



Case Study IE-POWER

Creo

Creo International are green energy consultants that specialise in hydrogen with over 15 years of industry experience.

Creo have developed a research house, located in Kent, designed to demonstrate how a self-sufficient home would be achievable in the UK.

They achieved this by coupling highly insulated building systems, such as Creo's patented ICF system, with green energy technology such as PV systems, an air source heat pump, a 28kWh battery pack and 14kW of PV panels.

As part of the research process, it was discovered that low sunlight levels in a UK winter meant that the house would still need power from the grid to operate.

Creo needed to find a solution to plug this grid dependence during the winter, this is where hydrogen was introduced.

During the summer months when sunlight levels are high the PV panels produce more energy than the house needs, this excess energy is used to run the electrolyser to produce hydrogen which is then stored.

In winter, the energy from the PV panels cannot fully sustain the house, this is where the Intelligent Energy (IE) fuel cell module converts the stored hydrogen into energy which is then fed into the house, eliminating the need for grid electricity.

Creo, together with their partners and software developers, have achieved a completely autonomous, zero emission hydrogen powered system.

As a result of Creo's successful integration of a hydrogen system, they have produced the UK's first ever on-grid hydrogen powered house (powered by IE's fuel cell).

Intelligent Energy's IE-POWER was selected by Creo due to the simple integration process and the support offered by IE when choosing the fuel cell product.

IE-POWER offers quiet operation, minimal maintenance (simply an air filter inspection or change), and zero emission at point of use (the only output is water vapour).

The Creo Hydrogen Power 2.0 System Specification

- Low maintenance
- Quick installation
- Can be remotely controlled
- Automated operation with full integration into existing properties
- 20,000+ hour lifetime
- Downsized or scaled up to meet end user requirements
- 100% green hydrogen

"Intelligent Energy's fuel cell technology and support team were critical components in executing Creo's goal of hydrogen system integration into the research house and our subsequent achievement of producing the UK's first on-grid hydrogen powered house."

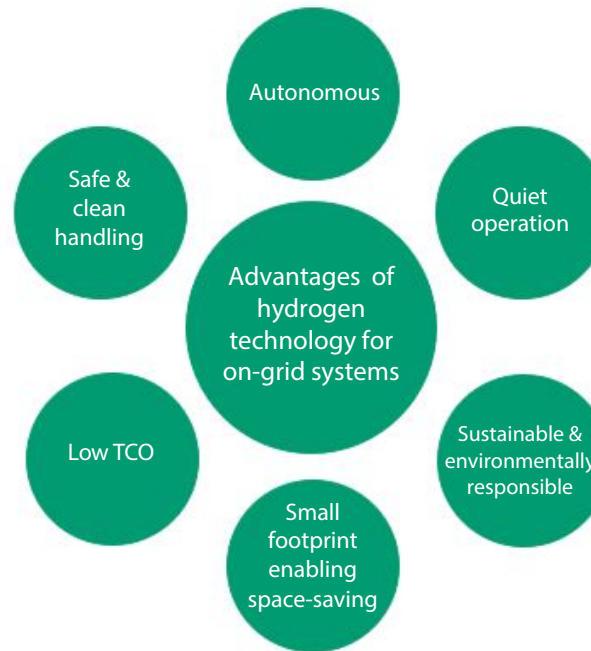
Bradley Arnold, Creo Project Manager

Applications for IE-POWER

- Backup power
- Off-grid power
- Telecommunications
- Microgrids
- Emergency power
- Auxiliary power units
- Non road mobile machinery
- Disaster recovery
- Portable power generation
- Material handling equipment
- Outdoor events

Features of the IE-POWER technology at the core of the Creo Hydrogen Power 2.0 System

- Lower life-cycle costs than standby diesel generators; with minimal service requirements
- Zero harmful system emissions at point of use
- Quiet operation
- Small footprint
- Regulated output designed for hybridisation with a 24V or 48V battery array
- Proven and reliable fuel cell system technology
- Utilises Intelligent Energy's air cooled fuel cell technology
- Assured power availability
- Modular, scalable system



+44 (0) 1509 271 271
sales@intelligent-energy.com
intelligent-energy.com

© Intelligent Energy Limited 2021. The Intelligent Energy name, logo, and other trade brands/names referenced herein are trademarks or registered trademarks of Intelligent Energy Ltd or its group companies, whether or not they are used with trademark symbol "TM" or "®". IE-Lift® is a UK registered trade mark of Intelligent Energy Limited and a Trade Mark™ of Intelligent Energy Limited.

Disclaimer: The information contained in this publication is intended only as a guide and is subject to change as a result of the constant evolution of Intelligent Energy's business and its technology. This publication and its contents (i) are not definitive or contractually binding; (ii) do not include all details which may be relevant to particular circumstances; and (iii) should not be regarded as being a complete source of information. To the fullest extent permitted by law, Intelligent Energy offers no warranty as to the accuracy of the content of this publication, shall not be liable for the content of this publication and no element of this publication shall form the basis of any contractual relationship with a third party or be used by any third party as the basis for its decision to enter into a contractual relationship with Intelligent Energy. Published by: Intelligent Energy Ltd, Charnwood Building, Holywell Park, Ashby Road, Loughborough LE11 3GB (Registered in England with company number: 03958217). Printed September 2022. All information correct at time of going to print. 62926-IE-CS-202011