

A HOMEOWNER'S GUIDE TO GOING SOLAR IN MAINE

STRAIGHTFORWARD ANSWERS TO YOUR
QUESTIONS ABOUT GOING SOLAR



Maine's local solar electric installer since 2012

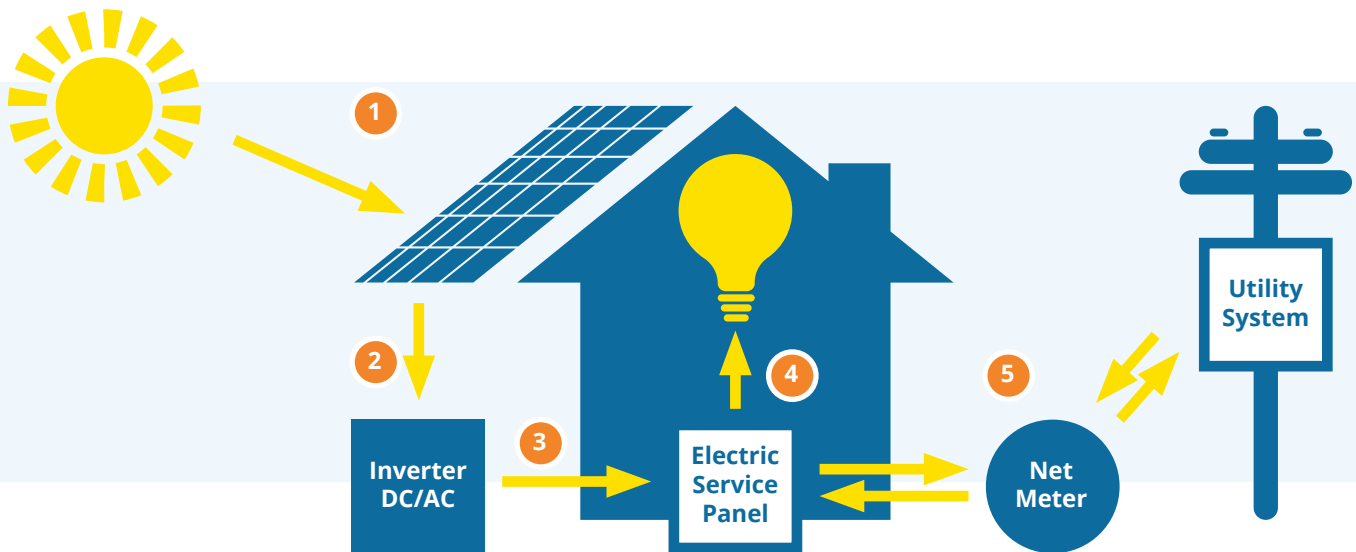
Whether you're ready to experience the benefits of solar now or you're still on the fence, we understand that going solar is a big decision for any homeowner. Making a well-informed decision if solar is right for you also requires learning a lot of new information. Understanding the different factors involved in a project like this is important. To help you decide whether solar power is the right option for you, we've put together this guide to answer the most commonly asked questions we receive. As you browse the guide, please do not hesitate to reach out to our team if more questions arise.

[MAINESOLARSOLUTIONS.COM](https://www.MaineSolarSolutions.com)

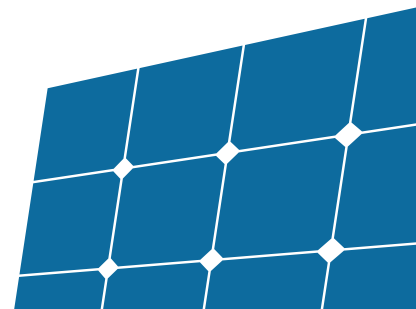
HOW DOES SOLAR WORK?

As the cost of solar energy has plummeted in recent years and electrical prices have increased, you are seeing lots more solar in your neighborhood, and you might have wondered how they work. Most of the solar electric systems in Maine are called grid-tied solar. With a grid-tied solar electric system, your home can be powered by the sun when it is shining. However, you are still connected to your utility provider, like Central Maine Power (often referred to as the grid), so you still have power when sunlight is unavailable.

Here's a simple, step-by-step look at how grid-tied solar works:



1. Solar panels convert energy from the sun into Direct Current (DC) electricity.
2. That DC electricity travels to an inverter where it is converted into the Alternating Current (AC) electricity used in your home.
3. The inverter delivers the AC electricity to your electrical panel, where it is distributed to electrical loads throughout your home.
4. Your home uses the solar produced electricity but still has access to electricity from the grid during high demand or at night.
5. When your system produces more electricity than your home is using, excess solar electricity is exported back to the grid, and you receive a credit, saving you money on your electric bill through a process called net metering. Solar customers in Maine benefit from our state's net metering solar policy. This policy allows a grid-tied solar electric system to offset its annual electricity consumption. We will go into this in more detail later.



WHY HOMEOWNERS ARE TURNING TO SOLAR

One of the most common reasons people decide to go solar is for the financial benefits. And for a good reason: it's an excellent investment! But, of course, there are many other reasons to go solar, like reducing carbon emissions and adding resale value to your home. But the number one reason we hear from customers? Reducing their electric bill.

Why? It is no secret that electricity rates have increased dramatically in Maine over the years, and it's uncertain when or if it will slow down. Thus, many homeowners like you are looking for less expensive and more

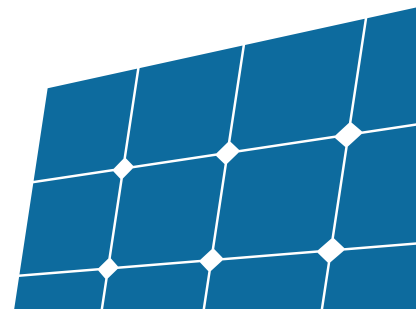
predictable ways to power their homes. When thinking about the opportunity for savings with a solar electric system, you not only need to consider how much you'll save in year one but also throughout the lifetime of the system. Due to their long system life (25+ years) and minimal maintenance, once the system is purchased, the cost of energy is fixed at a known quantity. As a result, you'll have a straightforward finance plan with fewer surprises in the long run. Those monthly electric savings add up quickly, and as energy prices continue to rise in Maine, your return on investment only improves.

DOES SOLAR WORK IN MAINE?

It may not seem like solar works in Maine (especially if you are reading this during the winter) but Maine receives quite an incredible amount of sun to make solar effective and affordable. In fact, Maine receives nearly 20% more sunlight annually than Germany, which is a leader in solar installations. We all know Maine can get very cold, but solar panels actually don't mind the cold and even lose some efficiency when it is too hot, reducing output. In fact, hot summer days are not necessarily the best for solar energy production.

Mainers looking to add solar are also concerned about the impact of snow on electricity production. Unfortunately, when solar panels are covered with snow, they

produce little to no electricity. The good news is that in Maine, most of your solar generation—and net metering credits (more about this later)—come during the spring and summer, and your system is designed for peak performance during those times. That means that even if you lose days of production in the winter (or even cloudy days), your system makes up the difference during the sunnier days. And although there is a lot of snowfall in Maine, the overall impact on total solar electricity production is relatively small. Most of the systems we design will meet close to 100% of a home's needs in a given year and our customers experience significant cost savings from installing panels right here in Maine.



WHERE DO THE SOLAR PANELS GET PLACED?

Roofs are the most common installation location for home solar electric systems – and for good reason. The more sun exposure solar panels get, the more solar energy they can produce to help replace power from the grid. So your roof is usually the perfect spot. Roof-mounted solar panels can be installed on your home, as well as on various outbuildings, such as a barn, shed, garage, or even carport. Your solar consultants can also sometimes split up solar arrays into multiple sections

and can work around roof components, such as skylights, vents, or pipes. Solar panels can be installed on various types of roofing materials such as asphalt-shingled and metal. An important note to keep in mind is that we will assess your roof's condition as part of our site survey. If your roof needs to be repaired or replaced, you'll need to get that work done first before you have solar panels installed. It will save you more money in the long run.

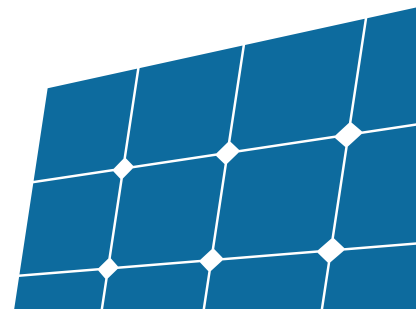
DO I HAVE OTHER OPTIONS BESIDES INSTALLING ON MY ROOF?

Yes, you do have other options. As noted above, many customers also install solar panels on their garage, barn, outbuilding, or even a pre-wired solar shed can work too! Ground-mounted solar arrays are also an excellent option if your roof is heavily shaded, not well oriented, or if you have aesthetic concerns about putting solar on your home or any building on your property.

A ground-mounted solar array may cost 15-25% more than a similarly sized rooftop solar array. This is due in part to the structure on which the solar panels are installed. A rooftop system is supported by the roof, meaning there's no need to erect a supporting

structure. But with a ground-mounted system, an independent structure will need to be erected to support the panels. The structure will consist of posts pounded deep in the ground for stable support, then, cross-beams are added in addition to the racking system and the solar panels themselves.

Although the initial cost may be higher, a properly oriented ground-mounted solar array is typically smaller than a shaded or poorly orientated roof array, which can contribute to a smaller cost differential in the end. Our team can work with you to give you pricing for each so you can make an informed decision for your specific location and budget.



HOW DOES MAINE SOLAR SOLUTIONS DETERMINE HOW BIG OF A SOLAR ELECTRIC SYSTEM I WILL NEED?

First, it's important to know that there is no one-size-fits-all answer. Just as each home's electric bill varies, so does the size and ultimately the cost of a solar electric system designed to eliminate that home's electric bill. Our goal is to provide you with a fixed-cost system that eliminates your annual electricity bill and saves you money from rising electrical rates. During your free solar site assessment, we gather information to design and price out a solar electric system specific to your home.

To get you a customized quote, we consider several factors, which include:

Your electricity consumption: Solar systems are designed to offset your annual electricity usage. We review your latest electric bill and calculate your annual electricity consumption. Then we take into account potential changes to your future electricity usage. For example, many of our customers install heat pumps and heat-pump hot water heaters to reduce their use of expensive fossil fuels. Are you planning to purchase an electric vehicle? Considering a pool or hot tub? If so, it may make sense to design a system that allows for easy expansion if and when your usage increases.

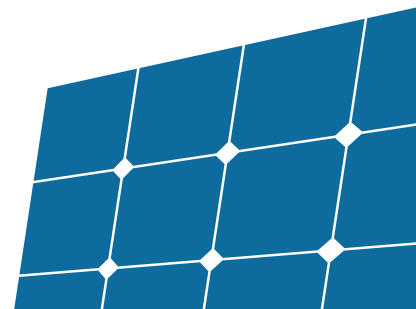
The orientation of your home: We take into account the orientation of your roof towards the south. But keep in mind, your roof doesn't have to face directly south. For instance, a solar array oriented 30 degrees east or west of south would only see a 3-5% reduction in annual output.

The pitch of your roof: The pitch or angle of your home's roof is factored into system size. A shallower roof produces more electricity in the summer. A steeper roof produces more energy year-round.

Shading: For electricity production, the more exposed your roof is to sunlight throughout the day, the better. Although your roof does not need to have full sun all day to be a good candidate for solar, we do take into account the effect of shading from trees, other buildings, and roof structures that shade your site over the course of the day and year and could potentially impact your production.

The type of solar panels you choose: There are many types of solar panels available for purchase. Panels size, panel appearance, panel efficiency, and variations in panel warranties all impact the final cost of the system. When designing a system, we typically show most folks four different panel types to understand how panel choice impacts system pricing. This is important, so we will go into this in more detail later in this guide.

Our professional solar consultants provide free solar site assessments. Information gathered at your home is used to design a system sized to offset your annual electricity usage.



WHAT'S THE AVERAGE COST FOR SOLAR IN MAINE?

Now that you know what influences the size and cost of a solar electric system, here is a range of prices you can expect to see in quotes for a solar panel system in Maine.

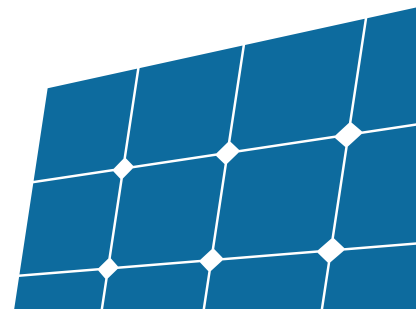
The average home in Maine uses between 8,000 kWh and 12,000 kWh of electricity per year. The cost for a grid-tied, rooftop solar electric system designed to cover this electricity usage would have a direct purchase price between \$23,289 and \$31,260. Once the 30% tax credit is factored in, the net purchase price would range between \$16,302 and \$21,882.

If Your Bill Is	Annual Electric Usage*	Solar Array Size	Estimated Solar Purchase Price**	Net Cost (after 30% Tax Credit)
\$155	6,431 kWh/yr	5.0 kW array	\$17,124	\$11,987
\$225	9,646 kWh/yr	7.5 kW array	\$24,162	\$16,913
\$295	12,862 kWh/yr	10.0 kW array	\$31,014	\$21,710
\$365	16,077 kWh/yr	12.5 kW array	\$38,199	\$26,739

**You can find how much energy you use on your electric bill.*

***Pricing estimates assume an unshaded, south-facing roof with a 35-degree roof pitch. Production levels and costs will vary depending on your free site assessment findings.*

Your customized, all-inclusive solar quote will present a few panel options and sizing, and a range of pricing. In addition, our solar consultants take the time to explain how solar works, educate you about your options and answer your questions so that you have the information you need to make an informed decision.



ARE THERE ANY TAX CREDITS OR INCENTIVES TO GO SOLAR?

There is a federal tax credit called the Investment Tax Credit (ITC). Commonly referred to as the Solar Tax Credit, it currently allows you to deduct 30% of the cost of installing a solar energy system and/or battery backup from your federal taxes until 2032. It's important to note this is a tax credit, not a deduction and allows for a more substantial financial benefit to homeowners. When you receive a tax credit, it can be applied against the federal taxes that you owe. For example, if you have a \$4000 federal tax liability and your solar tax credit totals \$3000, you could reduce your federal tax bill to \$1200.

It is also important to understand the tax credit can only be used to offset income taxes owed to the federal government. Therefore, if you don't have a federal tax liability, you won't be able to use the tax credit.

However, your tax credit can be carried forward. Note that this tax credit carryover can only happen during the period the IRS solar tax credit is in effect.

Currently, solar electric systems and battery backup systems qualify for a 30% federal tax credit when installed before the end of 2032. The tax credit then steps down to 26% in 2033 and 22% in 2034. It is currently scheduled to expire in 2035 for homeowners.

Maine Solar Solutions does not provide professional tax advice or financial guidance so we recommend you consult with a tax professional.

[LEARN MORE ON OUR WEBSITE¹](#)

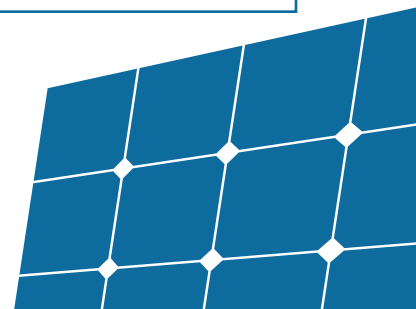
NET METERING: HOW IT HELPS YOU SAVE BY GOING SOLAR

Though there are no state tax credits or rebates to go solar in Maine, we have an excellent solar policy called "Net Metering" that allows you to receive energy credits for excess energy that your solar array may produce. It's great for Maine because most solar customers generate more solar power during the sunnier summer and spring months than they consume. When your solar panels don't get enough power to meet your electricity needs (like during the winter or at night), you use the net metering credits you've accumulated in the summer and spring to help offset those utility bills. These credits

are built up and redeemed daily but the credits are accrued and credited on a rolling 12-month period. With the right design, most of our solar customers offset 100% of their annual electric costs.

Did You Know? Net Metering allows energy credits produced on one metered account to offset electricity consumption on another account. Many customers use excess credits earned on their home system to eliminate their camp or ski house electric bills.

¹ mainesolarsolutions.com/blog/solar-investment-tax-credit-questions



HOW MUCH MONEY WILL I SAVE?

A solar panel system is one of the few investments that truly pays for itself in savings over time by reducing or eliminating your electric bill. On average, homes in Maine with solar have a payback period of 7-10 years. Once your system pays for itself, you may enjoy 19-25 years or more of nearly free

electricity (the utility still charges a minimum monthly delivery charge, currently at \$15 per month). That also means you are protected from any future electricity rate hikes, and as the cost of electricity increases, you will see an even greater return on investment.

WHAT ARE THE WAYS TO PAY FOR SOLAR PANELS?

The primary way to pay for solar in Maine is either a cash purchase or a solar loan.

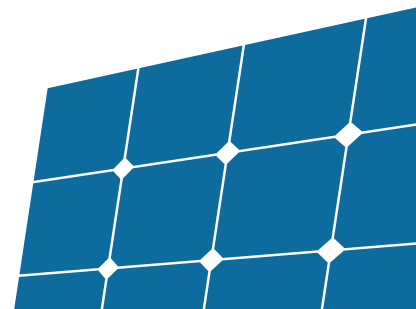
Cash Purchase: If you can afford to pay for your panels with cash, it will give you the highest return on your investment. You'll own your solar panels immediately and not pay interest or any other fees. Many of our customers have also taken advantage of low-interest rates and increasing home values to pay for their solar systems with home equity loans or when they refinance their mortgages.

Solar Loans: The second common option is to finance the purchase. Your fixed monthly payments will usually be comparable to your monthly electric bills, and zero down and low-interest rate options are available. And the best part is, while electric prices continue to rise, your loan payments remain the same. You could also contact your local bank or credit union to see if they offer home improvement loans at a percentage and term length that make sense for you. Maine Solar Solutions also offers solar system financing through [Mosaic](#)¹. These loans offer low-interest rates and a variety of term lengths with no prepayment penalty.

LEARN MORE ON OUR WEBSITE²

¹ mainesolarsolutions.com/financing-rebates

² mainesolarsolutions.com/blog/how-should-you-pay-for-solar-panels



HOW LONG DO THE PANELS LAST?

Most solar panels' performance is guaranteed for 25 - 30 years, but panels will go on to produce electricity for longer than that. As they naturally degrade over time, or if you

add more electricity to your home, such as installing heat pumps or an electric car, we can expand your system to cover the added electricity or degradation from your panels.

SOLAR PANELS LAST A LONG TIME! WHAT IF I WANT TO SELL MY HOUSE?

Buyers see the benefits of buying a home that can generate its own electricity, so installing solar panels can help you sell your home faster and likely at a significantly higher price. In a [study conducted by Lawrence Berkeley Labs¹](#),

homebuyers were willing to pay a premium of \$15,000 more for a home with an average-sized solar system. People see their value when deciding to purchase homes, and it's been shown homes with solar panels sell faster.

ARE ALL SOLAR PANELS THE SAME? HOW DO I CHOOSE?

CUSTOMER OPTIONS

When looking to install solar, another important decision you'll need to make is choosing which solar panels are the best for your home. Each solar panel option has specifications related to design, size, efficiency, durability, and warranty. All of these specifications impact solar panel quality and, ultimately, your return on investment.

PANEL

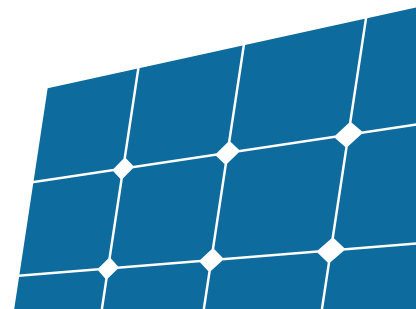
At Maine Solar Solutions, we choose to offer our customers choices of top-tier panels versus only one manufacturer so that as a customer, you can consider options such as panel appearance, efficiency, size, country of manufacture, and value.

SELECTION

We select our panels based on several factors, such as the manufacturer's reputation, product availability, quality history, and the company's financial standing. We then select panels from these brands during the design process. The selection is made based on customer preference, desired price point, energy production needs, and available installation space. During your [solar consultation²](#), we present and review these different options together so you can compare the costs and savings of each.

¹ [newscenter.lbl.gov/2015/11/12/premium-for-solar-homes](https://www.newscenter.lbl.gov/2015/11/12/premium-for-solar-homes)

² [mainesolarsolutions.com/about-us/our-process](https://www.mainesolarsolutions.com/about-us/our-process)



HOW MUCH MAINTENANCE OR UPKEEP IS REQUIRED?

The good news is that grid-tied solar electric systems require little maintenance during their lifespan to keep your solar system running. Plus, if something goes wrong, there is a good chance the warranty will cover it. In most cases, you don't even have to worry about cleaning your panels! Unlike more complex machines such as HVAC units or cars, solar systems have very few moving parts. They're remarkably simple for the work they do.

Our grid-tied installations also include system monitoring, so you can watch the entire array and each panel's output information on your desktop or on your phone. Your monitoring provides real-time performance information, historical energy production, error logging, and notification of system status to the installer and homeowner, via an intuitive graphical interface and is a favorite of our customers.



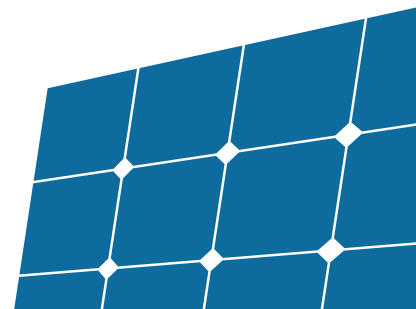
WHAT IF SOMETHING HAPPENS? WHAT DOES THE WARRANTY COVER?

Nearly all major components (solar panels, inverters, and racking) of solar systems have a minimum warranty of 10 years, and some are as long as 25+ years. Maine Solar Solutions adds an additional layer of security with a 10-year workmanship warranty.

The most expensive equipment in your solar array will be the panels, so it is especially important to pay attention to. Most solar panels have a workmanship warranty of 25 years and a performance warranty of 25-30 years.

The workmanship warranty covers any material or workmanship defects. The performance warranty protects against high degradation of solar panel performance.

Most manufacturers guarantee solar panels' performance to be 85-92% of the original performance at the end of the warranty period. During our solar assessment, we will review warranties so you can make the best decision for yourself.



DO YOU NEED BATTERIES FOR SOLAR TO WORK?

Grid-tied solar electric systems do not require batteries to work. Thanks to the net metering policy, you can get the full value of all of the electricity your system produces without relying on batteries. However, it is important to understand that a grid-tied solar electric system will not provide backup power during a power outage. If you would like to leverage your investment in a solar electric system to have a rechargeable backup source of power during a power outage, you would need to add a battery backup system, like a [Tesla Powerwall¹](#), to your solar system.

Even if you aren't quite ready for batteries during your initial solar install, our team can prep your system for a future battery install. If you're curious about batteries, your solar consultant will review your options with you.

For clients who desire a battery backup² system, Maine Solar Solutions offers grid-tied systems with battery backup as well as true off-grid solar electric systems³ which means not using the utility grid at all.

WHAT ARE MY ADDITIONAL COSTS?

It's important to note that cost should not be the only factor for settling on a particular company. Solar is a 25+ year commitment, and part of what you're paying for is a knowledgeable company that will support you best before, during, and after the installation. Going with the cheapest company could end up costing you more money in the long term because of low-quality products and poor installation.

At Maine Solar Solutions, our customers pay one price. Your fixed cost will include solar panels and system equipment, permits and engineering fees as required, utility application fees, installation, and registering your system. There are NO additional costs.

QUALIFIED STAFF

In Maine, solar installation work is required to be performed by licensed Maine electricians and helper electricians under their supervision. Maine Solar Solution installers are also trained to design and install solar arrays that maintain the structural integrity of your home's roof and array.

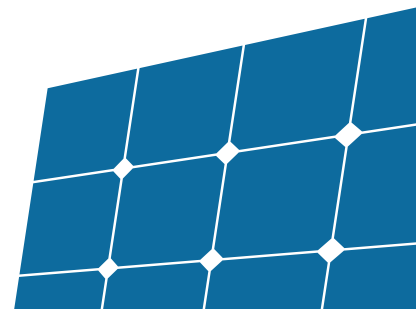
PAPERWORK AND SMOOTH PROCESS

Maine Solar Solutions will manage all aspects of the system installation, including design and specifications, permitting, utility paperwork, installing your system to code, and registering your system. After installation, Maine Solar Solutions will be there to activate your system and set up your monitoring software. Our collaborative team of caring and qualified staff will work together with you and communicate clearly during each step of the project.

¹ mainesolarsolutions.com/residential-solar/tesla-powerwall

² mainesolarsolutions.com/solar-plus-battery-backup

³ mainesolarsolutions.com/residential-solar/off-grid-solar



WHAT ARE MY ADDITIONAL COSTS?

MONTHLY INTERCONNECTION FEE

All grid-tied solar electric customers currently pay a current rate of \$15 per month to their utility providers. That rate will still be incurred.

SOLAR BATTERY BACKUP OPTIONS

A grid-tied solar electric system will not provide backup power during a power outage. If you would like to leverage your investment and add a rechargeable backup source to run essential loads during an outage, you would need to add a battery backup system, like a [Telsa Powerwall¹](#).

Even if you aren't quite ready for batteries during your initial solar install, our team can prep your system for a future battery install. Customers who install batteries can expect to see an additional cost starting at around \$17,000. Once the 30% tax credit is factored in, the net price of around \$11,900. If you're curious about batteries, your solar consultant will review your options with you.

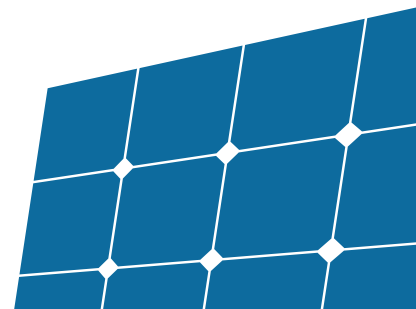
CHARGING YOUR ELECTRIC VEHICLE (EV) WITH SOLAR ELECTRICITY

With the growing popularity of electric cars, many of our solar customers are requesting the installation of an [electric car charging station²](#) at their homes. Combining an electric vehicle with a solar electric system on your home allows you to fix your electric car's cost and truly enables you to operate your EV as a carbon-free, green renewable energy vehicle. In Maine, installation of an electric car charger requires the installation services of a licensed electrician and most cities and towns also require an electrical permit and inspection by the town's electrical inspector.

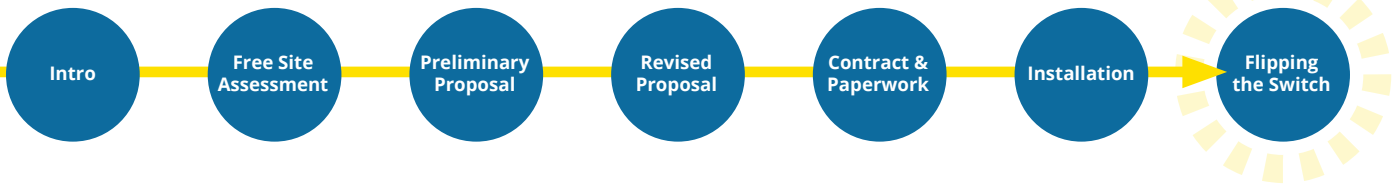


¹ mainesolarsolutions.com/residential-solar/tesla-powerwall

² mainesolarsolutions.com/electric-car-charging



HOW LONG IS THE PROCESS?



Once you're ready to see the specifics of solar for your home, it's time to schedule a free solar site assessment. During the initial consultation, your solar consultant will complete a roof assessment, discuss your solar goals, and ask for your last 12 months of electric usage in kilowatt-hours (kWh). This information will allow them to put together the best design for your unique space and needs.

STEP 1: AN INTRODUCTORY PHONE CALL

The first step is a brief phone call to gather some information and schedule a free solar site evaluation. We confirm your address, collect some information about your home, and determine your annual electricity usage by asking to see a copy of your electrical bill. We will also ask you to send photos of your electrical service panel. This is also a good time to let us know if you predict any energy increases or decreases.

Typical timeframe for initial call: 24 - 48 hours after you reach out to our team.

STEP 2: A FREE SOLAR SITE ASSESSMENT

We will conduct an onsite assessment of your roof to determine its pitch and orientation, perform a thorough shade reading and roof measurement. We assess your outside electrical service and look at the potential panel layout and location of wire runs.

Typical timeframe for onsite assessment: 1 - 3 months after your introductory call (this depends upon the time of year).

STEP 3: PRESENTATION OF A PRELIMINARY SOLAR PROPOSAL

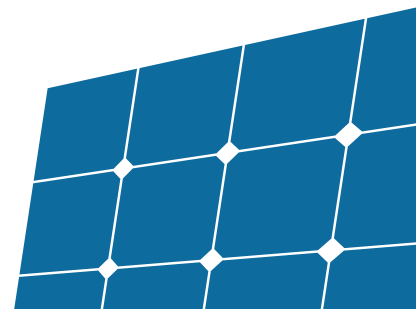
Virtually, your solar consultant will present you with a preliminary solar proposal. We typically present a few different system options as system size and solar panel choices will impact the final system price. We also offer an explanation of how solar policy works in Maine and answer all of your questions so you can make an informed decision.

Typical timeframe for preliminary proposal discussion: 1 - 2 weeks after we conduct your onsite assessment.

STEP 4: REVISED PROPOSAL

Based on the information gathered during the site evaluation and your feedback on the preliminary proposal, we will work with you to redesign the system to find a solution that works for your home and budget.

Typical timeframe: This process can vary from customer to customer because homeowners often take some time to approve the design, and we need some time to ensure everything is perfect.



STEP 5: CONTRACT AND PAPERWORK

If you choose to have Maine Solar Solutions install your solar electric system, we will prepare an installation contract. Grid-tied solar energy systems require some paperwork, so we submit all of that paperwork to your municipality for permitting and assist you in filling out agreements with your utility company. Once permitting is finished (length can vary from town to town), we'll schedule your solar installation.

Typical timeframe after the contract is signed: 1 - 8 weeks for paperwork submission and permit approval (keep in mind some towns can take a bit longer).

STEP 6: INSTALLATION

The actual installation is an exciting day and surprisingly straightforward. Your Maine Solar Solutions team will arrive get right to work. Some members of the team will actually work on installing your new panels, and the others will take care of all the grid and electrical work. Though most of the work is performed outside, we will need access to your electrical panel to connect the solar system to your home. After the team installs and connects the new solar panels, the lead on your project will show you your new system and answer any questions. Our team is efficient, friendly and will keep the area safe and clean. They are always happy to answer any questions along the way.

Typical timeframe: We usually schedule our installations on a first-come, first-serve basis; however, installations can be scheduled for specific blocks of time. Needless to say, inclement weather may impact our installation schedule. Typical residential systems typically take 1 - 2 days to install. Ground mount systems and larger systems can take longer. We will have an estimate for your specific installation before work begins.

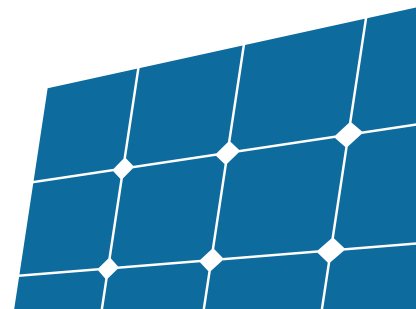
STEP 7: FLIPPING THE SWITCH

After your solar installation is completed, it must be approved by your utility company and may require an inspection (this can vary from town to town). They'll look at the work done by your installer and approve the system. Maine Solar Solutions will submit your certificate of completion to your utility company after the installation. Your utility company will then switch your meter remotely to allow for net metering of your excess electricity.

Typical Timeline: On average, it's about 4 - 6 months once you reach out to our team until we install. But it's important to keep in mind, that every home and installation is different depending upon the scope of the project. Once you've gone through these steps, however, you'll have a reliable and productive solar system that can easily produce electricity for 25 or more years. And it will have been installed by a company that cares about your project and a job done well.

[LEARN MORE ON OUR WEBSITE¹](#)

¹ mainesolarsolutions.com/about-us/our-process



REQUEST YOUR FREE QUOTE

At Maine Solar Solutions, our goal is to empower you by giving you the information you need to make an informed decision. If you're considering solar energy for your home or still have questions, [sign up for solar site assessment](#) and no-obligation solar consultation. Contact us here, call us at 207.871.7191 or email us at info@mainesolarsolutions.com.

GET A FREE QUOTE

mainesolarsolutions.com

MORE ABOUT US

Maine Solar Solutions was founded in 2012, and during our ten years of installing solar, we have designed and installed over a thousand solar electric systems throughout the state of Maine. All of our work is performed by our in-house licensed electricians and trained solar installers. Our installations are code compliant, safe, and adhere to industry best practices, ensuring a long-lasting and well-performing system.

Our team's experience is also evident in our earned credentials and partnerships over the years, which demonstrates not only our commitment to customer service but ensures that you will be a satisfied customer long after the installation is complete.



MAINE SOLAR SOLUTIONS
CELEBRATING TEN YEARS
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