

Community Solar Arrays: Questions & Answers

Specific to the Margery C. Evans Community Solar Array, Guilford, Vermont

The Green Lantern Group brings community solar to selected communities in Vermont. We locate sites, obtain permits and financing, and manage the construction, operation, maintenance, and eventual retirement of the community solar array. Homeowners, renters, businesses, and local government and nonprofits can participate in community solar projects - saving money while contributing to the ongoing transition to safe, clean, locally based forms of renewable energy.

What is a Community Solar Array?

A Community Solar Array (CSA) serves multiple customers, each of which owns a share of the benefits of the output of the solar array (denominated in watts). The arrays are often located in or near the community benefitting from the solar net metering credits, and typically have enough panels to supply power for between 50 and 100 homes. While the panel owners own a share of the solar panels' total output, the Green Lantern Group owns the array's supporting equipment, such as steel posts and racks, inverters, and transformers, and takes care of everything.

What are the benefits of joining a CSA?

CSA panel owners can save money, participate in Vermont's transition to a clean energy economy, and support local investment, jobs, and tax revenues based on locally available resources. The primary financial benefit is that each homeowner or business owner can save money on their electric bill for 25 years or more.

How can I participate?

You buy a portion of the solar array's production capacity, measured in watts, and benefit directly from Federal solar investment tax credits *and* from Vermont's group net metering credits, which are applied to your monthly electric bill. (In Green Mountain Power territory, for example, they are currently valued at \$0.164/kWh for an array larger than 150 kW, and \$0.184 for an array between 50 and 150 kW.)

How much does it cost?

Green Lantern is selling the Margery C. Evans solar panels for \$4/watt DC, meaning that a typical 335 watt DC panel will cost you \$1,340. A larger household might have the capacity to use the net metering credits from 10 to 20 such panels, thus costing them \$13,400 to \$26,800 to join the CSA. A smaller home might only need or want 5 panels, thus costing them \$6,700. An important feature is that households can deduct 30% of what they invest from their federal and state income taxes, which reduces their net, after-credit cost to \$938 per 335 watt solar panel. They recoup the rest of their investment (and more) as net metering credits are applied to their electric utility bills every month.

How much will I save if I buy the panels?

This depends on how much you pay in taxes and how many panels you buy. Let's assume you buy the output of one 335 watt DC panel at \$4 per Watt. This will cost you \$1,340. Thirty per-cent (the Federal investment tax credit for solar energy) of this is \$402. If you owe at least this much in taxes, you can take the entire \$402 as a tax credit. This is therefore a saving in your first year, so your real "out of pocket" cost is \$1,340 - \$402, or \$938¹. That particular panel will generate an average of 385 kWh of electricity every year and deliver it to the grid. Under Vermont's group net metering legislation, Green Mountain Power will credit your bill \$0.19/kWh for this energy (for an array over 150 kW in size, grandfathered under the more attractive pre-2017 incentives, which apply to Margery C Evans CSA). This means that one solar panel will produce net metering credits of 385 kWh x \$0.19/kWh, or \$73.15, on average every year - which you can use to reduce your monthly electric bills. Your "break-even period" is \$938/\$73.15, or about 12.8 years. After 12.8 years, your electricity savings are free. Just multiply this \$73.15 by the number of panels you need to see how much you can save each year in total. During some months (i.e., during the summer when sunlight is strongest and most Vermonters' electric consumption is lower), your electric bill will be close to zero, except for your basic monthly customer charge (independent of electricity consumption) and the energy efficiency charge, which are called "non-bypassable" charges.

How many panels should I buy?

That depends on your annual electricity bill. Let's assume it is about \$88/month on average, or \$1,060/year. If you divide \$1,060 by the value of a net metering credit (\$0.19/kWh), you will need 5,579 kWh/year of net metering credits to offset your electricity bill. To obtain this amount from a CSA, you would have to purchase the wattage equivalent of 14.5 panels (5,579 kWh/year divided by 385 kWh/year), or 4,858 W, which would cost you \$19,430, or \$13,601 after the 30% Federal tax credit is applied. If you save \$1,060 per year on your electricity bill, then it will take you about 12.8 years to break even, as described above. After that point, for the next 10-20 years you will be generating savings on your electricity bill of \$1,060 each year at no cost. If you can't use all of the Federal 30% solar investment tax credit in the first year, don't worry. The Federal tax credit can be carried forward and used in the future for up to 20 years.

I rent. Can I still take part in this?

Yes, you can. If you buy into a CSA, you will be able to use tax and electric bill credits in the normal way, and if you move, the credits are "portable" to your new electric account and meter, as long as you still live in Green Mountain Power service territory.

Can I get bank financing to help me buy the panels?

Yes, you can. In most cases, you should be able to borrow the money you need to buy the panels such that your loan payments are LESS than what you will save on your electricity bill, which generates net positive cash flow. Financing can be arranged through the bank of your choice. One example is the Vermont State Employees Credit Union's "VGREEN" program. (Contact VSECU regarding recent updates to their program.)

Can I sell my panels if I want to discontinue my participation in the CSA?

¹ In Vermont, businesses are eligible for an additional "business solar tax credit" of roughly 7%. If you are a business owner, consult a tax professional to see if you qualify.

Yes, you can. Green Lantern can assist you with this, and we will maintain a waiting list of prospective new community array panel-owners after the array is fully subscribed. The sale price will be determined by the “fair market value” of the panels, which is calculated by discounting the future savings from these panels over the rest of their operational lifetime.

Can I buy panels for my children, or even leave them to someone in my will?

Yes, you can, as long as the beneficiaries have electric accounts with Green Mountain Power and can benefit from net-metering credits (in other words, are not already enjoying credits from another array that fully or largely offset their electric utility bills).

Will I be responsible for the cost of maintaining the community array?

No. Our model takes into consideration what it will cost us to carry out routine maintenance over the entire lifetime of the array, ranging from landscaping and repairing fences to insurance costs and replacing the array’s inverters (a piece of electrical equipment) after about ten years. Steady cashflow for these purposes is ensured by devoting a share of the array to a non-profit or public-sector net-metering customer (also called “off-taker”) that does not own a share of the array, but instead purchases credits at a discount.

What does Green Lantern do with the Renewable Energy Credits (RECs)?

For an array whose permit application pre-dates December 31, 2016, the RECs stemming from the electricity generated by the panels you own, which represent the environmental attributes or benefits of this electricity, are the property of the panel-owner (i.e., You) and can be retained or sold according to their/your preference. For an array whose permit application was submitted on or after January 1, 2017², and is thus governed by the more recent rules, the RECs will be sold to GMP, which will retain them and ensure that they contribute to Vermont’s goal of achieving 90% renewable energy generation for all its energy needs by 2050.

Who is the Green Lantern Group?

We are a home-grown Vermont renewable energy development company based in Waterbury, founded in 2010. All of our owners and employees live in Vermont full-time, and currently work only in Vermont. We’ve become one of the largest developers of solar energy in Vermont, serving towns, schools, colleges, hospitals, ski areas, large nonprofits, manufacturing companies, small businesses, and households with solar arrays in over 50 towns in every corner of the state. We work with lenders and investors both inside and outside Vermont to obtain capital to finance the arrays we develop.

As of early 2017, Green Lantern had in excess of 25 MW of net metered solar projects operating in Vermont, representing more than \$50 million in total investment, ranging in size from 34 kW to 2.2 MW. We currently have another 10 MW of solar capacity in development around Vermont. In 2016, the Green Lantern Group was responsible for more than one-third of all solar net metering projects in the state, measured by total kW AC of capacity. For more information, please visit our website at <http://www.greenlanterncapital.com/>

² This does not apply to the Margery C. Evans CSA.

What principles does Green Lantern operate by?

We're committed to ethical, responsible, and transparent business practices - Vermont-style - and to making sure that solar development occurs in a way that's accountable to communities, good for the Earth, and in line with Vermont's renewable energy and climate action goals. We prefer sites that have little or no visibility, and we invest in landscaping and vegetative screening to mitigate negative aesthetic impacts. We are experimenting with solar arrays that enable cows and sheep to graze underneath, and which involve planting pollinator-friendly flowers between the rows of solar panels to promote bee and bird populations. Fortunately, ground-mounted solar arrays cause little or no disturbance of the soil, and the quality of the soil at the end of the array's lifetime should be better than it was when the array was built, especially if beneficial cover crops such as white clover are allowed to grow under the array. An additional benefit to Vermont agriculture is the annual lease payments we make to landowners, many of them farmers, over 25 years or more, helping rural economic viability over the long term.

What if the Green Lantern Group goes out of business?

Your panel purchase amount and the ongoing electricity production of the array generate the funds used to pay for maintenance and repairs. A solar array is a very reliable generator of electricity - a stable income-generating source - and requires little maintenance, so there is a strong financial incentive to keep it going once it is operational. In the highly unlikely scenario that Green Lantern closed down, we would make sure that a new manager was hired to keep the array operating, so you would not notice any difference.

Who do I contact at the Green Lantern Group?

In Southern Vermont, contact Ralph Meima, Director of Project Development, email: ralphm@greenlanterndevelopment.com, Phone: 802-380-1029.

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SAVE MONEY!

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RENEWABLE, SUSTAINABLE ENERGY AND FIGHT CLIMATE
CHANGE!***