



The Beginner's Guide to Going Solar

Everyone's heard of saving for a rainy day... and sunny days can help you do that! Today, solar energy isn't the bulky, uber-expensive option it was ten years ago. Today's solar energy options are lean, green energy machines that can save you money in the long run. Going solar isn't just good for the planet— it's good for your pocketbook, too! It doesn't have to be hard to keep your home's temperature comfortable, conserve your resources, and save money on electricity at the same time. This homeowners' guide to solar energy will provide you with everything you need to know if you're interested in switching to solar power.




An Energy Source That Puts You In The Driver's Seat

One of the many great reasons to go solar is to reduce your dependence on antiquated energy grids. Energy infrastructure is a huge problem all over the United States– we only have to take a look at some of the serious problems faced by public energy utilities to see why you might want to go solar. In June of 2022, the California Public Utilities Commission fined the state's largest utility companies for violating public safety and notification requirements [\\$22 million](#). In Maine, New Englanders were looking forward to a peaceful Christmas celebration when tens of thousands were plunged into darkness after several power plants failed to deliver electricity. The utility companies were [fined by ISO New England for around \\$39 million](#). In Houston, a power company was fined [\\$1.7 million](#) for failing to upgrade its electric meters and charging customers inaccurately. In light of these very public problems, it's no surprise that many homeowners are interested in gaining independence from these organizations and from the antiquated energy grid infrastructure.

If you're looking for a power source that grants you this independence and keeps you prepared for emergencies, solar energy is the answer. By having your energy source on your own property, you gain control over your power. This leaves you less beholden to large power companies that don't always have your interests in mind. There's a reason solar energy companies are on the rise. As demand for solar electricity rises and innovation in the space continues to accelerate, prices keep falling. Now, solar energy is available

everywhere for any type of home in nearly any location. If you've been on the fence, there's no better time than now to go solar.

SOLAR PROS & CONS



PROS	CONS
✓ Solar can reduce or eliminate your power bill	✗ There's paperwork & red tape involved
✓ Solar power can increase the value of your home	✗ Ownership of the home or property is required
✓ The solar industry contributes to massive job growth	✗ Solar energy is dependent on weather patterns
✓ Solar is a technology with a proven track record	✗ Not every roof type will work for solar installs
✓ Solar is surprisingly affordable. It's not just for the wealthy	✗ Without financing, solar has high up-front costs
✓ Solar can benefit the whole electrical grid	✗ Solar won't work for people who move often
✓ Solar power systems have a long life span	✗ The returns on solar aren't often immediate
✓ Solar lets you make use of unused space	✗ Solar is challenging to do it yourself

The Environmental Impact of Solar Energy

Implementing more solar energy sources and making solar energy affordable will effectively reduce the buildup of greenhouse gasses in Earth's atmosphere. This, in turn, will decrease the devastating effects of climate



change and help humanity steer toward a more sustainable future. In addition to [benefiting the health of the planet and the living things within it](#), using renewable energy introduces paths we can follow in order to create more jobs, put in place inexhaustible energy sources for future generations, make electricity more reliable and accessible, and stabilize the prices associated with securing utilities in homes and businesses.

Understanding Solar Power

Solar power is one of the most abundant sources of energy on our planet. In fact, the amount of sunlight produced in just an hour and a half of sunlight hitting the Earth's surface provides enough energy to power the world for an [entire year](#). Using solar technology to harness that power is a relatively simple process. By collecting solar energy via solar panels, it becomes possible to convert solar radiation into usable electric energy. Solar radiation is also referred to as [electromagnetic radiation](#). The sun's radioactive rays touch Earth's surface with varying concentrations, but all of our planet's surface receives at least some solar radiation throughout the weeks, months, and years that pass. Solar technology provides us with everything we need to collect, store, and transfer the sun's energy and use it to power everything that coal and other fossil fuels do.

Related post: [25 Key Terms to Know Before Going Solar](#) | [The Pros and Cons of Solar Energy](#)



How Solar Panels Work

Solar panels turn light into electricity through lots of linked [photovoltaic cells](#). Each one of these cells works together– think of production lines at a factory. Each cell is its own production line, and the product turned out by the semiconducting materials used in the cells is electricity. As the cells produce electricity, the collected current is directed to a central point within the solar panel where consolidation occurs, like at a control center in a factory where the parts are gathered for further processing. To make the electricity generated by the solar panel usable in homes and businesses, an inverter is employed. The inverter converts the electric current from direct current (DC) to alternating current (AC), which is the standard form of electricity used by our devices. The AC electricity produced by the inverter is then ready for distribution. It is similar to the manufactured products in our metaphorical factory being prepared for shipping and delivery to customers.

Types of Solar Panels

Solar panels turn light into electricity through lots of linked [photovoltaic cells](#). Each one of these cells works together– think of production lines at a factory. Each cell is its own production line, and the product turned out by the semiconducting materials used in the cells is electricity. As the cells produce electricity, the collected current is directed to a central point within the solar panel where consolidation occurs, like at a control center in a factory where the parts are gathered for further processing. To make the electricity generated



by the solar panel usable in homes and businesses, an inverter is employed. The inverter converts the electric current from direct current (DC) to alternating current (AC), which is the standard form of electricity used by our devices. The AC electricity produced by the inverter is then ready for distribution. It is similar to the manufactured products in our metaphorical factory being prepared for shipping and delivery to customers.

Is My Home Right for Solar?

If you're interested in bidding bye-bye to your expensive power bills, solar energy might be a smart decision. In order to ensure that your home is ready for solar, there are a few things you'll need to evaluate. The simple fact is that not all homes or homeowners are in the ideal situation for this investment. For example, if you're going to be moving within the next 3 years, there might not be enough time for you to get a return on your investment. If you do not own the home you are living in, you likely won't be able to make permanent improvements like installing solar panels. Furthermore, if your home is in a heavily shaded area it also might not be a good fit. There's a reason there's not a lot of solar power in the [Faroe Islands](#), where they get less than 900 hours of sunlight a year! Also, if your local utility companies do not currently provide good incentives to go solar, you might be better off waiting. They'll (probably) catch up with the solar trend as energy prices continue to skyrocket. On the other hand, if your home does get plenty of light and you can get a good net



metering plan with your power provider, you will be able to take advantage of all the benefits of going solar.

Benefits of Solar Power for Homeowners

[There are several reasons](#) why pursuing solar power for homeowners can be beneficial. For one, solar energy systems are becoming more affordable than ever before. Additionally, investing in solar energy presents homeowners with the opportunity to save money on future energy bills once they've had a solar system installed. To make matters even better, solar energy allows homeowners to power their homes independently, without having to worry about the integrity of local power grids. With this in mind, even if the electric grid loses power, solar-powered homes can maintain access to reliable energy. For homeowners who want to increase the value of their homes, solar power proves to be another worthwhile investment, as today's homebuyers are increasingly interested in sustainable energy.

BENEFITS OF SOLAR ENERGY



**AROUND THE
CLOCK POWER**



**POCKETBOOK
PROTECTION**



**BETTER
MONITORING**



**MORE ENERGY
SELF-SUFFICIENCY**

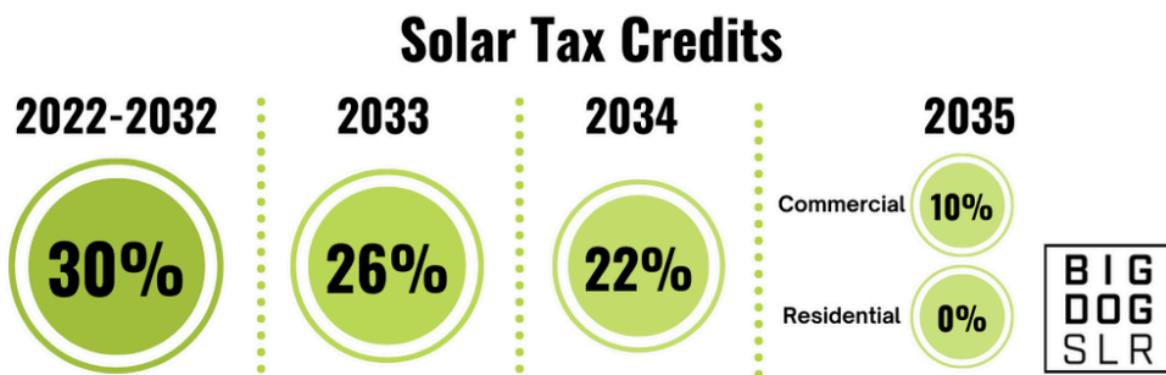
**BIG
DOG** SOLAR

Government Incentives for Solar, Plus Tax Credits

Depending on where you live, certain localities, states, and federal programs incentivize homeowners to utilize renewable energy sources. Solar energy is like pennies from heaven— you just have to pick them up! If you're planning to



switch from standard electricity to solar energy, be sure to check with your local government offices for any programs your household can participate in for more affordable solar options. If your home installs solar panels and starts using a solar energy system, you will likely qualify for various eco-friendly tax credits as well. Go green to get some green! You may have heard of the [Federal Solar Tax Credit](#). This credit provides a 30% tax credit for solar energy systems installed between 2017-2032. It should be noted that this is a tax credit and not simply a tax deduction. Credits are a dollar for dollar reduction of the final amount you pay in taxes at the end of the tax year.



Choosing the Right Solar System

Homeowners need to consider several things when looking for an effective solar system, as not all systems are created equal. Plus, it would be a shame to invest a significant sum of money into having a solar system installed, only to discover that it doesn't suit your needs. You want to be solar powered, not sun-burned! To [help you make the right choice](#), consider the following:



- Explore Panel Quality: You'll need to choose solar panels that were manufactured with quality in mind. You want panels that are in good working order, not ones that are discounted due to age or damage.
- Determine Energy Efficiency: After calculating the amount of energy your household needs in a given month, you can use this estimate to choose a solar system that produces enough energy for your family's needs.
- Consider Area Temperatures: Some solar panels do not withstand intense heat as well as others, so if you live in a particularly hot area, you'll need resilient solar panels.

Grid-tied vs. Off-grid Solar Systems

Some solar systems connect to an energy grid, so you'll need to decide whether you want a grid-tied system or an off-grid system. In some situations, off-grid systems may be the only available option, especially in cases where a home stands in a very remote location.

Sizing the Solar System

Depending upon the size of your roof and the amount of energy you use, you'll need to choose a system that can handle that sort of capacity. Most average households require a 4kW system, but smaller homes may use less energy, while larger homes may use more.

Related post: [How Are Solar Panels Made](#) | [Solar Power and How It Works](#)



Selecting the Appropriate Components

Your home's energy consumption will also help determine which solar components you need. As mentioned earlier, mono-crystalline panels are the most efficient and can handle high temperatures while thin-film panels are ideal for small homes that don't use a lot of energy.

Finding a Reliable Solar Installer

It's important to [research your solar installation options](#) carefully, because the last thing you want is to pay a lackluster, under-qualified company to install your solar system as haphazardly as humanly possible. You want your solar installer to shine! **Research Local Installers** It's almost always best to work with a local company with a stake in their community reputation. Check out local solar installers and read their reviews and testimonials, both on the website and through third-party systems like Yelp or Angi. Ask a number of questions about the installer. For instance:

- How many systems have they installed?
- What do their customers say about them?
- Do they offer a variety of panel, inverter, and battery options?
- Can they show examples of their work
- Do they install their own systems or does someone else do it for them?

Evaluate Installer Credentials and Certifications



To determine whether an installer you're considering has the qualifications needed to perform a decent install, take a look at the credentials and certifications the company holds. You can verify these credentials by checking with the [Solar Licensing Database](#). If the company you're evaluating doesn't appear on the list, it's probably a good idea to look elsewhere.

Request and Compare Multiple Quotes

Compare prices and additional services by contacting several solar companies and requesting quotes. While you don't want to choose an option based only on the price, collecting these quotes will help you determine a baseline for what you can expect when it comes to the cost of solar installation. Be wary of extremely high or extremely low price variations. If it sounds too good to be true... it probably is.

Permits, Installation, and Maintenance

When contacting potential installers, ask questions about the permits required and whether the solar company takes care of that obligation or whether you're responsible for it. Ask about the installation process including any labor required on your part, or any risks associated with the installation of panels on your roof. You'll also want to ask whether the company in question provides solar system maintenance. This way, you'll have someone to contact if you experience any issues.

Understand Local Regulations and Permits



It's also important to check with the officials in your city or town to confirm whether you're legally allowed to have solar panels installed on your roof. Visiting your town or city office will also help you determine which permits you need, as well as any other requirements associated with your locality.

The Solar Installation Process

When the time comes to have your home's solar system installed, you can expect the company you're working with [to follow a process similar to this](#).

1. Site Survey: In this first step, the installation team will measure the surface area of your roof, its orientation to true north, and a number of other important metrics to determine how to best suit your specific situation. We'll record how much electricity you've used over the past 12 months as well as determine the peak sun hours in your area.
2. Design and Planning: The sun doesn't shine every day. The energy that the sun provides has peaks and troughs, but you need a steady flow of power to your home throughout the year. In this second step, the design team will figure out how to design your system to provide this consistent level of power as well the circuitry needed for your home's electrical system.
3. Permitting: Working on a roof in a residential area falls under a variety of important government regulations. It's important to ensure that the plans that have been made are approved by the government and secure all necessary permits.



4. Installation: Certified professional installers will come and spend a few days installing solar panels on the roof and connecting all the electrical circuitry.
5. Inspection: Inspectors will check to ensure that everything the installers has done is up to par and compliant with all relevant regulations.
6. Meter Swap: Your old meter will then be removed and a new meter added which will be designed to track your energy production so that your excess power can be sent to the utility company and they can provide you with free energy in exchange during the shadier months. Learn more about these meters [here](#).
7. Activate The System: This is the final step in which your system is turned on and activated. Some companies, such as Big Dog Solar, will even provide an app to let you track your energy usage live.

After the installation process is complete, you'll be able to start collecting, storing, and using solar energy.

Maintenance and Monitoring Considerations

Most of the time, solar energy systems don't require much maintenance, but it's a good idea to be aware of how to extend the life of your system through smart energy practices. Follow these tips for effective solar system maintenance and monitoring. **Maximizing Solar Energy Benefits** One of the best ways to maximize the benefits of solar energy is to make sure the system



was installed correctly to begin with. Make sure all of your panels are aligned properly and set to the same angle. **Energy-Efficient Practices and Appliances**

To make your solar power last longer than it might otherwise, invest in energy-efficient appliances and other pieces of equipment. This may include smart thermostats, energy-efficient lighting, and water heating or air conditioning units that are designed to be energy efficient. **Battery Storage Systems for Solar** To keep your battery storage unit working as efficiently as possible, clean the unit on a regular basis using baking soda, distilled water, and a terminal cleaning brush. You'll also want to monitor your battery storage system to make sure it continues working at the same capacity as it did when it was first installed.

Related post: [*5 Tips For Getting Solar Panels For Your House*](#) | [*Do I Qualify for Solar \(Find out here\)*](#)

[Frequently Asked Questions about Solar](#)

How long do solar panels last? Solar panels are designed to last up to 40 years and come with 25-30 year warranties. The typical solar panel loses about 0.5% efficiency each year. Most manufacturers offer a warranty that guarantees your solar panels will maintain an efficiency of between 95% and 83% after 25-30 years of installation.

What is a Power Purchase Agreement? A PPA refers to a system designed to help homeowners manage the costs associated with switching to solar energy.



With a PPA, the customer pays for their solar system in a series of installments, much like a car loan.

What sort of incentives are available for solar power? Homeowners with solar systems can claim the investment tax credit on their tax returns. Additionally, some cities, municipalities, regions, and states offer their own benefits programs and incentives for solar-minded homeowners.

How long is the payback period? Solar energy has been made relatively affordable for most homeowners through a leasing program, PPA, financing agreement, or one-time purchase discounts. Plus, the amount of money you stand to save on your energy bills can help offset the cost of the system. Solar energy is a smart investment in most cases, and the potential benefits are well worth the initial cost required. If you're a homeowner and you're interested in switching to solar energy, give yourself enough time to thoroughly evaluate each of your options before you decide on the arrangement that will work best for you. By harnessing the power of the sun, your household can join the many others who have freed themselves from the clutches of greedy utility companies and crumbling energy infrastructure, and you can feel good about doing your part to help protect the planet.

At Big Dog Solar, we're passionate about powering your future with reliable, high-quality solar solutions. With expert craftsmanship and a commitment to innovation, we make switching to solar simple, affordable, and built to last.

855-935-0340 | bigdogsolar.com