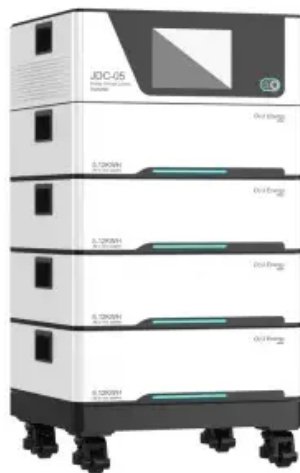


# Photovoltaic solar panels explained





## Overview

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As we've explained, the solar cells that make up each solar panel do most of the heavy lifting. Through the photovoltaic effect, your solar panels produce a one-directional electrical current, called direct current (DC) electricity.

As we've explained, the solar cells that make up each solar panel do most of the heavy lifting. Through the photovoltaic effect, your solar panels produce a one-directional electrical current, called direct current (DC) electricity.

There are three types of solar energy systems and two types of panels, the PV panel, the solar thermal panel, and concentrated solar power or CSP collectors. PV uses the sun's light to create electricity, which can be used for residential and commercial supplies.

How does solar power work?

This article lays out the basic science of how solar panels work and how it relates to powering your home and saving money.

When the sun shines onto a solar panel, energy from the sunlight is absorbed by the PV cells in the panel. This energy creates electrical charges that move in response to an internal electrical field in the cell, causing electricity to flow.

A PV cell is made of semiconductor material. When photons strike a PV cell, they will reflect off the cell, pass through the cell, or be absorbed by the semiconductor material. Only the photons that are absorbed provide energy to generate electricity. How do solar photovoltaic cells work?

Solar photovoltaic cells are grouped in panels, and panels can be grouped into arrays of different sizes to power water pumps, power individual homes, or provide utility-scale electricity generation. Source: National Renewable Energy Laboratory (copyrighted).

What is a photovoltaic (PV) cell?

A photovoltaic (PV) cell, commonly called a solar cell, is a nonmechanical



device that converts sunlight directly into electricity. Some PV cells can convert artificial light into electricity. Sunlight is composed of photons, or particles of solar energy.

What is a solar panel?

A Solar panels (also known as " PV panels") is a device that converts light from the sun, which is composed of particles of energy called "photons", into electricity that can be used to power electrical loads.

What is the photovoltaic effect?

The photovoltaic effect is the fundamental process that makes solar panels possible. Discovered in 1839 by French physicist Edmond Becquerel when he was just 19 years old, this phenomenon occurs when certain materials generate electrical current upon exposure to light. Think of solar panels as reverse LEDs.

How do solar panels work?

As we've explained, the solar cells that make up each solar panel do most of the heavy lifting. Through the photovoltaic effect, your solar panels produce a one-directional electrical current, called direct current (DC) electricity. Your home can't use DC electricity directly—it needs to be converted to alternating current (AC) electricity first.

How do solar panels convert sunlight into electricity?

Solar panels convert sunlight into electricity through a process called the photovoltaic effect. In this process, sunlight charges the electrons in a solar panel, creating an electrical current that can then power an electrical appliance. What are solar panels made of?

A panel comprises 60-72 solar cells.



## Photovoltaic solar panels explained

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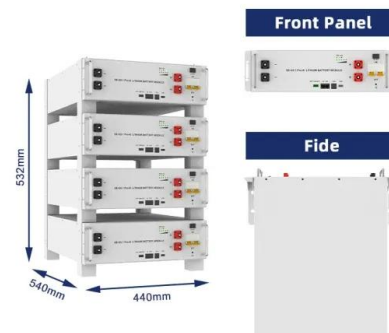


### [Solar Panel Sizes and Wattage Explained](#)

Additionally, you can compare pricing, brands and options by viewing solar kit sizes. Remember that you decide how many solar panels to install based on your demands, space and budget. Ultimately, for calculating ...

### Types of Solar Panels Explained

Two main types of solar panels There are two main categories of solar panels: photovoltaic and thermal conversion. Photovoltaic solar panels convert sunlight into electricity. Thermal conversion solar panels harness the sun's energy to ...



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### [Solar Panels: Everything You Need To Know](#)

What are Solar Panels Made from? Solar panels are made of different components. But, the heart of the solar panel is the solar cell. Solar cells are made from an abundant resource; silicon. An intricate manufacturing ...

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