

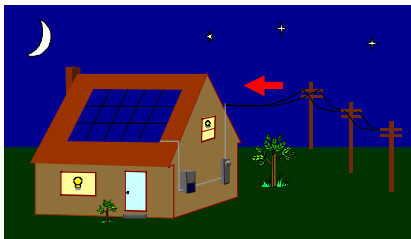
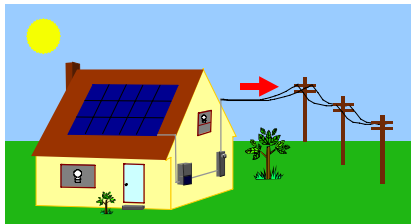


## In San Francisco, there's more than enough sunlight to make solar electricity (aka PV) technically feasible and financially attractive!

### Saving Money with Solar

Installing a solar system on your property allows you to both use the electricity it generates when needed – reducing your utility use and cost – and receive credit from the utility for feeding excess electricity back into the grid when you're using less than it is producing. This is called "net-metering." Your meter can spin backwards and your electricity bill is reduced to the difference between the value of the electricity you use from the grid and the value of the solar energy you send to it.

Extra solar power sent to the grid by day is credited against power you purchase when the sun is not shining



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Using solar also provides savings due to long-term price stability. Utility rates increase over time because of increasing fossil fuel costs, but the cost of sunlight never changes. It's always free! As electricity from the utility becomes more expensive, your solar system saves you more money and pays for itself even faster.

### Environmental Benefits

Since solar energy allows you to reduce the amount of electricity you use from the utility, you'll be decreasing the demand for fossil fuel power and the amount of carbon dioxide emissions and other air pollutants produced by power plants. Reducing emissions helps prevent climate change and other environmental and public health threats from burning fossil fuels. Large power plants also have a

significant impact on our water resources. Decreasing our reliance on them reduces their effect on the water supply and the health of our waterways, and the life that depends on both.

### Reduce Before You Produce

Decreasing the amount of energy you use by increasing the energy efficiency of your building and the appliances and equipment you use should come before installing a solar system. Using less electricity means you'll need a smaller – and cheaper – solar system to meet your need. Energy efficiency improvements often pay for themselves within a couple years and combining them with solar increases your overall economic benefit.

### How Is System Size Determined?

The shade-free area of your roof will limit how large your PV system can be, and your yearly electricity usage will dictate how much solar power you need. For your system to work best, the panels should face south or southwest and have no shading from trees, mechanical equipment, or other buildings. In San Francisco, it's ideal for panels to be tilted up to receive the maximum amount of direct solar radiation, but they also work well when laid flat. In addition to roofs, parking lots or other open spaces can make good locations for PV systems. All of these factors are taken into account to determine an appropriate system size for you.

**For more information please visit [SFEnvironment.org](http://SFEnvironment.org) or call (415) 355-3780.**

SFEnvironment is a department of the City & County of San Francisco.

## Resources for Solar Information

The **San Francisco Solar Map** ([www.sf.solarmap.org](http://www.sf.solarmap.org)) provides information on the amount of solar potential your rooftop has, along with the ability to calculate estimated economic and environmental benefits your potential system could provide. It also shows the location of solar systems in the city, includes case studies of property owners in San Francisco who have gone solar, and contains a wealth of information about solar energy and its use.

Local **solar installers** can be found at: [www.gosolarcalifornia.ca.gov/database/search-new.php](http://www.gosolarcalifornia.ca.gov/database/search-new.php)

This database enables you to search for renewable energy retailers in your area who can help determine an optimal PV system and design for you. SF Environment recommends obtaining bids from 3 different solar installers. Installers will typically provide you with a free site visit and quote. Alternatively, the list of local installers who are certified to use the GoSolarSF ([www.solarsf.org](http://www.solarsf.org)) incentive program is found here: [www.oewd.org/Workforce-Development-GoSolarSF-Solar-Installer-List.aspx](http://www.oewd.org/Workforce-Development-GoSolarSF-Solar-Installer-List.aspx)

You can find out more about **solar rebates, tax credits and other incentives** by visiting [www.sfenvironment.org/downloads/library/sfe\\_solar\\_incentives.pdf](http://www.sfenvironment.org/downloads/library/sfe_solar_incentives.pdf)

## Before Soliciting Installer Bids

It will be helpful to:

- Know your budget
- Have a summary of your annual electricity usage or copies of at least a year of your PG&E bills
- Know what PG&E rate schedule (tariff) you're on (E1, A1, A6, A10, E19, E20, etc.)
- Know what hours of the day you consume the most electricity
- Reduce your energy use by making energy efficiency improvements

## Understanding Bids from Solar Installers

Solar installers should give you a range of system sizes, costs and savings that are appropriate for your building. You should try to compare bids by similar parameters, such as nameplate system power (DC) rating (in kilowatts or watts) and expected annual energy (kWh) production. Be sure to clarify all assumptions used in the bids you receive, such as electricity price escalation, discount rate reflecting the time value of money over the lifetime of the system, and other financial considerations such as interest rate and term of a loan if your system will be financed.

## Your bid should include at least the following costs and benefits:

- Total cost from start to finish of design and construction. A detailed estimate might include:
  - Equipment
  - Labor
  - Permits
  - Tax
  - GoSolar SF incentive
  - State rebate
  - Federal tax credit
  - Renewable Energy Certificates (RECs), if applicable
- Make and model number of equipment
- Warranty information
- Expected operation and maintenance costs
- Expected system monitoring service costs (if offered)
- Projected monthly, annual, and lifetime costs and savings
- Finance options: cash, loan, lease, or power purchase agreement

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