

TURN
SUNSHINE
INTO
HOT
WATER

MJM
| SOLAR |

SOLAR WATER HEATING



WHAT IS SOLAR WATER HEATING?

Solar Water heating is the means of collecting the energy from solar radiation (or sunlight) to heat water.

The purpose of this is to:

- / REDUCE ANNUAL FUEL BILLS
- / REDUCE DEPENDANCE ON FOSSIL FUELS
- / CUT CARBON DIOXIDE EMISSIONS (PRODUCED WHEN FOSSIL FUELS ARE BURNT)

HOW DOES IT WORK?

Solar radiation falling onto a solar collector heats up a fluid. This fluid is pumped to a hot water cylinder where heat is transferred to the water within via a heating coil. The fluid then returns to the solar collector to absorb more heat and the process continues.

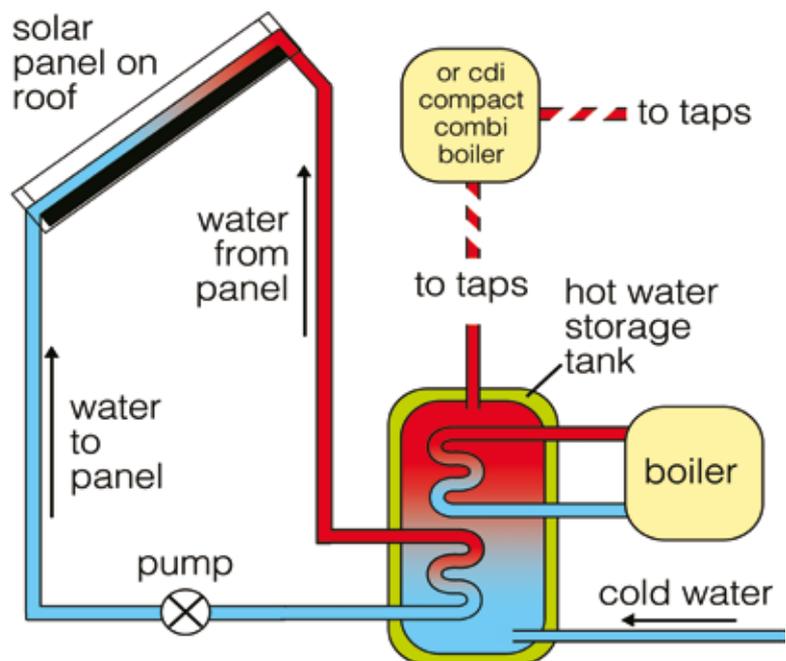
Solar water heating systems utilise either flat plate or evacuated tube collectors. Flat plate collectors consist of one large aluminium plate, coated in a selective coating and insulated. Flat plate collectors come with options to fit in portrait or landscape orientation, and fitted on roof, with mounting brackets, or fitted in roof with weatherproof dressings.

Evacuated tube collectors consist of a series of glass tubes filled with a vacuum. Inside each glass tube a u-pipe transfers solar energy to the solar fluid. Evacuated tubes are mounted vertically (portrait) and fitted on roof (with mounting brackets).

There are also options to fit panels on a flat roof with a mounting bracket, or mounted to wall.

In all systems a hot water storage vessel is required to absorb heat from the panels. This can be a traditional vented unit, as fitted in many UK homes, or an unvented unit which places the hot water on mains pressure and allows for a dry loft as no cold water tanks are required.

A combination boiler that is capable of accepting preheated hot water can also be used. This gives the best of both worlds of instant hot water when required and the energy saving capabilities of solar water heating.





One of our solar panel installations

THE INCENTIVE

The Domestic Renewable Heat Incentive (RHI) was launched in April 2014 and is administered by OFGEM. This pays a homeowner a tariff quarterly over a seven year period, helping to offset the initial installation cost of the system.

To be eligible for the RHI the products have to be MCS accredited and the installation has to be completed by an MCS accredited installer.

To claim the RHI, homeowners apply to OFGEM. You will also need to have a Green Deal assessment completed for the property and make sure cavity wall and loft insulation is installed to recommended levels.

Please contact us for up to date details and tariff levels.

For further information please check out the following websites:

www.ofgem.gov.uk

www.microgenerationcertification.org/

THE PAYOFF

Overall a solar water heating system will provide up to 60% of hot water energy usage. This generally averages out to 25% in winter, 50% in spring and autumn, and up to 100% in summer. The remainder is heated up by the auxiliary or back up heater, wether this be a heating boiler or immersion heater.

The Microgeneration Certification Scheme (MCS)

is an industry-led and internationally recognised quality assurance scheme, supported by the Department of Energy and Climate Change (DECC). MCS itself is a BS EN ISO/IEC 17065:2012 Scheme and was launched in 2008.

MCS certifies microgeneration products used to produce electricity and heat from renewable sources. MCS also certifies installation companies to ensure the microgeneration products have been installed and commissioned to the highest standard for the consumer. The certification is based on a set of installer standards and product scheme requirements which are available in the MCS Standards section of this website.

MCS covers electricity generating technologies with a capacity of up to 50kW, and heat generating technologies with a capacity of up to 45kW. Currently, MCS covers the following technologies:

- / BIOMASS
- / HEAT PUMPS (AIR SOURCE AND GROUND SOURCE)
- / MICRO HYDRO TURBINES
- / MICRO COMBINED HEAT AND POWER (CHP) SYSTEMS
- / PITCHED ROOF MOUNTING SYSTEMS
- / SOLAR PHOTOVOLTAIC
- / SOLAR THERMAL
- / WIND TURBINES

MCS is linked to the Government's finance schemes and incentives. In order to access the Feed-InTariff (FITs), Renewable Heat Incentive (RHI), or the Renewable Heat Premium Payment (RHPP), both the installed product and the installation company must be MCS certified.

BREAKDOWN OF A TYPICAL SYSTEM

Here we breakdown what goes into an average system, including system design, typical costs involved, possible RHI payments and hot water savings!

System based on a three bedroom detached house located in LN1 area of Lincolnshire, built between 1976-1982, occupied by four people.

The house has 150mm loft insulation, cavity wall insulation and a new (post 2005) gas boiler and fitted with non-electric showers.

Solar panels are fitted to a 35degree south facing roof with little or no shading.

(Please note the following information is for illustrative purposes only and is based on OFGEM's Domestic Renewable Heat Incentive payment calculator. Actual installation costs and/or RHI payments may vary from those given, depending on site conditions, hot water usage, occupancy levels, etc).

The required system for this property would be 6m² of flat plate solar collectors fitted to the south facing roof. The hot water storage vessel is an unvented unit with a minimum size of 210 litres and a minimum dedicated solar capacity of 70 litres.

Pipework is run between the solar collectors and the unvented hot water cylinder, via the solar pump station which pumps the solar fluid. 15m of twin flexible stainless steel, pre insulated pipework are required.

A solar controller keeps check of the collector and storage vessel temperatures and switches the solar pump on and off. This is normally fitted in an accessible location where it is easy to check how much energy is being saved.



A BREAKDOWN OF COSTS

- Total cost of system, including materials, labour, scaffolding, roof structural survey, electrical work and VAT @ 5%
- Hot water generated
- Quarterly payment
- Annual payment
- Total payment over seven years
- Tariff (total payment doesn't include any rises in tariff due to inflation)

£4703.66

1639Kw

£78

£310

£2170

19.2p/Kw

AT MJM SOLAR WE WANT TO BE HONEST WITH OUR CUSTOMERS ABOUT SOLAR WATER HEATING, WHAT IT DOES AND EVEN IT'S LIMITATIONS.

SO HERE ARE A FEW MYTHS ABOUT SOLAR WATER HEATING BUSTED BY OUR EXPERTS.

1 A solar system will save 60% on your total energy bills.

Solar water heating will save 60% of hot water energy only, unless it is used to heat the heating system. Generally Hot water accounts for about 25% of the total heating bill!

2 It will work if not fitted to a south facing roof.

You can obtain the same amount of heat from an East/west split system (where panels are fitted on to an east and west facing roof) as a south facing system but as you will be doubling the initial installation cost to achieve the same amount of useable heat, it may be more cost effective to find an alternative solution, or spend the money on other energy efficiency measures!

3 Installing more panels will give you more heat.

Solar systems are sized for the property allowing for assumed occupancy levels and hot water usage. With extra panels fitted this causes the system to switch off and turn to steam more, wasting energy and pushing up future maintenance costs. The initial installation costs will also be higher.

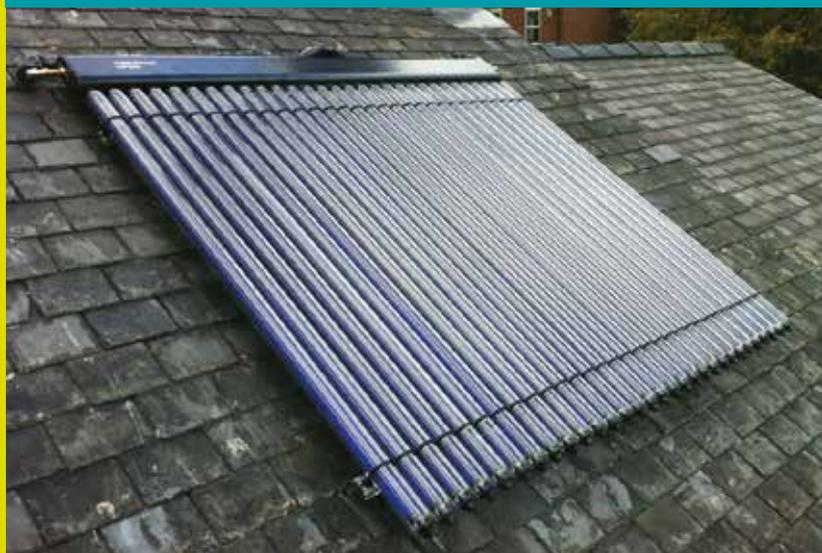
4 I can use solar water heating to heat my house.

It is certainly possible to use solar energy to heat a house but as the greatest amount of solar energy that is available is in summer, when generally the heating is not required, the system would be wasted. Hot water is used consistently throughout the year, so is better matched for solar water heating!

COMMON MISCONCEPTIONS



A 'Heatslave' system installed



An example of a solar panel installation

TESTIMONIAL

We had a combi boiler and a solar panel fitted earlier this year. MJM Plumbing were extremely professional and friendly, the job and all options available were explained to us beforehand. The work was completed efficiently and explained thoroughly. Since having the new boiler and solar panel system installed, our gas bill has significantly reduced. We are very happy with both the service we received and our new system. We would absolutely recommend MJM Plumbing!

Mr R.D. Waddington



Worcester Products

As a Worcester Accredited Installer, we are accredited to install Worcester solar water heating panels and Worcester gas and oil central heating boilers to the highest standard.

As accredited installers we offer

- Specialising in Worcester products
- Extended guarantees on Worcester Greenstar gas and oil boiler of between 3 and 7 years, depending on the product!
- Advice and prices on new Worcester boilers and solar water heating panels!
- Central heating installation and heating system tips
- Boiler and solar servicing and maintenance
- Boiler and solar repair or replacement

Worcester offer a range of gas and oil boilers to supplement their solar water heating systems, to make the most of the energy you do need to put in to the storage vessel.

These include

- **Open vented (regular) boilers** these are a good straight swap replacement option for many boilers within the UK.
- **System boilers** - System boilers convert the heating system into a sealed system, doing away with the header tank in the loft. The boiler incorporates the heating pump and includes all the required safety devices.
- **Combi boilers** - Whilst most combination boilers aren't suitable for solar water heating systems, Worcester produce two boilers that can accept preheated hot water. These are the Greenstar CDi Compact (gas) and Greenstar Heatslave II (oil). With this system you still have the capability of instant hot water, together with energy savings of solar. A hot water storage vessel is still required.



All boilers come in a range of outputs to suit individual homes and requirements.

Worcester also produce a range of supplementary products and controls, including single and twin coil unvented cylinders and heating controllers which integrate with the solar system.

GREENSKIES SOLAR WATER HEATING

Greenskies solar water heating panels can provide up to 60%* of your annual hot water requirements.

The Greenskies solar water heating family

Greenskies Solar-Lux panels

Solar-Lux evacuated tube panels offer solar hot water luxury and are the optimum investment in hot water comfort. The technology within these solar panels provides both high output and high efficiency, even when conditions are not optimal.

- Greenskies Solar-Lux 12
- Greenskies Solar-Lux 6

Greenskies Solar-Lifestyle panels

Solar-Lifestyle panels provide a high level of efficiency and versatile siting options - they are the optimum choice for all lifestyle requirements.

- Greenskies Solar-Lifestyle (portrait)
- Greenskies Solar-Lifestyle (landscape)

Greenskies Solar-Lito panels

Solar-Lito panels offer affordable solar hot water comfort. Versatile panel sizes combine to combat awkward roof shapes and spaces and can be accurately sized to suit our cylinder sizes.

- Greenskies Solar-Lito
- Greenskies Solar-Lito Mini

The Greenskies solar panels are designed to go with existing heating systems that use a cylinder to store hot water.

* Source: Energy Savings Trust

AT MJM PLUMBING WE SPECIALISE IN CENTRAL HEATING SERVICES WITHIN THE HOME

GAS AND OIL CENTRAL HEATING

As Gas Safe and OFTEC registered installers we offer the latest energy efficient boilers and controls to keep your home comfy and warm, yet lowering fuel bills and cutting carbon emissions. We also offer free and ongoing advice to keep getting the best out of your system.



301607



Registered Business
C14464

UNVENTED HOT WATER SYSTEMS

Installation, service and repair of unvented hot water cylinders.

These are mains pressure cylinders which give good and balanced flow rates to all hot water water fittings and showers.

POWERFLUSHING

If your heating suffers from cold spots, slow heat up or noise, it may be worthwhile getting the system power flushed. This involves connecting a high flow rate pump to the heating system and flushing each individual radiator, in conjunction with chemical cleansers and a magnetic filter, to remove system sludge and debris. The system is then refilled with fresh water and treated with chemical inhibitors

UNDERFLOOR HEATING

We offer design, installation and maintenance of underfloor heating systems, which are a good energy efficient alternative to traditional radiators, and compliment modern condensing boilers.



PLUMBING

We offer domestic plumbing and heating services of all aspects in Lincoln and the surrounding areas, but specialise in central heating systems, boiler servicing and gas safety checks, energy efficient controls and solar thermal panels.

- Worcester Accredited Installer
- Gas boiler installation, servicing and repairs
- Solar water heating installation and servicing
- Fitment of gas cookers, space heaters and water heaters
- Full installation of central heating systems, as well as repairs and alterations
- All the latest energy efficient boilers, controls and systems to save you money and cut your fuel bills
- Unvented hot water installation, servicing and repairs
- Full powerflushing service available- make your system cleaner and more efficient
- Underfloor heating installation and maintenance
- Small jobs welcome. outside taps, leaking tap washers, leaking pipes

PROMISE OF SERVICE

- No call out charge
- Straight hourly rate
- Free quotes
- Free advice and information
- No pressure selling tactics
- We only recommend the products that will be suitable for you and your property
- Fully insured with public liability insurance
- Fully licensed by the Environment Agency to carry and dispose of waste
- Most waste materials recycled where possible



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