



Solar Photovoltaics

Frequently Asked Questions – Commercial Customers

How does a solar system generate electricity?

A solar energy system generates electricity through the use of photovoltaic (PV) technology. PV turns sunlight energy directly into electric energy.

How do I use the electricity from my solar energy system?

The electricity generated by a solar energy system works just like the electricity delivered by Austin Energy. After passing through a component called an inverter, the direct current (DC) electricity generated by the solar panels is converted to alternating current (AC), the type of electricity that you access through the outlets in your building.

Will a solar energy system produce enough energy to handle all my electricity needs?

For the average Austin Energy commercial customer, a solar energy system will produce 5%-70% of their annual energy needs. System size impacts production. The size of system that is right for you depends on how big of an investment you want to make and how much un-shaded roof space is available.

How much electricity will my solar energy system produce?

The amount of electricity generated by a solar energy system is dependent upon several factors, primarily system size, orientation of the system and shading. Typically, a solar system using 100 square feet of solar panels will generate 1,000 - 1,440 kWh per year per kilowatt.

Do I need to be connected to the grid?

Yes. To qualify for an Austin Energy solar energy rebate, you will need to be connected to the grid. While you generate electricity during the peak hours of daylight and demand, your utility will seamlessly take over and continue to supply your electricity at night and on very cloudy days. If you decide to include battery storage, the additional cost for the battery system will not be covered by the rebate.

Purchasing and Installing a Solar Energy System

How will I know if my solar energy system is working?

Since solar technology is motionless and noiseless, you may want to know how to make sure it is working. Typically, the inverter display can show you how much power is produced at any given time. Also, a solar meter is required to keep track of how much electricity your system is producing and the display number will increase with each kilowatt hour generated.

What happens during an electric outage?

In any type of electric outage, only a solar energy system with battery backup will continue to have power. By code, any solar energy system without battery backup must shut down until utility power returns.

How durable is a solar energy system?

Solar energy system modules have passed a standard set of tests for durability and are built to withstand winds of up to 125 miles per hour and 1-inch hail.

Can I add battery backup at a later date?

Yes. If you start with some battery backup, it is easy to add more. However, if you start without a backup, it will be rather expensive to add batteries due to the high cost of adding a different type of inverter. Systems without battery-backup use a different inverter than those with battery backup.

How long will it take to install?

For commercial installations, consult your solar installer.



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Operational Performance and Quality

What happens at night?

Since solar energy systems require sunlight to produce electricity, your system will not produce at night. Austin Energy will continue to seamlessly supply your electricity at night.

What happens on cloudy days?

Since solar energy systems require sunlight to produce electricity, the bulk of your electricity production will take place under sunny conditions. Output is directly proportional to the amount of sunlight available at any given moment. A system can generate 50 - 70% of its typical output under bright overcast conditions but production will continue to diminish as less light reaches the system.

How does temperature affect solar production?

Solar energy systems typically operate in temperatures ranging from -13 to 122 degrees Fahrenheit. Output efficiency will drop as the system gets hotter. In summer months, the increased daylight hours increases daily production despite the efficiency loss due to heat.

What is the warranty on a solar energy system?

Solar energy system modules typically carry 20-30 year warranties. The system inverter is required to carry a 10-year warranty on non-battery back-up systems. The Austin Energy Solar Rebate program requires that all solar energy systems installed carry a 10-year warranty from the manufacturer and installer.

Will a solar energy system work with my building?

To have a solar energy system installed on your roof, your property must have a reasonable amount of non-shaded, unobstructed roof space during the key sun hours of the day. A southern orientation is ideal but east and west facing roofs can still capture over 80% of the power of a true south-facing roof. Your roof may be flat or sloped. Rack-mounted systems on the ground and pole mounted systems are also available.

Economics of a Solar Energy System

What is Net Metering?

If a solar energy system produces more power at any given moment than the property consumes, the extra power will flow into the Austin Energy electric grid. Over any month when a solar energy system sends more power into the Austin Energy grid than the building takes from the grid, the difference or net will result in a credit on the customer's electric bill. The credit will be determined by multiplying the net kilowatt-hours (kWh) of electricity fed into the grid times the current fuel charge, or Green Choice rate for Green Choice customers.

Are there federal incentives for installing a solar energy system?

Commercial customers may qualify for the following federal incentives:

- 1) Federal Business Investment Tax Credit for Qualifying Energy Property
- 2) Federal Modified Accelerated Cost Recovery System

Visit the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy (<http://www1.eere.energy.gov/solar/sunshot/financial.html>) for federal incentives information.

What size system should I get?

The size you choose is a trade off between the amount of money you want to invest and the amount of electricity you want to produce.



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You can look at your old electricity bills to calculate how much electricity your building typically uses. But remember, you do not need to cover all your electricity needs with a solar system to add value to your building.

The only other condition in deciding proper system size is the amount of suitable space available on your roof. To be suitable, you must have unobstructed, non-shaded roof area, either flat or a sloped, at an orientation other than North. You need roughly 100 square feet of roof space for each kWh that you wish to produce.

How much does a solar energy system cost?

The total cost for purchasing and installing a solar energy system is based on the size of system you require and the specific details of the layout of your property. Solar energy systems often range in cost from \$2.75-\$5.75/watt.

How do I purchase a solar energy system?

An Austin Energy participating company must be used to install your solar energy system. To help you get the best price, Austin Energy encourages you to get more than one quote.

Can I increase the size of my solar energy system at a later date?

Yes, provided you have the available roof space.