

BRECON BEACONS NATIONAL PARK



HEAT PUMPS (GROUND / WATER / AIR) IN THE BRECON BEACONS

OVERVIEW

This information sheet is for individuals who are considering the installation of heat pumps on their property.

The NPA acknowledge the significant environmental benefits of energy efficiency and renewable energy but must satisfy stringent environmental and design factors. We recommend that energy efficiency improvements should always be considered before fitting renewable energy schemes, for private or community use, will generally be acceptable by the NPA, and believe that their potential is vast and under utilised. This document will describe many of the relevant issues you need to consider before consulting one of the NPA's Planning Officers.

HOW DO THEY WORK?

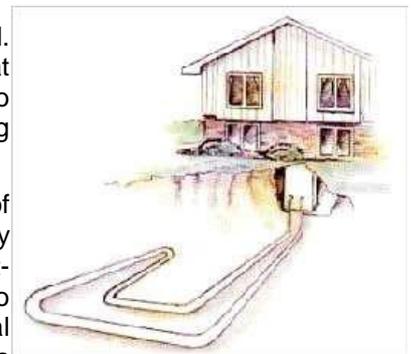
The UK ground temperature just below the surface remains around 10°C throughout the year. Heat Pumps access this thermal energy through loops of special pipe buried in horizontal trenches or through a vertically drilled borehole.

Horizontal systems tend to be cheaper whilst vertical systems are generally more efficient. The amount of land available on the property is the principle factor in determining which system is used.

The water pumped through the systems pipes is lower than the ground in which

it's buried and so it is slightly warmed. This water is then transferred to a heat pump, which raises the temperature to around 50°C, ideal for space heating systems.

Heat Pumps typically provide 4 units of energy for every 1 unit of electricity used and are considered to be a cost-effective, safe and viable alternative to heating with fossil fuels. The principal market for heat pumps are properties with a stable heat demand.



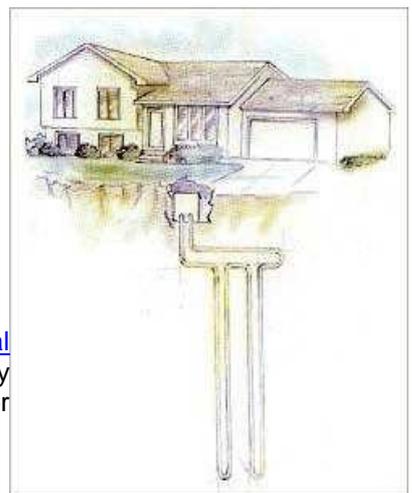
Above: Horizontal GSHP

Below: Vertical GSHP

SITING, DESIGN AND ARCHAEOLOGY

Heat pumps ground loops can be laid in the ground or in water such as rivers, lakes or ponds. As the installation of ground source heat pumps requires the excavation of trenches or deep boreholes it is important to consider in advance whether archaeological

remains exist on the site and what the implications of the Heat Pump might be. Information on the location of scheduled monuments, listed buildings and other known archaeological sites is available from the National Park Authority



COST AND MAINTENANCE

Heat pumps have proved to be very reliable and can have a design life of 25 years or more. Costs vary due to a range of factors such as length of pipe, depth of borehole and geographic location. Heat pumps generally require very little maintenance. A typical 8kW system costs £6,400-£9,600 plus the price of connection to the distribution system. This can vary with property and location.

Which installer do I Choose:

The NPA has a list of [certified local installers](#) on their website. Alternatively please contact the NPA on the number below for further information.

For further information contact:

Brecon Beacons National Park Authority

Plas y Ffynnon, Cambrian Way, Brecon, LD3 7HP

Grants

A number of grants are available for heat pumps systems. Please contact the NPA for current information.

Tel: (01874) 624437

www.beacons-npa.gov.uk

