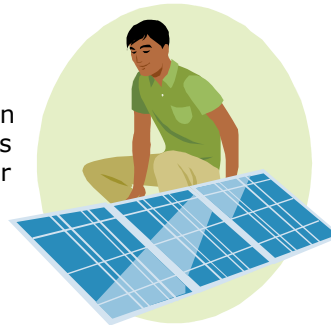




“How To Buy Solar”

Home Solar Power today

Putting Solar Panels up are really quite the “thing” these days yet many remain suspicious of this new fangled technology. In truth it is hardly very new and is actually well established in Britain. Systems have been up on roofs for over twenty years whilst the technology for solar electricity has been around since the 1950’s. When hundreds of 30-year-old solar panels were tested in 2009, 90% were in such good condition they could be reused.

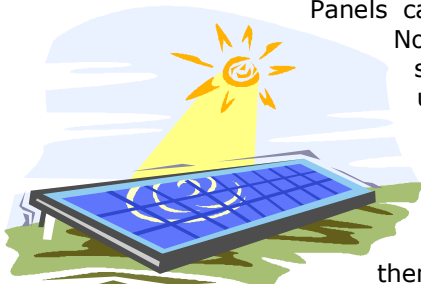


Photovoltaics

Photovoltaics (or “PV”) generates electricity from the sun and have no moving parts. They can be anything up to 19% efficient which is quite remarkable in comparison to say, a tree at only 5% efficiency.

Panels can be mounted almost anywhere but roof mounting is most common.

Normally they are grid-connected allowing the household to export their spare electricity. Contrary to popular myth grid-connected systems are useless in a power cut. By law in the UK they have to switch off when the power goes off – this is for safety reasons.

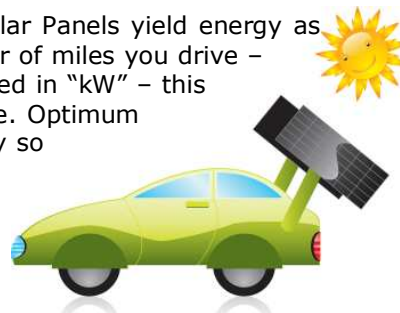


Solar Thermal

Solar Thermal gives you hot water. 100,000 homes in Britain already use them. There are different types of panel in use but all use a circulating fluid to transfer heat from panel to your hot water system. Panels normally are located close to your hot water tank, ie, on your roof. These systems are now very efficient and will generate up to 60% of your annual hot water needs. This excludes home heating. It can’t generate 100% all year because in summer you would have more hot water than you could ever use. You can’t store it until winter.

Terminology: like a car – but better

Solar Panels are like cars: they have different performance figures. Solar Panels yield energy as electricity or heat. This is measured in “kWh” and this is like the number of miles you drive – not a useful number by itself. The rate of production is “power” measured in “kW” – this is more like a car’s engine power and a better indicator of performance. Optimum power (or “max power”) is only reached at the sunniest point of the day so this is termed “peak” power represented as “kWp”. For example, a 3kWp PV system will generate a total of 2500 units of energy per year. It is a bit like saying you have a car that has 200hp and it will only get you 400 miles on a full tank. In the case of solar energy it depends on the sun and the weather but the sun is very predictable even if the weather is not day-to-day. Over a year it averages out.



Payback and Profits



From 2010 the Feed-in Tariff (“FiT”) guarantees around an 8% return on investment for your PV over 25 years. A £12,500 investment could yield you £25,000. A typical 2.5kWp well sited Photovoltaic installation could reward a homeowner with up to £900 per year and save them £140 a year off their electricity bill. Payback will be in 11 years typically. Hot Water systems will be covered by the Renewable Heat Incentive (“RHI”) scheme from April 2011. A system generating over 1000kWh/yr will earn you £200/yr payments for 20 years plus around £50/yr fuel savings. Payback will be in 14 years typically. Then it is all profit. You don’t get this for a car.

How to buy

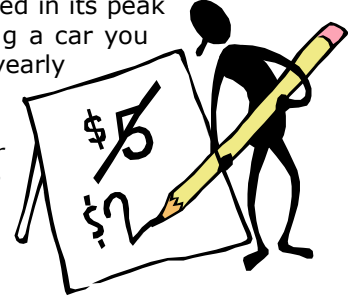
Like a car – shop around. Like any building work- always get at least three quotes. Choose reputable installers who are local to you. They MUST be MCS (Microgeneration Certification Scheme) certified if you are to qualify for FiT & RHI. Membership of the Solar Trade Association or Renewable Energy Association is also a good indicator of quality. Salespeople should spend no more than an hour surveying your



“How To Buy Solar”

property and talking to you. Agree to nothing at the time of the survey. Take your time and get you quotes in writing. Ensure that all quotes are for equipment that is MCS certified.

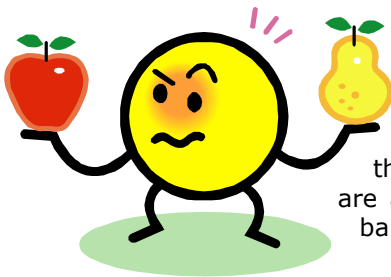
Insist that all suppliers should give you performance figures for your system. Many do not volunteer this information or give you inconsistent numbers. A PV system is normally specified in its peak power, ie “3kWp” which is like your car’s max power. However, when buying a car you would ask more questions. So always find out the solar panels’ expected yearly production, ie, “2500Kw per year”. Always get this information.



Likewise, when buying a solar hot water system you need to know the “solar energy to storage tank” or “energy produced by collector loop” figure per year. This is the annual usable heat you will get out of the system after all system losses have been accounted for. This should look like something in the region of “1,202kWh” per year.

These numbers are generated by estimating software the installers use. There are different types of such software. Typically installers use “PolySun” or “T-Sol”. The “official” one for MCS certification is called “SAP”. Get your quoting suppliers to give you these performance numbers AT LEAST in SAP so you have a like-for-like comparison. Drop this into conversation and your installer will know not to mess with you – you know what you are talking about!

Compare installers: measuring value-for-money



Let’s go back to our car analogy. We would like to know its power but this comes at a price. Is it worth it? Instead let’s think of miles-per-gallon. Just how much do we get out for what we put in? Each installer should have given you the kWh yearly production of your system. They will also give you a price plus VAT. Take the total price and divide it by the annual kWh production to give you a £cost/kWh (per year). You then are after the SMALLEST number, ie, the lowest cost per kWh/yr (or “bigger bang per buck”). This is your indicator of value-for-money.

Beyond simple value-for-money ask the installers a few other simple questions. How long have they been in business? Do they subcontract their work out? Are they qualified electricians/plumbers? Do they have references? Is the quote comprehensive & itemised? Did they check your fusebox & roof structure? Did they give you confidence? Apply simple commonsense.

How much should I pay?

Most of the costs are ‘fixed’ hence it pays to get the biggest PV system you can afford. An illustration: a 1.5kWp PV system might cost you £9000 but a system twice that size doesn’t cost twice as much. A 3kWp system might cost only £13,000, ie, only £4000 more for DOUBLE the output! The £price/output goes down considerably as size goes up. You can always export surplus electricity.

A solar hot water system will cost around £4000 but do not be surprised to see quotes up to and over £5000 for some flat panel systems. You must compare price versus output to know what is good value-for-money. However, you can’t export hot water so you are limited as to the size of system you fit.



...and finally

Planning permission is NOT required for Solar Panels unless on a listed building or in a Conservation Area. Even then permission can be given. You do not need a structural survey but your installer may recommend you need one if they have concerns about the strength of your home. This is very rare. Installations fall under building control so an inspector may call. This is extremely rare and is matter for your installer. If the installer is MCS certified and doing a good job this is nothing to worry about. An old fusebox may need replacing at additional cost (maybe £500). *If in doubt – ask. TTHW can you refer you to good suppliers who provide a Transition Discount. This is called the Wycombe home Power scheme.*

Free energy from the sun – you know it’s worth it.