Renewables Factsheet #2

MICRO COMBINED HEAT AND POWER (CHP)

SUPPORTED BY

NWEEP | CLASP.

Cheshire West and Chester

Cheshire East Council

Warrington Borough Council

OVERVIEW

Combined Heat and Power (CHP) is a technology similar to conventional small scale electricity generators, but the waste heat from cooling the engine and from the exhaust flue is harvested and used to heat space and water. However, the main output of a CHP is heat, and electricity is usually only generated when heat is needed.

Two main types of CHP commercially available are the stirling engine and the internal combustion engine, although some do incorporate fuel cells.

The typical ratio of heat and electricity production from a domestic scale CHP is 2:1.

CHPs are suitable in many types of properties. They can be installed in domestic buildings, apartment blocks, office buildings or complexes, shopping complexes, and industrial complexes. Micro CHP is usually the scale installed in domestic properties.

SUITABILITY

Micro-CHP systems should always be installed and run to meet the heating needs of the building, rather than to generate more heat than is needed just to meet electricity demand. CHPs are most suitable in a building where heat demand is quite high and consistent, for example very poorly insulated properties which cannot be improved using available technology.

A typical micro CHP system to heat a domestic property should also generate about 1kW of electricity.

Scale of Installation, Costs and Savings

A micro-CHP unit is similar in size to a conventional boiler and there is little additional installation complexity apart from connection of the electricity generation and provision for metering and feed-back to the national grid or electricity storage facility.

The typical cost for a Micro-CHP starts at £5,500.

Micro CHP qualifies for the Feed-In-Tariffs, if installed by a Microgeneration Certification Scheme accredited installer. This incentive is comprised of three parts.

- The Feed-In-Tariff itself, currently paying approximately 10 pence for every kWh generated by CHP. A typical system would generate around 1kW while the heating system was operating. This is a 10 year contract and is index linked.
- The free use of electricity generated.
- Payment for each kWh fed into the grid, through a contract with a Utility Company.

Further information on Feed-In-Tariffs can be found the Department of Energy and Climate Change's website:

www.decc.gov.uk.

Planning

Micro-CHP is one of the technologies covered by Permitted Development Rights, but this generally only applies to flues on domestic properties. Therefore it does not need a planning application before it can be installed. However, there are a few caveats, namely:

a. Where the flue exceeds 1m above the roof height (excluding the chimney).

b. Where the installation is on the principal elevation and visible from a road in buildings in Conservation Areas and World Heritage Site.

Further details on planning considerations are provided later in this factsheet.

Sources of further information and advice

The following websites provide further information and advice on combined heat and power:

a. **Energy Saving Trust:**
http://www.energysavingtrust.org.uk/Generate-your-own-energy/Micro-combined-heat-and-power-micro-CHP

b. **DECC:**
http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/explained/microgen/micro_chp/micro_chp.aspx

c. **Direct.gov.uk:**
http://www.direct.gov.uk/en/Environmentandgreenerliving/Energyandwatersaving/Renewableandlowcarbonenergy/DG_072634

d. **Local Government Improvement and Development**:
http://www.idea.gov.uk/idk/core/page.do?pageId=23051802

e. **The Microgeneration Certification Scheme:**
http://www.microgenerationcertification.org/mcs-consumer/installer-search.php

PLANNING CONSIDERATIONS

Permitted Development Considerations

Planning permission is not normally needed when installing a micro-combined heat and power system in a house or on non-domestic premises if the work is all internal. If the installation requires a flue outside, however, it will only normally be permitted development, subject to certain conditions, principally that the flue does not exceed 1m above the roof height (excluding the chimney) and that it is not installed on the principal elevation and visible from a road in Conservation Areas.

However, planning permission may be required if the Combined Heat and Power project requires an outside building to store fuel or related equipment, the same rules apply to that building as for other extensions and garden outbuildings. For further information on permitted development rights, please refer to the:

Planning Portal:
http://www.planningportal.gov.uk/permission/

If you live in a Listed Building or a Conservation Area, you should contact the Council to check on Local Policy and other planning regulations relating to Combined Heat and Power technology.

As yet the permitted development rights for Combined Heat and Power flue have not been extended comprehensively to non-domestic development, although these changes have been the subject of consultation and may be made in the future.

Advice should always be sought from your local planning authority if you are unsure whether your development falls under permitted development rights. Your local planning authority will be able to advise you on the need to obtain planning permission.

If you want certainty that your renewable energy proposal is considered permissible (in that you do not need to make a planning application) you should apply for a Lawful Development Certificate (LDC).

Development Management and Planning Policy Considerations

If planning permission is required for a building to house a Combined Heat and Power plant or to store fuel, the main planning considerations are likely to be the size, height and mass of the structure; its proximity to property boundaries; its location in relation to the original building; its impact on its surroundings and surrounding land users; and any designations or allocations associated with the land on which the development would occur.

If planning permission is required for a flue for the Combined Heat and Power system, the main considerations are likely to be the location of the flue; its dimensions; how well it relates to the character of a building and its surrounding area, the visual impact on the building, the area where it is located and on neighbourhood amenity.

Your local planning authority will be able to assist you in identifying the issues and planning policies that will be need to be taken into account for a particular proposal. Advice should always be sought from your Local Planning Authority before submitting an application.

Conservation Area or Listed Building Considerations

Visual impact is a particular consideration within Conservation Areas and on listed buildings.

On Listed Buildings, Combined Heat and Power flues are unlikely to be acceptable on any visible roofslope, but may be acceptable in hidden roof valleys, on roofs fully concealed behind parapet walls.

Key considerations for planning permission of buildings to house the Combined Heat and Power plant or to store fuel, which are associated with Listed Buildings, will be the visual impact of the proposal and the extent to which it reflects the character of the area and the building(s) with which it is associated. Other considerations include the size, height and mass of the structure; its proximity to property boundaries; its location in relation to the original building; its impact on its surroundings and surrounding land users; and any designations or allocations associated with the land on which the development would occur.

It is more than likely that listed building consent will also be required when proposing development which could affect a listed building. This is in addition and separate to the granting of planning permission, but similarly seeks to ensure that any alterations to a listed building, whether internal or external, do not alter the special interest of the building.

Particular care needs to be taken in Conservation Areas, where flues will not be acceptable if visible on prominent roofs, when viewed from the street or other public vantage points. Their acceptability on less prominent roofs may depend upon their size. In terms of visual impact, placing Combined Heat and Power flues on side or rear pitched roof slopes, concealed valley roofs and on flat roofs hidden by parapets is less likely to affect the appearance of the property and character of the area (including Conservation Areas).

PLANNING CONSIDERATIONS

Within Conservation Areas buildings to house the Combined Heat and Power plant or to store fuel, the key considerations will be the visual impact of the proposal and the extent to which it reflects the character of the area and the building(s) with which it is associated. Other considerations include the size, height and mass of the structure; its proximity to property boundaries; its location in relation to the original building; its impact on its surroundings and surrounding land users; and any designations or allocations associated with the land on which the development would occur.

Advice should always be sought from your Local Planning Authority before submitting an application, if you think it could affect a listed building or conservation area.

In addition to listed buildings and Conservation Areas, the development of CHP systems could affect scheduled monuments, historic parks and gardens, historic battlefields and World Heritage Sites. There will be other considerations to take into account when proposing development within or in the vicinity of these sites and areas. Local designations may also apply to specific sites and buildings.

Advice should always be sought from your Local Planning Authority before submitting an application.

Planning Application Requirements

When planning permission is required, the following information will normally be required in support of a planning application a CHP system in or on a domestic or non-domestic property. Guidance on how to make a planning application can be obtained from:

Planning Portal website:
http://www.planningportal.gov.uk/planning/applications/howtoapply

National requirements for all planning applications will apply to any proposal.

These can be found at:

http://www.communities.gov.uk/publications/planningandbuilding/validationguidance

Alternatively, this information can usually be obtained from your local planning authority, along with details of the application fee that will apply.

It is recommended that you contact your local planning authority for further advice before submitting an application.

Planning Application Requirements

Local planning authorities can also set out local requirements for the information that will be required in support of a planning application, but in most cases it is likely that the following information would be needed to support an application:

- Design and Access Statement
- Landscape and Visual Assessment
- Noise Impact Assessment
- Air Impact Assessment
- Conservation Statement and Heritage Impact Assessment
- Energy Statement

Please note that this is not an exhaustive list and additional information may be required to assess an application depending on the characteristics of a site. It is likely that additional information would also be required to support larger scale schemes.

It is recommended that you contact your local planning authority for further advice before submitting an application.

When it is believed that equipment is permitted development and considered permissible (in that you do not need to make a planning application) you should apply for a Lawful Development Certificate (LDC). The fee for LDC applications relating to proposed development is half of that payable for a planning application. Further information on LDCs can be found at:

http://www.planningportal.gov.uk/planning/applications/howtoapply/

or alternatively you should contact your local planning authority.

Building control requirements

Generally, if you wish to install a Combined Heat and Power system, it will be required to comply with Building Regulations; equipment, installation and testing, must all comply with the relevant standards.

A flue associated with a Combined Heat and Power system will also need to comply with Building Regulations, key considerations will be the strength of the building to support the piping and the safety of the installation.

If a new building is to be constructed to house a Combined heat and Power plant, this building is likely to need to comply with building regulations (although there are exemptions). Key considerations will be the flooring; foundations; walls below ground level; ventilation; energy efficiency; structural openings; doors and windows; drainage; electrics; external walls; party walls; kitchens and bathrooms; internal walls and roofs .

It is recommended that you contact your local authority Building Control section for further advice when considering a particular proposal.

FURTHER INFORMATION ON PLANNING REQUIREMENTS WILL BE AVAILABLE FROM YOUR LOCAL COUNCIL.

CHESHIRE EAST COUNCIL

Development Management

T: 0300 123 5014
E: planning@cheshireeast.gov.uk

CHESHIRE WEST AND CHESTER COUNCIL

Development Management

T: 0300 123 7027
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WARRINGTON BOROUGH COUNCIL

Development Management

T: 01925 442819
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