

HOW DO SOLAR PANELS WORK FOR KIDS

You have probably seen a lot of solar panels recently, as more and more people are having them installed on their roofs. 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!

How Solar Power Works

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.

Why Renewable Energy is Important

Before we look at why renewable energy is important, it is important to know exactly what renewable energy is. It comes from nature and can be provided by things like the sun, wind, and water. It can even be made from poo! It is also called green energy or clean energy because it does not cause any pollution when we use it to power our homes.

At the moment, we rely on energy made from the Earth's resources. These are things like coal and natural gas. We call these fossil fuels because they started forming during the age of the dinosaurs, and are even made from plants and animals from that period.

The problem with fossil fuels is that they won't last forever and we are already starting to run out, which is why renewable energy has started to become so important. Once they are gone, they cannot be replaced – at least not for another million years or so. Plus, they cause a lot of pollution, which is damaging our planet.

Sadly, we cannot store renewable energy yet. Things like wind and solar power only work when there are wind and sun around, and we have not found a way to store the power they generate yet. They also cost a lot more money to install at the moment, but governments around the world are introducing new ways for people to get renewable energy at a lower price or even for free.

Renewable energy is important because it doesn't damage our planet, and it keeps our air clean. So when we breathe, we won't be breathing in nasty toxins or pollution. Scientists are working hard to find better ways to use renewable energy so that we can have a healthier planet, and lead healthier lives, but they need continued support to do this. That's why it is so good to have solar panels!

The Advantages and Disadvantages of Solar Power

The advantages:

- They produce clean energy
- They produce a completely renewable source of energy
- They require little maintenance
- They are reliable
- They don't produce any noise
- It is possible to make money from them

The disadvantages:

- They are expensive to buy and install
- Do not generate power at night
- They are not very efficient (yet)

Fun Facts

Here are some fun and interesting facts about solar power that you probably didn't know before!

- The Earth receives more energy from the sun in one hour than the planet uses in one year!
- For solar panels to supply the world's electrical needs, less than 1% of the land would need to be covered in solar panels.
- Wind is actually a form of solar power. It is created by the uneven heating of the Earth's surface.
- Solar panels can work for decades. In fact, some of the panels that were installed in the 1970s are still working and generating electricity today.
- The solar cell was invented by Russell Ohl in 1941
- The photovoltaic effect, which explains how electricity can be generated from sunlight, was discovered by Alexandre Edmond Becquerel in 1839.
- Weight for weight, silicon solar cells actually generate the same amount of electricity over their lifetime as nuclear fuel rods, and they are much safer.
- The amount of energy that is used to create solar panels is actually paid back through clean electricity production within one or two years, making it much cleaner than people think.