Generating renewable electricity

Micro combined heat and power

Benefits

- generate electricity as a by-product of heat
- cut your carbon dioxide emissions
- easily replace a conventional boiler

Micro combined heat and power (micro-CHP) is a technology that generates heat and electricity simultaneously, from the same energy source, in individual homes or buildings. The main output of a micro-CHP system is heat, with some electricity generation, at a typical ratio of about 6:1 for domestic appliances.

A typical domestic system will generate up to 1kW of electricity once warmed up. The amount of electricity generated over a year depends on how long the system is able to run.

How does micro-CHP work?

Domestic micro-CHP systems are usually powered by mains gas or liquified petroleum gas (LPG), however some models are now powered by oil or bio-liquids, including biodiesel. Although gas and LPG are fossil fuels rather than renewable energy sources, the technology is considered a low carbon technology because it can be more efficient than just burning a fossil fuel for heat and getting electricity from the grid.

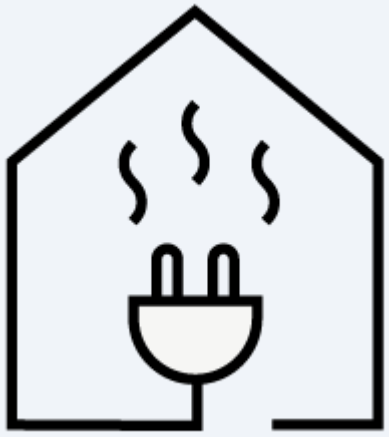
Micro-CHP systems are a similar size and shape to standard domestic boilers. They can be mounted on a wall or can stand on the floor.

The main difference between a micro-CHP system and a standard boiler is that a micro-CHP system can generate electricity while heating water – a boiler cannot do this.

Fuel cell CHP technology

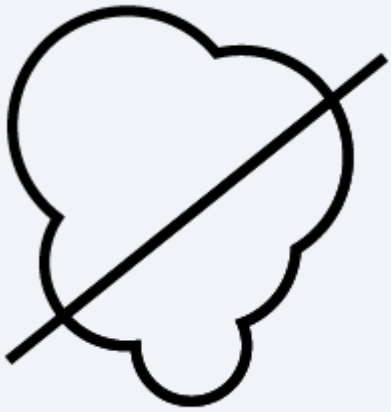
Fuel cell CHP technology generates electricity by taking energy from fuel at a chemical level rather than burning it. It uses a steam reformer to convert methane in the gas supply into carbon dioxide and hydrogen. The hydrogen then reacts with oxygen in the fuel cell to produce electricity. Waste heat is produced in this process, which is used within a hot water heating system.

Benefits of micro-CHP



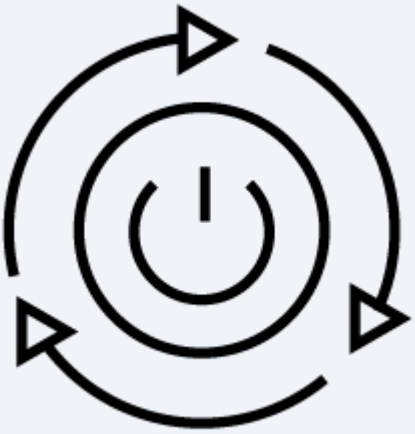
Generate electricity while making heat

When the micro-CHP is generating heat, the unit will also generate electricity to be used in your home (or exported).



Cut your carbon footprint

By generating electricity on-site, you could be saving carbon dioxide compared with using grid electricity and a standard heating boiler.



Easy installation

For the householder, there is very little difference between a micro-CHP installation and a standard boiler. If you already have a conventional boiler, then a micro-CHP unit should be able to replace it, as it’s roughly the same size.

Standard maintenance

Servicing costs and maintenance should be similar to a standard boiler, although a specialist will be required.

Energy Saving Trust is an independent organisation – working to address the climate emergency.

A respected and trusted voice on energy efficiency and clean energy solutions, we continue to work towards a smart, decarbonised, decentralised energy system.

Taken from the Energy Saving Trust website

- We empower millions of householders every year to make better energy choices.
- We deliver transformative energy programmes working with governments.
- We support businesses with energy efficiency strategies, research, assurance and communications, enabling them to play their part in building a sustainable future.