**How does solar energy work? 10 things to know about photovoltaic (PV) solar panels**

Solar photovoltaic (PV) systems – also known as solar panel systems, solar energy systems, or solar power systems – convert sunlight into electricity. You can use the electricity generated by your solar PV system to power your home, your business or even your car.

How solar energy works



1. Solar panel systems are a great way for you to save money, no matter what your budget is.

If you can afford to pay your electricity bill every month, you can afford to install a solar panel system. With a $0-down [solar loan](https://www.energysage.com/solar/financing/solar-loans/), [solar lease or PPA](https://www.energysage.com/solar/financing/solar-leases-and-solar-ppas/), you can finance your system and see immediate savings.



2. Installing a solar panel system is a great investment.

Investing in a solar panel system can [deliver better returns](http://news.energysage.com/installing-solar-the-best-way-to-invest-15k/) than stocks and bonds – and [now is the right time to make that investment](http://news.energysage.com/should-i-buy-solar-now-or-wait/). While solar photovoltaic technology is improving incrementally each year, financial incentives and rebates will decrease as solar becomes more popular.



3. Solar photovoltaic systems have been around for a long time.

[Solar photovoltaic systems](https://www.energysage.com/solar/101/about-solar-panels/) are a well-proven technology first invented in 1954 by scientists at Bell Labs. Today, solar panels are installed on over one million homes in the U.S.



4. Solar panel systems are highly durable.

Solar photovoltaic panels are made of tempered glass and can withstand hail, snow, rain, and high winds. They can even extend the life of your roof by protecting it from daily wear and tear.



5. Solar power systems can produce electricity for 25 or more years.

Most solar panel manufacturers offer a 25-year [power production warranty](https://www.energysage.com/solar/buyers-guide/solar-panel-efficiency/)guaranteeing that their solar panels will continue to generate electricity at a certain capacity for the warranty’s duration.



6. Solar power systems are practically maintenance-free.

Solar panel systems are [incredibly durable](https://www.energysage.com/solar/101/solar-panel-maintenance/). Except in extreme circumstances, they don't need to be washed or cleaned.



7. Solar panels can be installed almost anywhere in the United States.

Most locations in the United States [get enough sunlight](https://www.energysage.com/solar/why-go-solar/) to produce sufficient electricity from solar panels. The most important factors to consider when you evaluate your solar panel options are the rates you pay for electricity and the rebates and incentives available to you.



8. Solar energy systems are tied to the electric grid and do not require batteries to store power.

When you install a solar energy system on your property, you remain connected to the electricity grid. At times when your system produces more electricity than you use, you receive credit for the electricity you send to the grid; if you need more electricity than your solar energy system is producing, you can draw it from the grid.



9. Solar power systems can eliminate most of your electricity bill.

With the right planning, your solar panels can generate enough electricity to [meet your needs over a 12-month period](https://www.energysage.com/solar/101/net-metering-for-home-solar-panels/). As long as you have enough roof space to install the right size solar panel system, the power that your panels will produce will effectively eliminate most of your electricity bill.



10. Solar photovoltaic panels can be installed on the roof of your home or commercial property, on the ground or on a solar canopy.

Solar panels can be installed [practically anywhere](https://www.energysage.com/solar/101/solar-panel-installation/) that receives direct sunshine for most of the day and is not shaded by trees or buildings. Panels that face south will produce the most electricity, but your panels can also face east or west.

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