Touchstone Energy® Cooperatives

South Plains Electric Cooperative, Inc.
Your Touchstone Energy® Cooperative

SOLAR ENERGY FREQUENTLY ASKED QUESTIONS

As your Touchstone Energy cooperative, South Plains Electric Cooperative is your source for energy and information. Since interest in solar power generation is growing, we put together a series of fact sheets to help answer your questions. Contact us for more information about solar and assistance in making decisions about whether solar is a good option for you.

HOW DO WE GENERATE ELECTRICITY FROM THE SUN?

Solar energy systems work when sunlight hits a solar photovoltaic module (solar panel) and causes electric current to flow. The current produced from the solar panels is controlled and regulated by an inverter, which converts direct current (DC) to alternating current (AC), needed for use by household appliances. The electrical panel is where the power gets distributed throughout your house; any excess electricity may be sent from the panel back to the Cooperative's power grid.

HOW MUCH ELECTRICITY CAN I GENERATE?

That depends on several factors. 1) The size of your system. You can determine how much electricity you want to produce; then size your system accordingly. Note that you can start out small and add on. A system that will generate 100 percent of your energy needs is expensive, so most systems are sized to generate only a portion of your home's needs. 2) Your site. If you have a shade-free area from 9 a.m. to 3 p.m., you'll be able to collect more sun and produce more energy than if your site is shaded. 3) Your region. The more sunny days in your area, the more electricity you'll be able to generate. You can find online calculators to help answer this question in more detail, and installers can provide details about your situation, too.

WHAT HAPPENS WITH A SOLAR ENERGY SYSTEM AT NIGHT AND ON CLOUDY DAYS?

Battery-backed or grid-independent systems use on-site energy storage to store excess energy produced during the day for use at night or when the sun is not producing enough power. Choosing this option will add significant cost and maintenance to your system. Most people opt for grid-connected systems for reduced cost, maintenance and high reliability. With this type of system, your cooperative continues to provide energy to you when you need it 24/7. Your solar energy system will produce energy, and even excess energy, on sunny days. Your system will not collect sunlight at night and on cloudy days. That means, you will continue to draw electricity from the Cooperative during these times.

WHAT HAPPENS WITH A SOLAR ENERGY SYSTEM DURING POWER OUTAGES?

Most grid-connected solar energy systems shut down to prevent back-feeding electricity into de-energized power lines that may have fallen or that line crew members may be working on. It's important to have this shut-down feature to prevent injuries–and even death–to those working on the line.

WILL SOUTH PLAINS ELECTRIC COOPERATIVE BUY ANY EXCESS ENERGY I PRODUCE WITH A SOLAR SOLAR ENERGY SYSTEM?

Grid connected solar energy systems are connected to the Cooperative's power lines. That means electricity can flow both ways (to your home from your Cooperative, and from your solar energy system back to the electrical grid). Particularly on sunny days when your energy use may be low, your solar energy system may produce excess energy that can flow back to the grid. The excess energy will offset the cost of energy you use when your solar energy system is not generating at the retail rate. However, if your solar energy system produces more energy than you use in a billing period, you will not receive money back for the extra energy. Even if you have zero kilowatt hours for a billing period, you are still responsible for the facilities charge of $27.97. The facilities charge covers the cost of keeping the Cooperative's system available to you. Check with SPEC to get specific details for your system, including requirements for interconnection, safety, metering and applicable rates.

HOW MUCH DOES A SOLAR ENERGY SYSTEM COST?

The price of solar energy components varies depending on the size of the system (generating capacity), type and quality of the components purchased and complexity of the system selected. The good news for consumers is that the cost of solar energy has declined dramatically, while the technology has improved, equally dramatically. Installation costs depend on the size and complexity of the system, but also on the home layout and construction. For example, a simple, south-facing roof allows for an easier install than a roof with hips and valleys. In addition, some homes require structural or wiring upgrades. An average 4-kW system may cost between $10,000 and $20,000, before credits and incentives. This is based on a typical installed cost of $2.50 to $5 per watt of distributed generation capacity. To determine your costs, look for online calculators to help you estimate your pricing, and also get bids from reputable installers.

ARE THERE INCENTIVES AND TAX CREDITS FOR INSTALLING SOLAR ENERGY SYSTEMS?

Yes. There is a federal tax credit of 30 percent through 2019, then a slow phase out of the credit by the end of 2021. In addition, there may be state or local income tax credits, property tax exemptions and rebate programs from government agencies. These vary by state, city and utility, and may also depend on whether the system is purchased or leased. Find information about your state's programs: **http://programs.dsireusa.org/system/program/maps**. Be sure to consult with your financial and tax advisor.

HOW LONG IS THE PAYBACK PERIOD ON A SOLAR ENERGY SYSTEM?

The payback period can range from fewer than 10 years to more than 20 years, depending on the system cost, available rebates and incentives, the amount of electricity produced, and the retail price of electricity you purchase from your Cooperative.

HOW LONG DO SOLAR ENERGY SYSTEMS LAST?

Certified solar energy products and systems generally are reliable, with a life expectancy of about 30 years. Manufacturers test solar panels for hail impact, high wind and freeze-thaw cycles to represent real-life situations. Most manufacturers offer 20- to 25-year warranties for panels; extended warranties may be available at an extra cost. Little maintenance is required; occasionally it may be necessary to rinse modules off with water to remove dust and grime. Other components like inverters may have a shorter life. Solar panels may outlast the roof where they are attached. Make sure your roof is in good shape or budget for replacement during the life of the system.

HOW CAN I KNOW IF A SOLAR ENERGY SYSTEM WILL WORK ON MY HOUSE?

To begin, you can look at factors such as which direction your home faces, the condition of your roof, and obstructions such as trees and other buildings that may block the sun during the peak generation period of 9 a.m. to 3 p.m. Solar contractors can provide a more detailed analysis on what to expect.

HOW DO I GET STARTED WITH SOLAR?

Before choosing a solar system, be sure that your home is as energy efficient as possible; you may want to get a home energy audit to help determine which improvements will be most beneficial. Investing in energy efficiency provides a faster return on your investment. By improving your home's energy efficiency first, you will reduce your overall energy use and may reduce the size of

solar energy system needed–that saves more money. Also make sure your roof is in tip-top shape. If yours is older, you may need to repair or replace it before installing solar (and remember, a solar energy system may last up to 30 years, so be sure your roof will last, too). Research solar and solar contractors thoroughly before investing in a system; get at least three quotes before choosing a one. Be sure to work closely with South Plains Electric Cooperative for advice and assistance on interconnecting with the grid. We can provide information and history of your energy usage that can help you size your system and evaluate savings. Co-op staff has experience in working with other members and solar contractors.

South Plains Electric Cooperative, Inc.
Your Touchstone Energy® Cooperative

For more information, contact Randal Bailey
rbailey@SPEC.coop or 806.787.9099