

# Frequently Asked Questions



## Is solar power reliable?

Residential solar PV systems are typically grid connected which means that your system feeds electricity into the overall electricity. Because net metering allows you to be credited for the electricity your solar PV system generates, you only pay for the amount of electricity that you cannot offset from your solar PV system generation. When the weather creates less than ideal conditions for your solar PV system to generate electricity, you use electricity from the grid. So, solar power is equally as reliable as the electricity from the grid since it is always backed up by the grid. While solar panels are warranted usually for 25 years, you can expect them to perform for well over that period.

## Why do I need to own my home to install a solar PV system?

Residents who want to install solar PV must own their home because installation of solar PV requires integration with a home's existing infrastructure, necessitating property owner authorization. Similarly, solar PV systems financed through a lease or loan can only be installed by the property owner. If you are a tenant but feel solar PV could be a good fit for your home, take a look at our Residential Solar PV resource materials and contact your landlord to discuss the possibility.

## If my roof is shaded only part of the year, will a solar PV system still make sense for me?

Any shading will significantly reduce the output of the panels, even if just one panel is shaded. A PV system needs unobstructed access to the sun's rays for most or all of the day to be effective. Your solar contractor will analyze the sun's position relative to your home and give you a better understanding of how exactly shading would impact a solar PV system's generation potential.

## Why does the age and condition of my roof matter when considering solar PV?

If your roof is in poor condition or, due to age, will need to be replaced soon, you may want to plan to repair or replace the roof and install solar PV at the same time. It is possible to remove and reinstall your solar PV system to repair a roof failure or accommodate a remodel or addition but there is a cost to consider in doing so.

## Why does the slope of my roof matter when considering solar PV?

In terms of orientation, systems installed on a south facing rooftop will provide the best performance. Systems installed on east and west facing roofs will also yield good performance in Santa Cruz. For homes lacking optimal roof orientation, panels can be installed at the appropriate angle with racks that may increase the system cost but also the system efficiency. Your selected solar contractor will estimate a solar PV system's performance based on the specific area and orientation of your roof and review options with you.

## What is a kilowatt? What is a kilowatt-hour?

A kilowatt (KW) measures power or the rate of energy use. One kilowatt hour (KWh) equals the use of 1,000 watts of energy for one hour. A kilowatt hour is the measure of electrical energy commonly used for electricity billing. For example, a 100 watt bulb operated for 1000 hours would consume 100 kilowatt hours (100 watts x1000 hours= 100 KWh).

## What kind of energy efficient devices or appliances will reduce my electricity consumption and perhaps my solar PV system size and cost?

There are good opportunities to reduce electricity consumption and the size of a solar PV system through energy efficiency measures. Using compact fluorescent or LED lightbulbs and energy efficient appliances can reduce your home electricity load as will unplugging "vampire" loads like appliances or electronic devices that are plugged in but idle or fully charged and you are not using. Energy Star qualified appliances are becoming the new norm in homes because they incorporate advanced

technologies that use 10-50% less energy and water than standard models. Also, consider updating Heating, Ventilating and Air Conditioning system equipment and consider replacing old single-pane windows with efficient double-pane windows. More guidance and information on energy efficiency rebates are found at [energyupgradeca.org](http://energyupgradeca.org).

#### Why do lifestyle changes matter when considering solar PV?

Major lifestyle changes such as children moving away from home or major purchases of electricity consuming products like a hot tub or an electric vehicle all impact your home electricity load. You should consider any upcoming lifestyle changes by mentioning them to your solar contractor before bidding.

#### Why is my contractor proposing a solar PV system layout that doesn't fill my entire roof?

There are specific setbacks required by the 2013 California Fire Code to allow access to your roof in the case of a fire. Variances are not allowed. Also, many systems are designed to generate approximately 80% of load to take advantage of time of use pricing (also see below on TOU pricing).

#### How do I pursue a PPA, lease or loan?

See a comparison of advantages and disadvantages for each financing option in our Go Solar Santa Cruz: Residential Solar in 5 easy steps brochure. Solar contractors should present all options to you when you contact them for a bid. We recommend using PG&E's Solar Analysis tool at [pge.cleanpowerestimator.com](http://pge.cleanpowerestimator.com) to assess the different financing options specific to your home's electricity load, location and other characteristics on your own. The different financing options support different financial goals (e.g., cost neutral, lowest total cost, etc). See our residential case studies for examples of two different financing options utilized by our featured households.

#### A group of my neighbors are interested in group purchasing. How do we proceed?

Each homeowner in the group should complete the Go Solar Santa Cruz Residential Solar Worksheet to ascertain each home's suitability for solar. The neighborhood group should then review the worksheets together to understand each homeowner's financing preferences and timeline. If the group decides to proceed with solar PV as a group purchase, they should contact at least three licensed solar contractors for bids. Please contact the Climate Action Coordinator if your group needs help evaluating bids.

#### What is "net metering"?

Net energy metering is a special billing arrangement that provides credit to customers with solar PV systems for the full retail value of the electricity their system generates. The customer's electric meter keeps track of how much electricity is consumed by the customer, and how much excess electricity is generated by the system and sent back into the utility grid. Over a 12 month period the customer only has to pay for the net amount of electricity used from the utility over-and-above the amount of electricity generated by their solar system. If the solar PV system produces more electricity than the customer consumes, the utility will produce an annual "true up" report and pay nominal price for excess electricity generated.

#### What is "time of use" pricing?

Instead of a single flat rate price for electricity, residential customers that install solar PV are billed for energy using PG&E time-of-use rates. Time-of-use pricing leads to higher costs when electric demand is greatest (afternoons) and much lower when demand is low (evenings). This is beneficial to homes with solar PV because PG&E credits homeowner accounts for excess energy produced during the day at higher per kWh rates (when solar homes often produce excess power) and bill against that credit at night when prices are much lower. During summer seasons, time of use pricing allows solar homes to use up to three kWh of evening power for every one kWh generated during that day.

### What certifications and qualifications should solar contractors have?

Hiring the right contractor is important. Certified solar installers will possess an appropriate license. Validate a contractor's experience by obtaining and checking several installation references. Also, check the Better Business Bureau (see below).

### What licenses should solar contractors have?

Solar installers should have a C-10 (Electrical Contractor) or C-46 (Solar Contractor) license, which you can verify with the Contractors State License Board. Be sure to check the contractor's status before you sign a contract. Ask about the system warranty and what it covers exactly.

### How do I contact the Better Business Bureau and what do I ask?

Contact the Better Business Bureau (BBB) by going online to their website [bbb.org](http://bbb.org) and entering Santa Cruz, CA in the search bar. BBB evaluates businesses on how fairly and honestly a business conducts their business with the public. The BBB does not however, look at insurance, licenses or proper qualifications that solar contractors need to have.

### Why are solar contractors bonded and why does that matter?

It is important that the contractor is bonded and has insurance. Bonding protects the homeowner against non-performance or poor workmanship. Whereas insurance protects the property owner from accidents that may, but rarely do, happen. Make sure to obtain a copy of the contractor's insurance certificate.

### What is a typical solar PV system warranty?

Most solar electric panels come with a 25 year warranty. Inverter warranties are usually 10 years, so you should expect to replace the inverter at least once during the life of the system. Inverters convert direct current (DC) produced by the solar modules (the panels you see on the roof) into an alternating current (AC) for use.

### What is the cost for a solar PV system permit in Santa Cruz?

The City of Santa Cruz has one of the lowest solar PV permit fees in California, averaging about \$142.50. We have also streamlined the process to enable a quick turnaround on the permit. Your selected solar contractor will handle the permit process for you.

### What kind of rebates or other incentives are available for solar PV currently?

Rebates and tax credits are available. Energy efficiency guidance and rebates are offered at Energy Upgrade CA: [energyupgradeca.org](http://energyupgradeca.org). For a limited time there is a Federal Investment Tax Credit of 30% of the net cost of a solar PV system installed through 2016. Your selected solar contractor will work with you to file the appropriate forms so that you receive your rebates. PG & E also has information on incentive programs for solar hot water. Commercial solar PV system owners are also eligible to claim depreciation at tax time.

### Will my Solar System require maintenance?

In general, solar panels require an annual cleaning and no other maintenance. However, we recommend monitoring your system's performance through tools usually provided with the system. If you find anything unexpected with your system performance, a service visit from a solar contractor may be required.

