

## How does large-scale solar work?

A community solar garden is an example of large-scale solar electricity generation. If you are interested in operating a community solar garden, it's important to understand how large-scale solar electricity generation and solar panels work. This will help ensure that your community solar garden meets your community's electricity needs.

### Why is a community solar garden considered large-scale solar?

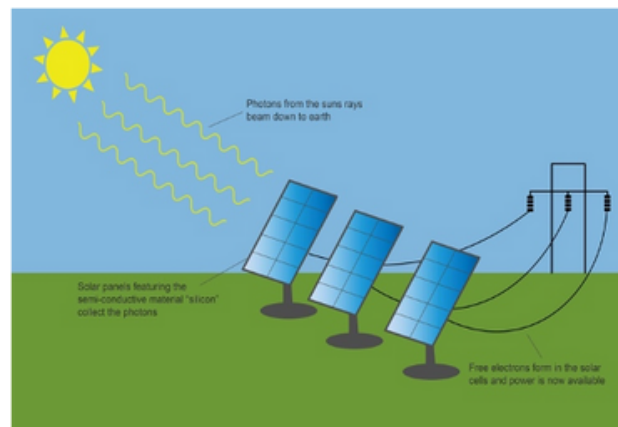
A community solar garden is a large area with thousands of solar panels producing electricity at the same time. It can power many buildings and homes in a community so it is considered large-scale solar. In contrast, a few solar panels on your roof that may only power your own house is considered small-scale residential solar.

### How do solar panels produce electricity?

Solar panels capture the sun's energy and use it to create electricity.

Here's how:

- ➔ First, energy from the sun hits the solar panel, which is partly made of silicon. Silicon has small particles called electrons.
- ➔ Next, the sun's energy knocks electrons free from the silicon.
- ➔ Then, the freely moving electrons move through wires to produce electricity.



A community solar garden channels the freely moving electrons into Nova Scotia's main electricity grid to bring power to participating subscribers.

[Learn more about Nova Scotia's Community Solar Program.](#)

## What type of electricity do solar panels produce?

There are two types of electricity:

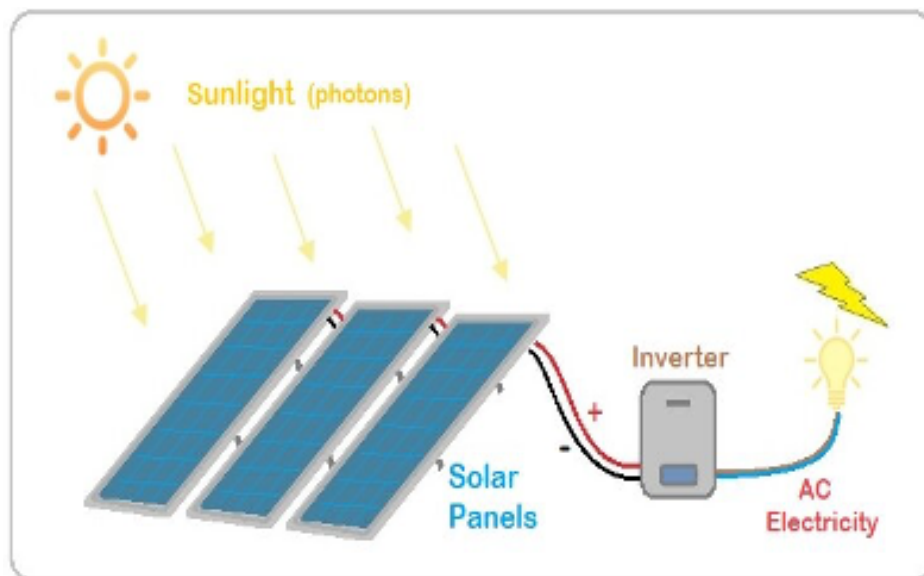


**Direct current (DC) electricity**  
created when electrons move  
constantly in one direction.



**Alternating current (AC) electricity**  
created when electrons move back  
and forth very quickly.

Solar panels produce DC electricity. However, solar panels need a device called an **inverter** to convert DC electricity into AC electricity because AC electricity is efficient at traveling long distances—like the distance between a community solar garden and a subscriber.



An inverter is important because it impacts the amount of electricity your community solar garden can generate. This, in turn, impacts the number and size of subscriptions you can offer. An Inverter Load Ratio (ILR) of 20% can be used to provide an estimate of DC to AC conversion. This means you will see about 20% of electrical energy is lost when an inverter converts DC electricity into AC electricity.