

tec the Environment Centre (tec)

Solar Thermal Water Heating

What is Solar Thermal Water Heating?

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 does it work?

There are two main types of commercially available system, a competent professional installer should assess your situation and discuss with you the best configuration to meet your needs.

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

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.

What are the costs and savings?

The cost of installing a typical solar water heating system is £3,000 - £5,000*. Solar thermal systems are eligible for the Renewable Heat Incentive (RHI).

Existing System to be replaced	Fuel Bill Savings by replacing old system** (£ per year)	Carbon Dioxide Savings by replacing old system** (kg CO ₂ per year)
Gas older (non-condensing)	£65	270kg
Electric (old storage heaters)	£75	350kg
Oil older (non-condensing)	£80	610kg
LPG older (non-condensing)	£75	500kg
Coal	£125	320kg



Sources:

*The Energy Saving Trust (2016)

**The Energy Saving Trust (Figures are based on fuel prices as of March 2016)

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