

COSBER

HPC Series Product

Energy independence, Zero-carbon emission

Smart **H₂** Energy platform **COSBER**

COSBER GmbH

Lise-Meitner-Straße 3,
82152 Krailling bei München
Germany

Office: +49 (0) 89 2620766-00
Fax: +49 (0) 89 2620766-60
Email: hydrogen@cosber.de

COSBER Production Facility

8th Floor, Building A, No.28 Dongyang
3rd Road, Danzao Town, Nanhai District,
Foshan, Guangdong, China

Office: +86 (0) 757 8661 3098
LinkedIn: Cosber Hydrogen
Email: hydrogen@cosber.com
www.cosberhea.com



CSB49C2503E-3



Smart Integration Global Innovation

Since its establishment in 1999, COSBER Technology Co., Ltd. has evolved to be a leading high-tech enterprise in China, with a global presence including R&D and business operations. COSBER has activities and business in more than 50 countries worldwide and maintains offices in China and Germany, with a team of over 300 professionals. At COSBER, we are dedicated to promoting China-German joint innovation and intelligent manufacturing. As part of this commitment, we work proactively to advance the development of the hydrogen energy industry.

COSBER's Smart H₂ Energy Platform is a cutting-edge clean energy solution designed for both residential and commercial buildings. Leveraging our advanced hydrogen technology, this platform provides integrated green building solutions to clients around the world. At COSBER, we believe the Smart H₂ Energy Platform represents more than just a source of sustainable energy - it embodies a transformative new way of living that will lead to a sustainable future.

At Cosber, our vision is to pioneer transformative solutions that shape the future of the energy industry. We envision a world of "green life, zero-carbon emission, caring for the earth" and work hard to drive innovation, sustainability, and prosperity for generations to come!



COSBER Hydrogen · Transform Life Green Building Solution



Energy Independence



Green & Clean Energy



Real Time Response



Zero Carbon Emission



Flexible Configuration



Safe & Efficient

The Smart H₂ Energy Platform for Intelligent Energy Storage & Generation

The Smart H₂ Energy Platform is an intelligent energy storage and generation system that includes a photovoltaic inverter, water electrolysis hydrogen production system, hydrogen storage system, fuel cell power generation system, auxiliary electric energy system, and a synergy control module. Its working principle is to optimize the use of renewable energy sources, such as photovoltaic or wind power, by converting excess electricity into hydrogen through an electrolytic cell. This stored green hydrogen can then be transformed back into electricity via fuel cell generation for later use.

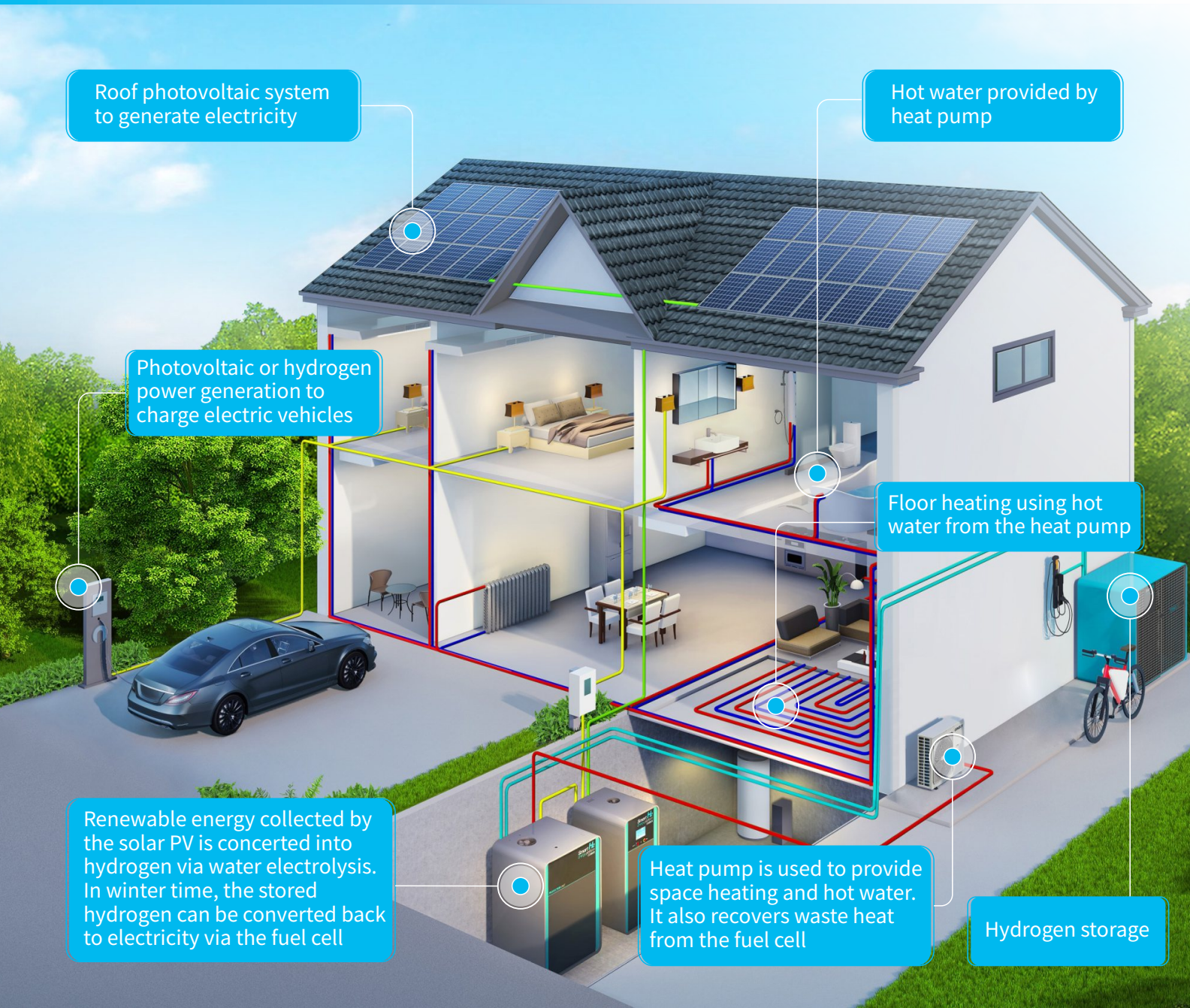


Optional

Smart H₂ Energy Platform

Meet the Various Requirements of Household Scenarios

Residential House



Family energy independence, cross-season energy storage and off-grid power supply.

Smart H₂ Energy Platform

Meet the Various Requirements of Commercial Scenarios

Commercial Building



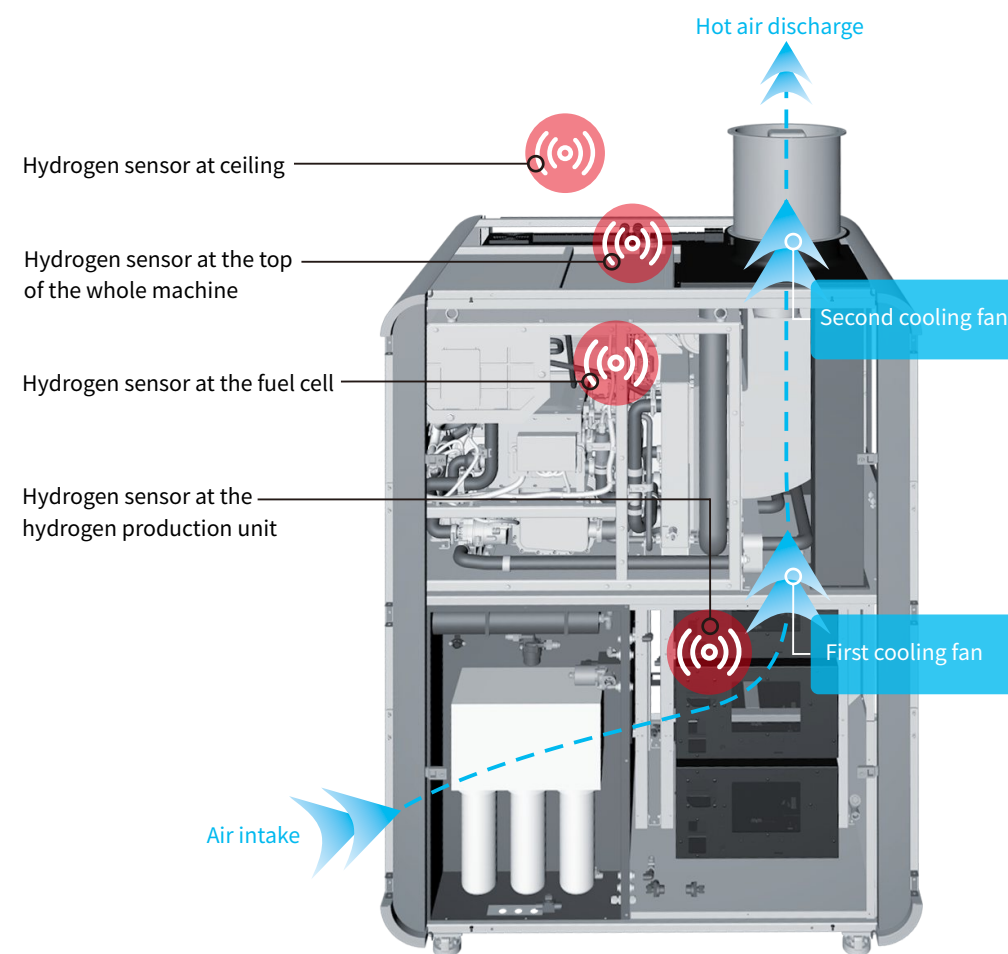
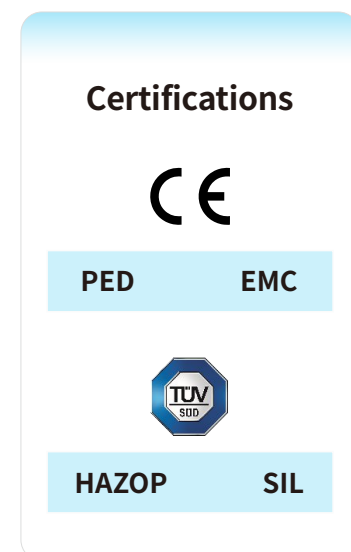
With the goal of global carbon neutrality, enterprises need to reduce carbon emissions and protect the environment. We work together to combat the climate change, reduce global warming, and enhance the social reputation of enterprises.

Hydrogen Power Cube

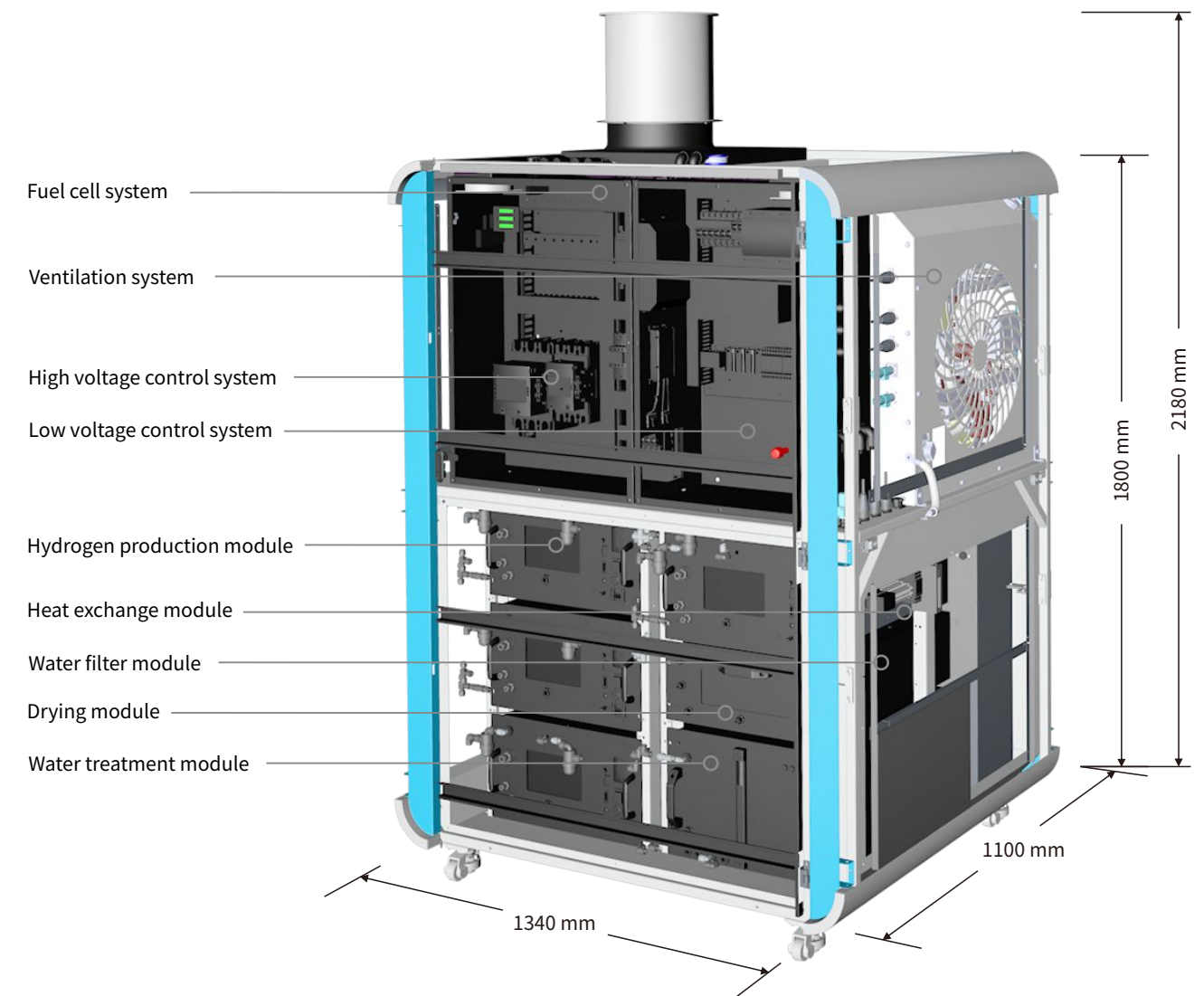
- ▶ Modular design, easy installation and fast delivery.
- ▶ Intelligent integrated control, multi-energy co-generation.
- ▶ Ultra-Security Designs, ensure user safety.



Ultra-Security Designs



Hydrogen Production and Power Generation Module

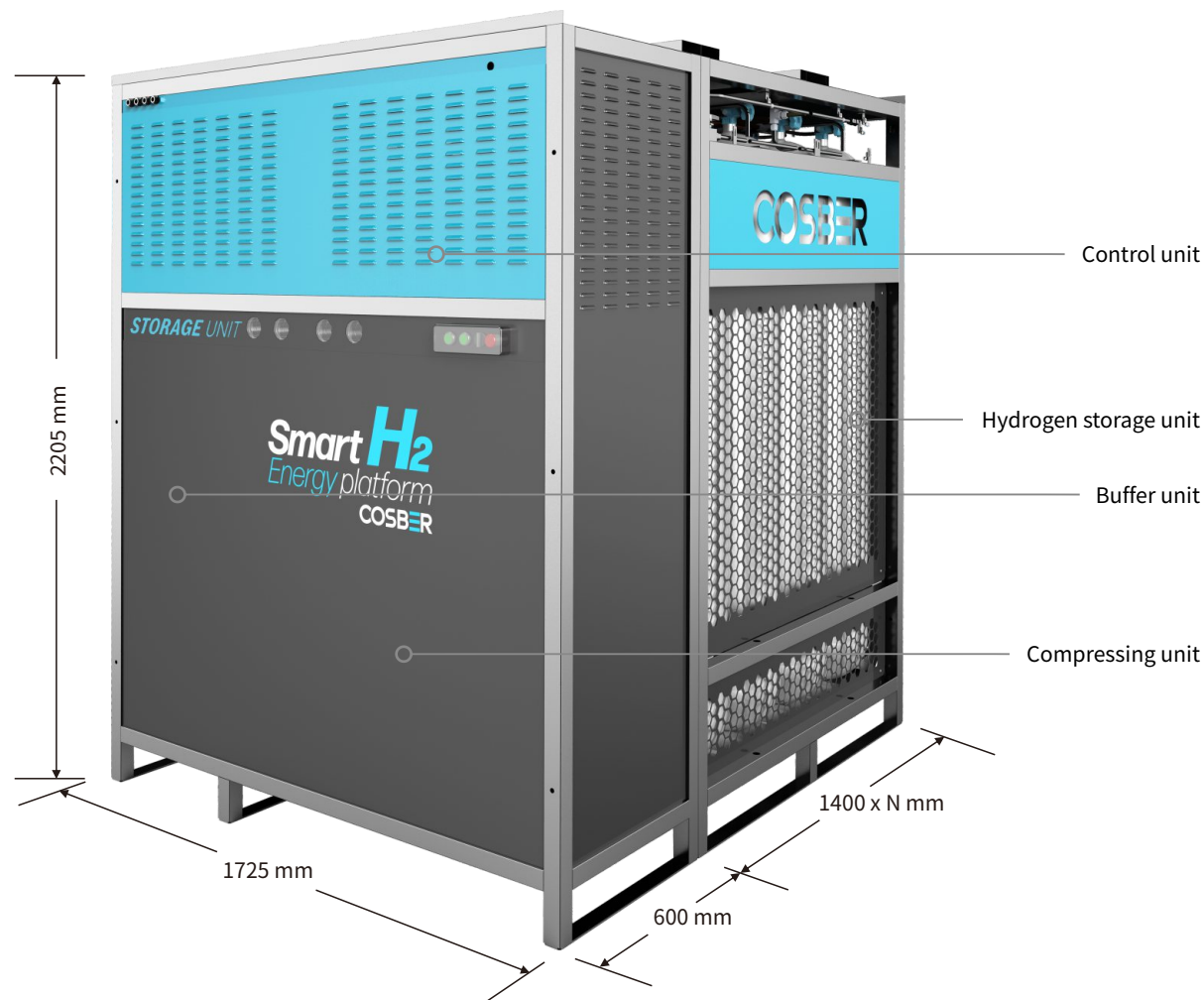


- Overall dimensions of Cabinet B: (L x W x H) 1340 x 1100 x 2180 mm, including fan height.
- The installation space needs to be reserved: 500mm on the left, right and rear. Reserve 1200 mm for the front door.
- The upper ceiling height is recommended to be greater than 2600 mm.
- Total installation space: (L x W x H) 2400 x 3000 x 2600 mm.
- The foundation for placing the equipment should be hard and flat ground, and the ground should be able to bear a load of more than 10 kPa.

The specific dimensions are subject to the actual product.

Hydrogen Storage System (HSS)

(Standard Unit)



- a. Cabinet C should be installed in an open outdoor place. The place must be equipped with lightning and fire protection facilities.
- b. The foundation for placing the equipment should be hard and flat ground. The foundation should be able to bear a load of more than 30 kpa.
- c. The overall dimensions of Cabinet C are (L x W x H) 1725 x (635 + 1400 x N) x 2205 mm, where N is the number of energy storage units in the hydrogen tank group. Weight of Cabinet C: 1300 + 5700 x N kg, where N is the number of hydrogen tank group energy storage units.
- d. Installation space to be reserved: front, rear, left, and right 500 mm space. It is recommended that users install protective rails around Cabinet C.

The specific dimensions are subject to the actual product.

High-density solid-state hydrogen storage cylinder for low pressure applications (Option 1)

Different from the traditional high-pressure hydrogen storage, the charging pressure of the solid-state hydrogen storage tanks is 10 - 35 bar.

- Low pressure, up to 35 bar
- High-density storage, density with 2.0 - 3.5wt %
- Long cycle life, 6000 times, up to 20 years
- Normal temperature usage
- Net zero emissions, environment friendly

Item	
Diameter	60 - 232 mm
Height	365 - 1400 mm
Weight	2.9 - 170 kg
Volume	0.46 - 40 L
Hydrogen storage capacity	33 - 2380 g
Charge pressure	35 bar
Discharge pressure	6 bar
Operating temperature	-15 - 60 °C



Low pressure hydrogen storage vessel (Option 2)

The most efficient way to store hydrogen with 35 bar.


- Simple installation
- Low maintenance costs
- long lifetime, up to 30 years


Item	
Vessel Material	S316
Nominal volume	1 - 5 m ³
Working pressure	35 bar
Operating temperature	-20 - 50 °C
Storage medium	Hydrogen
H2 storage	about 2.87 - 14.35 kg







More flexible, more economical


Module	Hydrogen Power Cube - Xplore	HPC-1000-B-0-A300
Energy Storage System (ESS)		
 (optional)	Inverter	
	Inverter type	Energy storage inverter
	Inverter quantity	1 set
	Rated input and output power	10 kW
	Mains input and output voltage	230 / 380 VAC, 50 / 60 Hz
	Battery	
	Lithium-ion battery type	LiFePO4
	Battery voltage	40 - 60 VDC
	Lithium-ion battery rated capacity	20 kWh





Hydrogen Production and Power Generation Module (L x W x H: 1270(635+635) x 1230 x 1746 mm)		
	Electrolyser	
	Electrolyser type	PEM
	Rated hydrogen production rate	0.5 Nm³/h
	Output pressure	Up to 30 bar
	Auxiliary electrolyte	1% KOH solution / pure water
	rated power input	2.4 kW
	Hydrogen output purity (%)	> 99.99 %
	Fuel Cell System (FCS)	
	Fuel cell stack cooling	Air cooling
	Fuel cell rated power	3 kW
Control Voltage	48 VDC	
Fuel cell hydrogen input (%)	> 99.97 %	

Hydrogen Storage System (HSS) (L x W x H: 1810 x 786 x 1500 mm)		
	Pressurization Cabinet	
	Compressor	Electric piston pump, working pressure 300 bar
	Power supply	220 VAC / 50 Hz / 1.5 kW
	Buffer tank	4 x 70 L, with the maximum working pressure of 200 bar
	Hydrogen Bottle Bundle	
	Hydrogen storage pressure	300 bar
	Hydrogen storage tank	Single tank: 50 L, working pressure 300 bar, 16 tanks / bundle
	Equivalent electricity capacity	1 bundle, 300 kWh

The specific dimensions are subject to the actual product.

Module	Hydrogen Power Cube	HPC-1000-B-0-W1000	HPC-1000-B-0-W3000	HPC-1000-B-0-W5000
Energy Storage System (ESS)				
 (optional)	Inverter			
	Inverter type	Energy storage inverter		
	Inverter quantity	1 set	2 sets	3 sets
	Rated input and output power	10 kW	10 kW × 2	10 kW × 3
	Mains input and output voltage	230 / 380 VAC, 50 / 60 Hz		
	Battery			
	Lithium-ion battery type	LiFePO4		
	Battery voltage	40 - 60 VDC		
	Lithium-ion battery rated capacity	0 - 30 kWh	0 - 60 kWh	0 - 90 kWh

Hydrogen Production and Power Generation Module (L x W x H: 1340 x 1100 x 1800 mm)				
	Electrolyser (AEM / PEM)			
	Rated hydrogen production rate	0.5 Nm³/h	1 Nm³/h	2 Nm³/h
	Output pressure	Up to 30 bar		
	Auxiliary electrolyte	1% KOH solution / pure water		
	rated power input	2.4 kW	4.8 kW	9.6 kW
	Hydrogen output purity (%)	> 99.99 %		
	Fuel Cell System (FCS)			
	Fuel cell stack cooling	Air cooling / water cooling		
	Fuel cell rated power	10 kW		
	Fuel cell system efficiency (%)	≥ 45 %, and the operating temperature is 60 - 75°C		
Control Voltage	48 VDC			
Fuel cell hydrogen input (%)	> 99.97 %, 6 - 10 bar			



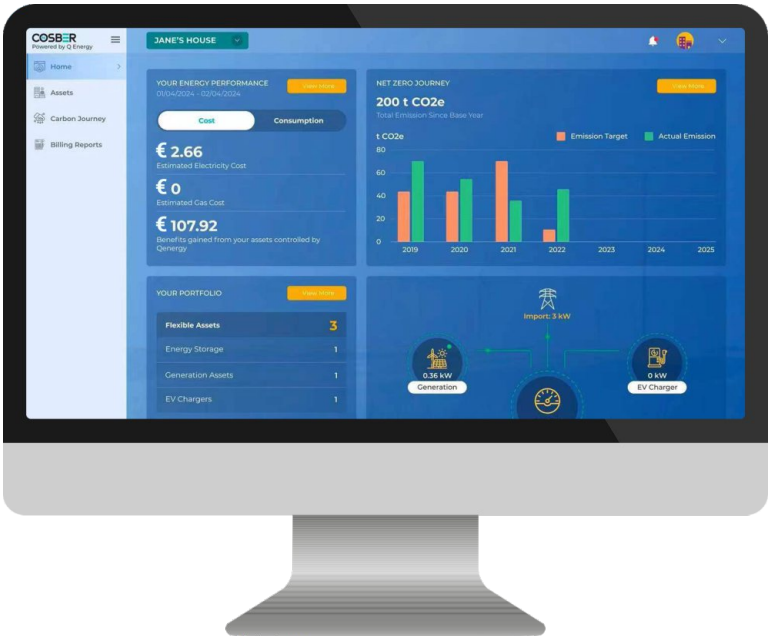
Hydrogen Storage System (HSS) (L x W x H: 1725 x 2035 x 2205 mm)			
Pressurization Cabinet			
Compressor	Electric piston pump, working pressure up to 350 bar		
Power supply	220 VAC / 50 Hz / 1.5 kW		
Buffer tank	4x70 L, with the maximum working pressure of 200 bar		
Hydrogen Bottle Bundle			
Hydrogen storage pressure	Up to 350 bar		
Hydrogen storage tank	Single tank: 110 L, working pressure up to 350 bar, 20 tanks / bundle		
Equivalent electricity capacity	1 bundle, 1000 kWh	3 bundles, 3000 kWh	5 bundles, 5000 kWh

The specific dimensions are subject to the actual product.

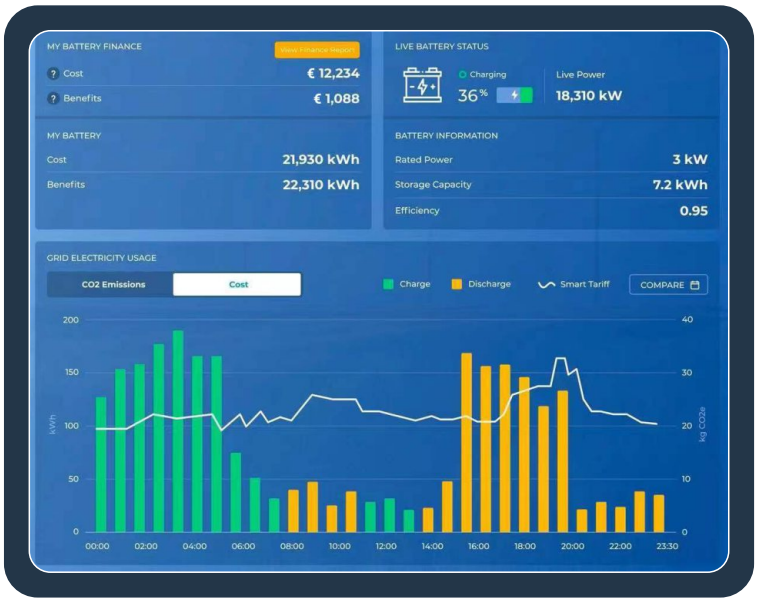
Cosber Smart Energy Management System

Reduction of energy costs and carbon emissions is optimized by advanced AI analytics and automation.

The management system monitors the energy consumption, costs, and carbon emissions. It also displays real-time performance, and demonstrates the energy management achievement with monthly and annual data.



- ▶ Carbon emission reduction target setting and carbon emission monitoring
- ▶ Monthly energy saving and cost saving report
- ▶ Daily / weekly energy consumption warning
- ▶ Daily / monthly / annual photovoltaic power generation amount
- ▶ Hydrogen production volume and power generation statistics
- ▶ Economic income statistics
- ▶ One-stop monitor all energy consumption and bill data
- ▶ Remotely supervises energy asset



PC Monitoring Dashbord Powered by QEnergy™

The equipment status and data can be automatically monitored and collected.

The working mode can be adjusted automatically or manually: Automatic mode, Sunny mode, Rain/snow mode and Night mode.



APP monitoring



Operation monitoring



Fault alarm



Equipment maintenance



Operation statistics



Information prompts



System settings

Application Scenario 1: Hydrogen Energy Showroom

“Zero-carbon emission” cottage in Foshan

The “Zero-carbon emission” cottage adopts the Cosber smart Hydrogen energy platform, using the PV from the cottage's rooftop and carport for power generation to produce and store hydrogen. This system can meet the user's demand for electricity, hot water and cooling throughout the year.



Hydrogen Power Cube Model: HPC1000-0010 (0.5Nm³/h)

Heat Pump Model: KSBZ-7D/2A, Heating 2.50~6.95kW, Hot water 1.03m³/h, Cooling 1.20~4.50kW



Energy Storage System (ESS) & Hydrogen Production and Power Generation Module



Hydrogen Storage System (HSS)



Heat Pump

Application Scenario 2: Commercial Office Building

Low Carbon Office Building in Foshan

In this modern commercial office building, the advanced clean energy technology of the Smart H₂ Energy Platform is installed to achieve an integrated energy supply solution for photovoltaic, lithium-ion batteries and hydrogen energy. During the day, the electricity generated by the photovoltaic system is directly used to power the building, including lighting, air conditioning, and various office equipment. The surplus electricity is stored in lithium-ion batteries, or used to produce hydrogen by electrolysis of water. The hydrogen can be used to generate electricity at night, and also through the winter.



Hydrogen Power Cube Model: HPC1000-T020 (2Nm³/h)

Lithium-ion Battery: 30kWh x 3



Hydrogen Production and Power Generation Module



Hydrogen Storage System (HSS)



Energy Storage System (ESS)