

Cooperative Solar

Owner-Member Cooperative Solar: Q&A

Q. What is Cooperative Solar?

A. Cooperative Solar will be a community solar farm owned by Kentucky's Touchstone Energy Cooperatives. It will be built by fall 2017, and will provide renewable energy without the headaches of installing and maintaining solar panels at private homes and businesses.

Q. Where will the farm be built?

A. Approximately 9 miles east of Lexington and 2 miles west of Winchester, adjacent to Interstate 64 and U.S. 60. Thousands of motorists will see the farm daily as they pass it on I-64.

Q. How large will Cooperative Solar be?

A. Cooperative Solar will have more than 32,000 photovoltaic panels covering 60 acres, making the installation one of Kentucky's largest solar farms. Construction will begin spring 2017.

Q. How can members participate?

A. For a one-time payment of \$460 per panel, participating members will receive a 25-year license for one of the panels. That means they will get credit on their monthly power bill for the value of the energy generated by their share of the solar farm. And they can monitor panel performance online.

Q. When can members participate?

A. The Kentucky Public Service Commission has approved construction of the solar farm, but the PSC must approve tariffs for the co-ops before they can begin marketing licenses. The PSC currently is reviewing those proposed tariffs.

Q. Why do businesses want to participate?

A. Many businesses have sustainability goals that can be met through Cooperative Solar.

Q. What are additional advantages for joining?

A. In addition to getting bill credits, participating members will also get:

- Renewable power at an affordable cost.
- No worries about maintenance or hassles from bolting panels to their roof.

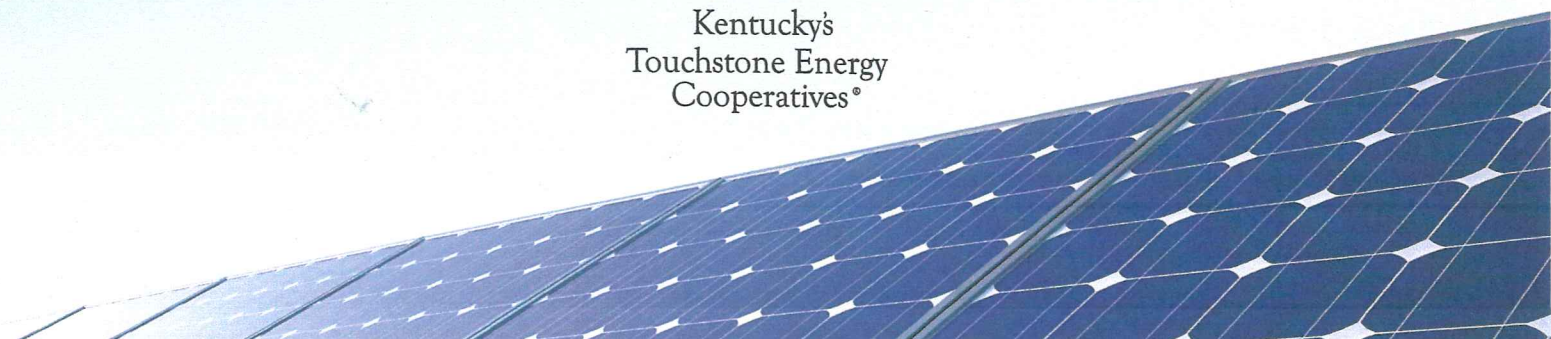
Q. Are there other reasons members might want to participate?

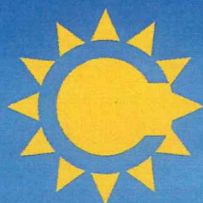
A. Many co-op members are interested because:

- They rent or face deed restrictions that prevent the private installation of panels.
- Their roof is shaded by trees or doesn't get good exposure to the sun.



Kentucky's
Touchstone Energy
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Overall goals of Cooperative Solar

- Provide a convenient, competitive renewable solar option for cooperative members who want an alternative to fossil fuels or wish to achieve sustainability goals.
- Keep the license fee as low as possible, so Cooperative Solar is accessible to as many co-op members as possible.
- Ensure bill credits reflect actual market prices for energy, capacity and SRECs.
- Do not shift costs to other co-op members.

Facts about the Cooperative Solar farm:

- 30,400 fixed solar panels and 1,900 tracking solar panels will be located on a 60 acre-tract.
- Will be located approximately 9 miles east of Lexington, Ky., and 2 miles west of Winchester, Ky., adjacent to Interstate 64. It will be visible from I-64 and will include signage facing the interstate.
- Total solar farm capacity will be 8.5 megawatts. Each panel is rated at 335 watts/direct current. Inverter efficiency to alternating current is approximately 75 percent.
- The farm will have enough capacity to power 1,000 typical Kentucky homes.

How does the installed cost of Cooperative Solar compare to private rooftop solar?

According to the PSC testimony of the Brattle Group consultant, private solar costs from \$3 to \$5 per watt installed. Cooperative Solar will cost about \$2 per watt installed.

What are other benefits of Cooperative Solar versus private solar?

The Cooperative Solar farm will be optimized for exposure to the sun. Both fixed and tracking panels will be oriented to maximize exposure to sunlight, and any obstructions will be removed. Because most private solar installations are placed on roofs of existing homes, installers are limited in their ability to optimize panels' orientation. In addition, homeowners often are hesitant to remove trees and other potential obstructions. Finally, homeowners often are limited in the amount of roof space they can devote to solar panels.

How many kilowatt-hours (kWh) is each panel expected to generate?

Month	Estimated kWh/panel
January	25
February	27
March	41
April	45
May	49
June	45
July	49
August	50
September	42
October	40
November	24
December	23
ANNUAL TOTAL	460

How many panels could be licensed by an average home?

Assuming typical average household usage of 1,200 kilowatt-hours (kWh) per month, or 14,400 kWh annually, a member could license up to 31 Cooperative Solar panels.

What are the main components that go into the participants' monthly bill credit?

There are three main revenue components for the licensee:

- **Energy credit** for kWh generated by the panels. Based on current market prices, we estimate this will generate about \$1.35 per month per panel initially.
- **Capacity credit** for the panel's proportional value of capacity, which will be sold into PJM. Based on current market prices for nondispatchable capacity in 2018, we estimate this will generate about \$0.42 per month per panel initially.
- **Solar Renewable Energy Credits (SRECs)** for the value of the renewable attributes, assuming the licensee chooses to sell these rather than retiring the SRECs. The market for SRECs is volatile. At current market prices, we estimate this will generate about \$0.20 per month per panel initially.

There is one primary expense component for the licensee:

- **Maintenance expense.** Routine maintenance is expected to be minimal, about \$2 per panel annually. But it is expected that the solar farm's inverters will require replacement during the 25-year license period, at substantial expense. As a result, the average monthly maintenance expense is estimated at \$0.66 per panel. Please note, all of these components are likely to change over time, especially the revenue components because they are based on market prices, which can be volatile.

What are Solar Renewable Energy Credits (SRECs) and how do they work?

A Solar Renewable Energy Credit (SREC) is created for every megawatt-hour of renewable electric generation. These credits are purchased by utilities and companies to meet renewable energy standards, help companies meet their sustainability goals and help offset the cost of renewable power projects.

What can you do with your Cooperative Solar SREC?

- The member may decide not to retire your SREC and get a credit on your monthly electric bill.
- The member can retire your SREC. By retiring your SREC, they are claiming the use of the renewable power. The SREC cannot be purchased or traded again, and they will not receive a monthly bill credit for their SREC.

Could the maintenance expense exceed the credits in a given month, leading to a charge on a licensee's monthly bill?

We believe such a situation is highly unlikely. Even during the cloudiest winter months, we can expect some power to be generated. And licensees will receive credit for capacity (and SRECs for those licensees who choose to sell them), regardless of generation.

What do I tell someone who expects to save lots of money by licensing solar panels?

Our estimates indicate each licensed panel will produce about \$830 in bill credits over the life of the license. The bottom line—if a member is considering participating primarily to save money, Cooperative Solar probably is not their best option. They likely would get a better return by investing in energy efficiency projects for their home. But if they are environmentally conscious and would like an alternative to fossil fuels that is likely to more than pay for itself over the life of the license, then Cooperative Solar is a good fit.

How much will a solar panel reduce a licensee's carbon footprint?

Each panel is estimated to reduce carbon dioxide (CO₂) emissions by 0.46 ton per year.



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