UK Solar Savings Starter Guide 2026

A plain-English guide to solar panels, battery storage, portable power stations and cutting UK electricity bills

Author: www.solarcal.co.uk
Version: 2026 Starter Edition

Important Note

This guide is for general information only. It is not financial advice, electrical advice, or installation advice.

Before buying solar panels, batteries, or portable power equipment, you should check your own energy usage, property type, roof condition, product warranty, and installation requirements.

For fitted solar panels and home batteries, always use a qualified installer.

Product prices, stock, discounts and offers change regularly. For the latest recommended products and current links, visit:

www.solarcal.co.uk

Introduction

Electricity prices have made many UK households look for better ways to reduce their bills. Solar panels, battery storage and portable power stations can all help, but only when they are chosen properly.

This guide explains the basics in plain English.

It is designed for UK homeowners and renters who want to understand:

- Whether solar panels are worth it
- Whether a battery makes sense
- How portable power stations compare
- What mistakes to avoid before buying
- Which products may suit different situations

Solar energy can reduce your electricity bills because sunlight is free once the system has been paid for. A home solar system can reduce electricity bills and may also reduce carbon emissions, depending on your property, usage and location.

The key is choosing the right setup for your home.

---

1. How UK Solar Savings Actually Work

Solar panels generate electricity during daylight hours. That electricity can be used inside your home first.

For example, if your solar panels are producing power while your washing machine, fridge, laptop, TV or dishwasher is running, some of that electricity can come from your panels instead of the grid.

That means you buy less electricity from your supplier.

The basic idea is simple:

The more solar electricity you use yourself, the more you can save.

There are three main ways solar can help:

1. Use solar power directly during the day
2. Store extra solar power in a battery
3. Export unused power back to the grid

The Smart Export Guarantee, known as SEG, allows eligible small-scale generators to be paid for electricity exported back to the National Grid.

This means solar panels can help in two ways:

- Lower your electricity bill
- Earn money from exported electricity

But the amount you save depends on your home.

A person who works from home and uses electricity during the day may get more benefit from solar panels than someone who is out all day and uses most electricity at night.

2. What Affects Your Solar Savings?

Your savings depend on several things.

Your electricity usage

If you use a lot of electricity, solar may save you more.

Higher-use homes may include:

- Families with children
- People working from home
- Homes with electric heating
- Homes with hot tubs
- Homes with electric vehicles
- Homes with heat pumps
- Homes with lots of appliances

Lower-use homes may still benefit, but the payback can be slower.

Your roof direction

In the UK, south-facing roofs usually produce the most solar power.

East-facing and west-facing roofs can still work well, especially if you use electricity in the morning or late afternoon.

North-facing roofs are usually less effective.

Shading

Shade can reduce solar output.

Common shading problems include:

- Trees
- Chimneys
- Nearby buildings
- Roof shapes
- Dormer windows
- Satellite dishes

Even partial shading can reduce performance, so this should always be checked before installation.

System size

A bigger system can generate more electricity, but bigger is not always better.

If your system produces far more than you use, you may export more electricity instead of using it yourself.

That can still earn money through SEG, but usually the best savings come from using your own solar power inside the home.

Battery storage

A battery can store unused solar electricity for later.

This is useful because many homes generate solar power during the day but use more electricity in the evening.

Battery storage can help you make better use of the electricity generated by your solar panels, but it must be matched to your usage and budget.

---

3. Solar Panels Explained Simply

Solar panels sit on your roof or another suitable structure and generate electricity from daylight.

They do not need hot weather. They need light.

This means they can still work in the UK, even when the weather is cloudy, although output is usually better on bright sunny days.

A standard home solar setup usually includes:

- Solar panels
- Inverter
- Mounting system
- Cabling
- Monitoring app
- Optional battery
- Optional EV charger connection

The inverter is important because it converts the electricity from the panels into electricity your home can use.

Main benefit of solar panels

The main benefit is reducing the amount of electricity you buy from the grid.

Electricity prices change over time, so solar should be judged against your own usage, your tariff and your installation quote.

Your actual bill can be higher or lower than the UK average depending on how much energy you use.

That is why solar should be judged against your own home, not just average figures.

Best homes for solar panels

Solar panels usually make most sense when:

- You own your home
- You have a suitable roof
- You use electricity during the day
- Your roof has little shading
- You plan to stay in the property long enough
- You want long-term bill reduction
- You are comfortable with the upfront cost

When solar may not be ideal

Solar may be less suitable if:

- Your roof is heavily shaded
- You rent and cannot install panels
- Your roof needs major repairs soon
- You use very little electricity
- You plan to move soon
- You cannot afford the upfront cost
- The installation quote is too expensive

---

4. Battery Storage Explained

A home battery stores electricity.

It can store:

- Extra solar electricity from your panels
- Cheap off-peak electricity from the grid, depending on your tariff and system

The battery can then power your home later.

For example:

Your panels generate electricity at 1pm while you are not using much power.

Without a battery, that extra power may be exported to the grid.

With a battery, some of that power can be stored and used later in the evening.

When a battery is useful

A battery can be useful if:

- You are out during the day
- You use more electricity in the evening
- You have solar panels
- You are on a smart tariff
- You want backup power options
- You have an EV or heat pump
- You want to use more of your own solar electricity

When a battery may not be worth it

A battery may not be worth it if:

- You already use most of your solar power during the day
- Your electricity use is very low
- The battery is too expensive
- The warranty is poor
- The battery size is too small
- You are unlikely to stay in the home long enough to recover the cost

Battery size

Battery size is usually measured in kilowatt-hours, shown as kWh.

A small battery may be around 3–5kWh.

A medium battery may be around 5–10kWh.

A larger home may look at 10kWh or more.

The right size depends on your usage, your solar system size and your budget.

Do not buy a battery just because it sounds powerful. Buy based on your actual electricity pattern.

---

5. Portable Power Stations Explained

Portable power stations are different from fitted home batteries.

A fitted home battery is usually installed as part of your home energy system.

A portable power station is a movable battery unit that can power devices through plug sockets, USB ports, DC outputs or solar charging inputs.

They are popular for:

- Power cuts
- Camping
- Van life
- Garden offices
- Small workshops
- Outdoor events
- Emergency backup
- Fridge or freezer backup
- Charging phones, laptops and routers

Portable power stations are usually easier to buy and use than a full home battery system.

They do not normally require the same level of installation, unless you are connecting them into a more advanced home backup setup.

What portable power stations can run

Small units may run:

- Phones
- Tablets
- Laptops
- LED lights
- Wi-Fi routers
- Small fans

Medium units may run:

- Mini fridges
- TVs
- CPAP machines
- Small kitchen appliances
- Power tools for short periods

Large units may run:

- Fridge/freezer
- Microwave for short use
- Kettle for limited use
- Larger tools

- Multiple devices
- Emergency home backup loads

Always check the wattage before plugging anything in.

A device with a heating element, such as a kettle, toaster, heater or hairdryer, usually uses a lot of power.

Key specs to check

Before buying a portable power station, check:

- Battery capacity in Wh or kWh
- Output wattage
- Peak/surge wattage
- Number of plug sockets
- Solar input limit
- Charging speed
- Battery chemistry
- Warranty
- Weight
- Noise level
- App control
- Expandable battery options

Simple capacity example

A 1,000Wh power station theoretically stores around 1kWh of energy.

If a device uses 100 watts, it may run for roughly 10 hours before losses.

But in real life, you should allow for efficiency losses.

So a 1,000Wh unit might give you closer to 800–900Wh of usable energy, depending on the product and conditions.

---

6. Solar Panels vs Home Batteries vs Portable Power Stations

Solar panels

Best for:

- Long-term bill reduction

- Homeowners
- Daytime electricity use
- Reducing grid electricity
- Export income through SEG

Not ideal for:

- Renters
- Shaded roofs
- Short-term living situations
- People who cannot handle upfront installation cost

Home batteries

Best for:

- Storing solar power
- Evening electricity use
- Smart tariffs
- Higher-use homes
- Homes with EVs or heat pumps

Not ideal for:

- Very low electricity users
- People with limited budget
- Homes without solar where the tariff does not support savings

Portable power stations

Best for:

- Renters
- Emergency backup
- Camping
- Garden rooms
- Small-scale backup
- People who want flexibility

Not ideal for:

- Full house backup unless using a large advanced system
- Long-term bill savings on their own
- High-power heating appliances for long periods

---

7. Example UK Scenarios

These are simple examples. Your real savings will depend on your actual usage, location, tariff, system size and product cost.

Example 1: Small flat or renter

Situation:

- Low electricity usage
- No owned roof
- Cannot install solar panels
- Wants backup for router, phone, laptop and lights

Best option:

- Small or medium portable power station
- Optional portable solar panel
- No fitted solar system

Possible product type:

- 300Wh to 1,000Wh portable power station

Good for:

- Power cuts
- Working from home backup
- Camping
- Emergency charging

Useful website pages to look for:

- Best portable power stations for renters
- Best backup power for Wi-Fi during power cuts
- Best small solar generators for UK flats

Example 2: Average UK homeowner

Situation:

- Owns a house
- Uses electricity during the day
- Has a decent south, east or west-facing roof
- Wants lower bills

Best option:

- Solar panel system

- Consider battery depending on usage

Good for:

- Long-term bill reduction
- Using appliances during daylight
- Exporting spare electricity

Useful website pages to look for:

- Solar savings calculator
- Solar quote comparison
- Battery guide
- Product comparison pages

Example 3: Family home with high evening use

Situation:

- Family uses power mostly after school/work
- Dishwasher, washing machine, TV, cooking, gaming, laptops
- May have EV or heat pump

Best option:

- Solar panels plus battery storage
- Smart tariff comparison
- Energy usage planning

Good for:

- Storing daytime solar
- Evening usage
- Reducing peak-rate electricity buying

Useful website pages to look for:

- Is a solar battery worth it?
- Best battery size for a UK family home
- Solar panels with battery storage explained

Example 4: Power cut backup

Situation:

- Wants backup for fridge, freezer, internet and lights
- May not want full solar installation
- Wants something simple and flexible

Best option:

- Medium or large portable power station
- Optional solar panel
- Possibly transfer switch only with qualified installation

Good for:

- Emergency backup
- Storms
- Rural areas
- Home office backup

Useful website pages to look for:

- Best portable power station for power cuts UK
- How long can a power station run a fridge?
- Best solar generator for emergency backup

---

8. Common Buyer Mistakes

Mistake 1: Buying before checking electricity usage

Do not guess.

Check your annual electricity usage in kWh.

You can usually find this on your energy bill or supplier account.

This number is more useful than your monthly payment because monthly payments can include debt, credit, estimates or seasonal changes.

Mistake 2: Only looking at the headline saving

Some adverts make solar or batteries sound like guaranteed huge savings.

Be careful.

Savings depend on:

- Your energy use
- Your tariff

- Your roof
- Your location
- Your system size
- Your battery size
- Your installation cost
- How much solar electricity you use yourself

Mistake 3: Ignoring shade

Shade can reduce solar generation.

Before buying, check whether trees, chimneys, buildings or roof shapes will block sunlight.

Mistake 4: Buying too small a power station

A very small portable power station may be fine for phones and laptops, but not for fridges, kettles, microwaves or tools.

Always check both:

- Battery capacity
- Output wattage

Mistake 5: Confusing watts and watt-hours

Watts measure power.

Watt-hours measure storage.

Example:

A 1,000W appliance needs a power station that can output at least 1,000W.

A 1,000Wh battery shows roughly how much energy is stored.

You need both numbers.

Mistake 6: Forgetting warranty and battery lifespan

Batteries do not last forever.

Check:

- Warranty length
- Cycle life
- Battery chemistry
- Brand support
- Replacement options

- UK support availability

Mistake 7: Not checking SEG export rates

SEG rates can vary by supplier and tariff.

Before installing solar, check what export tariffs are available.

Mistake 8: Thinking every battery gives full home backup

Not every battery system will power your home during a power cut.

Some systems need extra backup hardware.

Some only power selected circuits.

Some do not provide backup at all.

Always ask before buying.

---

9. Recommended Product Categories

Product prices, stock, discounts and affiliate offers change regularly. For the latest recommended products and current links, visit:

www.solarcal.co.uk

This guide does not list every product because recommendations can change. Instead, use the categories below to understand what type of product may suit your situation.

Category 1: Best for renters

Look for:

- Portable power station
- No installation required
- Easy to move
- Good for laptop, router, phone and lights
- Optional solar panel compatibility

Recommended type:

300Wh to 1,000Wh power station

Best for:

- Flats
- Rental homes
- Students
- Home office backup
- Light emergency use

Avoid:

- Very large units that are too heavy
- Products with poor warranty
- Units with low output wattage

Category 2: Best for power cuts

Look for:

- Higher battery capacity
- Strong AC output
- Fast charging
- UPS or backup mode if available
- Enough output for fridge, freezer, router and lights

Recommended type:

1,000Wh to 2,000Wh+ power station

Best for:

- Fridge/freezer backup
- Router and phone charging
- Storm preparation
- Rural homes
- Short emergency backup

Avoid:

- Small power banks marketed as full backup systems
- Units that cannot handle fridge startup surge
- No-name brands with weak support

Category 3: Best for camping and outdoor use

Look for:

- Lightweight design
- Solar charging
- Multiple USB ports
- Quiet operation
- Good carry handle
- Durable build

Recommended type:

300Wh to 1,500Wh depending on use

Best for:

- Camping
- Fishing
- Car trips
- Van life
- Outdoor work
- Festivals

Avoid:

- Heavy units if you need to carry them often
- Products with slow charging
- Units without enough ports for your devices

Category 4: Best for family backup

Look for:

- Large battery capacity
- Expandable battery options
- High output wattage
- App monitoring
- Solar panel compatibility
- Strong warranty

Recommended type:

2,000Wh+ expandable power station

Best for:

- Family homes
- Longer power cuts
- Multiple devices
- Home office protection

- Emergency planning

Avoid:

- Buying too small
- Ignoring weight and storage space
- Assuming it will power a whole house without checking

Category 5: Best for homeowners considering solar

Look for:

- Solar quote comparison
- Battery-ready inverter
- Good warranty
- MCS-certified installation
- Clear payback estimate
- SEG export compatibility

Best for:

- Homeowners
- Long-term bill reduction
- Homes with suitable roofs
- People planning to stay in the property

Avoid:

- Pressure selling
- Vague quotes
- No warranty details
- No clear installation breakdown
- Quotes that do not explain battery suitability

---

10. Simple Buying Checklist

Before buying solar panels, ask:

- Do I own the property?
- Is my roof suitable?
- Is the roof shaded?
- What direction does it face?
- How much electricity do I use per year?
- How much electricity do I use during the day?

- What is the installation cost?
- What is the warranty?
- Can I export electricity through SEG?
- How long will the payback take?

Before buying a home battery, ask:

- How much spare solar electricity do I produce?
- Do I use most electricity in the evening?
- What battery size do I need?
- Does it support backup power?
- What is the warranty?
- What is the cycle life?
- Can it charge from cheap overnight electricity?
- Is it compatible with my solar system?

Before buying a portable power station, ask:

- What do I want to power?
- How many watts do those devices use?
- How many hours do I need backup?
- What battery capacity do I need?
- Is the AC output strong enough?
- Can it charge from solar panels?
- How heavy is it?
- Does it have a good warranty?

---

11. Simple Power Station Size Guide

This is a rough starter guide only.

Phones, tablets and lights

Suggested size:

200Wh to 500Wh

Good for:

- Emergency charging
- Small lights
- Tablets
- Phones
- Short laptop use

Laptop, router and small devices

Suggested size:

500Wh to 1,000Wh

Good for:

- Working from home backup
- Wi-Fi router
- Laptop
- Phones
- Lights
- Small fan

Fridge/freezer backup

Suggested size:

1,000Wh to 2,000Wh+

Good for:

- Fridge
- Freezer
- Router
- Lights
- Phone charging

Important:

Fridges and freezers cycle on and off, so exact runtime varies.

Larger emergency backup

Suggested size:

2,000Wh to 5,000Wh+

Good for:

- Longer power cuts
- Multiple appliances
- Family backup
- Expandable systems
- Solar charging

Important:

Do not expect a small power station to run a full house.

---

12. How to Reduce Bills Without Buying Anything First

Before spending money, do these simple things.

Use more electricity during cheaper or solar-friendly times

If you already have solar panels, run appliances during daylight where possible.

Examples:

- Washing machine
- Dishwasher
- Charging laptops
- Charging power banks
- Charging EV if practical
- Heating water if your system supports it

Check your tariff

Your tariff matters.

Some people may benefit from smart tariffs, off-peak rates or export tariffs.

But always check the full details.

A cheap night rate may come with a higher day rate.

Reduce standby use

Turn off devices that are constantly using electricity where practical.

This may include:

- Old TVs
- Game consoles
- Chargers
- Desktop computers
- Extra fridges
- Outdoor lights

Replace inefficient appliances when needed

Do not throw away working appliances just for the sake of it.

But when replacing appliances, check energy ratings.

Fridges, freezers, tumble dryers and washing machines can make a difference over time.

Use your solar monitoring app

If you have solar, your app can show when you generate power and when you import from the grid.

This helps you change habits.

---

13. What Is the Best Option for You?

Choose solar panels if:

- You own your home
- Your roof is suitable
- You want long-term savings
- You can afford the upfront cost
- You use electricity during the day
- You want to reduce grid electricity use

Choose solar plus battery if:

- You generate more solar than you use during the day
- You use more electricity in the evening
- You want to store your own power
- You are on or considering a smart tariff
- You have higher electricity usage

Choose a portable power station if:

- You rent
- You want backup power
- You want something movable
- You go camping
- You work from a garden office
- You want to protect phones, Wi-Fi, laptops, fridge or freezer during outages

Choose nothing yet if:

- You do not know your electricity usage
- You have not checked your roof
- You are unsure about your budget
- You have not compared products
- You are being pressured by a salesperson

---

14. Final Recommendation

For most people, the best order is:

1. Check your annual electricity usage
2. Use a solar savings calculator
3. Decide whether your roof is suitable
4. Compare solar quotes
5. Decide whether a battery is worth it
6. Consider a portable power station for backup
7. Compare warranties and real product specs
8. Avoid rushing into expensive purchases

Solar panels can be a strong long-term investment for the right home.

Battery storage can be useful when matched to the right usage pattern.

Portable power stations can be a practical option for renters, backup power, camping and emergency use.

The right choice depends on your home, your usage and your budget.

---

15. Next Steps

To continue, do the following.

Step 1: Check your electricity usage

Look at your latest energy bill or supplier app.

Find your annual electricity usage in kWh.

Write it here:

My annual electricity usage: _____ kWh

Step 2: Check your roof

Write down:

Roof direction: _____

Any shading?: Yes / No

Homeowner or renter?: _____

Step 3: Decide your main goal

Choose one:

- I want to cut bills long term
- I want backup power
- I want camping/outdoor power
- I want to store solar electricity
- I want to compare products
- I am just researching

Step 4: Use our calculator

Use our free calculator to estimate your possible solar savings.

Calculator link: www.solarcal.co.uk

Step 5: Compare recommended products

View our latest recommended product guides on:

www.solarcal.co.uk

Suggested guides to look for:

- Best portable power stations for UK homes
- Best solar generators for power cuts
- Best battery backup for fridge and freezer
- Best solar panels with battery storage
- Allpowers vs EcoFlow vs Jackery

Bonus: Quick Decision Table

Your situation	Best starting point
You own a house and want lower bills	Solar panel quote
You use lots of power in the evening	Solar plus battery
You rent	Portable power station
You worry about power cuts	Medium or large power station
You camp or travel	Portable solar generator
You have an EV	Solar plus smart tariff research
You work from home	Solar or backup power station
You are unsure	Start with your electricity usage

Closing Message

The biggest mistake is buying before understanding your own energy use.

Start with your bill.

Then check your roof.

Then compare solar, battery and portable power options.

The best system is not always the biggest or most expensive one.

The best system is the one that matches your home, your usage and your budget.

For the latest calculator, product guides and recommendations, visit:

www.solarcal.co.uk

Sources and Further Reading

For more information, check official and trusted UK resources such as:

- Energy Saving Trust — solar panels and battery storage guidance
- Ofgem — Smart Export Guarantee information
- Ofgem — current and future energy price cap information
- MCS — certified installer information
- Your own energy supplier — electricity usage, tariff and export tariff details