



How do my PV panels actually work?

PV (photo-voltaic) panels convert sunlight into electricity, even on a cloudy day. An electric field exists between the layers within the smaller cells that make up each panel, which are usually made of silicon. When light hits, an electrical current is produced in the circuit within each cell. This current is accumulated and converted, so it can go on to be used to help power appliances in your home for FREE!

Any electricity produced by the PV panels on your roof that is not used up flows into the national grid, as it **cannot be stored** for use by you at a later time. Therefore, make sure you make the most of the free electricity you have at any one time by following this handy guide.

Things to remember:

Some of your home appliances are on all of the time, such as your fridge/freezer, so will always be using some of the free electricity generated by your PV panels.

The time of year will also affect how much free electricity is generated from your PV panels. For example, on a clear sunny day in July your panels will produce close to their maximum power output (2500W for 10 solar panels), whereas on an overcast afternoon in December they may produce as low as 100W! But by knowing how much power your appliances use, and when is best to use them, you can make your free electricity go as far as possible and save up to £500 per year on your electricity bills!*

*Based on 2.65kWp solar PV system on south facing roof and pre-payment electricity rate of 16p/kWh.

Your PV system requires no cleaning, very little maintenance and is monitored remotely by our installers. However, should you have a problem with the system or are concerned it is not working correctly please contact our installers on: 0800 852 1095 or 01228 267026, who will come out and undertake any necessary repairs or maintenance.

Your guide on how to make the most of your PV panels

Handy guide on how to make the most of the free electricity generated from your PV panels.

What this guide is for:

Each home appliance uses up a certain amount of power, measured in watts. Your PV panels generate power from the sun during the day, depending on cloud cover.

Using the typical appliance power values in the blue box to the right, and the chart below, you can work out what appliances you can use at **any one time** to make the most of your free electricity.

Example of how to use the guide:

- Q.** How many PV panels do you have?
A. 10
- Q.** What is the weather like at the moment?
A. Clear sunshine
- Q.** Using the table below, how many watts are your PV panels producing?
A. 2500
- Q.** What appliances can I run from this free electricity being produced now?
A. Hairdryer and microwave (1600 + 750 = 2350 watts)
 or
A. Washing machine (2500 watts)
 or
A. Kettle and television (1800 + 300 = 2100 watts)

Typical appliance power guide:

- | | |
|-----------------------|-----------------------------|
| Light bulb: 60 watts | Microwave: 750 watts |
| Fridge: 100 watts | Hairdryer: 1600 watts |
| Laptop: 150 watts | Kettle: 1800 watts |
| Television: 300 watts | Washing machine: 2500 watts |

Top tip:

Where possible, try to stagger your use of high wattage appliances to make the most of your free electricity!

For example, if your panels are producing around 2500 watts at any one time, it is best you wait for

your washing machine to finish its cycle before switching on your kettle for instance. Then you can be sure that you are not using as much, if any, electricity from the grid and are making the best use of your free electricity from your solar panels.

Please remember that this is only a guide of what appliances can be used at any one time from the free electricity being produced from your PV panels. Please check your own appliances for their actual wattages.

Panels 	Overcast (30% efficient) 	Cloudy/sunny (60% efficient) 	Clear sunshine (100% efficient) 
8	600 watts	1200 watts	2000 watts
10	750 watts	1500 watts	2500 watts
12	900 watts	1800 watts	3000 watts
14	1050 watts	2100 watts	3500 watts
16	1200 watts	2400 watts	4000 watts