

SOLAR PANELS



Solar electricity panels, also known as photovoltaics (PV), capture the sun's energy and convert it into electricity that you can use in your home. By installing solar panels you can generate your own renewable electricity.

- Lower bills
- Lower carbon footprint
- Potential to generate an income
- Reduced dependence on National Grid

For more information and advice, please contact Sarah Gill on 07720 098980 or sarah.gill@groundwork.org.uk

In more detail:

Solar PV systems turn sunlight into electricity through the 'solar cells' they contain. These cells are made from thin layers of a 'semiconductor' material (traditionally silicon) between layers of glass. Electricity leaves the panel as direct current (DC) and passes through an inverter that converts it to 240V alternating current (AC), so that it can be used in your home. This electricity can then power any appliances that are switched on – washing machine, TV and so on – while the surplus (if there is any) is exported to the electricity grid, or stored in a battery if you have one.

Solar PV systems are rated in kilowatts peak (kWp). This is the maximum rate of electricity generation at peak performance (eg. noon on a sunny day with the panel facing directly south). The kWp of a solar array depends on the size, type and number of panels – but a 3 or 4 kWp array is typical. Electrical energy generated by solar panels is measured in kilowatt hours (kWh) – the same unit that is shown on your household electricity bill.

Before you invest in a solar PV system you should check the following:

- Is your roof roughly south facing? Solar panels need maximum exposure to the sun, achieved by facing panels in a direction between south east & south west.
- Will trees or buildings cast shadows over the solar panels? If even a part of a panel is in shade, the amount of electricity generated will be greatly reduced.
- Is your roof structurally sound? It will need to take the extra weight of the solar panels plus the fixing frames.

To maximise usage of your generated electricity, try running high-usage appliances like washing machines and dishwashers during the day (when the sun is shining), although it's best to stagger their use so they're not all running at once. Doing this can save you around £240 a year on your bills, compared to £100 for households who are out all day. If you are out during the day then delay-start timers for appliances can be helpful.

To generate an income from your solar panels, you could sign up to a Smart Export Guarantee (SEG) tariff. Through the SEG any energy company with more than 150,000 customers is required to provide at least one export tariff and smaller companies can offer this voluntarily. SEG tariffs pay you for any electricity you generate but don't use, although the amount you get paid will vary from supplier to supplier so it's important to shop around.

What does it cost?

The average domestic solar PV system is 3.5kWp and costs around £4,800.

How much can I save?

With SEG, you could save up to £325 if you tend to be at home during the day and up to £220 if you tend to be out all day. Without SEG, estimated savings are £240-100. The more you are at home, the more you will save.

Do I need planning permission?

Solar arrays are classed as permitted developments, meaning they don't need planning permission if they stick out 200mm or less from your building and meet other basic requirements. However, it's still worth checking with your local planning department, especially if you live in a listed building, conservation area, or an area of outstanding natural beauty.

Who should install solar panels?

Always obtain 2-3 quotes, and request a technical survey, not a sales visit. Choose an installer registered with the Microgeneration Certification Scheme and signed up to the Renewable Energy Consumer Code.

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