



# Maximising the benefits of solar panels

A Spotlight on Solar Energy



[orbitcustomerhub.org.uk](http://orbitcustomerhub.org.uk)

# Introduction



We are committed to providing high quality, safe and sustainable homes as well as investing for a low carbon future.

The Government has set an ambitious target of reaching net zero carbon by 2050 and if we are to achieve this, we all have a part to play in reducing the impact our homes and lifestyles have on the environment.

Your home is already very much at the heart of this commitment, thanks to the solar technology that we have fitted to it, or are about to install.

Maybe you already have a good level of energy efficiency understanding and know about the many benefits of solar panels.

But as a new, or soon to be new, user of solar energy, we thought it would be useful to give you a quick overview of the technology and include some frequently asked questions about how it works.

We hope you find our ‘Spotlight on Solar’ information pack useful and pick up some tips and knowledge. As ever, if you have any questions or need more advice, then drop us a line using the Get In Touch details on the back page of this pack.



# Information about Solar Panels



## Sunlight is Free!

Solar electricity panels, also known as photovoltaics (PV), are installed on your roof to capture the sun's energy and convert it into renewable electricity which can be used in your home. A solar PV panel is made up of many cells made from a semi-conducting material.

When sunlight shines on this material, a flow of electricity is created. The cells do not need direct sunlight to work and can even work on cloudy days. However, the stronger the sunshine, the more electricity generated. Solar panels are fitted at the best possible angle to optimise sunlight exposure.

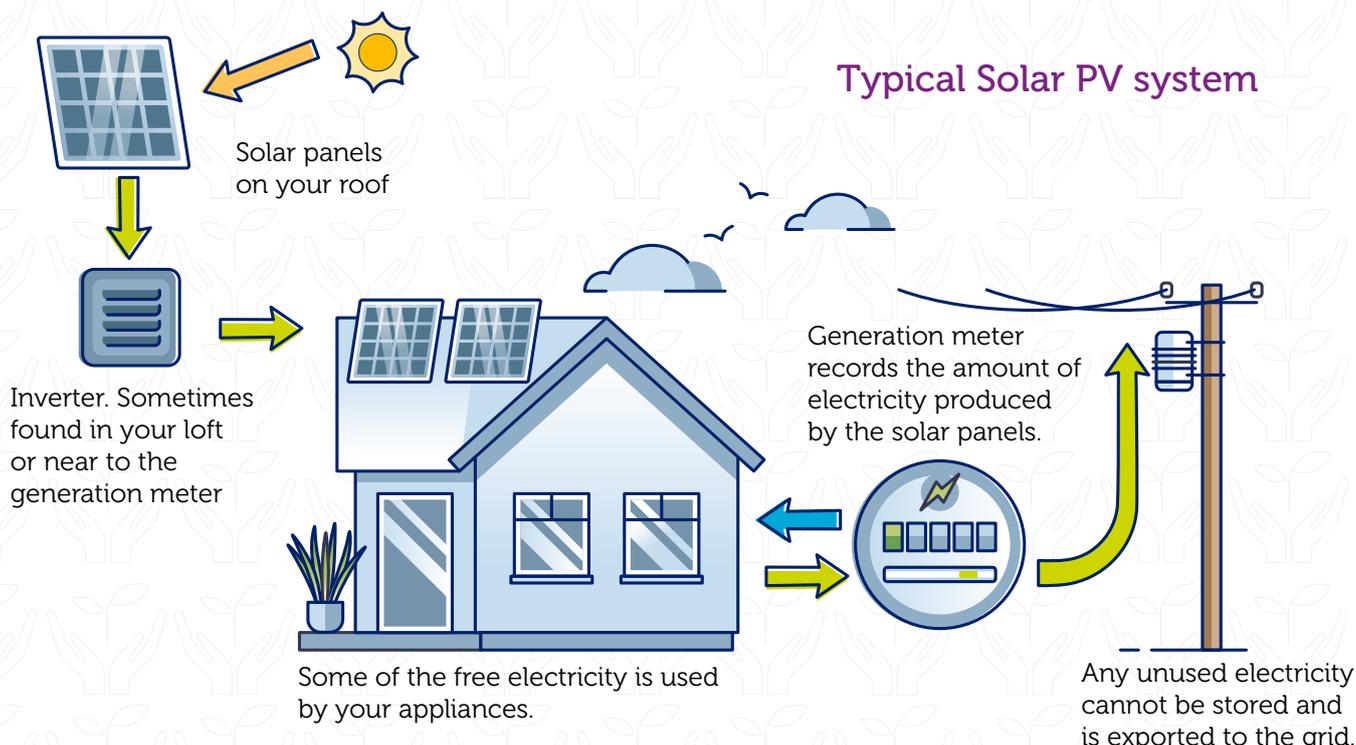
An inverter will be installed near your breaker panel inside your home. This is sometimes installed inside your loft. The purpose of the inverter is to convert direct current electricity (DC) into alternating current electricity (AC).

The inverter is then connected to your main electricity board and the solar panel to allow the electricity to be used in your home.

PV systems can deliver long-term carbon and financial savings, especially as the price of electricity continues to rise.

Benefits to you and your home:

- You can generate your own energy
- Sunlight is free so your electricity will be cheaper
- Solar electricity is a low carbon, renewable energy. Having solar panels can reduce your carbon footprint.





## Top tips: what you need to know

As your solar panels will be generating energy when there is daylight, it's a good idea to run your electrical appliances such as your washing machine, dishwasher, and iron during the day. That way your appliances will use the free electricity generated by your solar panels, reducing the amount of electricity you have to buy from your supplier. If you are not at home during the day then you can use your appliance's timers so they run at the cheapest time.

Any generated electricity that is not used in the home will then be exported to the electricity grid.



# FAQs



## How much electricity am I generating?

A typical set of solar panels is usually rated at around 3kW (3 kilowatts or 3,000W). This means that its maximum power output could be 3000W of electricity in strong, direct sunlight, with no shading.

However, groups of panels will rarely produce their maximum power output and their actual output will depend on many factors, including cloud cover and the location of the sun in the sky. For example, a 3kW set of panels could be generating around 2,000W at midday in July, but may only be generating 200W on a cloudy afternoon in December.

Your property will have a solar generation meter that records how much electricity your panels have produced. You can monitor the meter reads to see how much electricity has been produced.

## Do solar panels work in the winter?

Solar panels generate less electricity in winter for three main reasons: there are fewer daylight hours and fewer sunny days, and when the sun is shining it is lower in the sky, which means it is less powerful.

Although generation in winter months is lower than in summer, your panels will still generate electricity that you can use. Clear and sunny days in winter will result in high levels of generation and even overcast days can provide small amounts of solar electricity.

## How do I know if my solar panels are working?

If you are concerned that your solar panels might not be working correctly there are a few checks you can carry out to try and spot any issues:

- Check your generation meter. It should display a meter reading. However, if there is a problem the display could be blank or could display an error code.
- Look at the meter reading on your generation meter. If the solar panels are working your reading will be increasing. By keeping a regular record of the figures on your generation meter, e.g. weekly, you will be able to compare the figures and identify any potential issues.

If you are still not sure if your solar panels are working, then speak to us using the Get In Touch details on the back page of this pack and we can come and check them over.



## Do solar panels need cleaning?

Thanks to a solid design and a lack of moving parts, solar panels need little maintenance. The UK's regular rainfall helps panels stay clean naturally throughout the year. Even if dirt does settle on the panels, there is not a serious drop in solar panel output.

We will inspect your solar panels from time to time as part of your home's ongoing maintenance commitments.

## Can it get too hot for solar panels to work?

A good question given the extreme summer temperatures that we are more likely to experience, but while high temperatures can have some impact on overall panel efficiency, this is small. And don't forget that solar power works perfectly well in the deserts of the Middle East!

## Will the system work during a power cut?

No, for safety reasons, in the event of a power cut, the system will automatically switch off. This safety feature protects engineers working on the fault, as they could be put at risk if electricity were being supplied to the grid during a power cut. The solar panels should automatically switch back on when safe to do so.

## Will the performance of my panels decrease over time?

The lifespan of solar panels is about 25 years; however the inverter (think of this as the system's 'engine') may require replacing before then. There is likely to be some deterioration in performance over time – solar panels are typically guaranteed to provide 90% power output after 10 years.

## I want to monitor if I am using the free electricity, what should I do?

When you have a smart meter installed, the meter comes with an in-home display. These allow you to monitor the electricity you are importing from the grid and how much it is costing you. At times when your solar PV system is sending electricity to the grid, the in-home display would show that your electricity cost per hour is now £0.00 or you are purchasing 0 W of electricity. These are good times to be using your electrical appliances.

## How much could I save on my energy bills?

SYSTEM SIZE	ELECTRICITY BILL SAVING
	Presumed customer uses 50% of electricity generated themselves and is based on current unit rate of 30.11p/kWh (correct 1st July to 30th Sept 2023)
<b>1kW – usually 3 or 4 solar panels on the roof</b>	<b>£127.97 per year</b> This is based on a typical 1kW system that would generate ~850kWh, per year. With assumption that customer uses 50% then they avoid purchasing 425kWh from their supplier. Currently a kWh costs, on average, 30.11p.
<b>2kW – usually 5-7 panels</b>	<b>£255.94</b>
<b>3kW – usually 8-10 panels</b>	<b>£383.91</b>

There are indicative examples and actual system performance, savings, and income will vary.

# Find out more



Your home is already working hard to help you on the journey to a greener future.

We're here to support you on that journey. Our customer support hub is home to a dedicated Eco Hub which is packed with greener tips and advice to help you reduce, reuse and recycle.



Scan me

Just use your smartphone device, open the camera app, scan the QR code and it will take you directly there.

And for advice on where to get further information on solar energy, check out our top picks of energy efficiency sources:

[nea.org.uk/who-we-are/innovation-technical-evaluation/solarpv/](https://nea.org.uk/who-we-are/innovation-technical-evaluation/solarpv/)

[energysavingtrust.org.uk/advice/solar-panels/](https://energysavingtrust.org.uk/advice/solar-panels/)

[solarenergyuk.org/](https://solarenergyuk.org/)

[which.co.uk/reviews/solar-panels/article/guides](https://which.co.uk/reviews/solar-panels/article/guides)

[energysavingtrust.org.uk/energy-at-home/](https://energysavingtrust.org.uk/energy-at-home/)

[moneysavingexpert.com/utilities/energy-saving-tips/](https://moneysavingexpert.com/utilities/energy-saving-tips/)

If you have any questions about solar panels in your home, please feel free to contact us.

## Get in touch:

You can visit our website:

**[orbitcustomerhub.org.uk](https://orbitcustomerhub.org.uk)**

For more information, please contact us at:

**[orbitcustomerhub.org.uk/contact-us](https://orbitcustomerhub.org.uk/contact-us)**

Or to talk to us, please call:

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Textphone:

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Take a look on social media:

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