

Product Explainer

Solar Panels



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Generate electricity from your own roof.

What are solar panels?

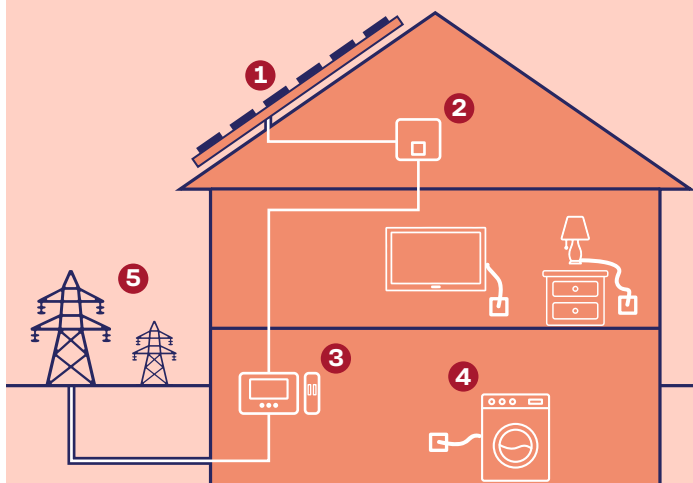
Solar energy comes in two types: Solar Thermal, which heats water, and Solar PV, which produces electricity for your home. This guide focuses on the far more common PV systems.

They provide a source of **renewable, low-carbon power**, helping you reduce your reliance on the grid and lower your electricity costs over time.

Even on cloudy days, solar panels can still generate electricity, it's daylight, not heat, that matters most.



How do solar panels work?



Solar PV panels contain cells that absorb sunlight and generate electricity. In simple terms:

- 1 panels generate electricity during daylight hours
- 2 the electricity flows through an inverter, converting it into usable power for your home
- 3 as part of the installation a safety isolation switch will be fitted next to your energy meter
- 4 your appliances use solar energy first, resulting in lower energy bills
- 5 any unused electricity can be transferred to the grid or stored (if you have a battery)

Solar panels automatically produce power whenever there's daylight.

Solar panels provide clean, renewable energy, reduce electricity bills, support upgrades like batteries, and offer long-lasting, efficient home electricity generation.



Are solar panels right for you and your home?

Solar panels can be a great option for many property types, but suitability depends on a few key factors.

A home survey will assess:

- roof size and condition
- orientation (roof direction) and pitch (angle)
- shading from trees, chimneys or nearby buildings
- available space for equipment such as an inverter
- your household electricity use

Specialist modelling tools are often used to design the most effective system for your home.

Key benefits of solar panels

Solar panels offer a range of practical advantages:

Lower electricity bills

Once installed, the electricity you generate is free to use during the day.

Clean, renewable energy

Solar PV helps cut carbon emissions and supports a greener future.

Make the most of daylight hours

Running appliances (that you were already intending to use) when the sun is shining can increase your savings.

Potential payments for extra electricity

You may be able to earn money by exporting unused electricity back to the grid.

Works well alongside other upgrades

Solar pairs brilliantly with battery storage, heat pumps and insulation.

Long-lasting technology

Panels are designed to perform reliably for decades with minimal upkeep.

What you should be aware of:

Solar panels are a fantastic solution for many households, but it's worth knowing:

Output varies by season

Generation is highest in summer, and lower in winter due to shorter daylight hours.

Not every roof is suitable

Some homes have too much shading or limited roof space.

Most savings come from daytime use

You benefit most if you can use electricity while panels are generating.

Make the most of timers and smart controls

Using timers to run appliances during daylight hours can help maximise the use of the electricity your panels generate.

Export payments aren't automatic

To get paid for surplus electricity, you'll need to sign up to an SEG tariff with your supplier.

Equipment placement is needed

An inverter (and possibly additional fuse board equipment) will need space indoors, often in a loft or garage.

Consider installing bird mesh

With your solar panels to prevent nesting, debris, noise, and system damage. It's easiest and cheaper to fit during installation rather than afterward.

Permissions may be required

Larger homes that could install systems over 3.68kw in size may require permission from their District Network Operator, who manages the local grid – UK Power Networks in Norfolk – prior to installation.

What to expect during installation

A typical domestic solar PV installation can usually be installed in **a day** but scaffolding is likely to be needed for installation and this will be in addition to this timeframe.

The process normally includes:

- fitting a secure mounting system on your roof
- installing the panels in the best position
- wiring the system safely into your home's electrics
- connecting an inverter to convert electricity for household use
- adding a generation meter to monitor performance
- installing safety isolation switches
- fitting protective bird mesh where required

Installers will explain practical details, including any work near your fuse board. Scaffolding is usually required for safe access.



What you need to know after installation

Solar PV systems require very little day-to-day effort.

After installation:

- an MCS certificate and relevant warranties will be provided with the electrical installation.
- the installer should be consulted to ensure DNO approval is obtained.
- the generation meter should be monitored regularly to track energy production.
- the system runs automatically, and rain usually keeps the panels clean.
- the panels will be registered with the local Distribution Network Operator (DNO).
- you'll also receive guidance on monitoring your generation and making the most of your solar power

It's a common misconception that installing solar panels means free electricity. While solar power can significantly reduce your energy bills, it doesn't generate limitless energy at no cost. Panels require an upfront investment, maintenance, and are dependent on sunlight, which varies by season and location. Understanding what a system can realistically produce helps set expectations and shows how it can power everyday appliances rather than your entire home for free.

Frequently asked questions

Do solar panels work in winter?

Yes panels still generate electricity in winter as long as there is daylight, although output is lower than in summer.

Do I need planning permission?

Most installations fall under **permitted development**, meaning planning permission is not usually required. Extra rules may apply in conservation areas.

Can I get paid for unused electricity?

Yes. Through the **Smart Export Guarantee (SEG)**, you can be paid for surplus electricity exported to the National Grid. You'll need to apply directly through your energy supplier.

How do I maximise savings?

Many households save most by:

- running appliances during the day
- using high-energy appliances around midday
- staggering appliance use rather than running everything at once
- You can also speak with your installer about smart management systems or a specialist system that utilises excess solar to heat hot water tanks. Installing a battery alongside solar will maximise savings and allow excess energy produced during the day to be available into the evening.

Check your funding options

If you meet the programme criteria, solar panels may be available with **full grant funding**, covering installation and associated surveys.

There's no catch and no obligation to go ahead until you're completely comfortable with the plan.

Other solutions that could work for you

Solar panels are even more effective when combined with:

- Battery storage
- Air source heat pumps
- **Ventilation improvements** (essential for a healthy, efficient home)

UK Solar PV: System Size vs What It Powers (Summer)

System Size	Panels	Daily Summer Output (kWh)	Typical Appliances Powered
2 kW	6	6–7	LED lights, phone/tablet charging, small kitchen appliances (kettle, toaster)
2.8 kW	8	8–9	Dishwasher, washing machine, LED lights, phones/tablets
4 kW	12	12–14	Fridge/freezer, washing machine, dishwasher, lights, small electronics
6 kW	18	18–20	Full household daytime use, multiple appliances, partial EV charging
10 kW	30	30–35	Nearly full home coverage in summer, multiple appliances, EV charging, some heating support

Highlighted Points

- 1 Installation, maintenance, and grid connection costs remain.
- 2 Output varies by season and location; winter production lower.
- 3 Small systems only power a few select appliances at a time.
- 4 Batteries can store surplus for evening use but add extra cost.



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