



RENEWABLE ENERGY

Is a Solar Power System a Good Investment for You?

The cost of having a whole house solar system installed has been falling rapidly, making it not only a good thing to do for the environment, there is also a good chance that it is a good financial investment. Whether this is true for you depends on several factors. However, if you have a single family home that is not shaded most of the day, it is almost certain that it is an investment that will have a return greater than what you can earn at the bank or many other typical investments. How much better? We cannot give you a precise number here, that requires an expert analysis of your particular circumstances. We can give you a good idea of what you should expect though.

We used data from Solarpowerrocks.com and other sources for our basic information. If you are serious about making this investment, you should speak to a solar professional. We have several sources listed at the end of this article.

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First: Where do you live?

As you can see from the chart, Virginia does not rate very high when compared to other states as being solar friendly. Across the line, Maryland has earned a grade of A and ranks as number 4 in the nation, and the District of Columbia has a B and ranks at number 11. The number one state in the country, according to SolarPowerRocks.com, is currently Massachusetts. The ratings are based on each state's policies and incentives to encourage the adoption of solar systems to provide electricity to our homes and businesses. In the charts below, you will be able to see how the differences in the state's rankings affect the size of investment needed and the return on that investment.

Ranking	VIRGINIA	Maryland	Washington DC	Massachusetts
35th	D	A	B	A+

Investment	VIRGINIA	Maryland	Washington DC	Massachusetts
Initial Cost	\$18,760	\$17,750	\$20,000	\$18,760

Next: How much will you need to invest?

There are several significant variables that will determine how much your solar system will cost.

- The size of the system that you need. Obviously, the more power you consume, the larger your system will need to be in order to meet the demand for electricity. The calculations used in the charts are for a 5 kilowatt (kW) system. Contractors that we spoke to said that the systems typically range in size from 5 kW to 10 kW.
- Who installs the system. This can be a DIY project. In fact, IKEA is now offering whole house solar systems in their UK stores and is believed to be planning to start putting them in their US stores within two years. Nonetheless, this is not your typical weekend project. First, it obviously requires working on the roof - not a comfortable place to work for many of us. It also requires knowledge of the roof structure and electrical system. A building and electrical permit is required and the installation has to be coordinated with your power company. For the vast majority of homeowners, this is a job that requires a solar energy system professional.
- Incentives. From the chart, you can see incentives are one of the main differences between the costs by state. Currently, the most important incentive is the 30 percent Federal income tax credit for a new system - it is available in all states. Virginia offers almost no incentives, except for those residents that are served by TVA. There are no tax credits, no sales tax exemption, and only a limited number of localities offer property tax exemption. For customers of Dominion Power, there are additional incentives and net metering

is now available. Incentives come and go with frequency, so make sure you understand what is currently available to you at the time you are ready to purchase and install.

- Other factors will also affect the cost. The charge for building permits can vary significantly between jurisdictions. Also, differences in local labor rates can make a difference. And, of course dealer competition in your area may be a factor.

As you can see, buying an installed system in Virginia can be 14 percent more expensive than the same system in Maryland and 25 percent more than in Massachusetts. Maybe, we should start putting some more pressure on our state legislators to bring us more in line with the policies and incentives our neighboring states.

What is the bottom line?

So what can you expect as a return on your investment? The numbers in the chart vary for four primary reasons. The size of the investment required, as discussed above, your net cost of electricity, the annual amount of electricity used, and how the investment is financed.

- The cost of electricity averages 12 cents per kilowatt-hour in Virginia compared to 13 cents for the national average. The higher the cost of electricity, the more you save when switching to solar. The average rate in Massachusetts is 21 cents per kilowatt-hour, which is one of the reasons it has the highest rates of return in the nation for residential solar investment.
- There are basically three ways to finance a solar system. You can purchase it using your own funds with the only cost being the opportunity cost from lost interest or other income from the

investment. Given current savings interest rates, that is not much of a loss. Systems can also be financed through home equity loans or other secured loans. Many dealers also offer lease programs. Interest on loan and lease programs needs to be considered when determining the rate of return on this investment.

The good news? Even in Virginia you can get a decent return on an investment in a solar system for your home.

Investment Return	VIRGINIA	Maryland	Washington DC	Massachusetts
IRR	6.8%	13%	17.5%	30.7%
Trees Saved	113	106	113	106

But it gets better! Based on SolarPowerRocks.com calculations, every 5 kW system installed provides the benefits to the environment of 113 trees every year!

Remember, this article is just a summary. While the process is not that complicated, as you can see there are a number of factors to be considered before making your decision. We recommend checking with an organization like [NOVA Interfaith Solar Co-Op](#) like Mike Freeland, our homeowner in the video above, or speak directly with a licensed and insured solar contractor, like [EDGE Energy](#), also in our video. Another solar co-op organization, [VA SUN](#) has information on solar co-ops in the state of Virginia. They claim members can save as much as 30% on a solar system.

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