renewable planet
energy efficiency providers

BG-15

The worlds most efficient fuel cell

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What is a Fuel Cell?

The most efficient small-scale electricity generator

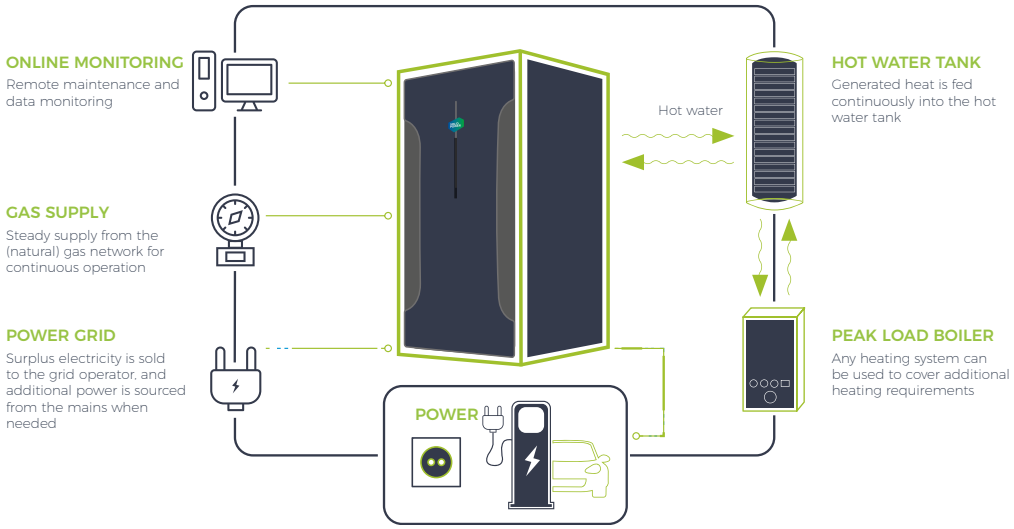
A fuel cell uses natural gas from the grid to generate electricity within your own building and significantly reduce the amount you need to buy from conventional electricity suppliers. Heat created in the generation process will also provide up to 200 litres of hot water each day, reducing the energy required by your heating or hot water system.

It is much more efficient at generating and delivering electricity than the grid. The gas it consumes to make electricity is significantly cheaper per unit than electricity purchased from the grid, which can reduce your bills and carbon emissions by up to 50%.

A fuel cell is a micro combined heat and power system (mCHP). It uses innovative fuel cell technology to separate natural gas into carbon and hydrogen using an electrochemical reaction that delivers clean, controllable, on-site electricity for residential as well as business use.

Producing up to 13,000 kWh of electricity per year, fuel cells are best used where annual electricity demand is greater than 10,000 kWh, whether in a single building or shared between multiple homes.

How the Fuel Cell Works



Producing Your Own Electricity

Higher efficiency means higher savings

Whether it's electric cars, digitalisation or smart homes – the increasing electrification affecting many areas of life and work is in full swing and the demand for electric power is rising continuously. Therefore, the electricity produced with fuel cells can be up to 50% cheaper compared to traditional supply via the grid.

The high electrical efficiency also allows for fuel cells to operate throughout the year - regardless of the weather or the season. It can produce up to 13,000 kWh that you can either use on-site or feed into the grid to receive compensation.

Highest electrical efficiency means

- Reduction of natural gas consumption
- Significant reduction in energy costs
- Lower carbon emissions

1.5kw Electric Power
Up to 13,000kwh of electricity per year

Additional Heat
E.g. for your warm water

Continuous Operation
Reliable energy 24/7

Efficient & Affordable
Protects the environment & your wallet

Easy Installation
Compatible with all heating systems

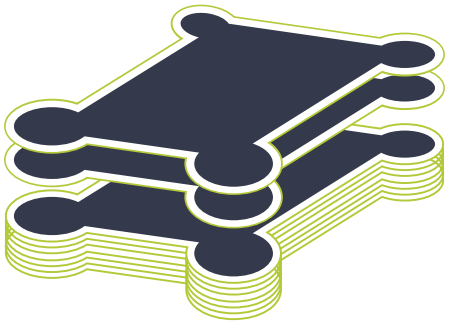
App Control
By Smart-phone, Tablet or Desktop PC

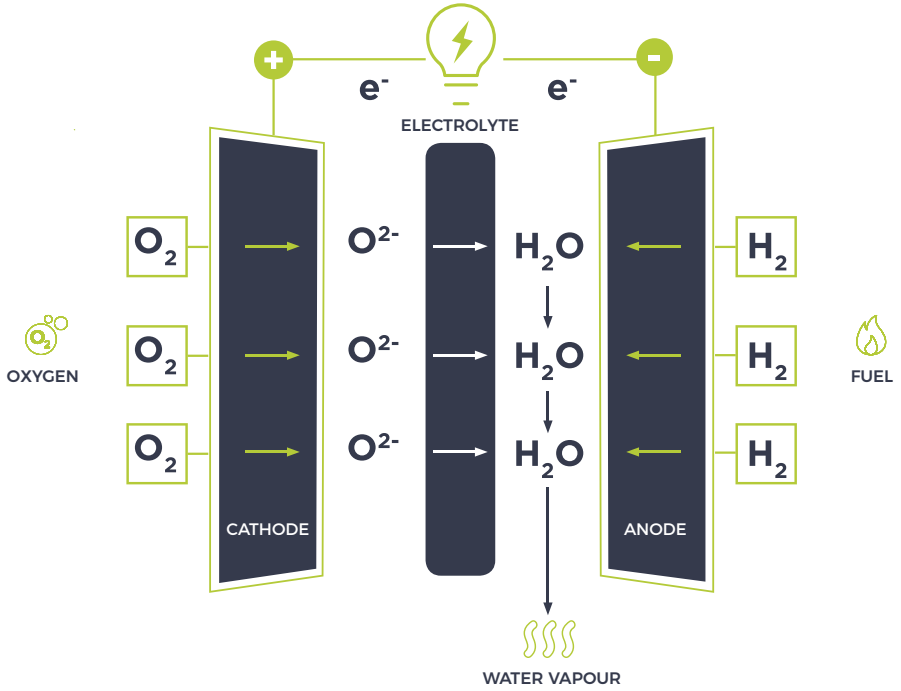
Improves the energy performance of your building
No expensive additional measures

The Fuel Cell Module

How does a fuel cell work

Individual fuel cells consist of a membrane that is charged with oxygen on the one side and with hydrogen on the other. The oxygen is extracted from the ambient air, while an innovative process is applied to obtain the hydrogen from conventional and widely available natural gas. The cell's special properties compel the oxygen to pass through the membrane and bond with the hydrogen. This process generates electrical voltage that is output as usable electrical energy.





High Efficiency

Significant CO2 reductions

Creating electricity on site with fuel cells avoids the inefficiencies of heat losses from conventional power stations and the transmission losses from the electricity distribution network. Fuel cells are the most efficient small-scale generators in the world, producing continuous power at 57% efficiency.

The electrochemical reaction generates very high temperatures that are converted into 'free' hot water by a waste heat recovery circuit, taking the overall efficiency as high as 85%.

The amount of CO2 released in a fuel cells power production process is on average 50% less than the carbon released by conventional power stations. This can save up to 4 tonnes of CO2 emissions per year.

Energy Balance

Quiet, compact, efficient, compatible with any heating system

Whether it's a detached home or a commercial business: the BG-15 can be easily installed in your boiler or utility room thanks to its compact dimensions. It only requires gas, water, electricity and Internet connections to be fully operational.

The BG-15 is designed as a power solution to complement the current heating system. This transforms any heating system into a "powerhouse" that can be used to produce heat and power. Installing a BG-15 improves the building's overall efficiency and can ensure compliance with national requirements.

The system runs very quietly and without vibrations, which makes the BG-15 perfect for companies, offices and as well as residential properties. Moreover, it can usually be connected easily to renewable heat and electricity sources such as solar thermal, photovoltaic systems and heat pumps.

Easy To Install

Easy to maintain

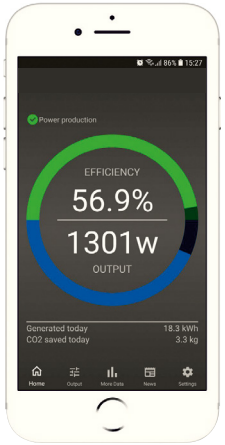
Fuel cells are easy to install, requiring only standard connections to the gas network, mains electricity and water, and broad-band internet. They are compact and occupy minimal floor space in either a plant room or utility area.

Our installation team is fully trained and qualified to connect your Fuel Cell to the mains utilities.

The fuel cell will be monitored and controlled remotely over the internet by our Fuel Cell net system. This enables us to monitor power generation on a 24/7 basis and lets you see how the system is performing.

Installation requirements

- Connection to gas network
- Permanent connection to the power grid
- Mains water connection
- Broadband internet



Complete Control

The BlueGEN BG-15 is conveniently controlled using a smart-phone, tablet or desk-top PC. You can keep complete control and access all the extensive data anytime and anywhere using the BlueGEN-net app. For instance you can find out how much electricity you are producing or exactly how much CO2 emissions you have saved.

Adapt the Fuel Cell to Suit Your Needs

Would you like to adapt the performance of the BlueGEN BG-15 to suit your individual needs? The BlueGEN-net app provides many different configuration options and allows you to create individual profiles. Vary the output at any time of the day. You can adjust the settings for any day, with separate configurations for weekdays and weekends, or even for every single day.

Increasing Power Demand?

Is your electricity consumption rising? Base load requirements can easily outstrip the performance of a single BG-15, especially in commercial settings. No worries though, as two or more BG-15 units can be combined easily to create a cascade. This way you will benefit several times over.

Technical Specifications

Application	Electrical power generator with heat recovery for commercial businesses, public buildings and private homes
Use	All residential and commercial buildings
Operation Mode	All-year (approx. 8,700 hours)
Fuel Type	Natural gas (biogas methane)
Fuel cell technology	Solid oxide fuel cell (SOFC)
Fuel consumption	Approx. 2.7 kWh (Hi)
Power output	Max. 1.5kW, min. 0.5kW
Electrical efficiency	Up to 55%
Thermal output	Up to 0.85kW
Heat recovery	Exhaust gas heat exchanger
Overall efficiency	Up to 88%
Electrical energy generated/year	~ 13,000kWh
Operation	Fully automatic start/stop
Control	24-h remote monitoring by the manufacturer, Internet/smart-phone app control
Weight	250kg
Height x width x length	1,200mm x 550mm x 800mm 46,8db (A)
Decibels	46.8db (A)
Service interval	12 months
Full maintenance service	Yes (120 months)
Funding	Funding options available

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Customer Service: 9am-5pm Mon-Fri
Call **0800 019 65430**

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