

Solar 101

What is solar energy?

Solar energy is the process of capturing sunlight and turning it into electricity which can either be used immediately or after being stored in batteries or thermal storage. The amount of sunlight that hits the Earth's surface in an hour and a half is enough to **power the entire world's energy consumption for one year.**

How is sunlight captured and turned into solar energy?

Sunlight is captured by using one of two methods: photovoltaic or concentrating solar-thermal power technologies. These technologies produce electricity with the **power of the sun by capturing and storing sunlight.**

How does photovoltaic technology work?

Solar panels are often referred to as **photovoltaic (PV)** technologies. This technology generates power by absorbing direct sunlight and converting it into electricity through semiconducting materials. The semiconductors are lined together and encased in glass to form a solar panel. These panels are usually found on roofs of buildings or in flat, open land.

How do concentrating solar-thermal power technologies work?

Solar-thermal power technologies use sunlight to power a turbine. Mirrors are used to reflect light from the sun onto a "receiver" to power the turbine, thus, **generating electricity.** Concentrating solar-thermal power systems is primarily used in large-scale solar production versus a home.

How long do solar panels last?

Solar panels last up to **25-30 years.** Since solar panels are made with non-toxic materials, solar panels can continue to operate at full capacity with some simple maintenance and upkeep.

Do solar panels work at night or on cloudy or rainy days?

Solar panels generate power even when there is not direct sunlight. Solar panels work at night by **storing energy** from sunlight received during the day. It is important that solar panel systems are equipped with battery storage to ensure access to electricity and power remains uninterrupted throughout the night and during intensive weather conditions. Rain can even make solar panels operate **more efficiently** by washing off any dirt or dust obscuring the PV system from sunlight.

Do solar panels work during extreme weather events?

Yes. Solar panels work to keep the lights on during **extreme weather events.** Solar panels are designed to withstand heatwaves and other extreme weather events so Ohioans can have reliable power, day or night, rain or shine.