

Fact Sheet 7: Combined Heat and Power (CHP)



A CHP unit fuelled by oil. Acoustic insulation removed

What are they?

Combined heat and power (CHP) systems are a cross between an electric generator and a boiler. They supply both electricity and heat at the same time.

What do they do?

CHP systems provide both heat and electrical power. They can replace a conventional boiler, and also generate electricity to cover a portion of your requirement. Generating both heat and power from the same fuel is much more efficient than generating them individually.

How do they work?

An engine that burns fuel to generate electricity generates a lot of heat e.g. a power station's wasted heat can be seen in the clouds of water vapour from the cooling towers. This heat is wasted energy. CHP systems capture this heat so it can be used for something useful. This increases the amount of energy you can get from burning a fuel: as well as running an engine, it also collects heat that would otherwise have been wasted. Only accredited micro-CHP units are eligible for the Feed-in Tariff scheme.

Where do they go?

Domestic sized or micro-CHP are the size and shape of a conventional boiler, and are designed to replace them.

For commercial properties, the CHP would be larger. CHP units are becoming popular with large commercial buildings that require a lot of heating, such as supermarkets.

What issues need to be considered?

A CHP will start working in response to a demand in heat. When it runs, it also supplies an amount of electricity to supplement your electricity supply. A CHP will save money on electricity bills, but not replace your electricity supply. A domestic property has a long period of low demand for electricity with regular short periods of high demand. A CHP large enough to supply these periods of high demand would be too large.

What are the planning requirements?

Most householders can carry out small extensions or additions to their homes without the need for planning permission. This is known as '**permitted development**'.

Planning permission would not be required for any internal components of the system, and fitting an external flue onto a house or block of flats will normally be permitted development, providing the conditions outlined below are met:

- Flues are less than 1m above the highest part of the roof (excluding any existing chimneys)
- In a conservation area and World Heritage Site the flue should not be fitted on a wall or roof slope that fronts a highway.

If the building is listed or in a conservation area, it is always advisable to check with your local planning authority before a flue is fitted as other consents may also be required.

Installing a larger CHP installation in non-domestic buildings e.g. supermarkets or factories will require planning consent, unless contained within an existing site building. This means that issues such as access, visual impact, noise, construction activity etc. will all need to be addressed in the planning application.

Much larger commercial scale CHP plants may also require authorisation from the Environment Agency regarding emissions and wastes; in particular, larger plants installed within urban areas will need to demonstrate that they are not causing breaches of air quality standards and targets. Plants may also require approval from other regulatory bodies regarding their use of gas as a fuel.

Please note: if you wish to install a new heating appliance or flue, Building Regulations will also apply.

More Info

'CHP Focus' is a new Department of Energy and Climate Change (DECC) initiative to support the development of combined heat and power in the UK. <http://chp.decc.gov.uk/cms/>

The companion guide to planning policy statement 22 provides more information on the planning and development of renewable energy schemes across England:
<http://www.communities.gov.uk/publications/planningandbuilding/planningrenewable>

Please Note: National planning guidance is currently under review and the companion guide to planning policy statement 22 is referred to for information only.