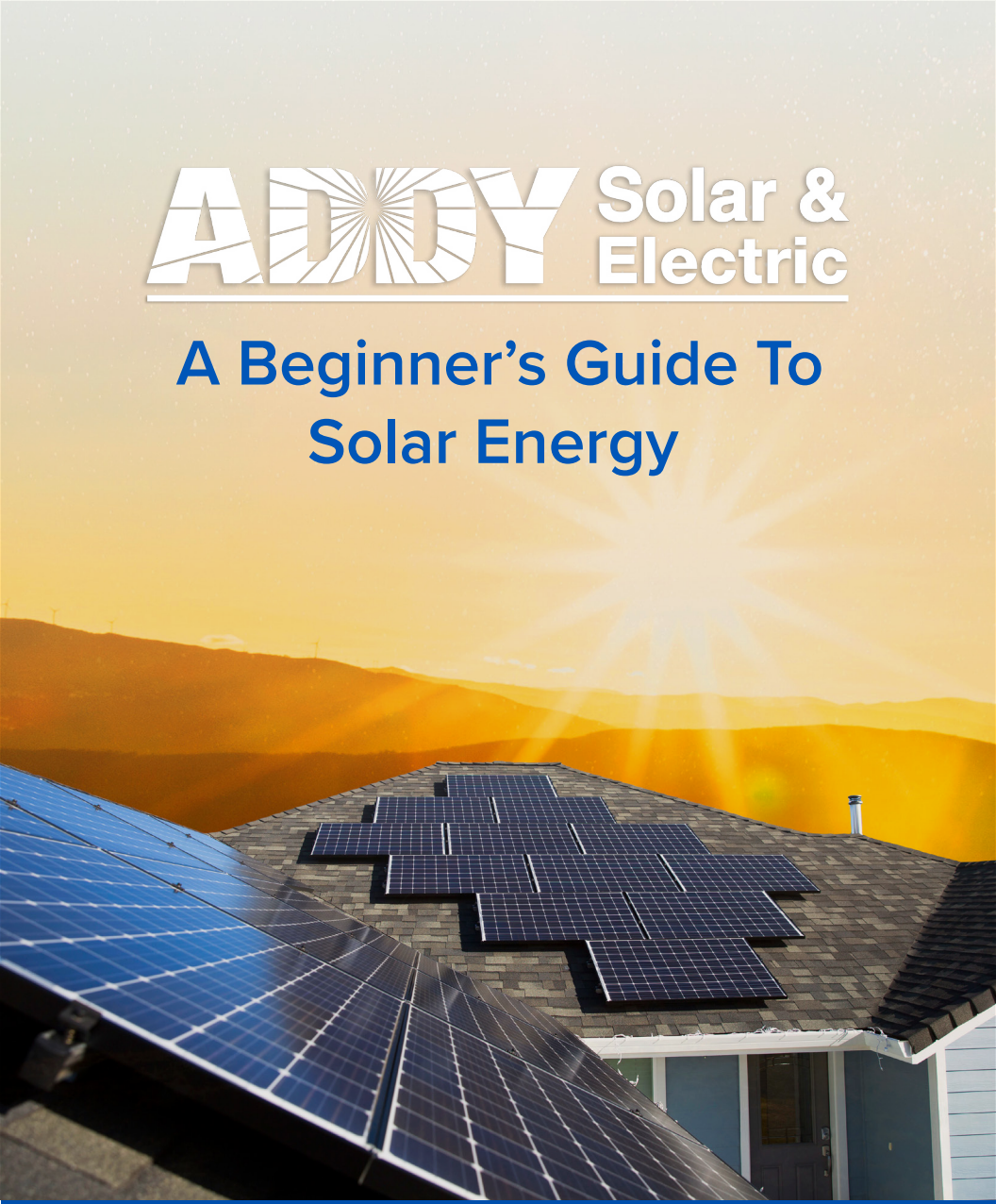
ADDY Solar & Electric

A Beginner's Guide To Solar Energy



1. What is Solar?

Solar power is the most abundant source of renewable energy on the planet. Solar generated power happens when a solar system garners energy from the sun and converts it into electricity for the home.

Solar's sudden rise in popularity is result of the clarity it brought to energy. The sun can no longer be ignored as an energy source; especially as the most abundant one on earth. Solar companies have spent the last decade creating a structure that can harness the sun's energy, and turn it into affordable electricity for the home. Five years ago, the systems were a desirable innovation, but not yet affordable for most homeowners. The "eco-friendly" logistics that surrounded solar made it a hit with environmentalists, but it wasn't until about 2015 that solar became marketable to everyone in America. With the fickleness of energy prices in the last few years, solar is not just earth-saving, but now cost-competitive logic. With this, homeowners are reconsidering the way they've always done electricity. This momentum has caused solar installations to triple in the last two years, and they are predicted to triple again.

"The U.S. Department of Energy predicts that in 2020 solar systems will be in 3.8 million homes."

2. How Does Solar Work?

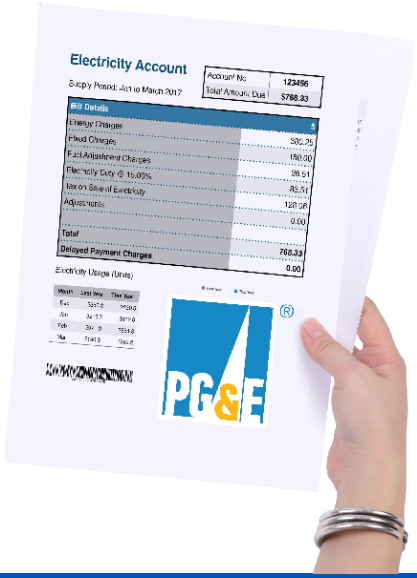
The solar company looks at the last twelve months of utility bills in order to build the size of system needed for the home. The kilowatt usage per hour (kWh) is the deciding factor in this process. A kWh is the amount of energy used, multiplied by the time it was turned on in the house. The average homeowner will accrue about 900 kWh in a month's time, and a solar panel will produce 30 kWh a month. The solar company divides the homeowners kWh usage to the solar panels kWh production to come up with the amount of panels needed for the system. The system is typically built to offset all energy costs, and will do so as long as the homeowner stays inside the kWh usage the system was designed for.

The panels are made up of Photovoltaic cells that capture the sunlight as direct current electricity, or DC. DC is electricity that flows in only one direction. It takes an inverter connected to the panels to convert the DC into alternating current electricity (AC). AC is opposite to DC in that it can move back and forth from the panels to the outlets in the home. When the inverter turns the DC to AC, the current can now travel continually to and from the panels and into every part of the house. In all of this activity, the meter is outside measuring the energy you give or take from the grid.

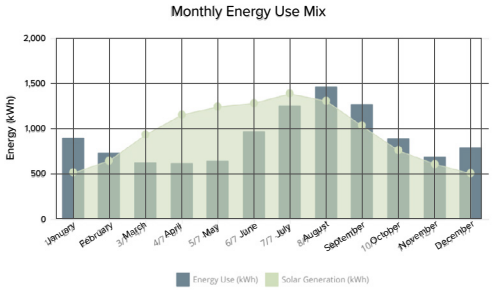
3. Solar And The Electric Company

Before a home goes solar, it gets all of its energy from the grid. The grid is the electric company's collection of energy. When the home goes solar, it ideally receives all the energy it needs from the sun, and the homeowner is free from the grid.

What if the sun isn't out and the homeowner turns on the lights? Solar's relationship with the grid works like this: When the homeowner was out at work and all the lights were off, the panels were collecting sunlight, but they weren't able to use them because no one turned on the lights. The solar system sends all that unused energy to the grid, and the grid held it for the homeowner. The grid used that energy as their own throughout the day, but kept track of the amount to return it as credit when needed. When the homeowner gets back that night and turns on the lights, the grid gives it back the sunlight it saved during the day. If the homeowner uses up all of its credited energy and needs more, they are charged the kWh price from the grid.



Realistically, there is not always enough sunshine to power the home. The house will be more dependent on the grid in winter time than it is in the summer. Below, a graph shows that even though some months use the grid more than others (cloudy winter months), by the end of the year it typically evens out.



In a year's time, most solar systems collect more energy than they use. These solar owners break even with the electric company by lending as much power to the electric company as they needed for the year. Essentially, a residential solar system makes each home its own power plant to receive and give power.

4. Does Going Solar Mean I'll Never Pay Another Utility Bill?

Everytime you pay a utility bill, you are paying X amount of dollars per Kilowatt-hour (kWh). This price varies based on where they live, current energy prices, and usage. The higher the utility company charges per kWh, the bigger the savings when the solar system is installed. When a homeowner needs more electricity than produced, the house taps into the grid for power, and buys electricity from the utility company. Whether or not the homeowner has another utility bill depends directly on their usage of electricity, as well as the amount of sunshine in the area.

5. When Do I Start Saving With Solar?

If you pay over $150 a month for electric, solar is something to consider. With a solar energy unit installed on your property, you'll pay less per month for the loan (on the system) than you would on electric. This means that once the solar panels are paid off, you will pay next to nothing for energy. This is possible with solar. Solar is a genius idea if you are staying where you are and would rather own your own energy than always rent it.

Solar installation is the right energy solution for any homeowner that plans to stay in the home for at least 6 years. This will cover the time it takes for the average resident to break even on the solar investment. Should the owner ever leave the home, they will have increased the value of the property by about 20% with solar installation. Northern California is known as one of the best places for solar installation in the country, with 240+ days of sunshine per year. This makes for a very logical switch to solar.

Finally, another benefit to going solar is the tax credit. After installation, the federal solar tax credit deducts 30% of the cost of your solar system off of your federal taxes.

Addy Solar & Electric creates custom solar solutions for Northern California. With hundreds of installations in the area, our team is a credible option for your energy needs. Schedule a free consultation and we'll be happy to walk you through the financial incentives in more detail.