

## U.S. Department of Energy - Energy Efficiency and Renewable Energy

# A Consumer's Guide to Energy Efficiency and Renewable Energy

## Small Solar Electric Systems

A small solar electric or photovoltaic (PV) system can be a reliable and pollution-free producer of electricity for your home or office. And they're becoming more affordable all the time. Small PV systems also provide a cost-effective power supply in locations where it is expensive or impossible to send electricity through conventional power lines.

Because PV technologies use both [direct and scattered sunlight](#) to create electricity, the solar resource across the United States is ample for small solar electric systems. However, the amount of power generated by a solar system at a particular site depends on how much of the sun's energy reaches it. Thus, PV systems, like all solar technologies, function most efficiently in the southwestern United States, which receives the greatest amount of solar energy.

You can also use PV technology to provide [outdoor lighting](#).

Here you can find the following information:

- [\*\*How Small Solar Electric Systems Work\*\*](#)

Learn the basics of how a small PV system produces electricity.

- [\*\*Considering a Small Solar Electric System\*\*](#)

Start here to determine whether a small PV system would be feasible, practical, and economical for you.

- [\*\*Small Solar Electric System Components\*\*](#)

Learn more about system components—solar cells, modules, and balance-of-system parts.

- [\*\*Installing and Maintaining a Small Solar Electric System\*\*](#)

Find out what you need to consider before you install a system, including basic maintenance tips.

## Learn More

### Evaluation Tools

- [Solar Estimator](#)  
Find-Solar.org

### Reading List

- *A Consumer's Guide: Get Your Power From the Sun* ([PDF 763 KB](#)). (December 2003). U.S. Department of Energy.

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