

Can I save money by installing a solar energy system?

This question is being asked more and more as members look for ways to reduce energy costs. The answer is maybe, depending on many factors, and how fast you want to see a return on your investment.

Start with energy efficiency

Before installing a solar energy system, consider reducing your energy use by making your home more energy efficient. Many energy efficiency measures have a faster return on investment, and the initial investment is less than that of a renewable energy system. Contact your local electric cooperative for energy efficiency rebates as well.

Keep safety in mind

Most solar systems are connected to the grid. Because of the two-way flow of electricity, excess energy the system collects during the day flows into your cooperative's lines. Improper connection and maintenance of the system may endanger people and the reliability of the grid. There are also safety considerations for rooftop solar you should discuss with your local fire department prior to installation, such as the layout of panels on your roof.

Is solar energy right for me?

If you have made your home as energy efficient as possible and now want to install a solar energy system, contact your local electric cooperative in the initial planning stages. Be sure to conduct thorough research on all aspects of any system before making the investment. Determine what your goal of the system is. For example, do you want to install solar energy because you believe it is the right thing to do? Or are you looking to save money? If you want

to save money, carefully examine all the financial considerations first. *And keep in mind, if you want to ensure you have power, even if your cooperative has an outage, a battery system is required.* This is an added expense, and takes about 30 percent of the system's power to keep the batteries charged.

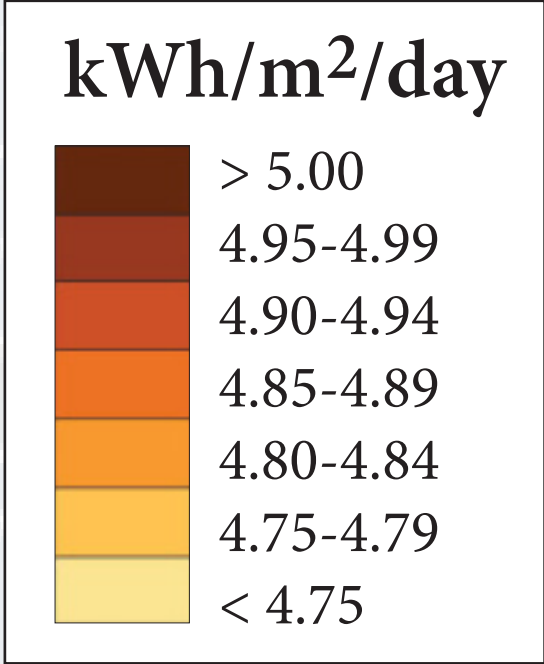
Financial considerations

When evaluating the potential of installing a solar electric system at a home or business, considerations should include:

1. *Solar access:* Missouri is fairly good in comparison to other parts of the country. Site specific access depends on installing the system so it is not shaded. See your location on the map below for average output.
2. *Retail cost of residential electricity:* Missouri is low in comparison to many other parts of the country. A lower electric rate makes the return on investment length longer than a higher electric rate.
3. *Available incentives:* Solar energy systems may qualify for a federal tax credit of 26 percent in 2022 and 22 percent in 2023.
4. *The total cost of the system:* The average installed cost of residential solar photovoltaic (PV) is \$3.10/watt, or about \$31,000 for a 10-kilowatt grid tie-in system.¹ In addition, there may be other costs to consider, such as liability, homeowners' insurance and property taxes.

Given the information listed above, evaluate your situation to ensure installing a solar system makes sense financially for you. Talk to your electric cooperative and qualified, reputable solar contractors to help evaluate your feasibility for solar energy.

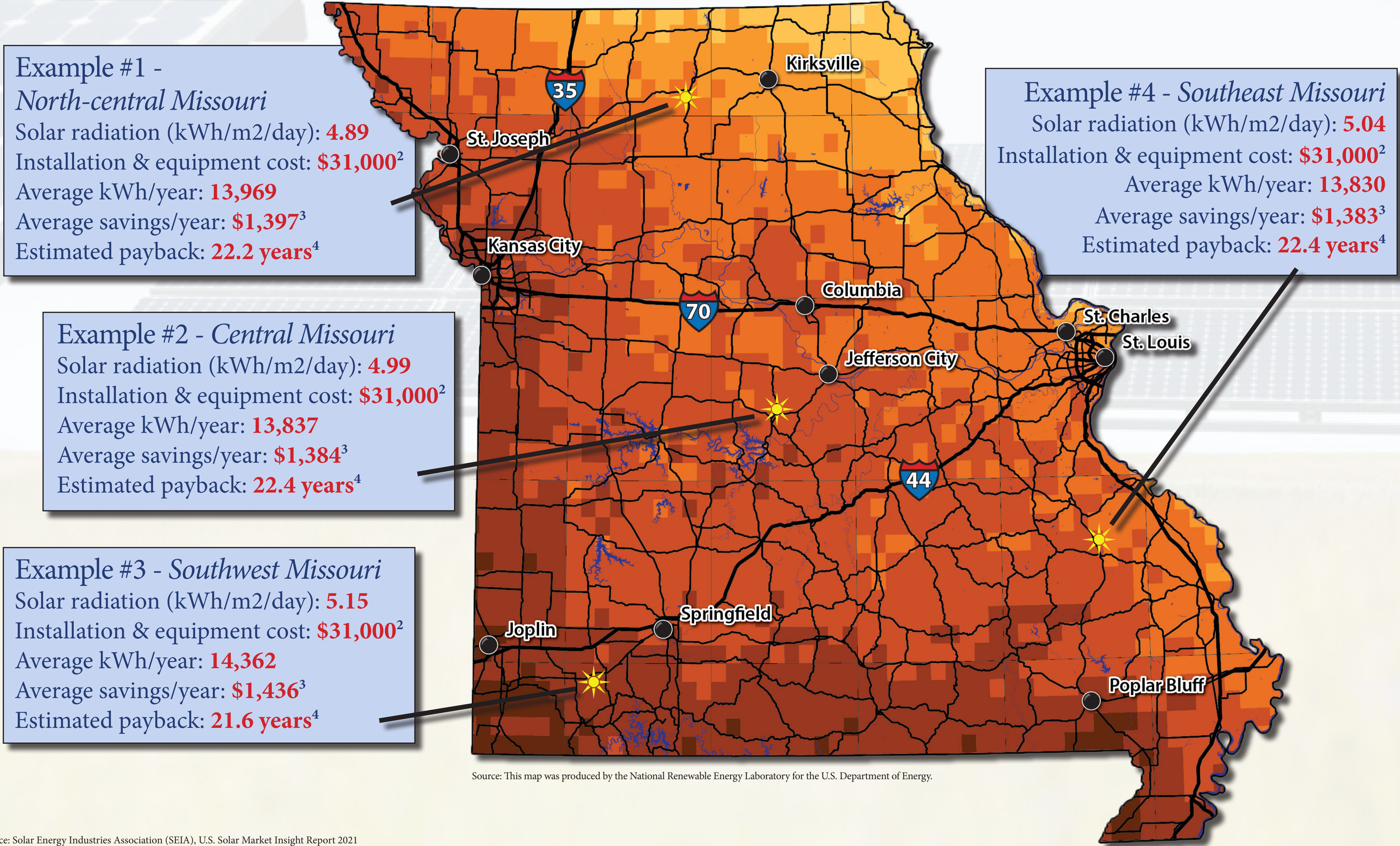
Residential solar payback examples



Missouri photovoltaic solar resource

This map is measured in kilowatt-hours per square meter per day (kWh/m²/day), which represents insolation, the total energy on a surface over a specific time interval. Examples below use the location's solar resource to determine average output and savings per year, and were calculated using the National Renewable Energy Laboratory's (NREL) PV Watts calculator using the default settings, including inverter efficiency of 96 percent. For more information, visit pvwatts.nrel.gov.

Your output may vary depending on site specific factors and regular maintenance such as washing the panels several times per year. Output also may drop about 1 percent per year through the average 20-25 year lifespan of most systems.



Source: This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy.

¹Source: Solar Energy Industries Association (SEIA), U.S. Solar Market Insight Report 2021
²Cost is based on \$3.10 per watt installed. Does not include federal tax credit.
³Based on an average Missouri retail rate of 10 cents per kilowatt-hour (kWh); not avoided fuel cost
⁴Does not include varying maintenance costs, which will increase payback time.