Power for your life

Can I save money by installing a solar energy system?

This question is being asked more and more as members are looking 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.

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.

Consider this:

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 will take about 30 percent of the solar 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, the Missouri Department of Natural Resources (DNR) recommends 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 back page map 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: Certain solar energy systems may qualify for a Federal tax credit of 30 percent until 2016.*[1]
4. *The total cost of the system: The average installed cost of residential solar photovoltaic (PV) ranges from $3.46 to $4.43/watt.*[2] *However, cost will vary based on installer and location.*

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.

[1]ENERGY STAR®; www.energystar.gov. Consult a tax advisor for more information.
[2]Solar Energy Industries Association (SEIA), U.S. Solar Market Insight Report 2015 Q1

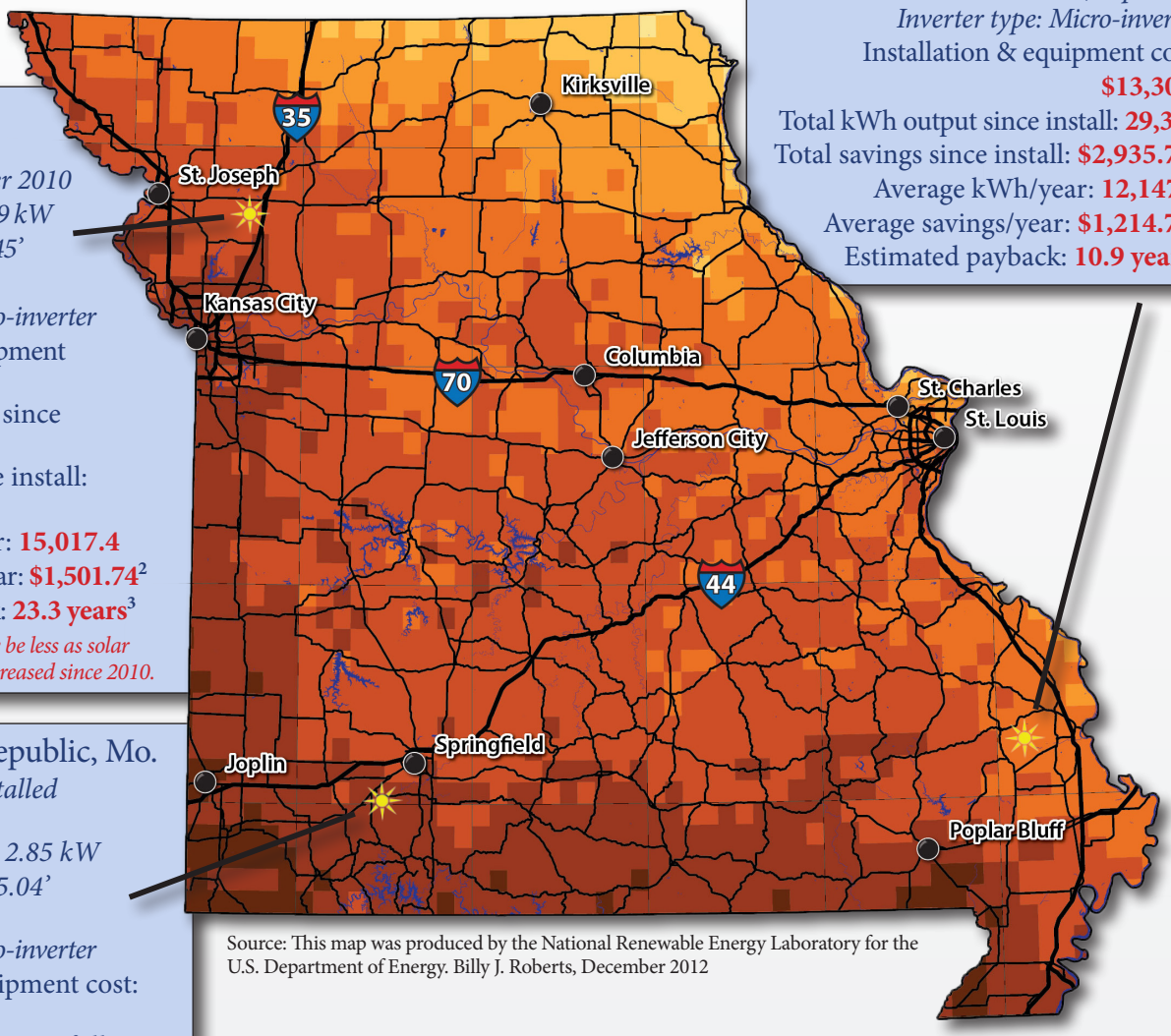
Residential solar system installations

Missouri photovoltaic solar resource

kWh/m²/day

- > 5.00
- 4.95-4.99
- 4.90-4.94
- 4.85-4.89
- 4.80-4.84
- 4.75-4.79
- < 4.75

The map below is measured in kilowatt-hours per square meter per day (kWh/m²/day). This represents insolation, the total energy on a surface over a specific time interval. For more specifics visit www.nrel.gov and search solar maps.



Source: This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy. Billy J. Roberts, December 2012

Example #1 - Cameron, Mo.

Installed: September 2010
Maximum output: 9 kW
Panel size: 2.5' x 5.45' (44 panels)
Inverter type: Micro-inverter
Installation & equipment cost: **$35,000*[1]**
Total kWh output since install: **72,584**
Total savings since install: **$7,258.40[2]**
Average kWh/year: **15,017.4**
Average savings/year: **$1,501.74[2]**
Estimated payback: **23.3 years[3]**
**Actual costs today may be less as solar hardware costs have decreased since 2010.*

Example #2 - Republic, Mo.

Installed: Fully installed May 2012
Maximum output: 2.85 kW
Panel size: 2.47' x 5.04' (15 panels)
Inverter type: Micro-inverter
Installation & equipment cost: **$8,400[1]**
Total kWh output since fully installed: **15,069**
Total savings since fully installed: **$1,506.90[2]**
Average kWh/year: **4,887.24**
Average savings/year: **$488.72[2]**
Estimated payback: **17.2 years[3]**

Example #3 - Whitewater, Mo.

Installed: July 2012
Maximum output: 7.56 kW
Panel size: 3.25' x 6.42' (27 panels)
Inverter type: Micro-inverter
Installation & equipment cost: **$13,300[1]**
Total kWh output since install: **29,357**
Total savings since install: **$2,935.70[2]**
Average kWh/year: **12,147.7**
Average savings/year: **$1,214.77[2]**
Estimated payback: **10.9 years[3]**

Solar energy output data supplied by electric cooperative members. 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.

Intercounty Electric Cooperative
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[1]Cost includes 30 percent Federal tax credit, available until Dec. 31, 2016.
[2]Based on an average Missouri rate of 10 cents per kilowatt-hour (kWh).
[3]Does not include varying maintenance costs, which will increase payback time.