

# Solar water heating

The Cotswolds Conservation Board is the body responsible for co-ordinating the management of the Cotswolds Area of Outstanding Natural Beauty (AONB).

The Board believes that there is considerable scope for the generation of renewable energy by householders and businesses in the AONB without harming the beauty of the landscape or traditional buildings.

This leaflet is one of a series providing information about a number of renewable energy technologies which are suitable for the Cotswold landscape.\* Consideration should be given to using more than one such technology in an integrated way to maximise the potential for renewable energy generation at a particular site or building.

The Board encourages everyone to reduce energy use by making their home or office energy efficient, particularly when planning for new buildings or conversions of existing buildings.

## SOLAR WATER HEATING

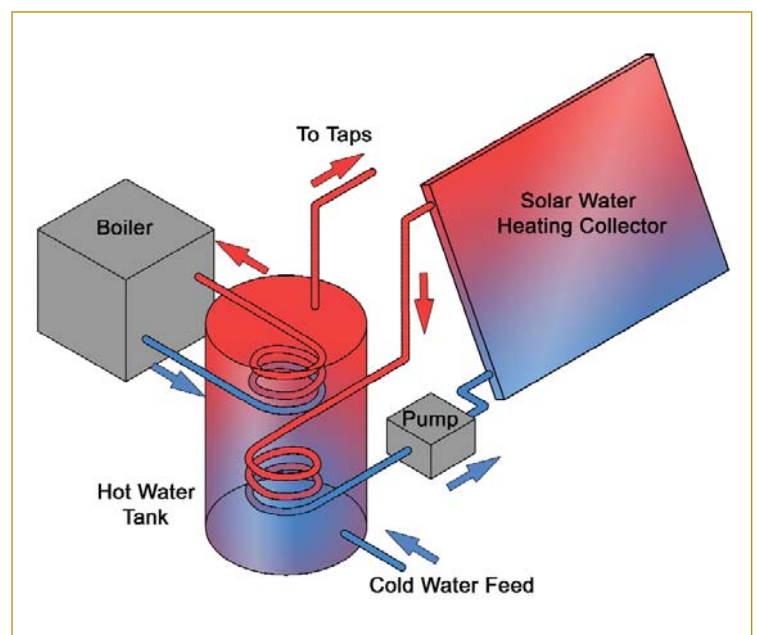
### Key points

- Heats water directly or indirectly from the sun's energy
- The amount of greenhouse gases produced to provide hot water are lower than emissions from a fossil fuel system
- Negligible amounts of air pollutants are produced when in operation
- Can be fitted onto existing buildings
- Well proven technology
- Low visual impact

### How does it work?

Solar water panels absorb sunlight to heat a fluid that is pumped through them. The heated fluid is then used to heat water in the hot water tank of a heating system. They can be used with "combi" boilers if the boiler can accept a hot feed. Solar panels are not usually used for space heating.

The solar panels have no moving parts and require very low maintenance.



Domestic water panels

\* The other leaflets in the series cover solar photovoltaics, biomass, micro-hydropower, small scale wind power and heat pumps.

## Solar water heating

### How much hot water can be generated?

The output of a panel will depend upon its construction, siting and local weather conditions. Ideally panels should be in unshaded locations, facing south and installed at an angle of 20 to 40 degrees. Such an installation on a domestic property would provide around 50% of the average Cotswold household's annual demand for hot water. A corresponding reduction in greenhouse gases produced by the use of fossil fuels for water heating would be achieved.

### Why is solar water heating suitable for the Cotswolds AONB?



Domestic solar water panels

Solar panels are either evacuated tube collectors or flat plates, usually black in colour. Both types are designed for installation on south facing roof slopes. They are a simple and effective means of providing hot water.

Solar panels would be suitable for the roofs of community, agricultural or industrial buildings where there is a need for hot water.

In all these circumstances the impact on the wider landscape or built environment is likely to be acceptable as the panels can be installed to integrate well with buildings or to have low visual impact and because they have no moving parts and are silent in operation.

Where traditional Cotswold stone buildings and roofs are concerned it would not be acceptable for the solar panels to be visible. However, many buildings have central roof gullies or back roof slopes which can only be seen from a limited number of places. In such circumstances it may be possible with care to ensure the character and appearance of the buildings are not harmed. This is particularly significant when dealing with listed buildings or in conservation areas.

Planning permission and listed building consent from your local planning authority may be required.



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