

Carbon  
Neutrality

2023

Launch of  
DeHydrogenizer Convection type (DHC)

2022

Launch of  
DeHydrogenizer Pumping type (DHP)

2021

SEMI S2 certification for  
Hydrogen Purification and Recycling (HPR)

2020

Launch of commercial operation of  
Hydrogen Purification and Recycling (HPR)

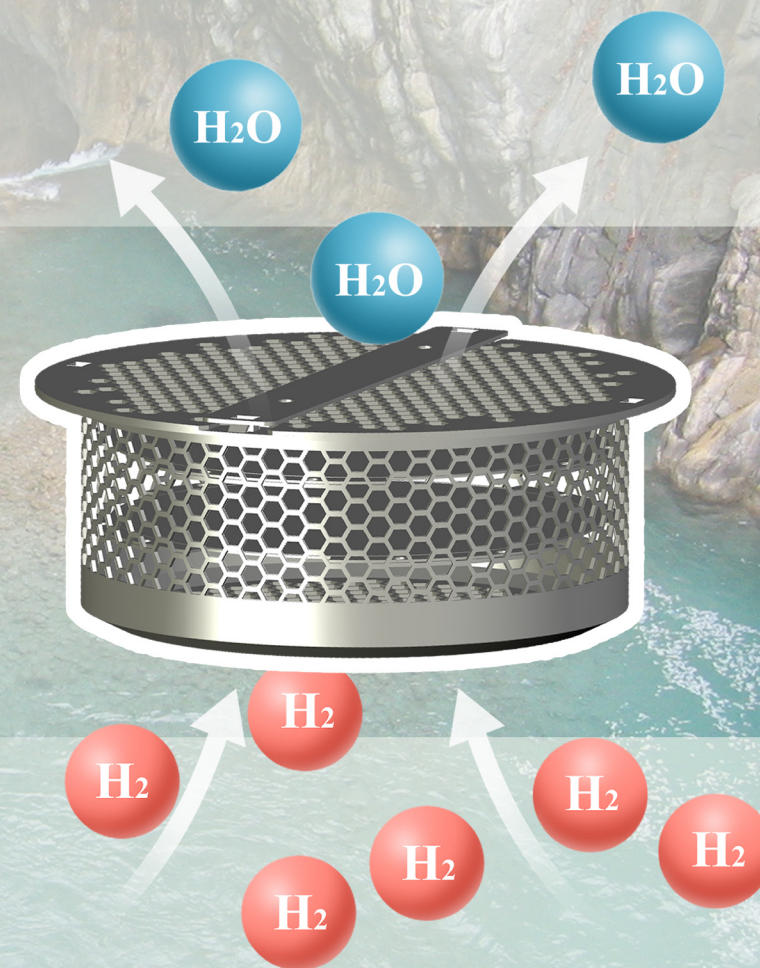
2008

More than 90% of fuel cell  
backup power orders in Taiwan

Self-made fuel cell stack  
and equipment

**T<sup>+</sup>PLUS**

**鼎佳能源股份有限公司**  
**Toplus Energy Corporation**



**Guarding Human And Nature**





# Hydrogen Exhaust

## HPR (Hydrogen Purification and Recycling)

### ECHP

Electrochemical  
Hydrogen Purifier



- Wide operation window of pressure (ambient pressure ~10 bar)
- ECHP : Purified H<sub>2</sub> concentration >5N, Low operation temperature (<100°C), SEMI S2 certification
- PCAP : Separate impurities including H<sub>2</sub>O, O<sub>2</sub>, NH<sub>3</sub>, VOCs, etc. Self-regeneration

### PCAP

Porous Ceramics  
Adsorbent Purifier



## DeHydrogenizer

### DHP

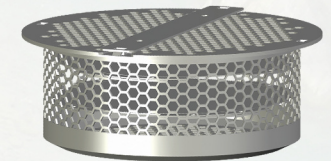
DeHydrogenizer  
Pumping type



- CO<sub>2</sub>/NO<sub>x</sub> emission free, flameless
- Low temperature (<100°C)
- Low energy consumption
- Heat reuse available

### DHC

DeHydrogenizer  
Convection type



- Eliminate hydrogen leaks in a confined space
- No power required, fuelless, consumable-free
- Third-party witness inspection

## Toplus' approach

Hydrogen Purification and Recycling: Providing hydrogen exhaust purification for recycling and electricity generation.

Dehydrogenizer: Providing safer and greener solution to residual and leaky H<sub>2</sub>.

**TOPUS**

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