

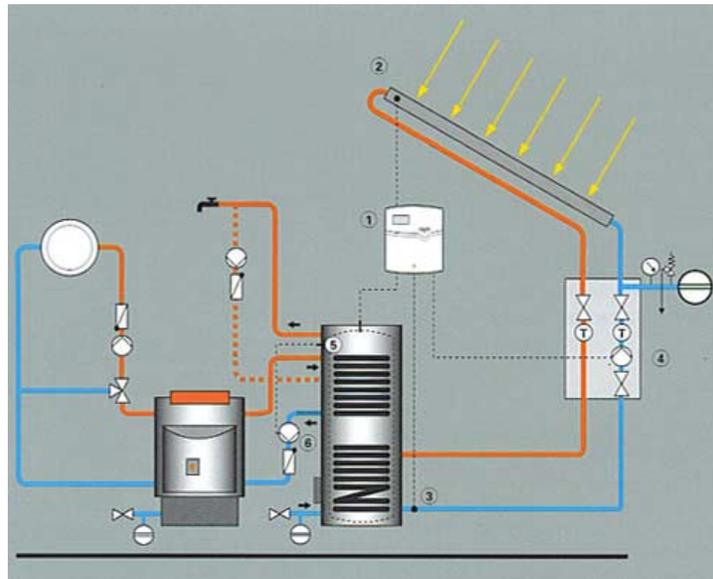
Solar technology

Solar radiation is a constant energy flow emitted by the sun equally in all directions. This energy source can be exploited through correct use and design of Solar Thermal Domestic Hot Water (DHW) systems offering large savings potential whilst at the same time making a valuable contribution to the protection of the earth's resources and the environment.

A correctly designed Solar Thermal system can save approximately 60% of the annual energy demand required for DHW heating for an average household in the UK making a significant reduction in annual fuel costs.

How does it work?

Solar Thermal works by transferring the thermal energy from the sun to usable heat energy used to heat stored water in a DHW cylinder. Solar panels mounted onto a roof surface absorb the sun's solar radiation. Coils inside the panels are connected on installation to a secondary coil inside the DHW cylinder and filled with an anti-freeze heat transfer medium. Sensors are mounted in the cylinder and on the panels. These sensors communicate with a controller turning on a pump when heat is needed and solar energy is available, directing heat from the panels to the cylinder. When the water in the cylinder is heated sufficiently the pump is turned off. A primary coil from the cylinder is connected to the traditional heating system to be used as a back up.



System efficiency

In an average home a well designed solar thermal system will provide around 60% of the domestic hot water requirements. Solar thermal systems generate energy during sunlight hours all year round even on overcast and cloudy days although optimum efficiency is achieved on warm and brighter days. In summer months the system may provide 100% of the demand requiring no additional energy at all. For the rest of the year, the solar DHW heating is supplemented by a second, independent heat source such as a condensing boiler.

Application

Solar thermal systems can be utilised in domestic dwellings, schools, office blocks and commercial applications. Virtually anywhere that has a hot water demand can benefit from the use of solar thermal energy.

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