



Solar water heating systems use free heat from the sun to warm water which can then be made hotter by a conventional boiler or immersion heater. They are one of the most efficient renewable technologies and if your church building uses a lot of hot water during the year can be very cost effective.

Benefits of solar water heating

Hot water throughout the year: the system works all year round, though you'll need to heat the water further with a boiler or immersion heater during the winter months.

Cut your bills: sunlight is free, so once you've paid for the initial installation your hot water costs will be reduced and you can get paid for generating heat through a solar thermal installation through the Renewable Heat Incentive.

Cut your carbon footprint: solar hot water is a green, renewable heating

system and can reduce your carbon dioxide emissions.

Cheaper option: Solar thermal can cost a lot less to install than other microgeneration technologies.

How does it work?

Solar water heating systems use solar panels, called collectors, fitted to the roof. These collect energy from the sun and use it to heat up water which is stored in a hot water cylinder. An efficient solar thermal system will reduce but not replace the need for a conventional heating system. It is ideal for pre-heating water, or for low-

temperature uses e.g. oversized radiators or under-floor heating.

Type of panel:

There are two types of solar water heating panels:

Flat plate collectors or

Evacuated tubes (up to 20% more efficient than a flat plate system but are also more expensive and generally bulkier).

Costs: the cost of installing a typical solar water heating system is around £4,800. Savings are moderate - the system could provide most of your hot water in the summer,



but much less during colder weather.

Maintenance: costs are generally low. Most solar water heating systems come with a five-year or ten-year warranty and require little maintenance. You should take a look at your panels every year and have them checked more thoroughly by an accredited installer every 5 years.

Savings: Solar water heating systems can achieve savings on your energy bills. Based on the results of the Energy Saving Trust's recent field trial, typical savings from a well-installed and properly used domestic system are £55 per year when replacing gas heating and £80 per year when replacing electric immersion heating; however, savings will vary from user to user.

Typical domestic carbon savings are around 230kgCO₂/year when replacing gas and 510kgCO₂/year when replacing electric immersion heating.

Earnings: You may be able to receive payments for the heat you generate from a solar water heating system through the government's [Renewable Heat Incentive](#). Installations

of less than 200 kWth are eligible for a generation payment of 8.5 (pence/kWh)

Note: You will not be eligible for the RHI if you have received a 'grant from public funds' for the costs of purchasing or installing your renewable heat installation.

Is solar water heating right for your church:

Do you have a sunny place to put solar panels?

You'll need around five square metres of roof space which receives 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 or hanging from a wall. If your church is listed you will need to consider visibility and fixings to ensure that the collectors do not damage the special character and appearance of the building.

Do you have space for a larger, or an extra, hot water cylinder?

If a dedicated solar cylinder is not already installed then you will usually need to replace the existing cylinder, or add a dedicated cylinder with a solar heating coil.

Is your current boiler compatible with solar water heating?

Most conventional boiler and hot water cylinder systems are compatible with solar water heating. But if your boiler is a combination boiler (combi) and you don't currently have a hot water tank, a solar hot water system may not be compatible.

A competent accredited installer will be able to assess your church and help you choose the best setup to meet your needs.

It is important to contact your Diocesan Advisory Committee Secretary early in the process.