

## Chateau Chantal Winery & Inn Installs Solar PV Energy System by Harvest Energy Solutions System designed to offset energy costs and support environmental sustainability.

### ABSTRACT

Perched high on a ridge overlooking Grand Traverse Bay, Michigan, Chateau Chantal Winery & Inn has offset their energy needs with a 148.5 kW solar photovoltaic (PV) array by Harvest Energy Solutions. The array's annual production of 172,351 kW is equivalent to saving CO2 emissions from the electricity use of 18.2 homes for one year.

This is the largest solar install at a Michigan winery. All aspects of the project are based in Michigan, with the winery in Traverse City, design, installation, and racking manufactured by Harvest Energy Solutions of Jackson, and solar PV panels also manufactured in Michigan. The solar energy system was installed in May and June 2015. With a mock 'power-up' of the system by U.S. Senator, Debbie Stabenow at a media event in June.

**Situation:** The Chateau Chantal project involved sale, design, engineering, procurement and construction of a 148.5 kW solar PV energy system to provide 40% of their energy needs. It was important to the stakeholders of this project that it not only meet the desired energy production, but to also be esthetically pleasing to the environment – being tucked in to the rolling hills of the vineyard, and visible from the Chateau's large patio used for events and viewpoint of the unique landscape on the Old Mission Peninsula of Northwest Michigan.

Specific design and procurement elements included purchasing products manufactured in Michigan that supported the economic growth for renewable energy in the state as well as qualifications in receiving a Michigan Economic Development Corporation, Pure Michigan Business Connect grant which provided matching funds up to \$50,000 to companies addressing technology gaps with innovative resources or solutions from a Michigan-based company. Further financing was also received from a United States Department of Agriculture Rural Energy in America Program (USDA REAP) grant that covered 25% of the project costs.

**Best Practices:** Harvest Energy Solutions provided the sales consultation, design and construction, working closely with Chateau Chantal's stakeholders as well as the agricultural energy experts from Michigan State University (MSU), who had performed a complete energy audit to help determine the size and renewable energy system best suited to attain the stakeholder's goals. Original interest was in wind energy, being on the Lake Michigan peninsula, where the winds were thought to be a good option. After the evaluation and energy audit by MSU, it was determined that solar PV energy was the better option.

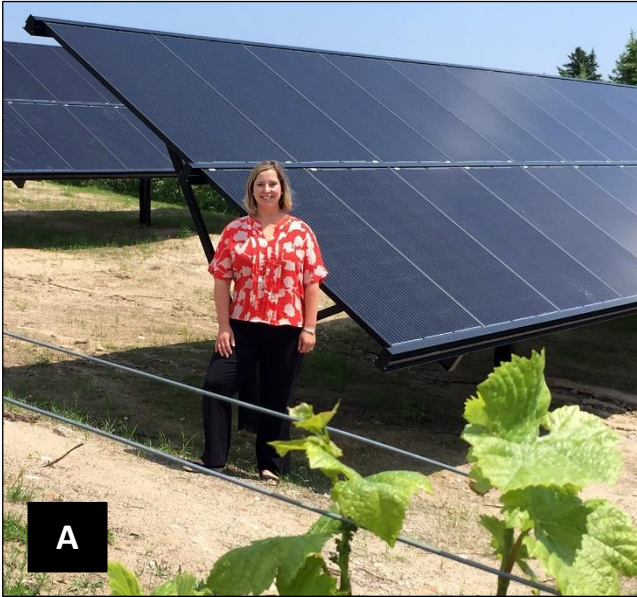
The uniqueness of the design and installation included powder-coating the racking for the system and procuring black solar PV panels from a Michigan manufacturer. The racking and powder-coating was also done at the Harvest Energy Solutions' manufacturing facility in Jackson, Michigan.

"At Chateau Chantal, we've been incredibly lucky to steward this amazing property on Old Mission Peninsula. Installing a large scale solar array is one more way we can reflect our commitment to a healthy environment. Our vineyard has been MAEAP (Michigan Agriculture Environmental Assurance Program) certified for 8 years and we ceased application of chemical fertilizers in our vineyard 10 years ago. We've been very conscientious of our natural beauty and understand that it is a major reason people vacation in our area. The stationary solar array has been designed and positioned so that the stunning natural views are not affected," stated Marie Chantal-Dalese, President and CEO, Chateau Chantal.

**Results:** The solar PV energy system has saved \$24,620 electrical costs and has exceeded projections, producing 201,087 kWh of power over the past 14 months. "This project has had a very positive impact on the customer's perception of our commitment to sustainability. While we use sustainable practices in the vineyard, most are hidden to the visitor's eye. Our large solar array, on the contrary, cannot be missed. We've had the opportunity to present at a several educational sessions on solar energy that also help spread the word about our commitment. We continue to be extremely pleased with this project and the financial results of the undertaking," Chantal-Dalese added.

The system was installed with a live-feed monitoring kiosk that displays the performance of the system viewed by company stakeholders as well as their customers. Ms. Chantal-Dalese has also used their support of renewable energy and the installation to hold educational sessions at the winery, local chamber of commerce and wine industry events. The winery as well as Harvest Energy Solutions received an unsurpassed amount of positive media exposure for renewable energy during and following the 'power-up' event that was attended by more than 60 local and state dignitaries, renewable energy advocates and area business owners.

PHOTOS:



- A. Marie Chantal-Dalese, CEO, standing with solar array, display shows unique black PV panels and black powder-coated racking.
- B. Aerial-view of the 148.5kW solar array with winery and inn in the foreground.
- C. Solar array post-install among the grape vines of the vineyard.
- D. Marie with solar array, vineyard and winery/inn in background.
- E. Marie with U.S. Senator, Debbie Stabenow at solar 'power-up' event.