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Solar Thermal

Solar water heating systems use heat energy from the sun to work alongside your conventional water heater. The technology is well developed and an effective means of using solar energy in the UK

How it works

There are two main types of commercially available systems:

1. Flat plate collectors

These have an absorber plate with a specially developed black coating, which maximises the solar energy collected and is usually covered by a glass sheet. Flat plate collectors are typically 30% efficient and cheaper to install.

2. Evacuated tube collectors

These enclose each pipe and its associated plate in an evacuated glass tube. The vacuum in the tube almost eliminates convection losses. They occupy a smaller area and have an efficiency of approximately 40%. Tube collectors are more expensive than flat plate collectors.

A competent professional installer should assess your situation and discuss the best configuration to meet your needs.

Costs and savings

A typical solar thermal water heating system costs £4,000 to £5,000 to install. Savings are moderate and fluctuate between seasons. During warmer months, the system can provide most of a households' hot water. However, it will generate less hot water during colder weather.

Key considerations

- **Roof area**

Approximately 5m^2 of roof space is needed for the system.

- **Orientation**

Ideally the system should face East to West through South, as direct sunlight is needed.

- **Heating and hot water appliances**

A water cylinder with a solar heating coil is needed. Many conventional boilers and hot water cylinders are already compatible with solar water heating. However, combination (or combi) boilers may not be compatible since these do not have a hot water tank.

- **Permission**

Most home solar water heating systems to not require planning permission. However, householders should always check with their local planning officers.

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