



BRECON BEACONS
NATIONAL PARK



SOLAR THERMAL WATER HEATING IN THE BRECON BEACONS

IN THIS PLANNING ADVICE NOTE:

OVERVIEW	1
PERMITTED DEVELOPMENT	1
PLANNING SPECIFICATIONS	1
HOW SOLAR THERMAL HEATING WORKS	2
SYSTEM ORIENTATION	2
COST AND MAINTENANCE	2
GRANTS	2

Environmental effects:

Negligible noise

Minimal visual impact

Minimal CO₂ and air pollution (negligible amount produced if a pump is powered from non-renewable electricity)

OVERVIEW

This PAN is for **householders** who need to know whether they require planning permission to install Solar Water Heaters at their home. It does not apply to buildings other than dwelling houses, flats and maisonettes. For advice relating to Farm buildings, community buildings, business premises, listed buildings or converted barns please contact the National Park Authority.

The NPA acknowledge the significant environmental benefits of **energy efficiency** and **renewable energy** and believe that their potential is vast and under utilised. Energy

Free standing panels, which are not fixed permanently to the ground i.e. they can easily be moved, are not considered to be development and do not therefore require planning permission. If however they are permanently fixed e.g. concreted into the ground or so large as to not be easily moved, or enclosed by fencing over 1m high, they may require permission and advice should be sought from the Development Control section at the National Park.

efficiency improvements should always be considered before fitting renewable energy.

Small-scale renewable energy schemes, for private or community use, will generally be acceptable by the NPA, but must satisfy stringent environmental and design factors. This PAN will describe whether you need planning permission and if so, it will describe many of the relevant issues you need to consider before consulting one of the NPA's Planning Officers.

PLANNING SPECIFICATIONS

What should it look like:

The panels are generally fitted on to the roof and a typical home system might be 2-4m² in size. There are two basic types for domestic water heating, one looks like a simple flat black panel (flat plate collectors) and has a similar appearance to a sky-light. The other system appears as a collection of glass tubes (evacuated tube collectors).

Pipe-work for panels is generally less than 2cm in diameter and normally runs directly from the panel into the roof space. If pipe-work has a larger diameter than this and needs to be run across the plane of the roof, please contact the Development Control section for advice.



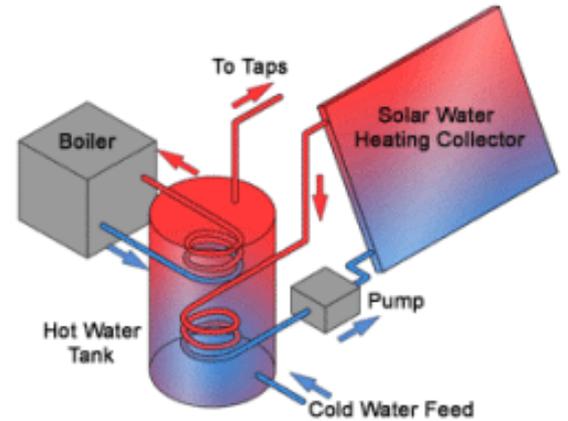
HOW DO THEY WORK?

Solar hot water systems work on the principle of water being pumped through the solar panel and heated by solar energy. It doesn't have to be shining, diffuse light is enough to heat the water. This heated water then flows through a heat exchanger, warming the stored water in the hot cylinder. In effect this serves to pre-heat the water so that less energy is required from traditional sources such as the boiler, and will often heat the water to such an extent that backup heating is not required at all. The collectors are silent and generate no emissions. In the UK, an average household will reduce its annual energy consumption levels for providing hot water by approximately 50% after

installing a solar hot water system.

What Type of System Should I Choose?

The NPA have preference for **roof integrated systems** which blend in with the built environment to minimise the aesthetic impact on the building. These types of products can serve a dual function: as building material and as a source of renewable energy.



Above: Typical Solar Thermal Water Heating System

ORIENTATION

Most solar panels will be fixed in a position to provide maximum capture of solar radiation. Installers will calculate the best orientation but generally, in the UK, the panel should face roughly south, towards the sun, and at a tilt of between 30-50 degrees from the horizontal. Solar panels can be used for a building with a roof or wall that faces within 90 degrees of south, as long as no other buildings or large trees overshadow it. Where a south facing roof is not available or if an installation is not acceptable due to its impact on the character of the building; stand-mounted solar panels may be put up in a more optimal location.

Whilst it will generally be preferable for solar panels to be mounted to the rear of the property, the NPA recognise that applicants will seek to put them on south facing roofs to maximise solar gain, regardless of whether this is a front or rear elevation.

Another consideration is that the roof must also be strong enough to hold the weight of the panels, especially if the panel is going to be placed on top of existing roof coverings.

COST AND MAINTENANCE

Solar thermal systems have been available in the UK since the 1970s and 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 size of collector, type of roof and geographic location.

Solar panels generally require very little maintenance other than ensuring they are kept relatively clean and checking that shade from trees has not become a problem.

Grants and Payback:

A home solar water heating system costs about £2,500-£4,500. By installing the system yourself the cost can be around £1,500-£2,000.

At present the typical financial payback

period on Solar Thermal is 5 – 8 years (depending on the type of system it replaces). A domestic installation could save an average household approximately half of its annual hot water requirement. A number of grants are available for solar thermal. Please contact the NPA for current information.

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

Tel: (01874) 624437

Fax: (01874) 622574

www.beacons-npa.gov.uk

