Solar thermal hot water cylinder

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Solar water heating systems, or solar thermal systems, use energy from the sun to warm water for storage in a hot water cylinder or thermal store. Because the amount of available solar energy varies throughout the year, a solar water heating system won"t provide 100% of the hot water required throughout the year. A conventional boiler or immersion heater is normally used to make up the difference.

Larger solar hot water arrays can also be arranged to provide some contribution to heating your home. However, the amount of heat provided is generally very small (less than 10% of the home"s heating requirement), so it is not usually considered worthwhile.

Most solar hot water systems are just designed to provide the hot water you use for bathing, showering and hot taps.

Solar water heating systems use panels or tubes, called solar collectors, to gather solar energy. The solar collectors convert the infra-red portion of visible light into heat. They are filled with a mix of water and glycol. This fluid is pumped round a circuit, which passes through the hot water cylinder.

There are two types of solar water heating collectors:

The system works all year round, though you"ll need to heat the water further with a boiler or immersion heater, especially during the winter months. In the summer, it should provide around 90% of your hot water requirements, dropping to around 25% in the winter.

Sunlight is free, so your hot water costs will be reduced.

Solar water heating is a renewable heating system and can reduce your carbon dioxide emissions.

To tell if solar water heating is right for you, there are a few key questions to consider:

Solar hot water collectors are typically placed on South facing roof, or somewhere between East to West (but not North facing). You will need around five square meters that receive direct sunlight for the main part of the day.

The panels don"t have to be mounted on a roof. They can be fixed to a frame on a flat roof, hung from a wall or mounted on the ground.

Energy is transferred from the sun to the water-glycol fluid used to heat water stored in a hot water cylinder. Inside the hot water cylinder, a base coil is connected to the solar collectors. Typically, one cylinder is used,

with either an immersion heater or another coil connected to your boiler, near the top of the cylinder. This top immersion heater or coil will heat the water to a higher temperature when needed. If a dedicated solar hot water cylinder is not already installed, then you will usually need to replace the existing cylinder.

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