

Financing Solutions Make Solar Affordable for Homeowners

By Richard Hartung
Op-Ed Explainer / Solar Washington

Solar energy cuts costs for homeowners and reduces carbon emissions tremendously, yet many individuals see it as unaffordable. In reality, it is quite affordable for many people, as a multitude of companies offer legitimate financing that makes solar energy practical for individuals.

Solar Energy Has Big Benefits and Big Costs

Installing solar panels can reduce electricity costs significantly for homeowners. It also has environmental benefits, as it decreases reliance on the usage of oil or gas to generate electricity, which produces greenhouse gas emissions.

Many homeowners are hesitant to install solar panels. According to the Energy Information Administration's 2020 Residential Energy Consumption Survey, only 3.7% of U.S. single-family homes generated energy from small-scale solar in 2020.¹ Solar panels cost between \$15,000 and \$20,000 for an average 2,000-square-foot home, according to MarketWatch,² and homeowners can expect to pay between \$10,500 and \$14,000 even after the 30% federal solar tax credit. According to Forbes, the cost of solar panels in 2024 is between \$8,500 and \$30,500.³ Many states also offer additional tax incentives, which can be found at www.dsireusa.org.⁴

Despite the high initial cost, it only takes an average of eight years⁵ to 10 years⁶ to break even on installing solar panels, which can last for about 25 years. Inverters will need to be replaced about every 15 years. The breakeven duration varies⁷ depending on the solar resources and electricity costs. Breakeven is faster in the Southeast or Northeast due to high electricity prices and longer in the Northwest where electric power is cheap. Amortizing the cost of a purchased rooftop solar power system over 25 years, solar electricity typically costs about half or less the cost of electricity offered by an electric utility. Adding in some small energy storage will provide power during blackouts due to extreme events such as storms, fires or hurricanes that can knock out power for days or weeks.

Financing for Solar Panels

Paying cash for solar panels is the best option, since homeowners are eligible for federal tax credits and other incentives when they pay for the systems and they do not need to pay interest.

Given the high cost of solar-panel installation, though, many homeowners choose to obtain financing via a loan, lease or power purchase agreement (PPA). The U.S. Department of Energy data shows that about 85% of residential solar systems in the United States are financed.⁸ The Clean Energy States Alliance found that nearly half of the homeowners who borrow to install solar use a lease or PPA.⁹

Loans

One option for financing solar panels is to obtain a loan from a bank, a credit union, a solar installer or another lender. While homeowners pay interest on the loans, they own the solar panels, so they should be eligible for federal tax credits and other incentives. Many lenders offer a secured loan, often a home equity loan, which uses the house as collateral. They may also

offer an unsecured loan, which can either have no collateral or use the solar panels as collateral. While home equity loans often offer lower rates and longer repayment terms, 10 personal unsecured loans have generally been more popular because obtaining a real estate loan takes more time and money.

Property-Assessed Clean Energy (PACE) Loans

Residential PACE program loans, which are currently available in some parts of California, Florida and Missouri, allow a property owner to finance energy or other improvements and pay the costs back over time through an assessment that is attached to the property rather than an individual.¹¹ Homeowners can install solar power without a large upfront cash payment and repay their costs over time periods such as 10 to 20 years. The payments are part of property assessments, which are secured by the property and paid as an addition to property-tax bills. Homeowners need to review documentation carefully to make sure they understand the programs well.

Leases

Homeowners can also lease solar panels from solar companies. Similar to an automobile lease, the homeowner pays a fixed monthly amount for a set duration. Homeowners can use all the energy generated by the solar panels, so they should have lower electricity bills. If excess power is produced, homeowners may receive compensation from the utilities if there is net metering for sending electricity to the grid operators. Homeowners who need more energy at night or due to higher electricity usage will need to continue to pay for electricity from their utility

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companies. They are also responsible for maintaining the solar systems. A disadvantage of this alternative is that homeowners will not receive federal tax credits or solar incentives since the panels are owned by the lessors. They will also be locked into long-term lease contracts, so the lessors and the buyers both need to agree to the buyers taking over the leases if the houses are sold.

Power Purchase Agreements (PPAs)

Another option similar to a lease is a PPA. A third-party developer or solar provider installs, owns and maintains the solar system. The PPA provider then agrees to sell the homeowner the energy generated by the solar system at a fixed rate, which is usually less than the cost from a utility company. The PPA provider is responsible for repairs, so there should be no direct costs for maintaining the system. Homeowners who need additional energy can buy electricity from the utilities at their standard rates. They should still be able to save on energy costs without the expense of installing the solar systems. Similar to a lease, though, the homeowner will not receive federal tax credits or other incentives because they will not own the solar system. They will also be locked into a long-term PPA contract, so the PPA provider and the buyer would both need to agree to the buyer taking over the agreement if the house is sold.

Homeowners Need to Be Careful

While there are plenty of legitimate companies providing loans and leases as well as PPAs, there are also bad actors. TIME reported that some solar customers say salespeople obscure the terms of the financial agreement and cloud the value of the products.¹² “A growing number of consumers are now saying in courts and in arbitration that salesmen from solar-panel and solar-panel-finance companies — including some of the biggest in the U.S... tricked them into taking out onerous loans they didn’t want.”

So, what should homeowners do to avoid being stuck with financing that creates problems or worse, is fraudulent? It's important to look for warning signals, do some research and not be rushed into signing a document. The first step is to get at least two or three proposals and compare them to make sure the prices and terms are acceptable. While most PPA programs and leases are legitimate, they also commit homeowners to decades-long payments. It is important to read the terms and conditions before signing any documentation. If the amount payable is close to or even more than current electricity costs, for example, it may be better to install and own your own solar power system. Some companies charge a large fee upfront of \$5,000 or more, while others add clauses saying the homeowner is responsible for maintenance or other costs. Neither is appropriate. It is also important to take time to read the contract and decide. Legitimate companies provide potential customers with full information and give them time to decide whether to move forward. Fraudulent companies or salespeople, on the other hand, are more likely to push for a quick decision. Taking time to get all questions answered and to reflect is essential.

There are also fraudulent companies or individuals that perpetrate scams. Homeowners can check with the Better Business Bureau or a state solar organization to make sure the business or salesperson is legitimate. The American Solar Energy Society¹³ also has lists of chapters¹⁴ and business members¹⁵ to tap for independent information.

While installing a solar energy system may seem too expensive initially, the long-term financial benefits are positive, and it has environmental advantages as well. Choosing the right financing option can make what might have seemed out of reach actually affordable.

Robert Foster and Dave Ginley, members of the American Solar Energy Society Board of Directors, provided quantitative advice on this article.

About the Author

Richard Hartung is a freelance writer, startup advisor and nonprofit board member focused on environmental sustainability. He is a member of the American Solar Energy Society, a committee member at the Washington Farmland Trust, and a board member of Solar Washington.

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