IE-POWER™

Powering the hydrogen future™



Zero emission



Compact power solution









High efficiency

Powering the hydrogen future™

"The science is clear, to avoid the worst impacts of climate change, business, government and society must work together to transition to a Net Zero economy [and avoid catastrophic climate change]"

***Committing to Net Zero by 2030,* PwC.**

Why hydrogen?

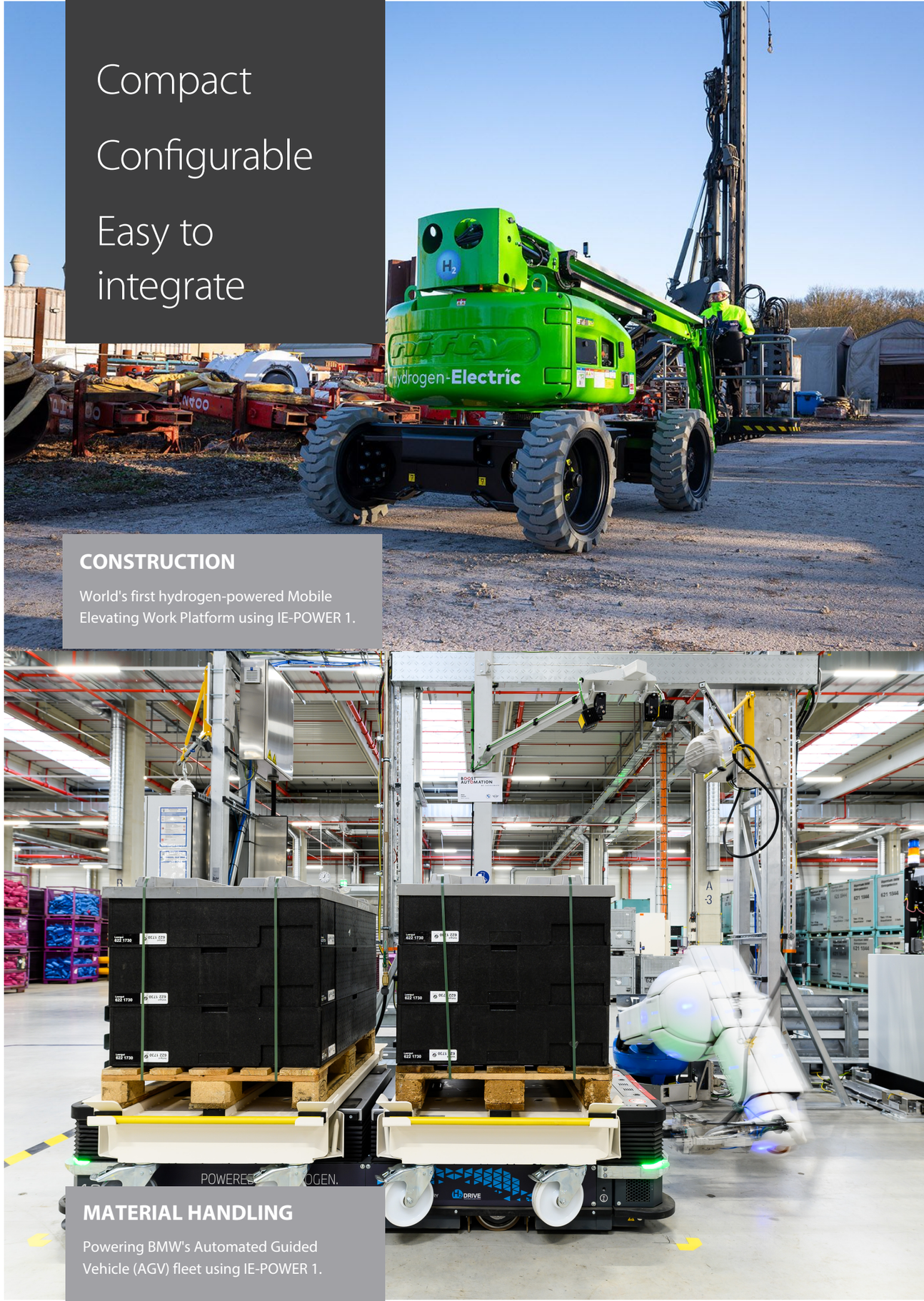
Hydrogen and fuel cells are increasingly recognised as a leading solution for replacing fossil fuels and combustion engines across a wide range of applications.

Hydrogen can be stored as a gas in cylinders and, when power is required, converted into electricity using fuel cell technology. This process delivers the benefits of traditional engine-based systems, while producing only water vapour at the point of use and eliminating harmful emissions such as CO_2, NO_x and SO_x.

They offer high efficiency, quiet operation, rapid refuelling and long run times, making them particularly well suited to applications where uptime, energy density and operational flexibility are critical. As the transition to cleaner energy accelerates, hydrogen fuel cells are playing an increasingly important role in delivering dependable power while supporting global net-zero ambitions.

Hydrogen fuel cells can be used in the following areas:

- ✓ **Diesel generator replacements** – fuel cells can deliver long term power generation without impacting or interrupting day-to-day operations.
- ✓ **Materials handling** – increasing truck optimisation and productivity with a 'plug and play' solution enables fleets to run more efficiently and for shift patterns to no longer be constrained by battery charging time.
- ✓ **Telecoms & micro-grids** – when used in conjunction with an electrolyser, our IE-POWER fuel cell modules can form clean, self-sustaining energy solutions, keeping critical applications working when needed the most.
- ✓ **Construction** – improved health & safety benefits for onsite workers due to reduced noise and greenhouse gas emissions.



IE-POWER Fuel Cells

Zero emission hydrogen fuel cell solutions to meet your net zero targets.

IE-POWER is our eco-friendly hydrogen fuel cell used across a wide range of applications including standby power, materials handling, telecoms, micro-grids and construction delivering zero emission power.

The IE-POWER hydrogen fuel cell range includes the IE-POWER 1, IE-POWER 3 and the IE-POWER 4 products. These modules deliver power from 1kW – 32kW through parallel operation, producing zero carbon emissions, and reducing noise.

IE-POWER features:

- ✓ Small, light, **power dense** hydrogen fuel cells
- ✓ Modular and **scalable**
- ✓ **Compact** and easy to integrate
- ✓ Unique **patented** airflow management
- ✓ **Configurable** to work with all major battery technologies
- ✓ No power degradation during periods of operation
- ✓ **Quiet** operation

Zero emissions
no NO_x, SO_x, CO_2

Power dense fuel cells

Unique airflow management

Improved productivity
compared to batteries

Less downtime
with rapid refueling

Easy integration
Scalable and modular

Small

Light

Power dense



OFF-GRID POWER

Off-grid power generation test site using IE-POWER 4.



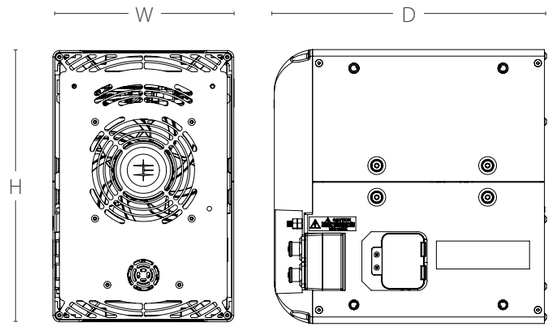
OFF-GRID POWER

Microgrid using IE-POWER 4 to support a rural hospital in Papua New Guinea.

Our POWER product range

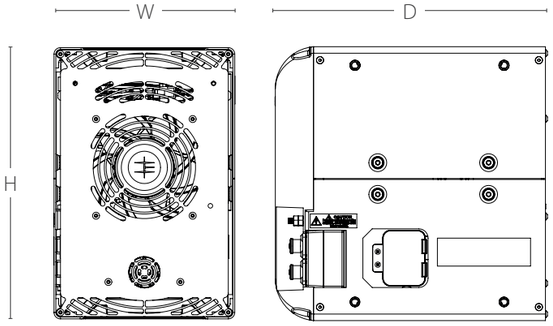
IE-POWER 1T

Through life power:	1kW
Voltage range:	24V – 48V
Module mass:	~10kg
Dimensions:	196mm (W) × 294mm (H) × 294mm (D)
Mobile lighting towers and welfare cabins. Construction, telecoms, power generation.	
Traditional through-flow for air cooling.	



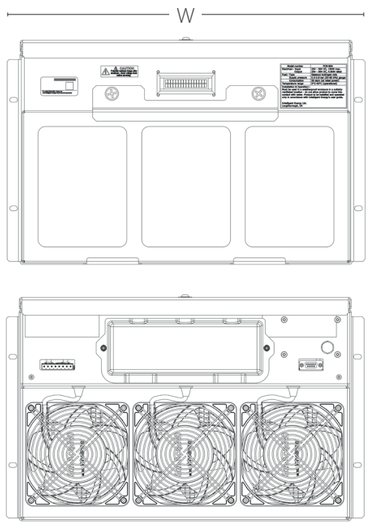
IE-POWER 1U

Through life power:	1kW
Voltage range:	24V – 48V
Module mass:	~10kg
Dimensions:	196mm (W) × 294mm (H) × 294mm (D)
Materials handling equipment, AGVs. Warehousing and logistics.	
Patented u-flow air cooling.	



IE-POWER 4T

Through life power:	4kW @ 48V
Voltage range:	24V – 48V
Module mass:	~20kg
Dimensions:	450mm (W) × 300mm ('7U') (H) × 500mm (D)
Stationary and standby power units. Telecoms, construction, micro-grids.	
Traditional through-flow for air cooling.	



Applications



TELECOMS

Access to the Internet is critical in the modern world, calling for reliable, robust, long-running standby power at cellular signal relay sites where grid supply is intermittent or unreliable.

Replace polluting diesel generators with carbon emissions-free standby power for telecom sites.



CONSTRUCTION

Emission-free solutions can be implemented to create a safe working environment without compromising on performance, equipment quality, efficiency or power output. Commercially available solutions for the construction sector already include welfare cabins, lighting towers and standby power.



MATERIALS HANDLING

Working closely with our partners, we have developed direct battery replacement products for a range of materials handling equipment. The uniquely compact, robust design and high-power output make these modules perfect for forklift trucks, cherry pickers, AGVs and other demanding applications where efficiency and reliability are key.

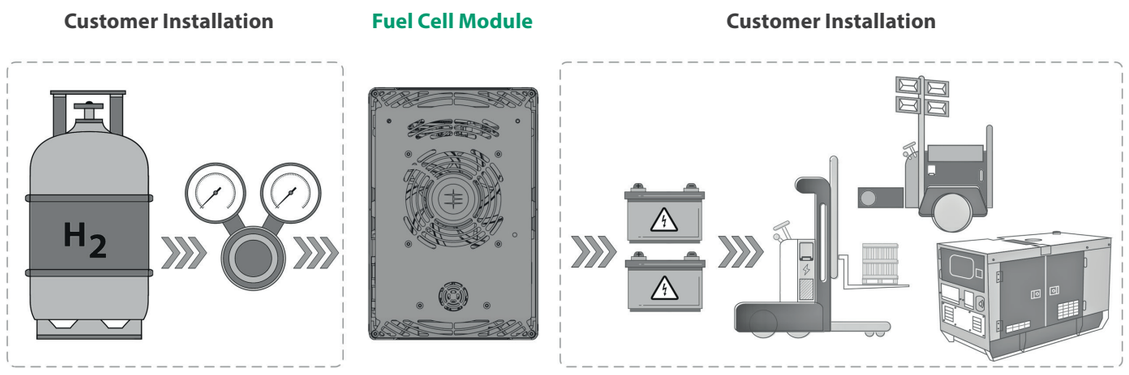


STATIONARY POWER AND MICRO-GRIDS

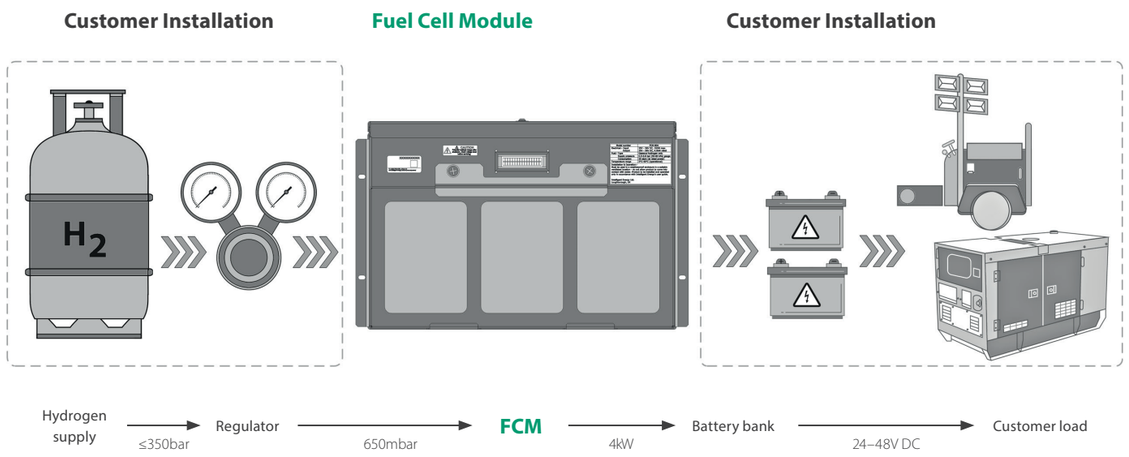
Hydrogen fuel cells provide the means for zero-emission electrification. When working as a hybrid system with batteries and electrolysers, hydrogen fuel cells can be self-sufficient and are an ideal alternative to diesel generators, supplying power to areas that cannot rely on the grid.

System Integration

IE-POWER modules are easy to integrate and are designed to work with most types of batteries making them suitable for a wide range of applications including materials handling, telecoms and micro-grids. The basic overview of a typical system incorporating our **IE-POWER 1** fuel cell module can be seen below.



The basic overview of a typical system incorporating our **IE-POWER 4** fuel cell module can be seen below.



For more information about our modules or to discuss your specific application, please **contact us.**

IE-POWER products

IE-POWER 1



IE-POWER 3/ IE-POWER 4



Who are we?

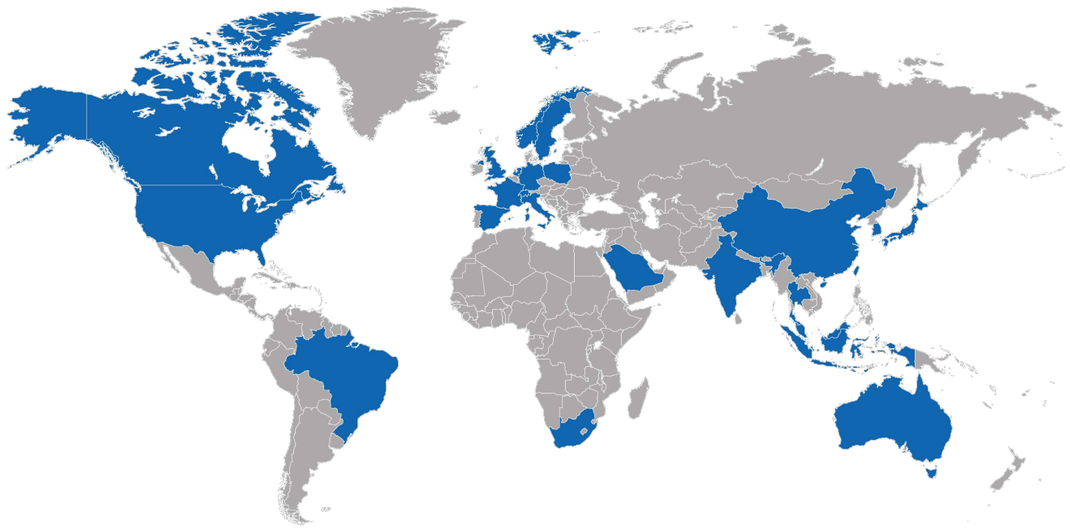
Since 2001, Intelligent Energy has been building a successful hydrogen fuel cell manufacturing business focused on the development of its lightweight, robust, fuel cell systems.

The fuel cell modules range from sub-1kW to 100kW+ for demanding applications across aerospace, stationary power, automotive, telecoms, unmanned aerial vehicles, and material handling equipment.

Where are we?

Our headquarters and manufacturing are based in the UK, with our systems being used by our partners and customers worldwide.

Located within the 750-acre Chelveston Renewable Energy Park in Northamptonshire, UK, Intelligent Energy's test facility is a dedicated site for advancing hydrogen fuel cell systems for aerospace and high-power stationary applications.



Intelligent Energy Headquarters
Charnwood Building, Holywell Park. Ashby Road, Loughborough. LE11 3GB. United Kingdom



GROUND SUPPORT

Fuel Cell Ground Support Equipment (FCGSE) vehicle at Haneda Airport.



CONSTRUCTION

Zero-emission welfare cabin on HS2 construction site.

Intelligent Energy®

Powering the hydrogen future™

Contact us: sales@intelligent-energy.com

www.intelligent-energy.com

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