

Solar Thermal / Solar Water Heating

Solar thermal systems use the heat of the sun to preheat domestic hot water. Solar thermal systems comprise a solar collector (usually referred to as a panel), a water distribution system including a pump and controller and a thermal store/hot water cylinder.

Panels come in two main forms: flat plate (the collectors are in a box which is usually glazed and insulated behind); and evacuated tubes (where vacuum glass tubes enclose each pipe and its associated absorber plate acts as the insulation). Flat plate systems tends to be cheaper to buy but evacuated tubes are more efficient.

Solar thermal systems:

- can meet almost all domestic hot water requirements during the summer months (approximately half all total annual requirements) for an average household (when sized and sited appropriately)
- have no moving parts (excluding plumbing system parts) and are low maintenance
- produce energy even with diffused sunlight.

The cost of a solar system varies depending on the type of system used and the amount of hot water required. A collector area of 3-5m² is typically installed for a family of four.

For solar thermal panels the optimum location is facing south and at a tilt angle of 30 - 40°. If the roof surface is in shadow for parts of the day, the output of the system decreases. Solar thermal panels are heavy and the roof must be strong enough to take their weight.

Solar thermal installations may be eligible for the domestic Renewable Heat Incentive (RHI) – see Factsheet 4.e

