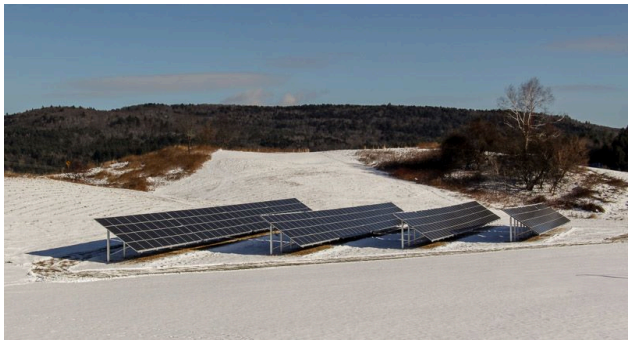
Crossett Brook Middle School Solar Project

Overview:

In December of 2013 Crossett Brook Middle School (CBMS) in Duxbury flipped the switch on their 157-kilowatt (kW) solar photovoltaic (PV) system. With an existing 14.2 kW solar array on the school's roof, just about half of the school's electricity needs are now met with solar energy. Due to the high efficiency, the 480-panel array is the most powerful school solar project in Vermont, tied to the grid and located on a half-acre of the school's property.



The project began as an idea hatched by the Waterbury Local Energy Action Partnership (LEAP) – the local town energy committee and by leaders at Crossett Brook Middle School. LEAP has set a goal of Waterbury and Duxbury being the greenest community in Vermont by 2020. Among other renewable energy, energy efficiency and transportation solutions needed, LEAP has embraced solar as a key strategy to attaining that goal. Among the solar strategies LEAP utilized was a Solar Year initiative that aimed at – and later achieved - the doubling of Waterbury and Duxbury's installed residential and community solar capacity in one year. The success of this initiative and the leadership of LEAP catalyzed the school solar project.

While LEAP's vision helped set the stage for the project, the group recognized early on that their role was better suited as a community liaison rather than a project manager; their Solar Year Initiative had built a network of community and professional connections in the solar energy sector. "We did a lot of match-making between potential installers, financiers and the school for this project. That made the process easier for the School Board and therefore ensured a more streamlined and successful project," said Jamison Ervin of Waterbury LEAP.

With a network of potential project partners LEAP worked with the School Board to shepherd their vision to reality. The school now incorporates the project into their curriculum. "The array is an engine for learning on topics like science, technology, engineering and math – areas that students need most in order to secure good jobs in the future," said Ervin.

Over the lifetime of the array, the carbon saved is the equivalent to the amount of carbon sequestered by 2,700 acres of forest.

Duncan McDougall
Waterbury LEAP

How It Worked

Before LEAP took their idea to the school, they assessed potential sites available on and off school grounds, the total school electricity usage, existing financial models, successful examples of solar at other schools and potential savings. Once they had enough information, they approached the Principal of CBMS at their solar festival with the idea – he had been thinking along the same lines, and he immediately embraced the idea. These discussions then led to a meeting with the School Board Business Manager. Connecting with the key financial decision makers early in the process was critical to get the project off the ground.

In partnership with the Principal and business manager, LEAP was able to explain the pros and cons of the different solar and financial models available. As part of their proposal, a committee member drafted a 3-D rendering of what the array would look like and where it would go, as a helpful visual. This helped make the project real, while explaining that the school would save $12,000 annually and $300,000 over the life of the project, making it economically compelling. LEAP's understanding of Vermont's renewable energy policies also played a role in helping shape the project: permitting for solar installations under 150kW are relatively easy, taking under a month to process, unlike larger projects that take far longer and can add to project costs. This understanding made it easier for the school to decide on the size and location of the array.

During this process LEAP continued to engage the community through writing informational articles in local media and a public hearing on the benefits of solar energy. However, while gaining community support is essential in any project as visible as this one, in this case no public vote was required, as there was no town bond issued for financing the project. It simply required a vote from the School Board for approval.

With community and school support solidified, the School Board drafted a Request for Proposal (RFP), with LEAP's assistance, it was sent out to potential developers. The RFP outlined the School Board's criteria for the project, which developers would then be required to address – such as financing options for the installation, insurance, and maintenance of the array. Through the RFP process, SunCommon, a Waterbury-based solar developer, was selected to design and install the array. Another partner, Green Lantern Capital (GLC) was also selected for the project, providing the financing through a Power Purchase Agreement (PPA). This kind of agreement means that GLC purchased and owns the array, and then offers the school a return on their investment through the federal tax credit (which they can take but the school cannot, as a nonprofit), their ability to depreciate their project over time and reliable monthly payment from the school. The Waterbury-Duxbury School District signed a 20-year service agreement with GLC, providing the school district with long-term price stability and the option to purchase the array after the contract expires, or in year 7 or 10 at a discounted price. This was an attractive financial structure for the school because there were no upfront costs. Instead, the school makes a monthly payment that saves CBMS 10 percent each year compared to utility rates.

Keys To Success

- Gathering information on potential sites available on and off school grounds, total school electricity usage, existing financial models, examples of solar at other schools and making the powerful case of financial savings.
- Engaging the community throughout the process by writing regular articles explaining the benefits of solar at the school in the local news and holding public forums.
- Ensuring that key players — in this case, both the principal and the business manager — supported the project, understood the numbers and could defend it to the school board.
- Explaining the pros and cons of different models (it helps to have a 3-D virtual rendering of what the model will look like and where it will go, and a summary of how much the school will save, both annually as well as over the life of the project).
- Publicizing and celebrating success!

Contact

Jamison Ervin, *Waterbury LEAP* — jervin@sover.net or (802) 244-5875