



Solar Energy

Join your neighbors in saving energy and money

Harnessing the sun

Solar photovoltaics and solar thermal systems are great options **for your pocketbook** and **for the environment**. A federal tax credit and rebates can help bring down the initial cost of a system significantly and in many cases make it possible to start saving money with your new system right away.

Eight steps: Get Started with Solar

1 LEARN ABOUT SOLAR TECHNOLOGIES

For general information about the different solar technologies, visit the Energy Efficiency and Renewable Energy office of the U.S. Department of Energy at eere.energy.gov/solar or visit the California Energy Commission's website at gosolarcalifornia.ca.gov.

2 GET AN ENERGY AUDIT BEFORE GOING SOLAR

Before planning the size of your solar installation, evaluate how much energy you could save by making your home more energy efficient. Visit empowerSBC.org for more information on energy audits and energy efficiency.

3 ASSESS THE MOST EFFICIENT LOCATION FOR PANELS

Figure on needing 80 square feet of panels per kilowatt (kW). A typical home installation is 3 - 7 kW DC, so you would need anywhere from 240 to 560 square feet for panels. The ideal location is unshaded roof or ground space facing South, West or East, with the panels angled between 5 and 30 degrees.

4 TALK TO A CONTRACTOR WHO SPECIALIZES IN SOLAR

Installers will assess your location and suggest the size and type of system. We recommend getting bids from at least two established local contractors. Some things to look for: local affiliations (such as local Contractors Associations and Better Business Bureau), proper licensing (go to cslb.ca.gov) and certification from the North American Board of Certified Energy Practitioners.

5 CONSIDER THE AESTHETICS.

A state mandate prevents architectural boards and homeowners associations from restricting solar panel installation based on aesthetics, but we encourage you to consider your system's visual integration with existing buildings. If possible, consider a high performance location with low public visibility, installing or using framing and mounting techniques that maximize a system's building integration.

6 INSTALL THE SOLAR SYSTEM AND GET YOUR PERMITS

Photovoltaic systems and hot water systems require a building permit, which would be handled by your contractor. Systems that are mounted on the ground rather than the roof may require a land use permit and may need to be approved by the county or city architectural review board.

7 COMPLETE INTERCONNECTION WITH THE UTILITY

Once you've received signoff on the building permit, the utility interconnection process can be finalized. After the utility company receives a completed application, you get permission to operate your solar system. Your solar electric installer will handle this process.

8 APPLY FOR YOUR TAX CREDITS

Under current tax code, when you file your federal income tax return you will receive a tax credit of 30 percent of your out-of-pocket costs for any solar system installed through 2016.

Incentives and financing

FEDERAL TAX CREDIT

The federal Energy Improvement and Extension Act of 2008 provides incentives for homeowners and businesses to install solar by providing a federal tax credit. Through December 2016, homeowners can receive a **30% tax credit** for installing photovoltaic or solar domestic water heating projects. Businesses can also receive a 30% tax credit on photovoltaic, solar thermal, concentrating solar power, and solar hybrid lighting projects.



NET ENERGY METERING

The State of California requires that utilities allow their customers to meter energy use on a net basis. This means that if a solar array produces more energy than is consumed in one month, that excess generation is rolled over to the next month as an energy credit. The metering period is 12 months, and at the end of those 12 months, the utility is required to pay the customer for any excess generation. If you have a solar array already and have not been notified of your options, contact your utility.

CALIFORNIA SOLAR INITIATIVE

The California Public Utilities Commission (CPUC) provides solar incentives for residential and non-residential customers under the California Solar Initiative (CSI), including multi-family and single-family affordable housing, new solar homes, and solar water heating. The California Energy Commission's New Solar Homes Partnership focus on solar photovoltaic (PV) systems for new construction. Information is available at gosolarcalifornia.ca.gov/ns hp.

HOW MUCH ARE STATE INCENTIVES?

Photovoltaic (PV) solar:

State rebates for solar PV systems are no longer available in PG&E or SCE territories.

Solar water heating

A rebate program administered by your local utility company is available for natural gas powered heaters in residential and commercial properties. The program is retroactive from July 15, 2009 and runs through 2017. Rebates are based on energy displaced and will be the same for commercial and residential systems, though the maximum caps vary and budget allocation is limited. Incentive payments will decline with time. Visit gosolarcalifornia.ca.gov/solarwater/ for more information.

SOLAR WATER HEATING

Fuel Source	Customer Class	\$ per kWh or therm or therm displaced	Incentive Cap
Natural Gas	Residential Commercial/ Multifamily	\$18.59/therm	\$2,719 \$500,000



ESTIMATING THE PAYBACK PERIOD

You will often hear the word “payback period” in relation to solar power. This is the length of time it takes to pay for your solar system through your energy bill savings. Calculate it with the following formula:

$$\text{PAYBACK} = \text{System cost} / (\text{monthly energy bill savings} \times 12)$$

For example, if your system cost \$20,000 and it saves \$200 off your electricity bill each month:

$$\text{PAYBACK} = \$20,000 / (\$200 \text{ a month} \times 12) = 8.3 \text{ years}$$

This is an oversimplified calculation and does not include financing costs or escalating electricity costs from your utility, or other important considerations.

SOLAR FINANCING

Most lending institutions offer loans for solar installations, just like they do for any home improvement. Be sure to check your local rates and restrictions.

Several companies offer leases and power purchase agreements. Leases from companies allow homeowners to pay a portion of the price upfront and then pay a monthly installment over the life of the contract (much like a car lease). A power purchase agreement allows homeowners to purchase their electricity from a third party, while not actually owning the equipment. In both cases, a solar system is installed on a home, but the homeowner is not responsible for maintenance, monitoring, or upkeep. In most instances the homeowner will end up paying less for electricity than they would have through their local utility.

If you own your home and have completed some basic energy efficiency improvements through the Energy Upgrade California rebate program, another financing option in Santa Barbara, Ventura, and San Luis Obispo COUNTIES is a low interest loan through the emPowerSBC program. EmPowerSBC has partnered with local credit unions to offer low interest, unsecured loans to homeowners for energy efficiency and solar upgrades. Check out empowersbc.org for more information.

Additional solar resources

ENERGY EFFICIENCY RESOURCES

To maximize the benefit of a solar installation, you should first trim down the building's energy use and make the building as efficient as possible. Through Energy Upgrade California (energyupgradeca.org) you can get rebates for up to \$4,500 for these improvements. Additionally emPowerSBC (empowersbc.org) can help you finance both home energy efficiency upgrades and solar electricity.

COMMUNITY ENVIRONMENTAL COUNCIL

CEC is one of the oldest environmental organizations in southern California, having been founded in 1970 as a result of the oil spill off Santa Barbara's shores. Over the last four decades, CEC has pioneered real-life solutions for the community in the areas of pesticide reduction, organic agriculture, green building, hazardous waste collection and recycling.

Today CEC is focused on weaning our region from fossil fuels and energy-intensive products. Promoting solar installations is one of several strategies that CEC has outlined to reach this goal.

For information or to get involved, visit cecsb.org.



FINDING A SOLAR INSTALLER

Installers can provide you with complete information about current costs and the details of installation. We suggest you talk to at least two installers. All installers are PV only unless otherwise noted.

A1 Solar

855.410.4700
a1solarpower.net

Allen Energy

(PV and Water)
805.324.5774
buildallen.com/energy

Astrum

800.903.6130
astrumsolar.com

California Solar Electric

805.640.7903
californiasolarelectric.com

Coastal Solar

805.427.1368
coastalsolarventura.com

Good Energy Renewables

805.452.7136
goodenergyrenewables.com

Mac's Solar (Water)

805.682.3386
macsolar.com

Planet Solar

800.859.SOLAR
planetsolar.com

Prime Solar Co.

805.646.8383
prime-solar.com

Quantum Solar Designs

805.445.6576
quantumsolardesigns.com

Santa Ynez Valley Solar

805.688.1213
syvsolar.com

Seaside Electric

805.889.8658
seasideelectric.com

Solar City

805.765.2489
solarcity.com

The Solar Energy Company

(PV and Water)
805.566.2127
thesolarenergycompany.com

Solarponics Energy Systems

805.466.5595
solarponics.com

Solforce

805.695.0015
solforce.com

Solwave

805.324.4433
solwavesolar.com

Sunrun

805.528.9705
sunrun.com

Sun Pacific Solar Electric Inc.

805.965.9292
www.sunpacificsolar.net



26 West Anapamu Street
Santa Barbara, CA 93101
805.963.0583
cecsb.org