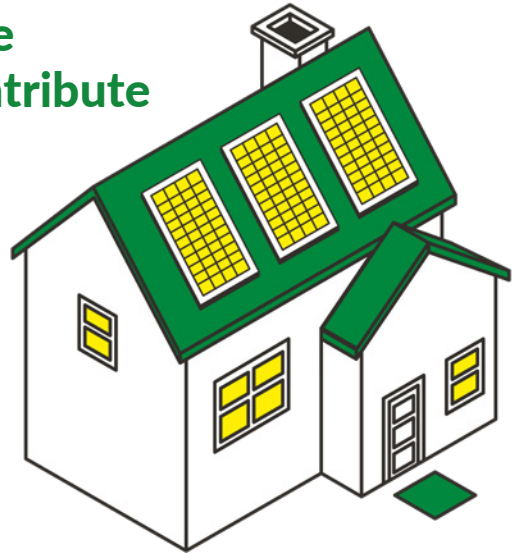


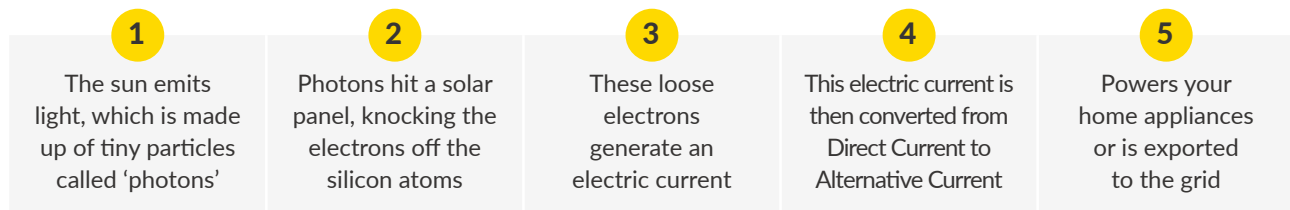
SOLAR PHOTOVOLTAICS (SOLAR PV)

Solar systems offer a way to generate renewable energy to a home and contribute to lowering your energy cost.

Solar PV can produce electricity into your property that can be used for lighting, power, appliances and heat. Solar PV systems are a very good addition to work with a heat pump, and this combination can make the home very energy efficient. Solar PV panels can have a diverter device that will allow it to heat water when there is low demand. Solar PV systems generally go on the roof and properties which are south-facing are best, however south west and south east also perform very well.



How do solar panels work?



How is it installed?



TOP 3

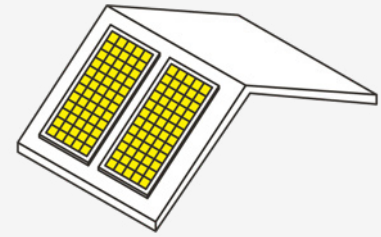
Benefits of Solar PV

1. Lower electricity bills as the panels generate electricity
2. Protection from price rises by energy companies
3. Reduction in carbons emissions as the electricity is being generated in a renewable way



**GREEN
DOCTOR**

Solar Photovoltaics (Solar PV)



What is it?	Solar electricity panels, also known as photovoltaics, capture the sun's energy and convert it into electricity that you can use in your home. By installing solar panels, you can generate some of your own renewable electricity. There is a hope that renewable systems can support us to become independent.
How does it work?	A Solar PV panel consists of many cells made from layers of semi-conducting material, most commonly silicon. When light shines on this material, a flow of electricity is created. The cells don't need direct sunlight to work and can even work on cloudy days. However, the stronger the sunshine, the more electricity generated.
How disruptive?	Solar PV will be attached to the roof of the building. Access will be needed in the loft and around the electricity meter. Disruption internally is minimal. ●●○○○
Right for your home?	Solar PV panels are worth considering if you have a mainly south-facing roof with little or no shade. Although a south-facing roof will give the best power output, south west or south east-facing roofs should also be fine, but you would get less power out of the system, and be able to save less on your electricity bill.
Maintenance	Solar panels generally require very little maintenance to function. The only thing they need is a periodic light cleaning to make sure dirt, leaves, and other debris aren't obstructing the sun's rays. The only time you may need more extensive maintenance is during periods of heavy snowfall, or if your panels' energy output starts to decrease.

Installation process

1. Set up scaffolding	Firstly, you have to erect scaffolding to ensure safety during the whole installation process when being on the roof
2. Install solar panel mounts	Then, The solar panel mounting system has to be set up. This will support the base of the solar panels. The whole mounting structure must be tilted and have an angle between 18 to 36 degrees to maximise sunlight exposure
3. Install the solar panels and remove scaffold	When the mounts are set up, the solar panels itself has to be installed on the mounting structure. The next step is to wire the solar panels into a solar array
4. Carry out the wiring to main electrical components	The solar inverter must be connected to the system. It is typically installed near the main panel and it could be both indoors and outdoors. Thereafter, solar panels may be connected to a solar battery which can store energy, Current funding does not always cover the cost of solar batteries
5. Test, commission and set up	The inverter is connected to the consumer unit so that energy can flow back to the grid when it is not being used in the home. A solar generation meter should also be connected to monitor the amount of electricity the solar panels produce.
6 Power the system	Once connected a Solar PV system can operate without the need for much maintenance for 25 years or more.



**GREEN
DOCTOR**

Find out more by visiting www.groundwork.org.uk/getenergyhelp
or scan the QR code.

