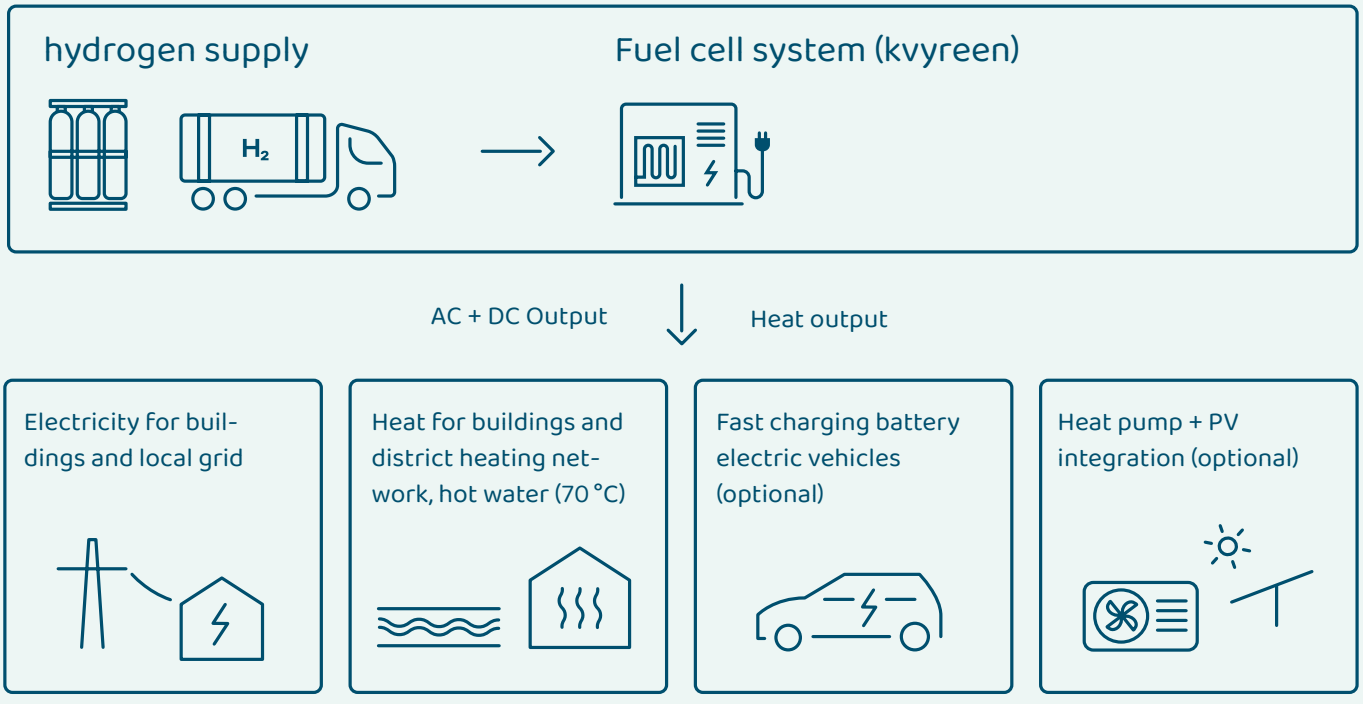
80/160 kW mobile power supply

- DC fast charger with 80/160 kW
- 3 phase, 400V, 50Hz AC output and CCS-2 interface

All products have a powerful interface for coupling waste heat into the building heating system.

- CO2-free operation
- Integrated fast charger for battery electric vehicles (optional)

Function & advantages of the fuel cell solution



- ✓ Prevention of power grid overload
- ✓ Avoiding / delaying network expansion
- ✓ Limitation of service charges
- ✓ Backup power supply

Fuel cell solution

Power-module(s)

- Fuel cell(s)
- Cooling / heat exchanger
- H2 Supply
- Steam and condensate drainage

application module

- Power electronics
- Grid connection
- DC fast charger (optional)
- Buffer battery
- Control panel
- Remote control

H2 Storage container

- 350/465 kg H2 @ 350/380 bar (approx. 11–15 MWh elec. + therm. energy)
- Docking station
- Foundation and access protection (not shown)

Electrical output

- 80 / 160 kWe
- 125 / 250A
- 400 VAC / 50 Hz

Thermal output

- 75 / 150 kWth
- 70 °C Outlet temp.
- Bldg./Heat. Interface

Design and cladding according to customer requirements (optional)

The hydrogen ecosystem also for buildings in Switzerland

Green hydrogen is produced using renewable electricity and distributed using a container logistics fleet.

In addition to mobility applications for fuel cell trucks and cars, hydrogen is increasingly being used for other applications such as charging battery electric vehicles and combined heat and power generation in buildings.

The Hälg Group plans and implements the seamless integration of fuel cell systems into existing building technology. Osterwalder AG will ensure the hydrogen supply for building applications.

Technical specifications

Technical Data [1]	Unit	kvyreen 80 GS	kvyreen 160 GS
Dimensions (W x L x H)	m	1.6 × 1.8 × 2.4	1.6 × 2.9 × 2.4
Weight	kg	1800	2500
Max. Inclination	degree	+/– 5	+/– 5
Ambient temperature [2]	°C	–30 to +35	–30 to +35
Hydrogen supply pressure	bar	9 to 16	9 to 16
Max. altitude	m a.s.l.	1500	1500
Fuel cell system			
Rated power	kW	80	160
Hydrogen consumption [3]	kg/hr	5,5	11
Hydrogen quality		ISO14687-2 2012 Type I, Grade D / SAEJ2719	
Electrical output			
Power	KVA	100	200
Voltage	V	400	400
Frequency	Hz	50	50
Number of phases		3 + N+ PE	3 + N+ PE
Thermal output			
Usable heat (approx.)	kWth	75	150
Outlet temperature on heating side	°C	70	70
Temperature difference inlet/outlet (approx.)	K	10–20	10–20

[1] The specifications are still being worked on and may be subject to change.
[2] Without reduction in charging power
[3] At rated power and start of service life

Hälg Group

The Hälg Group has been implementing innovative building technology projects in Switzerland since 1922. With over 1,000 employees and 28 locations, it is a leading and reliable partner for building technology and integrated facility management.
haelg.ch

H2energy

H2 Energy is involved in the entire hydrogen value chain and offers its engineering services for production facilities, the implementation of filling stations and the engineering of hydrogen fuel cell applications. More information about fuel cells and how they work:
h2energy.ch/kvyreen-hydrogen-generator

OSTERWALDER

Your expert partner for mineral oil products, local petrol stations, high-quality car care, hydrogen mobility, e-mobility, building technology, real estate and sewer cleaning. The long-established St. Gallen-based company Osterwalder looks back on over 165 years of tradition and is a member of the AVIA association.
osterwalder.ch

Empa

As an interdisciplinary research institute for materials science and technology, Empa conducts application-oriented cutting-edge research for the benefit of industry and society. Together with partners, Empa develops innovative solutions to the pressing challenges of our time. In this way, it makes a significant contribution to strengthening the innovative power and competitiveness of the Swiss economy.
empa.ch/web/empa

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