

So what's it
all about then?

How do I plan
each job?

Is there any help
from the government?

Clearly Solar

Facts & figures

Will I need new equipment?

Tell me all I need to
know about Clearly Solar

How do I sell
solar to my customers?

So...what's this guide all about then?

Simple...

Glow-worm have produced this guide exclusively for you, to answer all of your questions and to show you how we can help you to develop your business in the rapidly expanding renewable technology market.

Renewable energy solutions for the home are no longer a thing of the future that only a small number of people would consider, they are a thing of today.

More and more people are considering alternative ways to provide their energy when updating or installing a new heating system that won't damage the earth or waste fossil fuels.

Glow-worm has been providing UK homes with high quality, reliable domestic heating and hot water systems for over 70 years. Solar energy has a great future in the UK and as a trusted manufacturer we are committed to delivering you the quality, performance and support you expect as we move into this new chapter together.

What is renewable energy & microgeneration?

That's quite simple too...

Renewable energy is derived from inexhaustible energy sources such as the sun, wind, water and plant material.

Using renewable energy reduces our dependency on energy sources that contribute to climate change; it can also save your customers money by reducing their energy consumption.

Microgeneration is the harnessing of renewable energy locally to generate useful heat or electricity. There are a number of

microgeneration technologies available including Wind Turbines, Solar Photovoltaic and Solar Thermal.

Others include:

- Heat Pumps; they extract the earth's natural heat from the air, water or ground.
- Small-scale hydro; this system converts potential energy into the kinetic energy needed to turn a turbine in order to produce electricity.
- Biomass; this system uses organic matter instead of fossil fuels to produce energy.

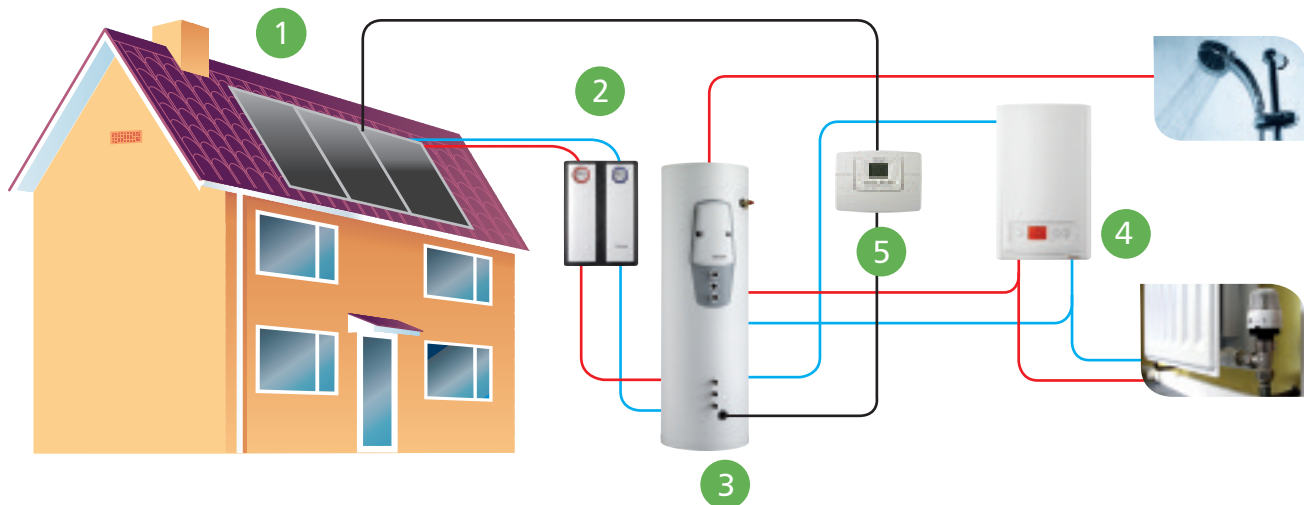


What's Solar Thermal all about?

It's about using the sun's natural energy to create hot water for the home

Solar Thermal is an affordable, cost-effective microgeneration technology for housing. It uses the power from the sun to heat domestic hot water for home consumption. Glow-worm has a range of Solar thermal systems called Clearly Solar.

- 1 The panels collect energy from the sun which heats the fluid in the solar panel.
- 2 When the fluid in the panels is hot enough, the pump station circulates the hot fluid around the system.
- 3 The hot fluid is pumped around the coil at the bottom of the twin coil cylinder and heats the potable (or mains) water held within the cylinder for domestic use.
- 4 If the temperature sensor in the cylinder detects that the solar panel hasn't collected enough energy to heat the hot water to the required temperature, that's when the boiler will fire up, heating the top coil of the cylinder and topping up the temperature of the hot water so that it comes out of your taps at the temperature needed.
- 5 The solar controller is the brains of the operation, managing the solar system during daylight hours, enabling you to time your hot water and measure the amount of energy you have gained from the sun.



Facts & Figures please...

Certainly...

- Solar Thermal doesn't need lots of sun as it uses diffused solar radiation and direct sunlight to convert the energy from the sun into heat. Even on cloudy days a solar thermal system will capture solar radiation which will contribute to domestic hot water.
- In the summertime this will be as high as 100% meaning that the boiler will never have to fire up saving both energy and money. In the winter a lower level of energy is produced by the sun, so a boiler is also needed to provide energy to heat the domestic hot water.
- Overall, you can heat on average 50 - 60% of your hot water for the year
- Typically there are two types of solar thermal collectors to choose from: Flat Plate or Evacuated Tube, and two types of systems: pressurised (similar to a sealed central heating system) or drainback (similar to an open vented central heating system).
- The Glow-worm Clearly Solar system is pressurised and utilises a flat plate collector which is really robust, light-weight and easy to install.

What's in it for my business?

Loads of different things

- Differentiate you from your competitors
- Generate additional revenue in a rapidly growing market.
(The solar market in the UK is predicted to double in size by 2011 with most of the growth occurring in the 'flat plate' market)
- Deliver more profitable work (Servicing and Installations)

Anything else?

Yes. It will be something new and interesting! And it will be a very lucrative extra string to your bow.

By the way

Don't forget... boilers are still required to supplement the solar system.



Is there any help available from the Government?

There are a variety of different initiatives available

Home Owner Grants

Home owner grants are available through the DBERR Low Carbon Building Programme, they offer up-to 30% (maximum £400), towards installation costs of solar thermal systems. The grants are available for installations that have been fitted by certified installers fitting approved products under the DBERR UK Microgeneration Certification Scheme. For more information, please visit: www.lowcarbonbuildings.org.uk

In Scotland, under the Scottish Community and Householder Renewable Initiative (SCHRI), grants of up to 30% (maximum £4000) are available for home owners.

Commercial Loans

Interest-free Renewable Energy loans are available through the Carbon Trust for small or medium sized businesses. For more information, please visit:

www.carbontrust.co.uk/energy/takingaction/loans_renewables.htm

Developer's Grants

Funding is available towards sustainable new homes through two channels; the Housing Corporation that supports new affordable homes and English Partnerships that support regeneration projects. To gain this funding, level 3 of the Code for Sustainable Housing needs to be achieved. Microgeneration can contribute towards this level 3 rating. For more information, please visit:

www.housingcorp.gov.uk/index.php or

www.nhbcbuilder.co.uk/sustainable

Top Tip

Government initiatives are changing on a day to day basis so keep looking on the websites for the latest news.

Solar thermal and solar PV

It comes down to where you live!

In most cases, a solar thermal installation doesn't require planning permission as this is now classified as a permitted development providing all the criteria listed below is met. There are however, some instances when planning permission should be sought; A-frame installations, some on-roof installations (where very deep panels are used), installations on listed building and in conservation areas may all require a planning application being sought.

a. Installations on roofs or walls are allowed as a permitted development providing:

- The equipment is installed on the wall or roof of the dwelling and that it does not protrude more than 200mm above the roof.
- The highest part of the equipment is below the highest part of the roof, excluding any chimneys.
- Certain additional conditions apply to listed buildings, World Heritage Sites and in conservation areas.

Note

Glow-worm's Clearly Solar flat plate collectors installed with an in-roof kit meet this requirement. An application for planning permission is recommended for on roof installations.

b. Installation of a stand alone solar system (i.e. an A-frame installation) is allowed as a permitted development provided:

- The highest point of the installation is less than 4m above ground level.
- The installation is more than 5m from the boundary of the property.
- The total surface area of the panels does not exceed 9m² and no dimension of the array is greater than 3m in total.
- There is only one array installed.
- Certain additional conditions apply to listed buildings, World Heritage Sites and in conservation areas.



Will I need much new equipment

You'll certainly need some...

- **Transport:** You should consider the size of your current van as solar collectors can take up quite a lot of space (typical solar set measurements are 2mx1.2mx1.8m). It's also important to take into consideration unloading the solar set off your vehicle. It's a good idea to use a tail lift and pallet truck or to remove each item from the pack individually.
- **Installation:** General safety wear such as a hard hat and a safety harness for roof work are both strongly advised.

- **Scaffolding:** This is likely to be required for fitting the collectors on the roof. Access and space will need to be carefully considered at each specific site. Scaffolding must be erected by a competent person and it's advisable to visit the National Access and Scaffolding Confederation website. They will be able to recommend a competent company that operates in your area.

If working at heights a hoist and harness (or harnesses) are used for lifting collectors from the ground to the roof.

For more information, visit: www.nasc.org.uk



Tell me more about roof works

Listen up. This is the important stuff...

Prior to an installation it's really important that the condition of the roof is checked thoroughly. Check rafters, lathes/battens and tiles. These all need to be in good order, suitable for secure fixing and able to take the load safely.

- If you're happy to get on the roof to fit the collectors ...our advice is that you comply with the HSE Work at Height Regulation 2005 and seek training on the product you'll be working on. There is a duty on employers and any person who controls the work of others to comply with the Work at Height Regulations 2005.

- Don't forget to talk to your insurance company to make sure that your policy covers you for additional liability for the roof work involved.
- If you don't like of heights don't worry! You needn't miss out. Why not consider partnering with a competent roofing company that would be happy to carry out that part of the job for you? You can find competent roofing companies in your area on the National Federation of Roofing Contractors website. For more information, visit : www.nfrc.co.uk

Top Tip

If you decide to use a roofer to install the collector make sure that they fit the external pipe work and collector sensor and thread them through the roof. To save time make sure they also seal and weather proof while they are still up there.



I'll obviously need to do some training

You will indeed and Glow-worm can help

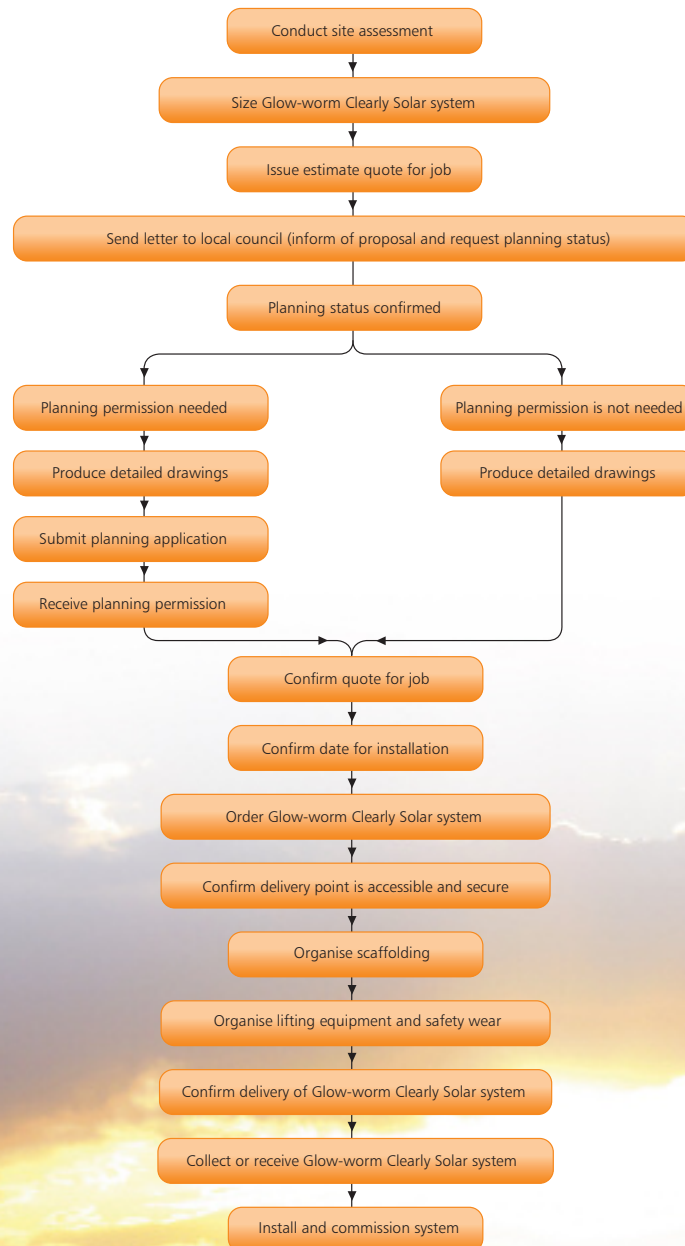
Installers and service engineers are considered to be competent if they have successfully completed a recognised BPEC or Logic accredited Solar training course.

Glow-worm offer the following courses:

- A one-day basic course giving an insight into solar thermal theory, systems and products. Whether you're an installer, specifier or merchant, we'll cover all of the key points you'll need to consider.

- A two-day BPEC Course. This two-day intensive, 'hands-on' course provides in-depth training on all domestic solar thermal systems and the necessary roofing work. A certificate is issued at the end of the course upon successful completion of the exam.
- A G3 unvented cylinder accreditation is mandatory to install and service unvented solar cylinders. We offer this as a simple one day training course as well.
- As installers must hold a G3 accreditation before taking a BPEC course. We schedule our courses on successive days so that if you want to do it all in one go you can take G3 on the 1st day and the BPEC course on the 2nd & 3rd day.
- To book a place on one of our courses call the training team on: 01773 596 156

How do I plan each job?



How do I sell Solar to my customers?

Here's a few Top Tips

Most home-owners want to 'do the right thing' and 'go green'. However, as you know when you sell and install a boiler it's often a distress purchase. Solar is a different proposition altogether. Buying solar products is a very considered decision and can be regarded as a big investment. Your customers may want solar products for a huge number of compelling reasons.

- Firstly, there's the green story. Solar will reduce your customers' CO₂ emissions and they'll play a part in reducing the rate of climate change
- They will be more protected against the ever-rising rate of gas and oil prices

- The value of their property will increase
- The rating on their Energy Performance Certificate will increase - part of their Home Information Pack (HIP)
- It will make their home more attractive to buyers when they want to sell
- Finally, there's the economic story. Your customers can reduce their energy bills while getting 50-60% of their hot water absolutely free!

Top Tip

Come on a Glow-worm BPEC training course and we will list you on our approved installer list on the Glow-worm website - sit back and let the customer leads come to you



Tell me all I need to know about Clearly Solar

The Straightforward approach

Glow-worm's 'Clearly Solar' range of solar thermal systems is fully compatible with new or existing sealed system or open vented central heating systems.

Our products are high performance, robust flat plate collectors that are ideal for all types of homes across the UK.

A Clearly Solar system has 4 key parts: Flurosorb flat plate collectors, Fluorocyl twin coil cylinder, Solar pump station and Fluoropro solar controller.

Our flat plate collectors can be installed in-roof or on-roof, either horizontally or vertically. If the roof isn't big enough or if it's facing the wrong direction, they can be installed on A-frames which can sit on a flat roof or in a garden.

The collectors are amongst the lightest on the market at 43kg each – about the same as a combination boiler – making them as easy as possible to hoist and move around on the roof.

And it all comes with a 25 year warranty on the twin coil cylinder and a 10 year on the flat plate collectors.



Our Solar System is robust, efficient and easy to use. Of course, great products need great support and the support we offer is clear and straight-forward as you'd expect from Glow-worm.

- **Experienced technical support**

Experts are available for assistance over the phone between 8.30am – 5.30pm Monday to Friday. Accredited engineers are also available for on the job support.

- **Assisted commissioning***

A Solar accredited service engineer will visit the installation and support installers through their first system commissioning. They can help with the final stages of the installation as well as the handover to the home owner.

- **Design specification service**

It's important that a solar thermal system is correctly designed and specified. Our highly experienced design team use state of the art CAD software, delivering personalised design booklets.

- **Full local support from Glow-worm Sales Managers**

They work closely with installers, merchants and specifiers to support everything throughout the installation.

For more info on Glow-worm Clearly Solar

visit www.clearlysolar.co.uk or call 01773 596105 for a range brochure.

*A charge for this service may apply.



Easy Ordering

You won't believe how easy it is

Because solar thermal, especially when you are just starting out, can be quite confusing we have put together easy to use and easy to order packs which contain everything you need for an installation.

Step One - Select a flat plate pack

Clearly Solar flat plate packs are available in small (1 panel), medium (2 panels) or large (3 panels) and include the following:

Clearly Solar Flat Plate Packs

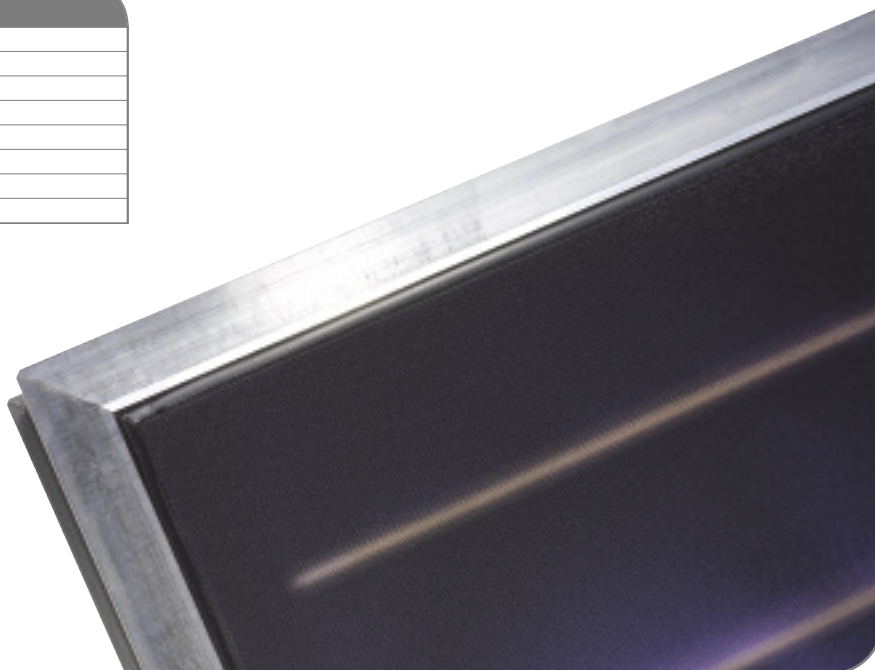
Fluorsorb flat plate collector(s) (1,2, or 3)
Roof brackets for concrete tiles
On roof collector fixing kit
Fluropro Solar controller (inc collector sensor x1 cylinder sensors x2)
Solar gain sensor
Solar pump station
Expansion vessel 18l
Solar Fluid 20l

Step Two - Select a pipe work pack

Clearly Solar Pipe Work pack is a simple grab and go solution which contains all necessary fittings and enough pipe to plumb a typical solar system.

Clearly Solar Pipe Work Pack

15m floor to roof insulated flexible pipe
Fittings pack for flexible pipe
1m through roof insulated flexible pipe
Automatic air separator
Protection vessel for expansion vessel



Step Three - Select a twin coil cylinder pack

Clearly Solar Twin Coil Cylinder Packs are available in 200, 250 or 300 litre versions. They include the following:

Clearly Solar Twin Coil Cylinder Packs

Flurocyl twin coil cylinder (200l, 250l or 300l)
Thermostatic mixing valve
Two port motorised valve
Cold water inlet pack
Carrying handle

Alternative Fixings

The simple packs include fixing brackets for concrete roof tiles and are designed to support the majority of typical UK installations.

If you have a more unique installation you can choose individual components from the Glow-worm range, selecting slate or clay peg tile fixing brackets.

First fix & Second fix

For house builders, the ability to do a first and second fix of the solar panels is essential.

Glow-worm provide simple in-roof preparation kits so that you can carry out all the roof work in advance of the panel installation.

Accessories

We also provide a range of Clearly Solar tools and accessories to help you out on the job like harnesses, carrying handles and a filling pump.



Straight Forward Delivery

Direct to your door

Solar thermal kits are not small, so we want to minimise the amount of transporting about you have to do by delivering them pretty much anywhere you want, be it to the trade counter where you placed your order or direct to site.

Our standard delivery service is 5 days from receipt of order, but you can choose a next day or timed delivery if you need things quicker. Once ordered, we even call you before the delivery to confirm delivery times and any specifics about the place you want the kits delivering to.

When we are 1 hour away from the delivery destination we will call you again to confirm that we are on our way, giving you time to get to the delivery location to meet us.



Useful Numbers

Literature

To request a Glow-worm Clearly Solar product brochure call:
01773 596190

Technical Help

For detailed assistance call:
01773 828300

Training

For more information or to book one of our many training courses please call:
01773 596156

Clearly Solar After Sales

For any sales queries please contact our sales office on:
01773 596510

Clearly Solar Specialists

To contact a Glow-worm Solar specialist please email:
info@glow-worm.co.uk

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