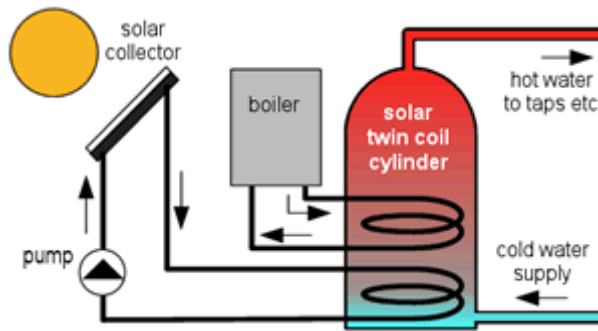




# norfolk solar

## converting sunshine to hot water

Solar collectors (solar panels) mounted on a roof are connected to pipes containing a heating fluid mixture of water and antifreeze. When the sun heats up the solar collectors the hot fluid is pumped through the pipes to a heat exchange coil in the new solar hot water cylinder. Here the captured solar energy is transferred from the hot fluid in the coil to the household's hot water supply. The hot water in the cylinder is connected to the taps, shower, washing machine, etc in the usual way.



In order for the solar water heating system to run safely and efficiently, a range of valves are installed in the heating fluid circuit. A series of temperature sensors are connected to a digital solar controller to switch the system on or off according to the solar energy available.

On days of limited sunlight, solar energy alone may not be sufficient to heat the household's water to a usable temperature. In this case your conventional boiler or your immersion heater (if fitted) can be used to further boost the temperature of the solar heated water.

## choosing the right system

As with all technologies there are good and not so good solar water heating systems. When choosing a solar water heating system there are a number of points to consider:

### hot water storage cylinder

The size of the hot water storage cylinder is generally determined by the amount of hot water your household uses in a day.

Typical daily hot water usage:

appliance	volume (litres)
standard sized bath	60
corner bath	120
shower / power shower	15-60
washing machine	50
kitchen sink	15
bathroom washbasin	5

A new solar hot water storage cylinder is usually fitted in the airing cupboard replacing your existing storage cylinder. If the space around your existing storage cylinder is limited an alternative position or design can normally be agreed.





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## size and quantity of solar collectors

Allow around one square metre of collector surface area for every 45 - 50 litres of hot water to be stored.

## position of solar collector

Collectors in the UK work best when facing south and at an angle of around 35 to 45 degrees from the horizontal.

## durability

A well designed and constructed solar water heating system should provide many years of good service with little maintenance.

## cost

Assuming a life span in excess of 20 years, solar water heating offers good value for money when comparing the initial investment to the cost of a household's current heating fuels. The costs of conventional heating may increase over the years as existing oil and gas supplies diminish and 'pollution taxes' are levied.

It is also important to consider the cost of electricity to run the solar heating system (pump, controls etc). For a typical home this is less than £10 per year.

Solar water heating cannot be considered good value if the initial system cost is too expensive. For this reason it is important to shop around for a competitively priced system using high quality components.

