

NOVGERA

H₂ Fuel Cells

Novgera Presents our Novara Hydrogen Solutions: H₂ Production and Fuel Cell Solutions for customers.

Introduction

We provide
Hydrogen
production and
fuel cell
solutions
to help to
achieve their net
zero ambitions

Hydrogen is a versatile energy carrier, which can help tackle various critical energy challenges. Hydrogen fuel cells produce electricity without emitting harmful green houses gases. Therefore, hydrogen fuel cells can help decarbonise the energy sector.

Novara GHP Solution

Our complete green hydrogen production and energy generation. This solution provides customisable Hydrogen Fuel Cells and dedicated Green Hydrogen Production.

The Novara GH solution enables the growth of the hydrogen economy, which will help achieve our net zero ambitions. Hydrogen energy storage can increase the the reliability of renewable energy generation such as wind and light more stable and reliable, In addition to this, hydrogen energy storage is the preferred solution for large-scale energy storage and it part of a sizeable and growing market.

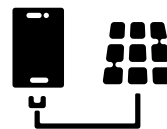
This solution provides a completely customisable: 300KW, 500kW, 1MW, 1.2MW, 2MW and 10MW hydrogen fuel cell combined stationary hydrogen power plant

Our hydrogen energy storage power generation system is a high-power, high-efficiency and modular hydrogen power generation product, which can be combined into power generation applications of various specifications which use Hydrogen fuel cells.

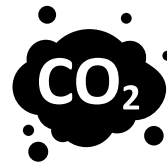
It power generation capacity can be configured from: 500kW, 1MW and 2MW according to the needs of the required use case It is suitable for large-scale and long-term energy storage and grid connection of renewable energy, and also includes community, commercial distributed power generation, cogeneration, IDC standby power supply and other fields.

Technical Specifications

Rated Power	500kW 1MW 2MW 10MW
Hydrogen Consumption At Rated Power	133.52 g/min
System Peak Power	about 110%
Hydrogen Consumption At Peak Power	147.26 g/min
System Idle Power	10±1.5 kW
Normal Temperature Start Time	≤8 Sec
Low Temperature Cold Start Temperature	-30 °C
Low Temperature Cold Start Time	≤60 Sec
System Maximum Operating Temperature	95 °C



**Reliable
Energy**

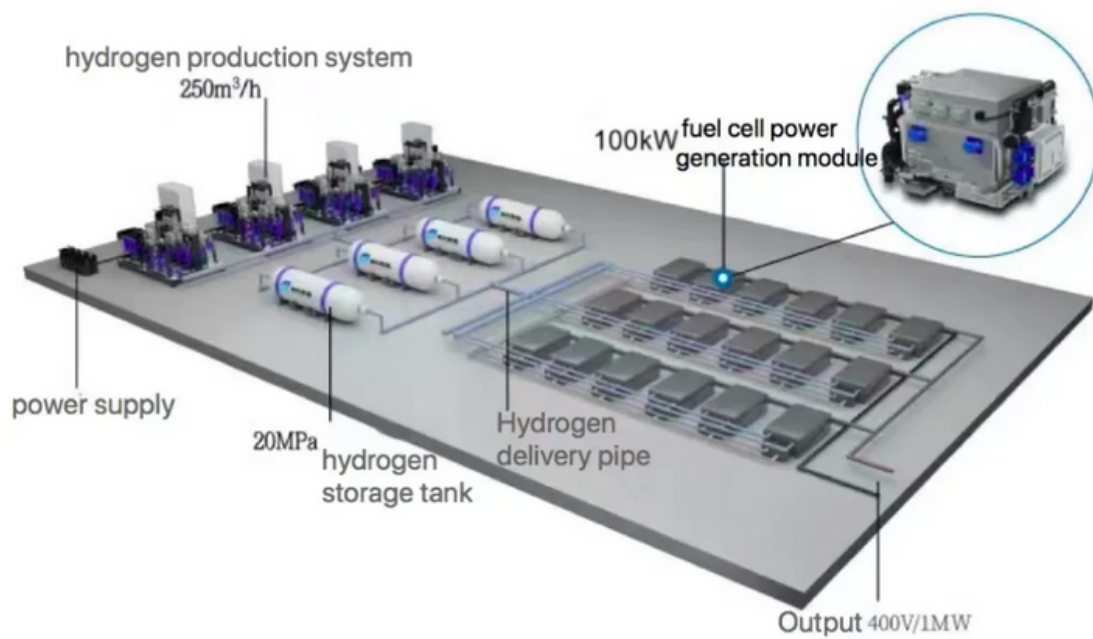


**Emission
Reduction**



**Clean
Power**

Novara GHP Hydrogen Production and Generation Layout



H2 Applications



Novara HF

Hydrogen Fuel Cell

Only Solution

Hydrogen Fuel Cells 1000 - 1200 KW Output

The Novara 1MW fuel cell power station system is the most powerful and efficient hydrogen power systems.

The product has the following characteristics:

- (1) Strong compatibility. It is the industry's first modular design concept. It adopts integrated design of multi-fuel cell stacks module, compatible with 1000~1200kW power output, and can also be paralleled with multi-system and combined into megawatt system output;
- (2) High efficiency. The rated work efficiency is up to 44%, and the highest work efficiency is 61%, which is the industry-leading level;
- (3) Large power: The working voltage is 450-750V, system peak power 1200kW, and single unit power is the largest in industry which is able to meet the special industry power requirements;
- (4) Wide range of applications. Design standards can cover a variety of environmental conditions (-30 ° low temperature startup, 40 ° low temperature storage) for defined power generation;
- (5) Long design life. It can reach 15,000 hours
- (6) The mass power density of the single fuel cell reactor is 541W/kg, the volume power density is 1.52KW/L*H₂, and the external size of the project is currently two 30-foot containers, which can be reduced to one 40-foot container for the convenience;
- (7) Waste heat recovery and utilisation system can fully recycle and utilizes the energy of fuel cells as much as possible, which can ensure the overall energy utilisation rate of the system can reach more than 80%.



Distributed H2 Generation System

This 100kW fuel cell distributed generation system is mainly used for emergency power generation and power supply in factories, communities, construction and other places which require clean power generation. The advantages of this system is that it has high integration, good durability, strong stability, high power density, extremely fast start up speed, strong environmental adaptability and is easy to maintain.

Hydrogen Fuel Cell Distributed Generation System

Rated power: 100kW

Output voltage: AC380V

IP grade: IP55

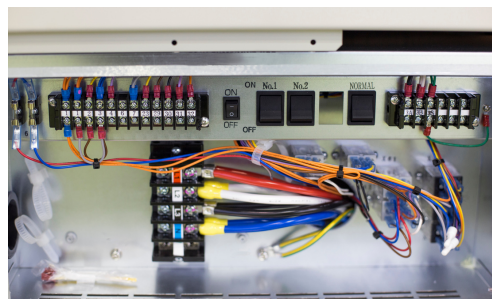
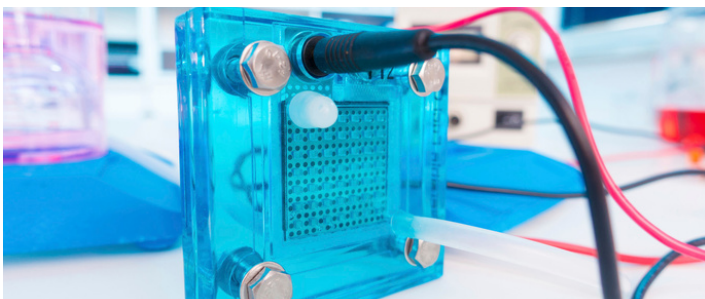
Size: 6050*2400*2500mm

Maximum efficiency: $\geq 50\%$

Cooling method: Liquid-cooling

Cold start temperature: -30°C

Generating capacity: 300kW-h



Power Supply Systems

Hydrogen Fuel Cell Distributed Generation 1KW System

Rated power: 1kW	Weight: 17kg
Cooling method: Air-cooling	Maximum efficiency: $\geq 42\%$
Output voltage: 220VAC	Cold start temperature: -10°C
Size: 370*200*460mm	



Hydrogen Fuel Cell Distributed Generation 5KW System

Rated power: 5kW	Weight: 140kg
Cooling method: Liquid-cooling	Maximum efficiency: $\geq 42\%$
Output voltage: 48-72VDC/220VAC(adjustable)	Cold start temperature: -30°C
IP grade: IP55	Designed life: 15000h
Size: 850*505*520mm	



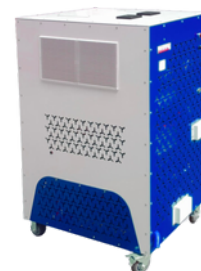
Hydrogen Fuel Cell Distributed Generation 10KW System

Rated power: 10kW	Weight: 235kg
Cooling method: Liquid-cooling	Maximum efficiency: $\geq 42\%$
Output voltage: 48-72VDC/220,380VAC(adjustable)	Cold start temperature: -30°C
IP grade: IP55	Designed life: 15000h
Size: 1110*670*860mm	



Hydrogen Fuel Cell Distributed Generation 20KW System

Rated power: 20kW	Weight: 492kg
Cooling method: Liquid-cooling	Maximum efficiency: $\geq 42\%$
Output voltage: 48-72VDC/220,380VAC(adjustable)	Cold start temperature: -30°C
IP grade: IP55	Designed life: 15000h
Size: 1140*765*1720mm	



Mobility Systems and H2 fuelling stations

3.5t Fork Lift Truck

FC rated power	20kw
Rated lifting capacity	3500kg
Overall weight	5130kg
Overall size	4600*3660*1470mm
Fork size	1200*125*50mm

