

Frequently Asked Questions

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- How does a solar electric system work? Please click [here](#).

- What size of a system do I need? System sizes are usually determined by available roof space and financial factors. On average 1 kilowatt of power produced requires approximately 100 square feet of roof space and costs approx. \$7,000. While it is possible for solar energy to meet 100 percent of the energy needs of a typical home on an ANNUAL basis, most customers offset 30-50% of their energy. If you would like to offset a certain percentage of your utility bill, we can look at your past electric bills and design a system to cover your needs.

- How much does solar cost? The cost depends on the amount of suitable space for the panels, the system size, and the amount of money you want to invest in solar. The smallest system we install is 2kW, costing approx. \$15,000 and requiring about 200 square feet of suitable space. Typical residential systems range between 2 and 10 kW, costing approx. \$6,500-8,500 per kW installed.

- Are there ways to help pay for solar electric systems? Fortunately, several types of incentives are available, including federal and state credits and grants for homes and businesses:
 - An uncapped 30% federal tax credit is available in which 30% of the total cost of a solar installation is credited against your federal taxes.
 - TVA's Generation Partners Program will pay you the base rate plus 12 cents per kWh for your solar electricity production. For example, a 4 kW system generates on average 400 kWh per month, so a 4 kW system would generate about \$84/month. This would appear as a credit on your monthly bill.
 - TVA grants \$1000 to customers who install grid-tied solar electric systems.
 - Businesses are eligible for the TN-CET Grant which covers 40% of the installed cost up to \$75,000.
 - Businesses are also eligible to take the 30% federal tax credit as a grant.
 - Agricultural producers and small rural businesses are eligible for the USDA's REAP grant for solar PV that covers 25% of the cost of installation. Click here for details on this program: <http://www.rurdev.usda.gov/rbs/busp/bprogs.htm>

Please click [here](#) for a complete list of state and federal credits and grants. Call us for more information on these incentives and about financing options.

- What steps should I take to decide if solar is right for me?

- Estimate how much energy you use by gathering your electric bills from the past year.

- Think about how much energy you would like to offset and how much money you want to invest in solar.

- Determine what site might be the best location. Solar works best on south-facing roofs. East/west oriented roofs with low pitch are also suitable, although some production loss occurs. There should be little or no shading from trees,

chimneys, dormers, or obstruction by vents or skylights. If the roof is not suitable, we can install panels on another structure or on poles.

- Determine if there are other energy conservation steps you can take within your home or business that will reduce your energy use.

- We can set up a free site visit to assess your site and generate a proposal. If you are located more than an hour from Nashville or the Tri-Cities area, we charge \$250, but this fee comes off the final cost of the system should you choose to install.

- What are the benefits of solar?

- Solar helps stabilize your energy costs and increases self-reliance.

- It hedges your bills against rapidly rising electrical rates.

- It strengthens our energy security & sustains long term affordability.

- It supports the clean energy economy and local green jobs.

- The environmental benefits of renewable energy are both immediate and long term. For example, a 5kW system's benefits over its warranted lifetime of 25 years are equal to planting 30 acres of trees, not driving 237,000 miles, or removing 225,000 lbs. of CO₂ from the atmosphere at a rate of 1,797 lbs per kW. In addition, solar electric systems help improve air quality by reducing emissions of fine particulate matter, nitrogen oxide, and sulfur dioxide.

- What happens with electrical outages? A grid-tied solar electric system must shut down until utility power returns so that it doesn't back-feed the grid. When grid power goes out, the inverter will automatically shut off. When the grid power is re-established, the inverter will automatically turn back on after it has synchronized with the utility grid.

- Will my system work on cloudy days? Usually, yes, but it will be less productive. Production will be in proportion to the thickness of cloud cover.

- How long does it take to install the system? For a typical residential system, it can take between three and five days to install the PV panels and equipment. It can take an additional 7-10 business day for the utility to install the separate PV meter. We will turn your system on after the utility company has installed the PV meter and all inspections have passed.

- What if I need a new roof or I am building a new house? We don't recommend installation on composition shingle roofs over 10-years-old. You want your roof to be in the best condition possible because the average working life span of a solar system is around 30 to 40 years.

- Can the solar panels withstand high winds and hail? The panels are supported by high quality stainless steel and aluminum racking systems designed and mounted based on American Society of Civil Engineer (ASCE) wind load provisions. All solar panels are tested to UL-1703 standards and are capable of withstanding one inch (2.5cm) hailstones at 50MPH. They are covered with tempered glass, akin to a car windshield. Additionally, the panels are covered by homeowners insurance if you tell your agent.

- Do I need approval from my homeowners association? Some homeowners associations have rules regarding the installation of anything on your roof or grounds. If you belong to a homeowners association, contact them and ask about neighborhood guidelines. In our experience, most homeowners associations decide in favor of solar system installations.

- Will adding solar increase the value of my home? A study funded by the US Dept. of Housing and Urban Development, along with the EPA, found that a solar electric system can add \$20 of home value for every \$1 of annual energy savings. For example, a 3 kW system could increase the value of your home by up to \$15,000. Link to study: http://www.icfi.com/Markets/Community_Development/doc_files/apj1098.pdf

- What do I need to know about solar system installation? We mount solar electric panels on your roof and run wires through conduit to a solar kWh meter. From there, we also run wires through conduit to your breaker panel. In the same vicinity as your utility meter, we mount a DC disconnect, inverter, AC disconnect, and the solar kWh meter. This equipment can be mounted either inside or outside and takes up about 15 square feet (3' x 5' area).