

## CASE STUDY

# ON-SITE POWER

Small Wind, Solar



## Putting the sun and the wind to work slashes electrical expenses at Cross Island Farms



Installation of Bergey Excel wind turbine at Cross Island Farms.  
Photo credit: Cross Island Farms

### Background

Cross Island Farms, which encompasses 102 acres of land, is a certified organic vegetable and livestock farm located on Wellesley Island, in the Thousand Islands region of New York. The farm grows organic vegetables and produces organic eggs, beef, goat, chicken, and pork. The animals are raised on pasture, without the use of hormones, and sold to the community. Primitive camping, as well as educational farm tours and farm and garden workshops are services that are provided on the farm. Given the farm's philosophical approach to doing business in an ecologically and economically sustainable way, renewable energy was a natural fit.

### Challenge

Installing a wind turbine and a solar panel system would provide the farm with a non-polluting source of electricity that would reduce their dependence on fossil fuels and help reduce the emission of greenhouse gases, but the costs would be in excess of \$100,000.

Cross Island Farms received a grant through the USDA-Rural Energy for America Program that would fund 25% of the originally planned wind project. They installed a meteorological tower to determine the wind speed, and discovered that the 80-foot tall tower they were planning to install would not produce the results they were hoping to achieve. The project stalled until New York State Energy Research and Development Authority (NYSERDA) staff read about their plight in a news article and proactively reached out to Cross Island Farms.

**Customer**  
Cross Island Farms

**Location**  
Wellesley Island, NY

**Installation Date**  
2011

**Equipment**  
10-kW Bergey Excel wind turbine  
on a 120-foot tower  
5.52-kW SunPower Solar  
Electric System

**Energy Generation**  
16,000 kWh annually

“As a sustainable farm, we look to purchase our supplies locally and if we can generate all of our own electricity on-site, you can't get any more local than that. Everyone works on our farm including the cows, goats, pigs, and chickens; now we put the sun and the wind to work, too.”

— Dani Baker,  
Cross Island Farms

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## Solution

Cross Island Farms received incentives and technical assistance from NYSERDA. NYSERDA staff provided information about their eligible installers, a list of installers who have been vetted by NYSERDA, and provided additional information to help Cross Island Farms make a selection. They chose Alternate Power Solutions of NY from Brewerton to install their wind turbine. With NYSERDA's support, the farm was able to install a Bergey Excel 10-kW wind turbine on a 120-foot tower along with a 5.52-kW SunPower solar panel system. A self-supported lattice tower was chosen because animals and visitors would be wandering around the tower, and a guyed tower, although cheaper, could pose a potential hazard.

## Results

Cross Island Farms brought three critical elements to this successful wind project: land, wind, and an appreciation of the value in a long-term investment. They knew investing in renewable energy would have a payback of more than 10 years, but they also knew that purchasing these systems would immediately and drastically reduce their electric bill. The two systems combined are expected to generate all of the farm's needs, about 16,000 kWh annually.

Investing in a wind turbine and a solar panel system makes the perfect marriage because the wind system will generate most of its electricity in the winter, while the solar panel system will generate most of its electricity in the summer. "We plan on operating this farm for a long time and knowing that our energy-related expenses will be close to zero for the foreseeable future will help us with our financial planning. If we can produce all the power we need with limited expenditures, then we can get closer to our goal of living off the profits of the farm," said Dani.

Cross Island Farms also purchased a back-up generator so they can power the farm even if a storm knocks out the electrical grid.

## Get Started

Visit [nyserdera.ny.gov/small-wind](https://nyserdera.ny.gov/small-wind) or call **1-866-NYSERDA** to learn how you can reduce your energy consumption and costs.

**"We want to serve our community not only by providing healthy and nutritious, organic meats, eggs, fruits, and vegetables, but by being a potential sanctuary in the event of a natural disaster."**

— Dani Baker, Cross Island Farms



Photo credits: Cross Island Farms

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