

STATIONARY FUEL CELL SOLUTIONS

GENSET AND BACKUP POWER SYSTEMS FROM KW TO MW

Fuel cell power solutions are an alternative to diesel generators and batteries, providing clean and long duration power for On and Off-grid configurations.

«Reliable, low maintenance and zero emissions power systems»



Main features

- Modular and scalable
- Fast-response PEM* fuel cell technology
- Indoor /outdoor
- Uninterruptible Power Supply in option
- On-site hydrogen production in option
- Trigeneration in option:
 - Heat (60°C to 70°C)
 - Refrigeration (4°C to 20°C)
- Lifetime up to 20 years

* Proton Exchange Membrane

BENEFITS



Clean & silent

- Zero emissions
- Only water as by-product
- Low noise pollution and no vibration
- No risk of fuel leakage vs diesel
- Better lifecycle analysis than lithium-ion batteries



Low maintenance

- 1 maintenance visit per year
- No performance loss in standby mode
- No fuel degradation over time vs diesel



Competitive cost

- Lower initial investment for long autonomy vs batteries
- Lower TCO* than diesel gensets (logistics free and low maintenance frequency)
- Financial added value with cogeneration (power + refrigeration) for subtropical climates



Easy to install

- Plug and play
- Indoor/outdoor
- Intuitive mechanical and electrical interfaces



Reliable & Efficient

- Better startup reliability than diesel generators
- Electrical efficiency around 50%
- Energy efficiency above 75%
- Air independent architecture (H₂/O₂) in option



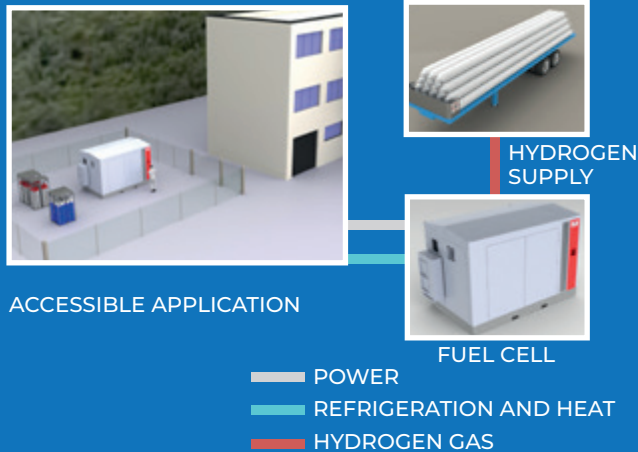
Compact

- High power rack design
- Optimized footprint with high pressure H₂ storage

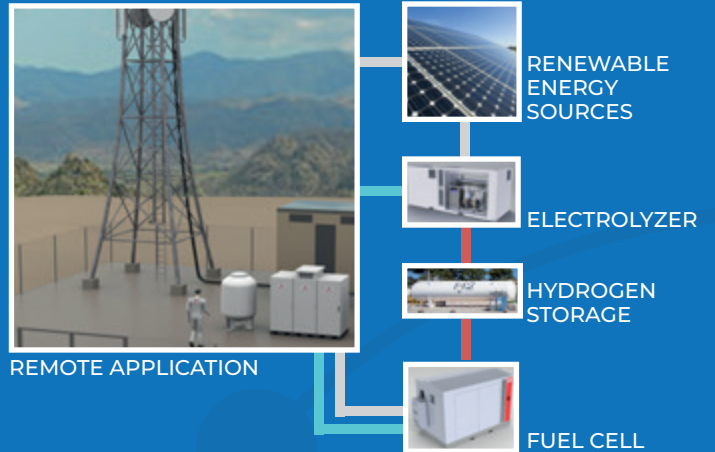
Helion
HYDROGEN POWER
by ALSTOM

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WITH LOGISTICS



WITHOUT LOGISTICS



APPLICATIONS



Events & work sites

To improve air quality in cities by providing a zero emissions solution.

- Events
- Ships in ports
- Construction & maintenance work sites



Business

To maintain brand image and high quality customer service.

- Business parks
- Luxury hotels
- Telecoms
- Industries



Critical sites

To guarantee vital functions of critical facilities/services.

- Data centers
- Telecoms
- Hospitals
- Military
- Airports
- Industrial process
- Banks



Grid support

To strengthen grid reliability and renewable energy sources penetration.

- Grids
- Micro-grids
- Renewable energy sources



Remote sites

To offer autonomous and zero emissions power supply without logistics.

- Telecom towers
- Mines
- Petrochemical platforms
- Tourist resorts
- Islands
- Villages



Industries

To optimize energy self-consumption by valorizing by-product hydrogen.

- Chlorine industries
- Refineries

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