

How Logan Energy Can Help

Logan Energy is the established expert on energy solutions harnessing the power of hydrogen to provide clean energy solutions. Being independent of both manufacturer and technology enables Logan Energy to provide impartial advice on the alternative energy option that today's hydrogen technology offers. It is this independence that allows us to deliver the right solution for each and every application.

Established in 1994, no other organisation has the depth or range of experience of different applications. Logan has been responsible for the installation of over 130 fuel cell solutions and presently operates approximately 25% of the global installations equating to about 18% of the global capacity. Our in-house experts have just short of 100 man years of hands-on practical experience from feasibility studies through design and planning, detail engineering, installation, hook-up, commissioning, operations and maintenance.

Passionate about hydrogen and with an unparalleled history in fuel cells, Logan Energy does not limit itself to the application of fuel cells but includes all technologies that either generate or utilise Hydrogen. Our expertise in the application of fuels cells includes electricity generation, combined heat and power, tri-generation (heat, cooling and electricity) utilising a number of base fuels ranging from natural gas and LPG through various bio-fuels to anaerobic digester gases.

Logan Energy can help your organisation harness clean, quiet, efficient and reliable energy schemes which can run on carbon free fuels or use hydrocarbon based fuels more efficiently than other technologies and thus significantly reduce carbon emissions through:

- Fuel Cell Project Consulting
- Support OEM Product Development/Roll-out
- Project/Product Marketing and Sales
- Site Evaluations and Applications Engineering
- Turn-Key Installation Packages:
 - Construction
 - Securing local and national Incentives
 - Project Finance
 - Customer Support - Complete Operations and Maintenance Package
 - Product Training

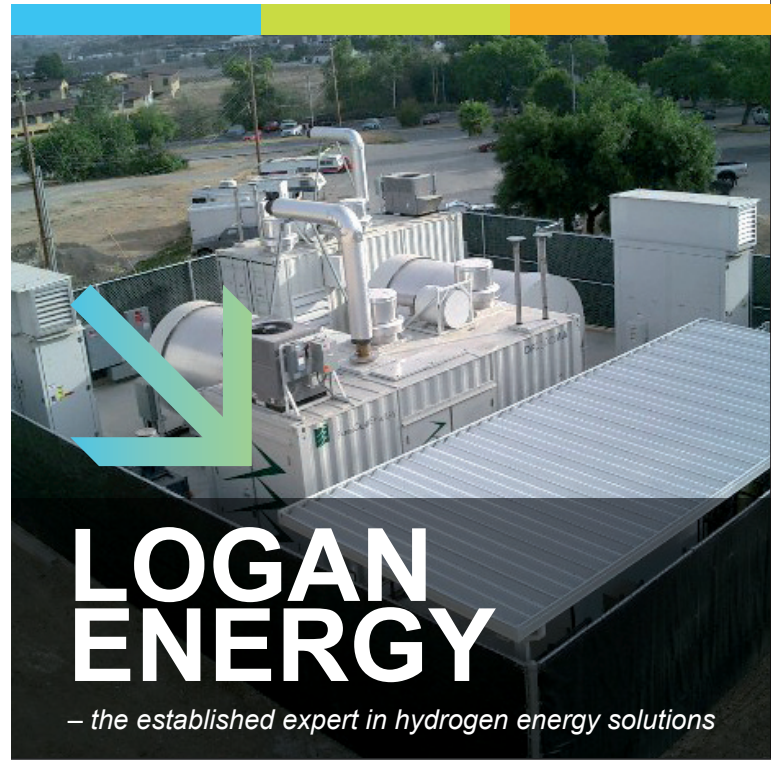
Initial Free Review

If you would like to find out if fuel cells are a viable option to consider for your organisation or project, we'll be happy to review your application without obligation – or fee!

Contact John Lidderdale or Bill Ireland by email at mail@loganenergy.eu today for your free initial review.

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Hydrogen fuel cells provide high quality, high efficiency power and heat quietly and have a low to zero carbon footprint depending on the fuel source.

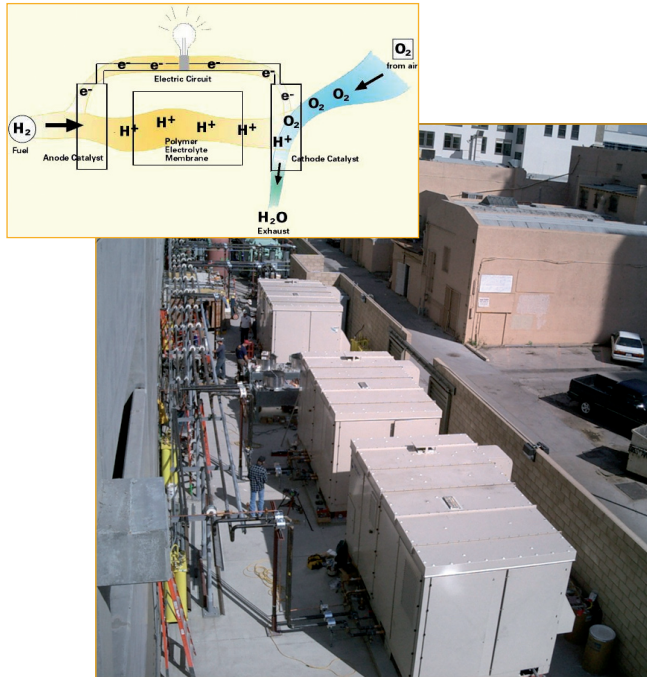
With over 500 Megawatts successfully installed across the world in a wide variety of applications, fuel cells are a tried and tested alternative energy solution.

Logan Energy has been involved in over 130 of these installations which is why we are the established expert on hydrogen energy solutions.

Logan Energy can help you identify how you could benefit from the latest Fuel Cell technology and harness this clean, quiet, efficient and reliable energy source.

Fuel Cells

The proven energy source that's clean, reliable and efficient



What are Fuel Cells?

Fuel cells convert hydrogen and oxygen into electricity, heat and water. They do this quietly and efficiently and as the only by-product is hot water, they generate power without pollution.

As Hydrogen is not always readily available or cost effective, most fuel cells for Combined Heat & Power or Power Generation are designed to run on a variety of fuels such as fossil fuels, hydrocarbons, bio-fuels or digester gases. The fuel is reformed within the fuel cell package to generate the required hydrogen stream.

In addition fuel cells are more reliable than mechanical plant and can provide an availability better than 95%.

Advantages of Using Fuel Cells

1. Reduced Carbon Footprint

When fuelled by pure hydrogen the only by-product is water. The inherent higher efficiency of a well integrated fuel cell installation can significantly reduce your carbon footprint.

2. Highly Efficient

Electrochemical conversion of the fuel is more efficient than combustion so produces more electricity per kilowatt of input fuel. In addition, heat produced can often be used in a process known as CHP or Combined Heat, Cooling and Power (Tri-generation). Overall system efficiencies can approach 90%. In addition, fuel cells remain efficient at much lower loadings than reciprocating machinery.

3. Virtually Silent and Vibration Free

The electrochemical process used by fuel cells means there are no moving parts to generate noise or vibration.

4. Highly Reliable

The lack of moving parts means fuel cells can be an incredibly reliable source of energy providing availability of over 95%.

5. High Quality Power

Fuel cells provide a virtually perfect sine wave for sensitive electronic equipment.

6. Cleaner

When powered by fossil fuels the electrochemical conversion produces far less pollution than the alternative combustion based technologies and when powered by hydrogen produces minimal pollution.

7. Independence from Traditional Infrastructure

Fuel cell systems can operate in Grid parallel or Island mode and switch easily from one to the other making them remarkably efficient as prime power for data centres and other ultra-high-availability installations.

Applications for Fuel Cells

Logan Energy has installed over 130 Fuel Cell power plants exceeding 9MW capacity at over 75 locations. Customers include Department of Defence, various government agencies, fuel cell manufacturers, utilities, banks, universities, commercial developers and other business centres. There are many applications that suit fuel cells and are totally dependent on the individual application.

Uses include:

- Grid independent generators for on-site services in areas that are off grid or require reliable energy supply with grid backup.
- Backup assurance for critical systems and ensuring a reliable power supply for industries such as telecommunications.
- Substitute primary on site power to reduce carbon footprint.
- Converting waste to energy by generating power and heat from digester gas produced by industries such as landfills, waste water treatment facilities, food processors, distilleries and breweries.