

Business makes technology shine

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PLATTSBURGH — Nearly limitless free energy flows down on your property every day, and Linda and Greg Brienza want to help you harness it.

The Brienzas, proprietors of Triangle Electrical Systems Inc. at 158 Quarry Road in Plattsburgh, had been watching with increasing interest as solar-panel technology improved and the green revolution unfolded in recent years. In 2003, they began selling fixed-base solar panels at their business.

But one key piece of technology seemed to be missing to make solar work well here, especially on cold North Country winter days. As any sunbather knows, facing the angle of the sun is key to receiving maximum ray exposure.

"We do a lot better to have our sails up when the wind is blowing," Greg explained. With fixed-platform or roof-mounted solar panels, that angle was not always achieved and much of the energy was wasted.

So, using home-grown designers, mechanics, welders and production techniques, and drawing upon their experience as industrial and commercial contractors, the Brienzas came up with a solution and created a separate company, called SolarNovar, to market it.

Their residential and commercial two-axis, 16-panel tracker system, designed by Triangle Electric engineer Frank Sansone, can increase solar-panel production by 45 percent. The Brienzas believe the efficiency can be increased up to 85 percent and hope to soon get an outside agency to verify that finding. Every component of the tracker is made in-house.

The tracker rotates the solar panels through the day to stay precisely aligned with sun. "It operates the way a sunflower does," said Mary Ann Sorrell, who is handling marketing chores for the new company. "There's nobody else in the Northeast who builds a tracker this way."

A single tracker with the 16 solar panels, on a scale that can be in harmony with the landscape, can generally provide the electrical energy needed to power an average-sized, energy-efficient home. The initial cost for the system and installation is about \$75,000, although special situations and options could affect this price. Much of the cost is refundable through energy grants and tax breaks.

Excess electricity generated when the sun is shining brightly is sold back to the power grid, making up for cloudy days. And with battery technology moving at a rapid pace, excess supply will someday more easily be kept on site, making the whole system even more self sufficient and practical.

The tracker is also programmed to recognize how hard the wind is blowing, so it can be pitched to avoid damage during storms. It can also park itself straight up to eliminate snow buildup and can be adjusted to make mowing and other yard-maintenance chores easier. Specifically designed for the North Country climate, it even catches the rays reflected by snow.

Over the past two years, prototypes have been created and calibrated at Triangle Electric. "Now we have it designed, and we're ready to go to market," Linda said.

SolarNovar can take a potential customer's electric bill and evaluate how many panels and kilowatts would be needed to accomplish the electrical or even hot-water needs of a residence or business. Initially, there will be three trackers of various sizes and color schemes offered. They can be customized for people who want to add features or control the angles manually or by computer and can be fitted into the landscaping theme of a property.

"It's not like those windmills that can stick up and ruin your view," Sorrell said.

Wi-Fi, surveillance systems or other electronics could also be incorporated into the system. Despite a couple of recently publicized episodes, Sorrell said, they're not subject to theft. "They're not lightweight," she said. "They're not something one person could pull apart."

Not only are the trackers suitable for individual residences and small businesses, groups of them can be arranged to provide larger-scale power production to a housing development or industrial park. A one-and-one-quarter acre "tracker square" features 25 trackers that can be arranged along roadways, around perimeters, in parking lots, on farms, in open areas, or as a positive use for contaminated brownfields. "That's a wonderful vision," Linda said.

A system like this could provide about 265 kilowatts of electricity and power up to about 50 homes. Architects and contractors could mesh them with residential communities or large businesses, screening them with fences or trees. "One of the local orchards is looking at this," Sorrell said.

Linda added that it's a statement people are making about going green, and the individual trackers have been popular with doctors and other professionals. One drawback, which hopefully will be resolved soon, is that small businesses currently can't sell electricity back to the power grid. Legislators in Albany are being lobbied to try to get the rule changed.

Another obstacle is that it's also taking three or four months to get New York State Energy Research and Development Authority grants approved. These can pay up to 40 percent of the cost of the system, which works nicely with the income-tax deductions that are offered for installing solar panels.

When things are working smoothly, "your system could be 50 percent paid back by the end of the first year, not counting what you generate to pay your bills," Sorrell said.

Looking ahead, tracker squares could be the solar gas stations of the future as more and more vehicles are powered by batteries. The Brienzas hope tracker squares can be marketed to government agencies and military bases. Oneida County has expressed an interest in up to 1,000 trackers. Generating power on site is far more efficient than having to send it through transmission lines for long distances, which causes lots of waste.

Roger Sorrell is serving as the director of business development for SolarNovar, focusing on military,

government and municipality sales.

Currently, a lot of money is going into the development of new solar panels. Prices are holding fairly steady or coming down slightly and the panels are getting smaller. From a buyer's standpoint, Greg said, the situation is like buying a new computer. You can hold out forever waiting for faster processors or new features, but at some point you have to jump in.

Greg said that while the Brienzas didn't start out to get involved in the environmental revolution, and really didn't even see it coming, with their engineering background and experience in industrial electronics, it was a natural fit.

"It was somewhat of an accident," he said. "We just liked solar."

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