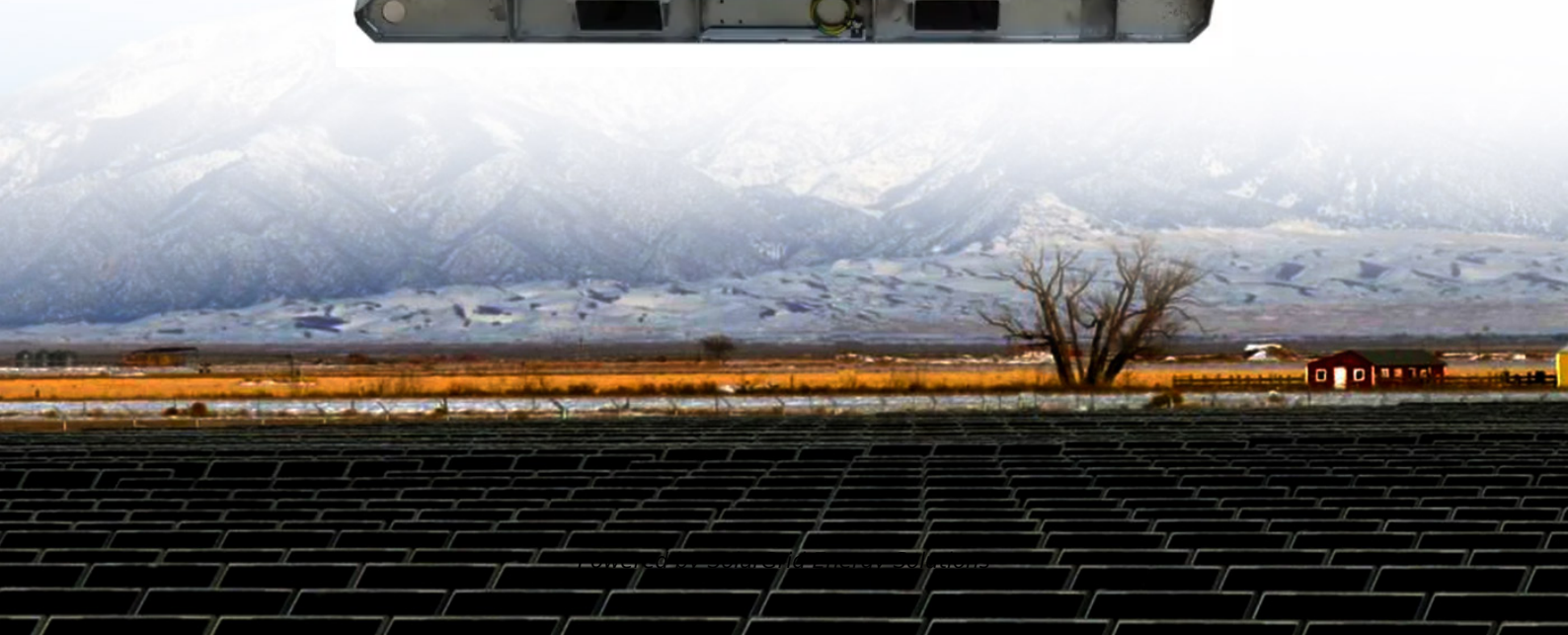


## SolarGrid Energy Solutions

# How solar panels charge on-site energy



## Overview

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How can on-site solar PV & energy storage improve sustainability?

To achieve sustainability goals while meeting the increasing electricity demands of electrification, organizations are pairing on-site solar PV generation with on-site energy storage. These systems, which are considered as “behind-the-meter” (BTM) systems, allow facilities to maximize the benefits of on-site renewable generation.

How does a grid-tied solar home work?

An example is the traditional grid-tied solar home. Since solar energy only generates real power, reactive power can’t be supplied locally. Instead, it must be provided by the grid and distributed along transmission lines. Consumers then receive additional charges (KVAR) on their bill for a level of reactive production that occurs off-site.

How do solar panels create electricity?

But if you want to explore how solar panels create electricity a bit more, we'll explain what you should know. Solar cells are typically made from a material called silicon, which generates electricity through a process known as the photovoltaic effect.

Are solar panels generating energy on your roof?

So, even though you have solar panels generating energy on your roof, you’re still drawing (and paying for) reactive power from the grid because your panels are only producing one form of power needed to operate AC equipment.

Why is solar power installed behind a meter?

Installations behind the meter — usually on-site — offset both energy and demand based utility expenses. Because peak solar power production typically coincides with peak electricity usage, the solar power can offset

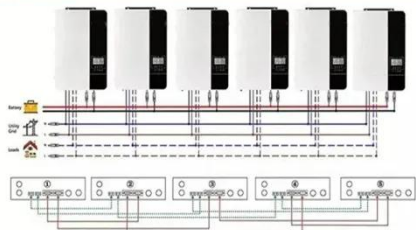
higher peak time energy charges. Each kilowatt-hour created on site helps reduce those peak demand prices.

How do solar panels work?

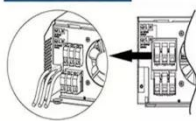
As we've explained, the solar cells that make up each solar panel do most of the heavy lifting. Through the photovoltaic effect, your solar panels produce a one-directional electrical current, called direct current (DC) electricity. Your home can't use DC electricity directly—it needs to be converted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

## How solar panels charge on-site energy

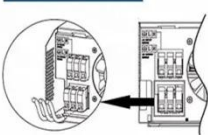
Parallel (Parallel operation up to 6 unit (only with battery connected))



AC input wires



AC output wires



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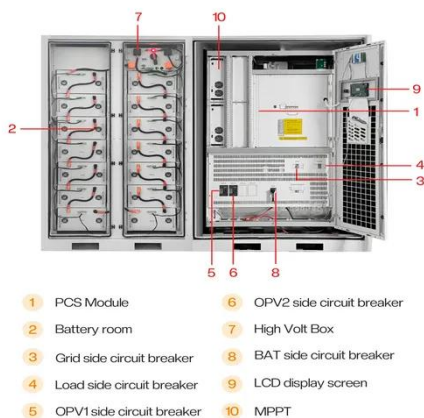
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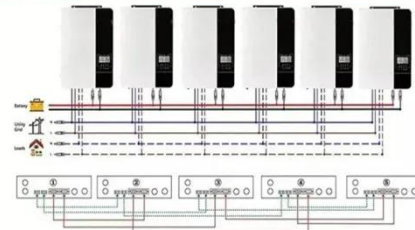
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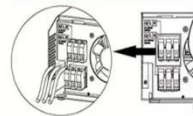
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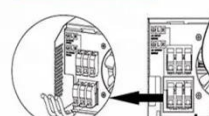
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AC input wires



AC output wires

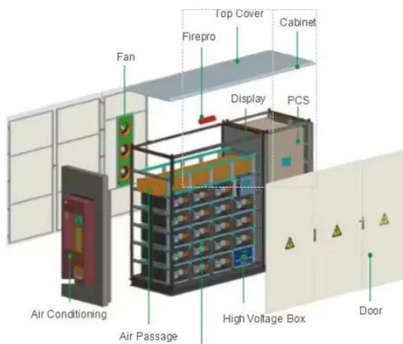


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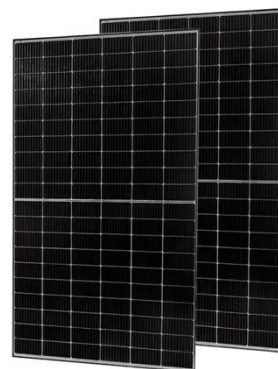


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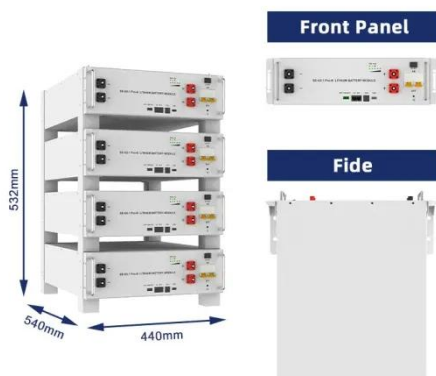
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