

SOLAR HEAT PANELS

Solar panels collect heat energy from the sun that is used to heat water via a heat exchanger. These systems supplement conventional water/central heating systems.

Summary

- There are two main types and configurations for solar hot water systems – flat plate and evacuated tubes.
- Flat plate systems have an efficiency of around 30% and are a cheaper option to install. Evacuated tube systems generally require a smaller area, and have a higher efficiency, but are more expensive to install.
- For areas that are prone to freezing temperatures, there are ‘freeze-tolerant’ systems. This means that collectors can be connected directly into existing hot water cylinders without having to use heat exchangers or anti-freeze. Some systems need a pump to move the fluid through the systems, whilst others use natural convection. Systems are available that use photovoltaic energy for the pump rather than mains electricity.

Site requirements

Ideally, between 2 and 5 meters square of roof space facing south or southwest is required for installation. The roof space needs to be in little shade for the main part of the day.

Planning requirements

Planning permission may be required in some cases and should be investigated through the local planning authority. In cases where the site is in a conservation area, or is a listed building, then planning permission will almost certainly be required.

Other requirements

It may also be necessary to install an additional water cylinder. Extra space might be needed for this.

Capital & Installation costs

A solar water heating system will cost between £1,000 and £2,500 for DIY, or between £2,000 and £4,000 for a professionally installed system. Note that grants will not be available for DIY systems.

Operation & Maintenance Costs

Solar water heating systems require relatively little maintenance; professionally installed systems usually come with a ten year guarantee.

Savings

This kind of system would be expected to provide all the hot water required in summer, and to contribute to hot water demand in winter.

Sources of Funding

Scottish Communities and Householder's Renewable Initiative:

The Energy Savings Trust (EST) and Highlands & Islands Community Energy Company run the Scottish Communities and Householder's Renewable Initiative (SCHRI). Householders can receive up to 30 per cent of the total cost of their project up to a limit of £4,000. Community schemes can receive a maximum grant of £10,000 for a feasibility study and a maximum grant of £100,000 for a capital project. Contact: www.est.org.uk/schri/ or call 0800 138 8858.

Loan Action Scotland:

Loan Action Scotland is funded by the Scottish Executive through the Scottish Energy Efficiency Office in support of Action Energy. Loans may be advanced against a range of energy saving measures to enable companies to take action to reduce their energy bills. It is primarily an energy efficiency scheme, but it may be worth discussing whether biomass heating equipment would be eligible.

The scheme provides interest free loans of £5,000 to £50,000. Loans can have a repayment period of up to five years. The loans are available to companies based in Scotland, with up to 250 employees. Companies must be able to demonstrate that the actions proposed will deliver the energy efficiency benefits claimed. See: www.energy-efficiency.org/howto/help/loan/index.html

Tax Incentive

Enhanced capital allowances (ECA) Scheme:

The aim is to encourage businesses to invest in low carbon technologies, and so reduce UK carbon emissions. Solar thermal panels are included as energy saving plant and machinery. The ECA scheme is an integral part of the Climate Change Levy Programme, and was introduced by the Finance Act of 2001. Sponsoring organisations are the Treasury, DEFRA and The Carbon Trust.

Enhanced Capital Allowances (ECAs) enable a business to claim 100% first-year capital allowances on their spending on qualifying plant and machinery. All businesses that are subject to UK taxation are eligible, regardless of size, industrial or commercial sector or location.

See: http://www.hmrc.gov.uk/capital_allowances/eca-guidance-pt1.htm

Advice

Energy Savings Trust (EST) business advisers can help small to medium sized businesses make best use of the many energy and resource efficiency schemes provided by the Trust and other government funded organisations. They can also help access tax incentives and interest free loans to help finance improvements.

EST advisers can help you access:

- Free and impartial information and advice.
- Free on-site energy, waste and water audits.
- Practical guides and best practice literature.
- Low carbon, clean fuel and renewable technologies.
- Relevant training and seminars.

Contact: 0845 458 5040 www.est.org.uk

Scottish Solar Energy Group
Solar Trade Association
Grant Search – search for available funding
Energy Efficiency Advice Centre (EEAC)

www.sseg.org.uk
www.solartradeassociation.org.uk
<http://www.est.org.uk/myhome/gid/>
0800 138 8858.

