

# The mobile, hydrogen-powered fast charger

Overcoming the limits of electric vehicle charging infrastructure



## FAST, GREEN EV CHARGING. ANYTIME, ANYWHERE

### Overcoming the limits of electric vehicle charging infrastructure

With the number of battery electric vehicles on the road projected to increase tenfold by 2030, the charging infrastructure must expand accordingly. To satisfy demand in Europe alone, 6000 charging points will need to be installed weekly by 2025, up from 1600 per week currently<sup>1</sup>. This will require massive upgrades to the power grid as well as new additions of renewable energy sources, all of which are slowed down by permitting bottlenecks and public opposition. To keep traffic flowing smoothly on EU highways, at least one fast charger per km in each direction will need to be installed by 2030<sup>2</sup>.

### Presenting kvyreen

kvyreen is a mobile, hydrogen-powered fast charger. When used with green hydrogen, it offers CO<sub>2</sub>-free, fast and scalable charging, independent from the local electricity grid and without the risk of charge power limitations at peak times. For commercial fleet operators, kvyreen enables a plannable charging schedule and avoids costly delays in case of electricity shortages. It can be easily integrated into existing hydrogen or traditional refuelling stations, installed at rest stops, parking lots, or deployed for temporary events such as festivals or trade fairs. Highly mobile, kvyreen allows for demand driven fast charging: redeployed from camping sites in the summer to ski resorts in the winter.



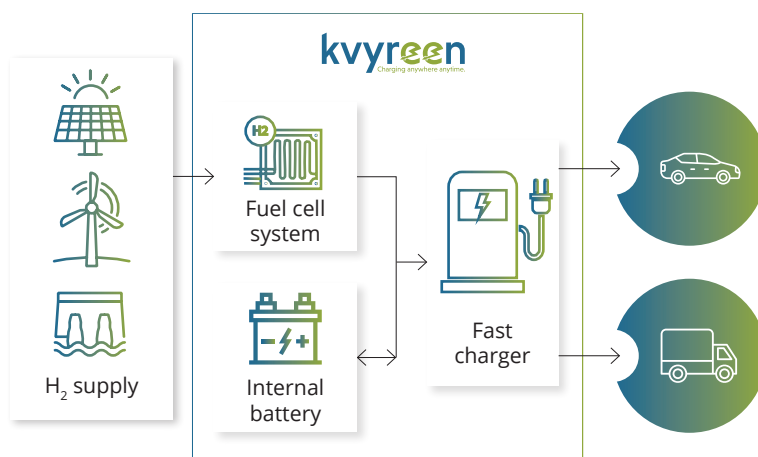
**kvyreen allows you to  
offer EV fast charging  
anywhere, anytime!**

<sup>1</sup> <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/europes-ev-opportunity-and-the-charging-infrastructure-needed-to-meet-it>

<sup>2</sup> <https://www.acea.auto/publication/european-electric-vehicle-charging-infrastructure-masterplan/>

## A flexible and powerful platform

kvyreen offers a charging power of 80 kW or 160 kW, with higher power models available in the future. Hydrogen is either supplied via the infrastructure of a hydrogen refueling station, the Hydros spider<sup>3</sup> network, or via a hydrogen bundle. kvyreen uses state-of-the-art fuel cell technology and custom power electronics to transform energy stored in hydrogen into electricity to charge the EV's battery. The same technology platform can be used to power off-road vehicles and ships, as well as to deliver AC power to the grid as part of combined heat and power system (CHP) or as a mobile, hydrogen-powered genset<sup>4</sup>.



## Guaranteeing ease of use

The kvyreen's system allows real-time data management and control via a remote dashboard. Maintenance is taken care of by a dedicated service organization. It offers easy backend integration and a pre-installed RFID reader so multiple payment options can be realized. The kvyreen system can be installed in less than 60 minutes once the hydrogen supply has been prepared.

## Customization

Upon acquiring kvyreen, you gain the flexibility to customize it according to your unique brand identity.

## Watch video



## Benefits at a glance

- DC fast charging at 80 or 160 kW
- 100% reliable and guaranteed power output
- No grid connection or upgrades required
- CO<sub>2</sub> free with green hydrogen
- Mobile unit, can be installed wherever needed
- Integration with various external H<sub>2</sub> supply possible
- Scalable to 500 kW and beyond
- AC output model available soon



<sup>3</sup> Containerized hydrogen logistics solution from H2 Energy, Alpiq and Linde.  
For more information see: [hydros spider.ch](https://www.hydros spider.ch)

<sup>4</sup> More information on alternative applications available upon request.

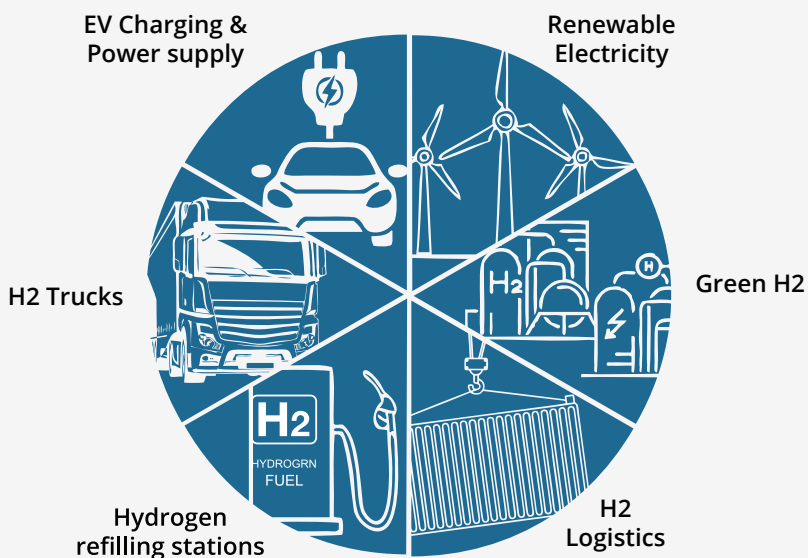
## Technical specifications

Specifications <sup>5</sup>	Unit	kyvreen 80	kyvreen 160
<b>Device</b>			
Dimensions (W × L × H)	m	1.6 × 1.8 × 2.4	1.6 × 2.9 × 2.4
Weight	kg	1,800	2,500
Max. inclination	degree	+/- 5 to horizontal	+/- 5 to horizontal
Ambient temperature <sup>6</sup>	°C	-30 bis +35	-30 bis +35
Hydrogen supply pressure	bar	9 to 16	9 to 16
Max. altitude <sup>6</sup>	m a.s.l.	1,500	1,500
<b>Fuel cell system</b>			
Hydrogen consumption <sup>7</sup>	kg/100km	1.2	1.1
Hydrogen quality	-	ISO14687-2 2012 Type I, Grade D, SAE J2719	
<b>Fast charger</b>			
Charging power	kW	80	160
Max. charge voltage	V	800	800
Number of charging points	-	1	1
Charging connector	-	CCS Type II	CCS Type II

<sup>5</sup> Specifications are work in progress and can be subject to change

<sup>6</sup> Without de-rating of charging power

<sup>7</sup> Assumption: Energy consumption of electric vehicle 20 kWh/100 km



## About H2 Energy

H2 Energy plays an active role in reducing climate change by making **green hydrogen a cornerstone of the energy system**. Founded in 2014, it established a **world first hydrogen ecosystem** in Switzerland, offering nationwide supply and logistics. H2 Energy was the first company worldwide to deliver hydrogen fuel cell trucks to commercial users through a pay-per-use business model. Working in partnership with Hyundai, Linde and Alpiq, its trucks are being used by retailers and logistics companies across Switzerland.

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