



BRIGHT SOLAR

YOUR GUIDE TO UNDERSTANDING SOLAR



brightsolarmarketing.com

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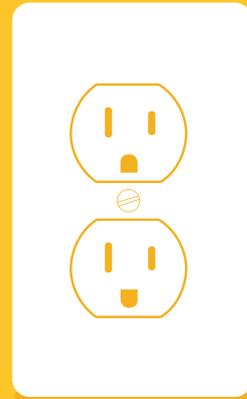
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Introduction

Going solar is one of the best investments a homeowner can make in their home because a solar power system generates most or all electric power a homeowner uses each month. The savings add up over the 25 year warranty period that most home solar power systems are covered for. In fact, after breaking even on the cost of the system, a homeowner can expect to save tens of thousands of dollars over the life of their solar power system.

Why go solar?

Potential savings from solar: The main reason people go solar is to save money on utility bills. How much you can save depends on how much electricity your household uses and the cost of purchasing electricity from a local utility.



The more power you use, the more money you can save by going solar. For example A typical California household uses about 7,000 kWh per year, and pays about \$1,500 per year. **By going solar, an average household could save \$1,307.52 per year, or \$37,500 over the 25 year warranty period that solar power systems typically have.** If that same household uses a lot of electricity, say 12,000 kWh per year, that household would save about \$48,000 over a 25 year timespan¹.

Potentially add value to your home: On average, you may add \$1.85 of value to your home for every dollar you spend on solar power. **Additionally, homes with an owned solar power system typically sell about 20% faster than homes without solar power.**

Lock in your utility rates: Going solar protects you from utility rate increases. The cost of electricity coming from your own solar system is predictable, It never increases, unlike the cost of electricity from your utility.

Better for the environment: Most of the time, people go solar for other reasons than saving the environment. But they are still helping save the environment. Solar panels make up for the amount of carbon used to produce them in about 2 years. For the remaining decades of service life left in them, they reduce the amount of carbon produced to make electricity.

http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPDComparativeAnalysisofUtilityServicesRatesinCAFinal.pdf

Solar power basics

How do solar panels work? A solar panel is made up of many photovoltaic solar cells connected together. Each of those cells works by allowing photons (energy from the sun) to knock loose electrons from atoms in the cells. Those electrons then flow through attached wires in the form of electricity. The more solar cells you have in a solar panel, the more electricity it can generate. The electricity generated by solar panels is direct current. To use it to power a home or the electrical grid, the direct current must be converted to alternating current. That conversion is done by a component called an inverter.

How grid-tied solar works? After the direct current power generated by the solar panels is converted into alternating current, that power is then used to either power the home or the electrical grid. If the power is sent to the grid, then the house's electrical meter spins backwards. If the meter spins far enough backwards to show a negative amount of power consumed per month, then the customer may get a bill credit at the end of the month. With some utilities, should the customer have left over bill credits at the end of the year, they will then get a check from the utility company.

What does it take to go off-grid with solar? You would need both a solar panel system, and enough batteries to power your home when the sun isn't shining. Off-grid solar is very expensive because of the batteries. That is why most people who install batteries remain connected to the grid. They only use the batteries to power their home during peak rate times, which are usually in the evening, after the sun has set.



What happens when there is snow on solar panels? Snow will prevent sunlight from reaching the panels, so they won't generate power when covered with snow. Most solar panels are mounted at an angle, so snow will eventually slide off of them. If you don't want to wait for the snow to fall off, you can brush the snow off with a push broom.

Do I still get a utility bill after I go solar? Yes, but your utility bill will be a lot smaller, or maybe even a bill credit if you generate more power than you use. If you have left-over bill credits at the end of the year, you'll get a check for the amount of those credits. Solar power systems are designed to net-meter out. That means they are designed to produce as much power as the home uses, so the homeowner doesn't end up paying for electricity.

Do solar panels work in a blackout? For most grid-tied solar power systems, the answer is no. The system is connected to the grid, not your home. In the event of a blackout, the solar power system has a special cut-off to prevent electricity from being sent into damaged electrical grid wiring. It's a safety feature that protects line workers that are working to restore the power. There is a special inverter called a "[Sunny Boy](#)" that can provide up to 2,000 watts (Max current load 20 Amps) if the sun is still shining.

What kind of maintenance do solar panels need? Solar panels need very little maintenance. If they get dusty, safely sweep or squeegee it off. If they get covered by snow, sweep it off or wait for it to fall off on its own. That's it! No further maintenance required.

How do I maximize my savings on my solar power? It's easy! Just use less power than your solar panels produce. If you live in an area with Time-of-Use billing, be sure to minimize your use of electricity during peak rate hours. Those are usually in the evening.

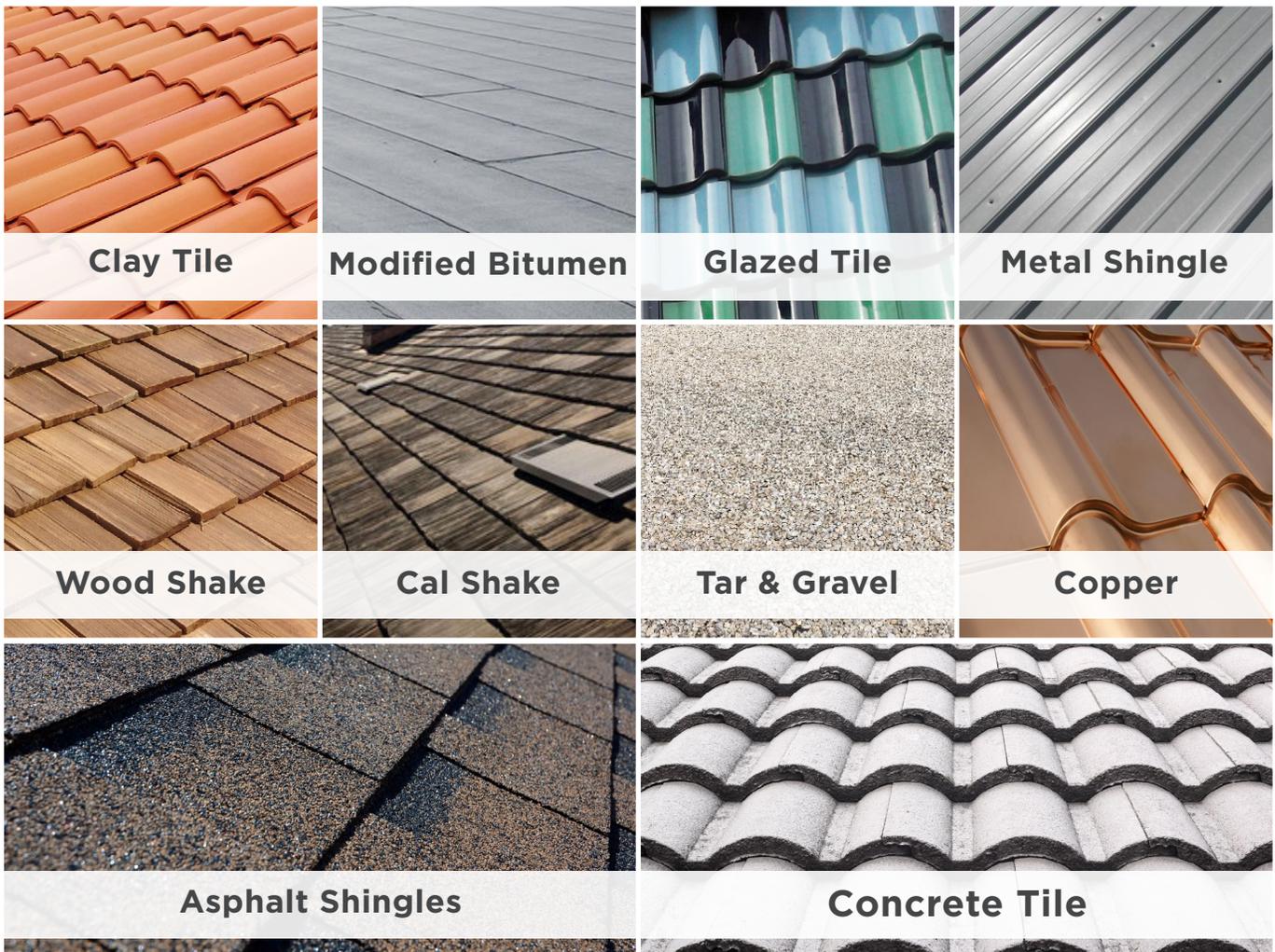


Solar panels and your home:

What you need to know before going solar

What kind of roof do you have?

The type of material used to roof your house matters. Concrete shingle is definitely better than clay tile for solar panel installation. Roof types that solar is commonly installed on include:



Asphalt and concrete shingles are among the best roofing materials for going solar because they are the most durable type of roofing materials. Because of that, concrete and composite shingles are easier to install on than other types of roofing materials.

If your roof type isn't listed above, don't panic! Solar can be installed on nearly every type of roof. A solar power installation company such as our exclusive installer **Freedom Forever™** can advise you about mounting solar panels on your roof.

What condition is your roof in?

Solar panels can be costly to remove once they are installed. For that reason, you should look at the condition of your roof when choosing to go solar. **If your roof needs repairs due to roof leaks or structural problems, make those repairs prior to installing solar panels.** If you aren't sure about the condition of your roof, then consider hiring a roofing company to come to your home and inspect it for you.

How much sunlight does your property get?

This is the very first question you should ask because the answer to it determines if your property is right for solar panels. Google has a free tool called [Project Sunroof](#) that can give you an accurate assessment of how much power you could generate annually with solar panels on your roof. All you need to do is input your address and Google will tell you how much your potential energy production is in kilowatt-hours (kWh).

How much could you save by going solar?

To get the most accurate prediction of how much you can save by going solar, have a utility bill handy. When Project Sunroof tells you what your potential savings are, find the box on the page that says: "What's your average monthly electric bill." Move the slider in that box to the average amount you pay per month for electricity. You'll find that information on your electric bill. Once you've input your average electric bill amount, Project Sunroof will give you a viable estimate of how much you could save by going solar.

Will I have to cut down trees?

You will need to cut down trees if trees cast too much shade on your roof. One easy way to estimate if you'll need to clear trees or branches from your

roof is to use Google's [Project Sunroof](#). Read your power bill to find out how much electricity you use. If Project Sunroof shows that your roof will generate that much or more power, you won't need to cut down any trees. If Project Sunroof shows that your roof has too much shade to generate the amount of power you need, then you'll have to look at trimming branches and/or cutting trees. You may also choose to keep your trees and not get 100% of your power usage offset by solar.

House batteries: When they make sense, and when they don't

Home batteries hold enough power to run a home for around 4 - 6 hours. If you live in an area with Time-of-Use (ToU) billing, you can use your batteries to power your home during peak rates and save considerably. If those peak rates are in the evening, after the sun goes down, then batteries can make a lot of sense. They could save you from paying the highest rates.

If you don't live in an area with TOU billing, home batteries most likely don't make sense. The thing to remember about batteries is that they are usually warrantied for only 10 years. Products do of course outlast their warranties, but warranties do give you some idea of how long the product is expected to reliably last. Because of this, to figure out if batteries make sense financially, you'll need to calculate how much you'll save over 10 years. With regular flat-rate billing or tiered billing, you don't save enough on electricity to justify the price of the batteries. Battery prices are falling, so they will make sense for more and more homeowners as their prices continue to drop.

California residents have an additional incentive to install batteries. Customers of SDG&E, SCE, or PGE will be eligible for as high as a \$500 per kilowatt-hour (kWh) credit when installing home batteries. The SGIP incentive will be reduced as more batteries are installed in California. The earliest adopters of battery technology will receive the biggest incentives. Our exclusive installer **Freedom Forever™** carries the LG Chem home battery system that produces 9.8 kWh of power. With a SGIP incentive of \$500, a homeowner can receive an incentive of \$4,900 for adding the battery to their system.



Solar Financing Options



Solar purchase vs. leases and Power Purchase Agreements (PPA) which is better

Purchase: The decision to buy depends on your finances. If you have good credit, you'll get the greatest return on investment from your solar power system by buying it. Even after loan costs are figured in, purchasing gives you the best bang for your buck when going solar. Some finance companies offer more aggressive financing than others, so shop around. **Freedom Forever™** may be able to find financing even with a FICO score as low as 600. PACE loans are another option where available. Property Assessed Clean Energy loans (PACE) finance your solar with a property tax assessment on your home.

PPA: A Power Purchase Agreement is a contract between a homeowner and a solar power company for the homeowner to pay a rate for electricity that is lower than the rate that homeowner would pay the utility company. You don't save as much as you do with a purchased system, but if you can't finance a system, a PPA is a great option that can still save you tens of thousands of dollars depending on what rates you're paying now and how much power you use.

Lease: When you lease a solar power system, you agree to pay a fixed monthly payment for the system. A lease can be an attractive option.

Zero down financing options for solar

If you decide to purchase your system, you may have several zero-down financing options. You can get a secured or unsecured loan at a bank or other lender. Many solar power companies including Bright Solar have third-party financial partners that can finance your solar system. You may also be able to find financing in your local community in the form of a PACE loan. PACE loans finance your system with a small tax assessment on your home.

Secured vs unsecured loans

If you decide to take out a zero-down loan to buy your system, you'll need to choose between secured and unsecured loans. Each has its advantages and disadvantages. Both types of financing make you eligible as system owner for any Federal and state tax deductions and other incentives that are available.

Secured loans: Secured loans use your home or some other asset as collateral. If you fail to make your payments, the bank seizes the asset that you secured your loan with. Secured loans represent less of a risk to the bank than unsecured loans, so they often come with lower interest rates and are easier to qualify for. To qualify for a secured loan, you must have enough equity in your home (or some other asset) to cover the cost of the loan. The interest on secured loans is often tax deductible.

Unsecured loans: Unsecured loans sometimes don't require any collateral. But they are actually "secured" with a lien against the solar system. If you don't make your payments, it will affect your credit score and, worse, you may get sued by the bank. Unsecured loans are riskier for banks, so they are harder to qualify for and usually have higher interest rates than secured loans. The interest paid on unsecured loans isn't tax deductible. Unsecured loans will often come with hidden dealer fees. Those fees are paid by the solar power installer company and often passed on to you in the form of a higher price for the system.

Differences between secured and unsecured loans

Secured loans	Unsecured loans
<ul style="list-style-type: none">• Require collateral• No origination fees• Interest may be tax deductible• Usually have lower interest rates• Easier to qualify for	<ul style="list-style-type: none">• Don't require collateral• Interest isn't tax deductible• Usually have higher interest rates• Harder to qualify for

Government secured loans

For people who don't have the credit to qualify for a loan from a bank, there are government sponsored loans that they may qualify for. These loans are backed by the government. If you fail to make your payments, the lender is able to collect some or all of the balance of your loan from the government.

FHA loans

Federal Housing Administration (FHA) loans are insured by the FHA. Like secured loans, FHA loans are secured by your house, and the interest is tax deductible. But unlike secured loans, if you default on an FHA loan, the bank won't foreclose on your home. The bank can instead collect up to 90% of the loan's value from the FHA.

PACE loans

Property Assessed Clean Energy (PACE) loans are offered by some local governments. These loans issued by private lenders and are paid back by a property tax assessment on the home over the course of 10 to 20 years. These loans stay with the home and transfers to a new owner if you sell it before the debt is fully paid off. The only way you can default on them is to fail to pay your property taxes.

Tax Credits and Incentives for Going Solar

Federal Tax Credit The Federal Tax credit for solar power currently allows consumers to deduct up to 30% of the cost of a solar system from the tax owed at the end of the year. If the amount owed is less than 30% of the price paid for the system, a credit will be applied in the amount owed. Any remaining amount of the credit may be carried forward for up to 5 years. If nothing is owed at the end of the year, then no tax credit will be applied.

*No statement contained herein shall constitute tax or legal advice. You should consult a legal or tax professional on any such matters.

The credit is being phased out. Solar systems that begin operation before December 30th, 2019 are eligible for the full 30% tax credit. Systems that begin operation after Jan 1st will only be eligible for a 26% tax credit. The Federal Tax credit will gradually be phased out after that.

State Tax Credits for going solar Some states offer incentives for going solar. The best way to find out what incentives are available is to talk to a solar power dealer. Bright Solar can connect you to a solar power dealer in your area.

Connect with us to schedule an appointment with a solar expert

Call us at

(951) 797-1287

brightsolarmarketing.com





The solar installation process



There is more to going solar than just building a solar system on your roof and flicking a switch to turn it on. The installation company must get the necessary permits from your local jurisdiction. They then have to design and build your system. Once the system is built, then your local utility company needs to come out to your home and inspect it. If the system passes inspection, the last step is for the utility to grant Permission-to-Operate (PTO).

Assessing your energy needs

Your solar journey begins with an assessment of your solar needs. Your solar power dealer's sales representative comes to your home and analyzes your utility bill. From the information on it, the sales rep determines how much power you need to produce to net meter out.

Net metering happens when you produce about the same amount of power that you consume. It can eliminate or significantly reduce what you pay for electricity every month. It's a good idea to go big when deciding how large of a system you want. Most utility companies will allow you to go up to 115% of your normal usage. You want the extra power to lower your bill and to account for future increases in your electric usage

Assessing your energy needs

Your solar journey begins with an assessment of your solar needs. Your solar power dealer's sales representative comes to your home and analyzes your utility bill. From the information on it, the sales rep determines how much power you need to produce to net meter out.

Inspect your home and roof for solar power

After your solar power dealer helps you choose a system for your home, the next person to visit you will be someone from your solar power installer. That person is there to inspect your roof and home so the installation company can design a system for your home. Solar systems are always designed to fit the specific home they are installed on, there's no such thing as "one size fits all" when it comes to going solar!

Permitting process

Once your solar installer has designed your system, they then have to submit those plans for approval by your local authorities. They will review the design to see that it meets all applicable local codes. If it does, they will issue permits to the solar installer so construction can go forward.

Installing the system

The big day has finally arrived! Your solar installer arrives to install your new solar system. Most installations only take a day or two. Your solar installer will also make any upgrades needed to prepare your home for solar. Those upgrades can include fixing breaker wiring in your circuit breaker box and making minor repairs to your roof. If your roof needs more than minor repairs, a roofing company will be hired to make them before the solar system is installed.

Inspecting the system

After the system is installed, your local utility company will need to come out and inspect it prior to allowing it to be connected to the grid. The utility company can take all the time they want to schedule the inspection. If your new system doesn't pass, the utility company will schedule another inspection. Inspections are performed with the installer present, so if anything is needed, they can make the needed improvement right away.

Who installs your system

To give you the best service possible, we partner exclusively with Freedom Forever, one of the industries fastest-growing installation companies. In addition to providing a high level of customer service, Freedom Forever also offers a unique 25-year production guarantee that is one of the best in the business. They make it easy to go solar with confidence.

Asking the utility for permission to operate (PTO)

After your system passes inspection, your solar installer will ask the utility company for Permission to Operate (PTO). This is the final step in the installation process. Once PTO is granted, your solar installer will remotely switch your system on. At that point, your system begins delivering electricity to the grid.



Monitoring your system and the Freedom Forever 25 year production guarantee



Now that your system is operating, it's time to monitor it to ensure its producing electricity. You want to make sure it's producing the amount of power it's designed to produce. Freedom Forever provides you with monitoring software that makes it easy. They also monitor your system for you because they guarantee its power output. Your new solar system is guaranteed to produce the power they promise it will for 25 years. If it ever breaks down or underproduces, they'll come out and fix it at no charge*

* Subject to the terms and conditions of your agreement

How long does a solar power system last?

Most solar systems including those built by Freedom Forever are warrantied to last for 25 years. It's very likely that your system will last longer than that. There are 40 year old solar systems out there that are still going strong, producing about 75 - 80% of the power they were originally designed to produce. As they age, solar panels lose about 0.5 - 1% of their power output per year. Thus it's very likely that your solar system will outlast its warranty.

What happens if the system stops working?

If your system stops working, and you aren't monitoring it, you may not know it broke down until you receive a huge electric bill! That's why you should keep an eye on your system. If you are a Freedom Forever customer, you don't have to worry. They monitor it for you. If it produces less than what's in your agreement, they can come out and fix it, and reimburse you for any lost power production*. They do this because of their 25 year production guarantee.

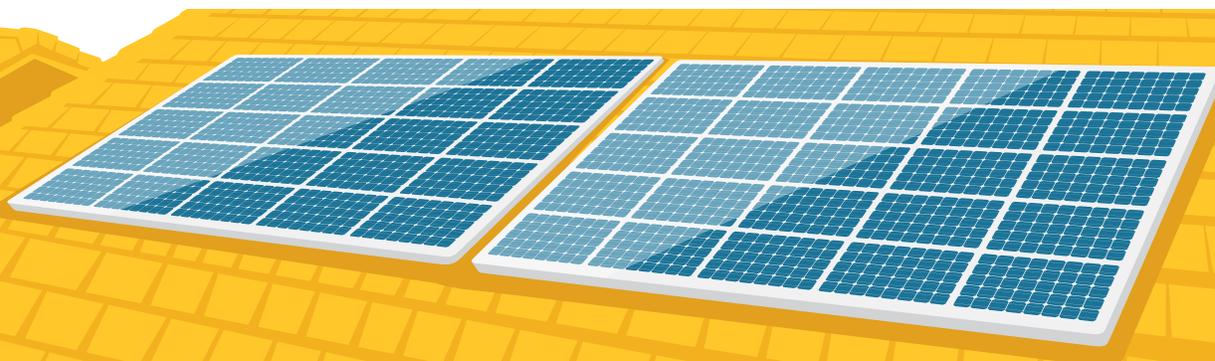
* Subject to the terms and conditions of your agreement

The Freedom Forever Solar 25 year production guarantee

Freedom Forever guarantees your system will produce the amount of power they say it will for 25 years. They will fix it and reimburse you for any lost energy production while your system was down or under producing.*

The power production guarantee is a Freedom Forever service. Other companies will fix your system when it is under warranty.

* Subject to the terms and conditions of your agreement



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