

Saxtons River Solar Collective

In February 2011, Eric Shenholm approached a solar installer to discuss the installation of a multiple-family solar project in his field. He had a perfect site: An east-west oriented field with no obstructions to the south and close proximity to a power line. What he didn't have were the finances to install a large system on his own.



Shenholm started researching community solar projects in Vermont to see how others had approached this idea, but only found two systems – neither of which had a structure that he could emulate – (since both were fully capitalized and installed by an individual who then “sold” power to a number of interested neighbors). He was not in the financial position to pay for the system first and then find off-takers, but he thought if he could get enough people to join together at the outset, it would bring the price down for everyone, and they would be able to pull it off.

He started asking around the community and found three neighbors right away who were very interested. Adding his own house and his in-laws' house on the same property, he had five households. Planning meetings were scheduled, and two solar companies were brought in for estimates. Both estimates seemed high to Shenholm, who had been in the solar business in the 70's and early 80's – and in the construction business ever since.

For planning purposes, the system he was considering was 30 kW and would generate electricity for six households. The thought was that each household would get 5kW. He based this number on a national average of kW needed per household. The reality was that each household needed something other than 5kW, and because a sixth household never materialized, the projected needs for five households added up to 27.54 kW instead of his original number of 30kW.

The final arrangement included two households taking 8kW each, two households taking 4kW each, and one household taking 3kW for a total of 27.54 kW. This system went on line in October 2013. In October 2014, 12kW was added for two more households.

How It Worked:

The people who are part of the original 27.54kW system are all Shenholm's close neighbors, but that wasn't necessary for the success of the project. Because of Vermont's group net metering laws, anyone within one utility territory – in this case, Green Mountain Power's service area – can take part in a group net-metered system. The common denominator of interested parties was simply that they wanted to “go solar” but didn't have an adequate site. (Note: The second phase of 12kW consisted of 8kW for someone in the next town, and 4kW for someone at the other end of the village where the array is located).

“For years I'd wanted to install solar PV panels at my home, but a large beautiful tree made it impossible. Eric's solar project has allowed my dream to come true, even to the extent of taking out my furnace and fuel tank and heating my home with a groundwater geothermal system. Finally my house is off fossil fuels!”
A member/solar off-taker in the project

The estimates from the two solar companies seemed high, and Shenholm thought he could do better. He decided to see what would be required (by the State of Vermont) for him to install the system himself. In order for the members of the group to receive the state incentive for installing renewable energy, the installer must be what was called a “Provisional Solar Partner.” To qualify, Shenholm took several intensive courses in PV installation that were accredited by the State of Vermont. Once the courses were successfully completed, he was able to function as the installer and receive the Vermont incentive, which was divided amongst the group members. (This project was also the first job for a new solar company: Saxtons River Solar Electric.)

In meetings held over two years, a structure emerged that everyone was happy with. The group wanted to “own” the system, which entitled them to state and federal tax breaks and incentives, but no one wanted to form a legal entity that they would then own and maintain the project. The solution they arrived at was to have each person lease the plot of land that their system was sited on and own the equipment. A long-term lease was negotiated with the help of a lawyer and a guiding member operating agreement was put together to set the terms of the project, including upkeep and maintenance issues. Power generated was attributed to each person’s meter based on their ownership percentage of the total system.

Shenholm acts as the system administrator and gave the individual meter numbers and their allocation percentage to Green Mountain Power, who divides the production up and credits the appropriate accounts.

The system was installed on pole-type adjustable ground mounts, purchased locally, and is tied directly to the grid through string inverters. GMP installed a new pole on an adjacent road, making the wiring distance from inverters to meter a reasonable 110 feet.

The original estimates for the proposed project were \$200,000 and \$227,000. (These numbers were in 2011, and reflected what was then the current “average price” of a solar PV system installed in Vermont.) The final cost of the system Shenholm installed was \$94,000. (Instead of \$6/watt or \$7/watt, they paid \$3.42/watt.) No corners were cut in the equipment or installation. The panels and inverters are all top shelf components from established suppliers.

By joining together to install one larger system instead of 5 or 7 smaller systems, member/owners experienced significant savings, which translates into a shorter payback on their investment. We have now logged a year and a half of operation, and all members are getting 90 to 100+% of their electricity needs met by solar energy.

KEYS TO SUCCESS:

- A commitment to renewable energy by the group members.
- A willingness to make decisions by consensus, keeping “community” values in mind but having one person serve as coordinator/administrator to manage the process and project (which is guided by an agreement between members and the administrator).
- Vermont’s state incentive program and the 30 percent residential federal tax credit, which each member got to take advantage of – significantly driving down the cost of the project.
- Green Mountain Power’s commitment to renewables and net-metering.

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