

# Things to Consider Before Choosing Solar



The majority of solar energy systems will place the PV panels on the building's roof. When deciding if a roof-mounted solar energy system is right for you, consider these questions:

**Will you be in the same house long enough to break even?** According to the non-profit Center for Sustainable Energy, the cost of a residential solar energy system is currently between \$3.00 and \$5.00 per watt. A standard 5-kilowatt (kW) system will cost between \$15,000 and \$25,000 before tax incentives. Using the National Renewable Energy Laboratory (NREL) PVWatts® solar calculator for the Brazos Valley, a 5-kW solar energy system will provide an estimated annual energy output of 7,430 kilowatt hours (kWh), which would save the homeowner an estimated \$785 per year in electricity costs. Even assuming no finance charges and qualifying for the full 30 percent federal income tax credit, this would put the estimated breakeven point anywhere between 13 and 23 years.

**What is the condition of your roof?** Solar panels are usually warrantied to last for 25 years. That means your roof should have at least that many years of life left when you install solar panels. Otherwise, you'll have to temporarily remove the solar panels when you replace the roof, which will add to the cost of roof replacement.

**Which way does your roof face?** South-facing roofs (180 degrees azimuth) are the most productive for solar due to our location north of the solar equator, followed by west- and east- facing roofs. The more usable area on these sides of your roof, the more energy the PV panels will generate, which makes a difference on the overall return on investment of your system.

**Is your roof shaded?** Look at the shadows on the south, west, and east sides of your roof. If portions of your roof are blocked by trees or buildings, that will lower the potential solar output.

**How big is your roof?** It takes an average of about 100 square feet of roof area for each KW of a solar energy system. An average residential 5 kW system requires about 500 square feet of roof space.

**Have you received quotes from multiple contractors?** The installation costs for solar energy systems can vary greatly, so spending a little time getting several quotes can reduce your break-even point dramatically. In addition to comparing prices, also look at each contractor's customer reviews and research their company to make an informed choice. You may even ask for addresses of the contractors' other local installations to see the quality of their work and perhaps even speak to the homeowners about the installation process.

**Here are some recommended websites for those considering solar energy systems:**

- <https://pvwatts.nrel.gov/pvwatts.php>
- <https://www.energy.gov/eere/solar/homeowners-guide-going-solar>
- <https://www.consumeraffairs.com/solar-energy/solar-energy-pros-and-cons.html>