

How Solar Power Works

You have probably seen a lot of solar panels recently, as more and more people are having them installed on their roofs. In 1883, American inventor Charles Fritts made the first solar cells from selenium. Though Fritts had hoped his solar cells might compete with Edison's coal-fired power plants, they were less than one percent efficient at converting sunlight to electricity and thus not very practical. However, do you know what they are or how they work? Take a look at this exciting guide and find out just what solar power is!

The solar panels that are installed on the roof of a house capture energy from the sun. They take this energy and use it to provide the house with electricity and even hot water. Solar panels can even work on cloudy days when the sun isn't very visible at all.

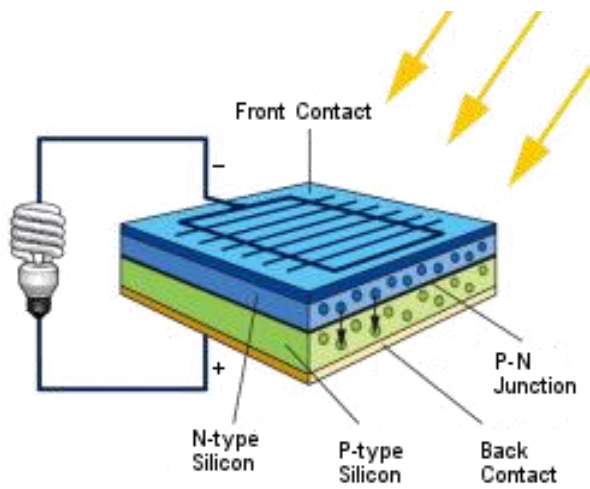
Of course, solar panels cannot provide a home with power at night, so most people still have to remain connected to the National Grid (this is where you get your electricity from). However, there are some advantages to staying connected to the National Grid, and this step by step to how solar power provides energy for your home will show you why.

- The sun shines on the solar panels and the panels absorb the energy, creating direct current (DC) electricity.
- The electricity is fed into what is called a solar inverter. This converts the current into alternating current (AC) electricity.
- The AC current is then used to power the appliances in your home.
- Any power that your home does not need gets sent back (or sold) to the National Grid for others to use.

In a way, you could say that the National Grid works in a similar way to a bank. You can deposit your excess energy from your solar panels, but when you need it back later (such as during the evening), you can take some back.

Light from the sun travels 93 million miles before it gets to earth. Sunlight lands on your roof and is magically transformed into electricity. The generated power works your TV, heats water and lights your way at night. The key to this modern miracle is the photovoltaic cell that takes that renewable energy and sustainable supply and generates electricity.

Of course, there's more to it than that. Let's start with the basic components of your average solar panel system - the sort you see on the roof of a house or out in the country as part of a solar farm. The main constituent of an effective solar power system is the photovoltaic cell.



Photovoltaic Cells

Photovoltaics has been around for a good few years now. Back in the late 1950s PV cells were almost exclusively used to power things like satellites and many of us remember having calculators at school that didn't need a battery because they were powered by the sun. The desire to harness that energy has been the Holy Grail of renewables for the last 30 to 40 years.

The great thing about solar cells is that they don't need bright sunshine to work. They just require light and can produce electricity even on a cloudy day - which is great news here in the UK. There are several types of photovoltaic cell used in solar panels. They are made from silicon, an excellent semi-conductor. These different cells vary in the efficiency of their electricity production, their purity and their cost.

Put simply, the cells absorb the light from the sun and convert it to electricity. By placing a connection either end of the cell you can then collect that current and use it to power all your energy needs.

Solar panels are not the only source of renewable energy. Other sources of renewable energy include wind and hydro power. It is believed that it is possible to switch to a fully sustainable global energy landscape within the next 30 years. According to research, greater geographical connectivity of solar, wind and hydro power, can reduce energy use and cut costs but our major transportation systems, including trucking, rail and sea transportation of goods, depend greatly on fossil fuels.