



Michigan Residential Smart Solar Shopping Guide



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Introduction

This *Michigan Residential Smart Solar Shopping Guide* is designed to help homeowners and small businesses learn about solar energy. It answers many of the important questions people ask when preparing to purchase and install a solar energy system. This Guide explains the benefits of solar energy, the steps involved in shopping for solar, and many of the important decisions that need to be made prior to installing a solar energy system. It also provides additional sources of information for those wanting to learn more about solar energy.

If you have any remaining questions after reading this Guide, please contact GLREA. This Guide will be updated as needed to remain current. Please check back for updates.

Why Should You Install a Solar Energy System?

To begin, installing a solar energy system can improve the quality of your life and that of the broader community. People usually cite one or more of the following reasons for installing solar energy:

- Solar energy saves money on utility bills;
- Solar installations usually increase your property value; and
- Solar supports a clean environment and helps fight Climate Change.

Here is some additional information about each of these reasons.

Solar Energy Saves Money on Utility Bills

When you install a solar energy system, you can save money by generating your own electricity, instead of buying it from a utility. Michigan utilities have among the highest electric rates in the Midwestern states, and the rates have been steadily increasing. Rate increases are likely to continue because Michigan utilities are replacing aging infrastructure and are investing in modernizing the grid and making it more resilient.

Solar energy systems can save money in the long run. Owning your own solar energy system will reduce your utility bill and help shield you from future utility rate increases. Solar electric systems are quite durable because they have no moving parts. Solar panels themselves typically carry 20 to 25 year warranties, and system warranties often include protections for other components that might not last that long. You should carefully check equipment warranties and any performance guarantees, to make sure you understand what risks will fall to your equipment manufacturer, dealer, and installer, and which risks will be your responsibility. Your cost of producing solar electricity will be largely determined by the cost of installing and maintaining a solar energy system. On average, it can take anywhere from about 8 to 12 years of Michigan solar production for an initial investment in solar electricity to pay for itself through reduced utility bills. However, once the solar energy system costs are recovered, the ongoing electricity production is effectively free for the remaining equipment lifespan. See: *How Long Will Solar Panels Last?* in the FAQ section.

Federal Investment Tax Credit

Until at least 2033, the real cost of installing your solar energy system will be reduced by 30%, because of the Federal Solar Investment Tax Credit. This credit is designed to encourage homeowners to install solar. It reduces the amount of federal income taxes owed by 30% of the cost paid for installing a solar energy system. This federal credit is slated to continue for systems installed before the end of 2032. If your tax credit exceeds your tax liability, you can carry forward the remainder and apply it to subsequent years. (https://www.energystar.gov/about/federal_tax_credits/solar_energy_systems)

Example of the Cost and Financial Savings of Installing a Solar System*

On average, Michigan homes use about 700 kilowatt-hours per month** or 8,400 kilowatt-hours a year, which costs about \$125 per month or \$1500 per year. Over 25 years, this amounts to \$37,500. In this example, a six-kilowatt photovoltaic system generates over the course of a year approximately the amount of electricity needed. Market prices will vary based on system size, location and accessories. In this example, the solar system cost is approximately \$16,500, about \$2.75 per watt. But with the 30% Federal Investment Tax, the real cost is about \$11,550 [16,500 – (16,500 x 0.30)]. For the investment of \$11,550 the homeowner will save \$1,512 every year. The annual return on this investment is 1,512/11,550 or 13%. It will take about eight years for the solar system to pay for itself through utility bill cost savings (\$11,550/\$1,512). Over the course of 25 years you will save \$33,810 (\$45,360 – \$11,550). This is real savings! And this assumes that utility rates stay the same for the next 25 years, which is not likely to happen. So your savings will be even greater as utility rates keep going up. When you take your next steps towards getting a solar energy system, your installer should be able to provide you with a financial model similar to this one.

*Please note that this example assumes the customer uses all of the energy that is produced from their system. Current utility payments for solar electricity sent to the grid in Michigan average about half of the retail rate, which means sending solar energy to the grid (rather than using it on site) will yield a longer payback period and lower return on investment.

** If the home is heated with electricity the annual usage will be at least twice this amount. To calculate your kilowatt-hours, please visit: <https://pvwatts.nrel.gov/> or <https://sunroof.withgoogle.com/>

Solar Installations Usually Increase Property Value

Installing a solar system is quite likely to increase your home's market value. A comprehensive review by U.S. Department of Energy researchers found that home values increased by about \$15,000 as a result of installing solar PV systems (see: <https://emp.lbl.gov/news/berkeley-lab-illuminates>). In addition, Michigan law assures homeowners that adding a solar photovoltaic system will not increase their property tax taxes, as long as they own the home (see the Michigan General Property Tax Act, MCL 211.7h).

Solar Supports a Clean Environment and Helps Fight Climate Change

By choosing to install a solar system, you will be producing your own electric power. Because utility power plants are among the largest contributors of carbon emissions that cause climate change, reducing purchases from your utility company will help reduce those emissions. Utility power plant emissions also include other air pollutants that cause health problems, especially among children and the elderly.

By investing in solar, you are joining a movement of like-minded people who share your values, to change how the world generates energy. You can choose to produce clean renewable energy that supports a clean environment and helps preserve the planet for future generations.

Sizing Your System:

How Big of a Solar Energy System Can I Install?

1. Under Michigan law, solar energy systems that interconnect with the utility grid, are allowed to produce enough electricity to meet 110% of the electricity you bought from your utility, over the 12 months prior to installing your solar system. For new buildings, an annual electricity usage estimate will be needed.
2. The size of your system may be governed by the amount of roof or ground area that has good solar access. The solar contractor will determine how large an area this is and compare it with your electrical usage. If you have plenty of area for siting solar on your property, for systems that are connected to the utility grid (which will be almost all), your contractor will look at your utility bill and figure out how much electricity you have been using and then figure out how big a solar system you will need. If you plan to purchase an electric vehicle or add electric appliances in the future, the additional 10% of solar capacity can be used to meet these increased needs.
3. If your property does have more suitable area than what is needed to equal your current needs, you might consider adding electric uses at the same time you are determining the appropriate size for your on-site solar installation. (See: <https://www.rewiringamerica.org/electrify-home-guide>.) Most households in Michigan use fossil fuels (natural gas, propane, or fuel oil) for space and water heating, cooking, and clothes drying. All these fossil fuels emit greenhouse gasses that contribute to climate change. Converting some or all of these uses to electricity (for example, using heat pumps for heating, electric water heaters, induction ranges for cooking, and electric clothes dryers), will lead to increased annual usage that can be served by a larger solar array, thus further reducing your impact on the environment. Another attractive choice can also be adding plug-in electric transportation options (including electric bikes, scooters, cars, or trucks). The federal government and your utility company are likely to offer tax credits and rebates, respectively, for high-efficiency electrification choices. (See: <https://www.rewiringamerica.org/app/ira-calculator>.)

Design and Operating Options for Michigan Home Solar Installations

What Will be Your Relationship with Your Utility Company?

Your solar contractor will work with your utility as you purchase and install your solar energy system. You won't have to do much with your utility during this process, but you may have to interact with your utility once your solar system is up and running.

Because your solar energy system runs on sunlight, on sunny days your solar energy system may produce more electricity than you can use at any given moment in your home, creating a surplus of electricity. In that case, there are options for what your system can do with this excess energy.

The first option is exporting this excess electricity back to the electricity grid, in exchange for a financial credit from your utility company. The amount credited varies by utility company and can vary by the time when the electricity is exported back to the grid. Credits are less than the full retail rate of the electricity you purchase from the utility company. You can also schedule at least some electricity usage to occur when the sun is shining, to use more or even possibly all of the electricity generated from your solar system. Solar energy can also be combined with thermal storage (in the form of heating or cooling energy), or you can store the extra electricity in a battery. That stored energy can then be used when the sun goes down and your solar

production is reduced. Designing your solar energy system to reduce solar exports can help to maximize your return on investment.

Adding Battery Storage to Your Solar Energy System

With recent advances in battery technology, rather than sending extra solar electricity that you cannot immediately use back to the utility and receiving a credit, you can store this electricity for use at another time. With the electricity stored, you can then draw upon it when the sun goes down and in the event of an electric power interruption. Battery storage can offer some reliable, emergency backup power and thus more independence from your utility. However, adding batteries can increase installation costs by several thousand dollars. If you are concerned about service during power outages, it is important to understand the limited capacity of storage batteries. They can be sized to provide power to a limited number of critical-needs devices, for a limited number of hours. Prices will vary depending on the number and size of batteries installed, the cost of labor, and other factors. Ask your installer about installing a battery back-up system, or at least consider building your solar energy system so that it is ready to add batteries in the future. To learn more, please visit: <https://www.solarreviews.com/blog/is-solar-battery-storage-worth-it-given-current-solar-battery-cost>.



Beneficial Electrification

Before installing a solar energy system, you may want to consider opportunities for what is called ‘beneficial electrification.’ This term applies to using electric appliances instead of liquid or natural gas fueled appliances. Key incentives for beneficial electrification include decreasing your carbon footprint, improving indoor air quality, increasing electrical efficiency, saving on energy costs, and supporting a more sustainable energy infrastructure. In order to decrease your fossil fuel usage, you will need to replace natural gas (or propane), gasoline, and heating oil appliances in your home with electricity generated by renewable sources. The emissions from electricity production are gradually decreasing as utility companies are adding more clean energy in order to meet Michigan’s clean and renewable energy standards. Technologies for electrification can include electric heat pumps, water heaters, cooking appliances, electric vehicles, and smart home technologies. If you make electrification changes to your home before or concurrent with your solar installation, you can consider installing a larger solar system that will meet more of your home’s total energy needs. (See: <https://emp.lbl.gov/publications/electrification-buildings> and, <https://www.aceee.org/sites/default/files/pdfs/b2201.pdf>, and <https://www.517cafe.org/general-5>.)

Different Types of Solar Companies

In all cases, it is wise to ask for and compare proposals from different companies and to check references from previous customers to help make sure you are working with a reputable and honest company. You should also double-check to make sure that the company you are hiring has the required licenses for building and electrical installations and maintains insurance to protect your solar investment and your home in case anything does go wrong with your installation. Both GLREA and Michigan Saves maintain and make available directories of pre-qualified installers.

Be cautious about “get solar for free” advertisements. Such statements can be either a scam or a rip off, in that customers could end up paying more each month for the equipment purchase than the value of the electricity produced, or the installed system does not produce as much energy as estimated, or both.

Be aware of three different business models:

1. Local solar installers are Michigan businesses that do the physical installation of the system.
2. National companies often hire local people to install equipment.
3. Referral Companies find clients and refer the clients to installers, in exchange for the installer paying them a finder’s fee.

The Process for Obtaining a Solar Energy System

What follows is a list of the steps typically involved in obtaining a solar energy system. Solar installers will also explain their process. Here is the usual approach:

1. Provide the address of the property where you want to install a solar system. A solar contractor will review your property to determine where solar panels might be installed that will provide the best solar production. Many companies use computer mapping software to check your roof, shading from trees or neighboring buildings, and whether ground mounting is an option at your location.
2. Next, provide your solar contractor with a copy of your recent utility electric bill for the home where you want to install a solar system. The solar contractor will determine how much electricity you have used in the previous 12 months, and how much your usage varies during the heating and cooling seasons. This is important for two reasons. First, the solar contractor can then determine how big a solar system you would need to generate the electricity you have historically used at this location. Secondly, Michigan utility companies have the right to refuse to interconnect a solar system that produces more than 110% of your recent annual electrical consumption. You will work with your solar contractor and the utility company to determine the right size for your home and your projected electrical needs. Make sure you understand the available options and how utility rates will affect your payback time and return on investment.
3. Your solar contractor will usually give you a preliminary analysis that will include how much electricity you have consumed over the past year, how big a solar energy system you will need to generate that amount (and for generating the additional 10% capacity) and whether your property (roof or a ground mount system) has enough unshaded areas where the solar panels can be installed. Contractors usually provide a drawing or schematic about where to mount the panels. The solar contractor will also provide a preliminary itemized cost estimate for the planned system.

4. At this point, if you are still interested, the solar installer will make an appointment for a site visit, to visually inspect the building, property, and electrical service panel. This is done to confirm estimates and understand any site-specific details that are relevant for the installation.
5. Next, the solar contractor will offer a firm price for installing the system and you will decide whether to sign the contract as is, ask for amendments, or decline to complete the transaction. Once the contract is signed, the installer will handle the applications for building and electrical permits from your local government, and for interconnecting with the utility company. Then, the installer will install your system.
6. After your system is installed, the contractor is usually the one who contacts the utility company to finalize the interconnection process and obtain the required permission to operate.

Understanding the Solar Energy Agreement

After you find a reliable contractor, it is very important that you understand the terms, guarantees and warranties, and all the content included in the contract. Since this is a legally binding agreement, it is important for the resident or their trusted agent to understand all of the details. It's recommended that the resident ask the contractor as many questions as needed to fully understand their contract and their future experience with their system. For a recommended list of questions to ask solar contractors, please visit: <https://ases.org/40-questions-to-ask-an-installer/>.

It is also important to understand the warranties. When having direct ownership of the solar energy system, you will receive a 20 to 25 year warranty on the solar panels but there may be separate warranties for other components of the system that may need to be replaced during the lifetime of the system. You should know what the warranties provide and who stands behind them. Your contract should also include a timeline for the installation, an estimated annual solar energy production, guarantees of hourly production output, any recurring or one-time fees, an itemized budget, a list of subcontractors (if any), and an itemized list of equipment that will be installed. If for any reason you change your mind, Michigan law provides a three-day cancellation period for contracts you sign at your home. (See: <http://legislature.mi.gov/doc.aspx?mcl-445-112>.)

Different Ways to Pay for Your System

1. The best return on your investment is to pay for the solar energy system with cash.
2. If you can't do that, a home equity loan will probably have the least additional cost.
3. If you can't get a home equity loan, a loan from Michigan Saves will usually have lower interest than a rate for an unsecured loan.
4. There are companies that offer financing as part of the deal, but one needs to be cautious about the rate and its variability.
5. Some companies will lease the system with an option to buy. One needs to look carefully at the payments in relation to the amount of electricity to be produced and what guarantee there is on that production. This is a long-term contract with a company that may not have been around very long and you are expecting them to be there for the 25 years of the system's life.

6. Some firms used to provide a Power Purchase Agreement (PPA). Here you are not buying the equipment, just the electricity. This is similar to the lease option and as with the lease option, there are the same potential problems. Since PPAs don't allow the homeowner to get the tax credits, there are almost no companies offering them.



Solar Equipment Care and Maintenance

After installing the solar energy system, it becomes your responsibility to upkeep your system and take care of the maintenance. Though most solar energy systems come with a warranty, maintenance may still be required to comply with the manufacturer's warranty. Fortunately, solar energy systems usually require very little maintenance. This maintenance includes:

- Checking panels, wiring, and external components for any physical system damage.
- Checking for evidence of rodents or birds intruding on the system.
- Trimming trees, if necessary, to prevent shade from reducing solar production.
- See how much electricity your solar energy system is producing by checking the app on your smart phone or by going to the Inverter Company's website. Most Inverters come with an App that connects you to the company's website, that enables you to get continuous data of your solar system's output. Be aware that daily and monthly output can vary by a large amount.

With most Michigan solar installations, rain and snow tend to keep the panels sufficiently clean and with most roof pitches, snow slides off on the first or second sunny day.

Without proper maintenance, there may be a reduction of electrical output from your solar energy system. Most modern inverters communicate with owners and installers via the web and will often alert you of any major issue. It is suggested that users regularly monitor their solar energy production. A prolonged drop in production likely indicates that maintenance is needed or a component has failed and needs to be replaced. Some system components, notably the inverters that change power from DC to AC, can need replacement one or more times during the expected life of the solar panels.

Before you buy, be sure you understand who will be responsible for which kinds of maintenance and clarify what tasks will be your own responsibility and whether and how you will pay for any professional maintenance services. Review your system owner manual and ask the solar installer to review with you the maintenance tasks and schedule that are required.

Frequently Asked Questions (FAQs)

Q: What happens to solar production during cold weather?

A: Solar electric panels typically perform somewhat better in colder temperatures. However, the power production conditions are not equal throughout the year. In Michigan winters, the lower angle of the sun in the sky and fewer hours between sunrise and sunset generally mean that less power will be produced per day. (See: <https://www.energy.gov/eere/articles/let-it-snow-how-solar-panels-can-thrive-winter-weather>.)

Q: Will I have to trim or cut down trees when I install my solar energy system?

A: Although your solar energy system is most efficient when it receives direct sunlight, it is not necessary to clear out all your trees. To achieve a better output from your system, it may be recommended that you remove some branches or trim your trees before installing your system. Although deciduous trees drop their leaves in the winter, trunks and branches can still shade solar panels. Your installer will be able to help you understand quite accurately how tree trimming or removal will affect your solar energy production.

(See: <https://www.sierraclub.org/sierra/2016-6-november-december/ask-mr-green/hey-mr-green-should-i-cut-down-trees-for-solar-panels>.)

Q: Should I repair or replace my roof before getting a solar energy system?

A: Since your solar energy system's expected lifespan can be 25 years or more, your roof should be in good condition prior to mounting a system. That being said, if the roof is free of damage and in generally good condition, solar can be installed without replacing the roof. If your roof is 10-15 years old or older, you should consider getting your roof inspected to see the condition of your roof. If you have an older roof, you may want to consider getting it replaced because you will save money in the long run since you won't have to replace your roof at a later date and remove and reinstall your solar energy system. If you are in the process of obtaining a system, you can ask your solar installer about the condition of your roof. (See: <https://www.energy.gov/eere/solar/articles/replacing-your-roof-its-great-time-add-solar>.)

Q: How long might it take to install my solar energy system?

A: The physical installation of your system can take as little as one to three days. The process that takes the most time is permitting, planning, inspections, and scheduling which can take as long as a month or two. Your solar installer will let you know the expected timeline before starting the process. Installers typically start work on local construction and electrical permits and utility interconnection procedures as soon as they have a signed contract, to minimize the time to complete the installation and receive the utility's permission to operate.

Q: Can solar panels be recycled?

A: Yes, it is possible to recycle solar panels because solar panels are made of glass, electronic components, and metals that are recyclable. However, some solar panels and system components might not be fully recyclable. Panels usually last 25 years or more, so the demand for recycling has been slow in developing. Some manufacturers are making fully recyclable solar panels already, and there are at least some solar equipment recycling facilities in operation already. As more solar panels reach the end of their useful life, we can expect a growing emphasis on recycling. To learn more about the recycling process and where to recycle solar panels near you, please visit: <https://www.epa.gov/hw/solar-panel-recycling>.

Q: Can I participate in a group-buying program in Michigan?

A: GLREA offers communities a 'Solarize Program,' which provides discounts for groups of participants who purchase solar together. The exact details will vary by community and will depend in part on which installers

are participating. In the GLREA Solarize Program, price discounts will increase if a larger number of people decide to get solar. Program discounts will range from 5% to 15% of the purchase costs. For more information please visit: <https://www.2glrea.org/copy-of-partners>.

Q: How long is the payback period for a solar energy system in Michigan?

A: The average range of the payback period for Michigan installations is between 8 to 12 years. For more information, please visit: <https://www.solarreviews.com/blog/michigan-net-metering>.

Q: Will my solar energy system have a production guarantee?

A: Production guarantees can vary for each installer, and there are some installers who may not have a guarantee. This is why it is very important to ask your solar installer about a production guarantee before signing a solar contract. Your solar installer will usually guarantee a specific amount of energy production in a specific timeframe. Please note that production guarantees are separate from the warranties on specific solar energy system components. Please visit: <https://www.marketwatch.com/guides/solar/solar-panel-warranty/>.

Q: Will installing a solar energy system affect my homeowner insurance?

A: Residential solar installation should not affect your insurance plan due to the solar energy system being generally covered by a typical homeowner policy. It is important to talk to your own insurer to make sure that they provide this coverage. In some cases, you could need a separate policy or an increase your coverage amount, because the system increases the replacement cost if there is total loss. (See: <https://www.solarreviews.com/blog/solar-panel-insurance-a-guide-to-home-insurance-for-solar> and <https://www.nrel.gov/docs/fy21osti/78588.pdf>.)

Q: Can I install the solar energy system myself?

A: Yes you can. But anytime you are working with electricity you must know what you are doing because it can be dangerous. The U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, recommends that people interested in purchasing solar use a certified solar installer. (See: <https://www.energy.gov/eere/solar/homeowners-guide-going-solar>.)

Q: Can I add more capacity to my pre-existing solar energy system?

A: Yes, it is possible to add more capacity to your solar system due to a recent electric vehicle purchase and other additions to your home that will increase your annual electrical consumption. But as you contemplate adding more solar panels to your system, there are factors to consider; does your roof or property have room for additional panels? Is your current inverter sufficient in size or will you need to get another one? How will increasing your solar energy system impact some of the incentives you previously had? Though this may be a lot of things to consider when adding solar capacity, your first step is to contact your original solar contractor about adding solar panels.

Q: Can I finance my solar installation, if I don't have the money to pay for it outright?

A: Yes, you can borrow money to pay for your solar system. Financing for installing solar (and for home energy efficiency improvements) is available through Michigan Saves, an organization that works with lenders to provide easy access to lower interest-rate financing for home energy projects. Homeowners and even renters can qualify for Michigan Saves financing, as long as they are current in paying their utility bills. Software is available to calculate how long it will take to pay off your loan. Once the loan is repaid, then the

full savings of generating your own solar electricity versus buying it from your utility will directly benefit you. For more details and current loan options, including a list of participating contractors, please visit: <https://michigansaves.org>.

Q: How long will solar panels last?

A: Solar panels will provide 80-90% of their rated capacity even after 25 years of use. They may continue to produce electricity for many years after that, at a slowly declining amount.

Glossary of Terms

Ampere (amp or A): A basic unit of electrical flow or current.

Capacity: The maximum amount of electricity that can be produced by a solar energy system.

Cost Per Watt: A measurement calculated by the total cost of the solar energy system and dividing it by the wattage capacity in the system.

Electrical/Utility Grid: The complex system of poles, wires, and related equipment that distributes electricity from producers to consumers.

Inverter: Is the power electronic device that transforms electricity from direct current (DC) to alternating current (AC). There are three kinds of inverters: string inverters, microinverters, and power optimizers. String inverters convert the DC power from several panels to AC power. Micro inverters are small and are usually mounted on the back of each solar panel, converting the output of each solar panel from DC to AC. Power optimizers are located at each panel and by communicating with the string inverter, they maximize the power coming off of that panel (which may vary depending upon shading and/or orientation) to optimize the system's output.

Net Metering: A utility rate structure that credits owners of solar energy systems at retail rates, for the measured excess energy produced and delivered to the utility grid.

Module: Another name for a solar panel.

Multimeter: A device that is used to test the voltage and power output of a solar panel.

Payback Period: The payback period is the amount of time it takes for solar owners to make back the money of your initial investment.

Peak Sun Hours: A measurement of sunlight in a specific area. Michigan's average peak sunlight hours are an average of 2.5 - 3.5 hours per day.

Photovoltaic (PV) Cell: Often called a solar cell, that uses sunlight and converts it into electricity.

Silicon Solar Panels: Silicon solar panels are presently the most popular and most efficient panels in the solar energy market. Silicon solar panels convert sunlight to electricity at average rates of 20% or higher.

Thin-Film Solar Panel: These solar panels are made from silicon and other light-sensitive materials. These are less efficient than silicon solar panels but can be less expensive. These panels usually have an efficiency ranging from 10% -19%.

Additional Resources

To check Michigan contractor licenses: <https://michigan.uhire.com/>.

National Renewable Energy Laboratory, *Own Your Power! – A Consumer Guide to Solar Electricity for the Home*, <https://www.nrel.gov/docs/fy09osti/43844.pdf>.

Solar Energy Industry Association, *Residential Consumer Guide to Solar Energy*, <https://www.seia.org/sites/default/files/2023-05/Resi%20Guide%20to%20Solar%20Power%20June%202023.pdf>.

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, *How to Pick Your Solar Installer*, <https://www.energy.gov/eere/solar/articles/decisions-decisions-choosing-right-solar-installer>.

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, *Solar Power Basics*, <https://www.energy.gov/eere/solar/how-does-solar-work>.

U.S. Department of Energy, Solar Energy Technologies Office, *A Consumer's Guide to Buying a House with Solar Panels*, <https://www.energy.gov/eere/solar/consumers-guide-buying-house-solar-panels>.

U.S. Department of Energy, Solar Energy Technologies Office, *Homeowner's Guide to Going Solar*, <https://www.energy.gov/eere/solar/homeowners-guide-going-solar>.



About GLREA and this Guidebook

GLREA is a non-profit organization that educates homeowners and businesses about the benefits of renewable energy and supports the expansion of solar and geothermal energy in Michigan. GLREA can help you learn more about renewable energy and connect you with solar or geothermal contractors that work in your area.

Please support this work by becoming a member of GLREA by going to <https://www.2glrea.org/membership>, and then scrolling down and clicking on the yellow 'Become a Member' button and follow the instructions. If you have questions, feel free to contact John Freeman at Jfreeman13@comcast.net.

The purpose of this Guidebook is to help homeowners and businesses learn about the benefits of solar energy and the process for purchasing a solar energy system. GLREA wants to thank University of Michigan Student Intern Juliett Knight, and GLREA Education Committee Members Tom Stanton, Wayne Appleyard, and John Sarver for their work in compiling this Guidebook.