

Microinverters Raise the Roof for Greenhouse Solar Power

CHALLENGE

Avoid large production losses caused by difficult rooftop shading issues

SOLUTION

Simplified installation with Enphase microinverter system designed to fit unique structure

RESULT

Exposed underside of inverters and modules reduces both time and cost for maintenance repairs



“For such a large, complex rooftop installation, we knew only one inverter could measure up to the challenge – Enphase.”

—Andy Bennis
VP of Sales and Marketing
Sentinel Solar

Entrepreneur David Ruby operates six acres of greenhouse facilities that grow fresh produce for thousands of Ontario residents. To offset his direct electrical costs, Ruby explored several alternative energy options until ultimately choosing solar as his facility’s new power source.

Commercial Project Chooses Enphase

Before the launch of Ontario’s feed-in-tariff (FIT) program, Vine Fresh Produce, Ltd., had considered installing a net-metered solar system to offset the facility’s direct electrical consumption. Once the feed-in-tariff was put into effect, however, it became much more beneficial to sell electricity back to the grid through solar PV. Vine Fresh Produce was then awarded a 2MW contract, making their three-phase system the largest rooftop installation under the Ontario FIT program.



The 2.3MW array allows the partial glass rooftop to heat the building's inside while simultaneously generating solar power for the facility.

Interested in the viability of using microinverters in a large commercial system, the owner of Vine Fresh Produce contacted Sentinel Solar, known for their successful track record of incorporating Enphase micro-inverters into large-scale projects.

Removing Design Obstacles

The design of the greenhouses left a "sawtooth" style roofline, with a peak that shades the bottom row of every roof during certain times of the day and year. Additionally, the system's racking and modules needed to be integrated into the overall structure of the building in order to minimize materials and the weight load on the roof itself – a challenge that would have proved impossible with a string or central inverter system.

Vine Fresh Produce's unique system structure provides Sentinel and their customer full access to each module and inverter from inside the greenhouse. The exposed underside of the array enables accessible operations and maintenance repairs without scaling on top of the roof.

While string inverter installations are complex and involve hazardous high voltage DC lines, which are often prone to issues of production loss, Enphase's low voltage AC wiring was ideal from both a simplified design and a safety perspective.

For a site as large as Vine Fresh Produce's 2.3MW system, being able to track its health and maintenance was a key component in



INSTALLATION SUMMARY

Client **Vine Fresh Produce, Ltd**

Location **Strathroy, Ontario, Canada**

Installer **Sentinel Solar**

System Size **2.3MW**

Microinverters **Enphase M215**

Modules **Jinko 250W poly**

choosing Enphase. The owner was looking for a distributed architecture where any small outage would not result in large power production losses. He also wanted the ability to monitor the system remotely and to accurately pinpoint any performance issues. Plus, Enphase's 25-year warranty also protects the system over the long-term should any performance issues need addressing.

With the Enphase System and Enlighten's remote diagnostic capabilities, Ruby can rely on his system for maximum energy harvest even during those times when the peak of each roof creates unfavorable shade.

About Enphase Energy

The Enphase System revolutionizes solar power generation with industry-leading technology innovation. Enphase's proven microinverter technology maximizes production of each module, which works together with advanced communications hardware and an intelligent software platform to deliver a reliable, high-performance solar array.

To learn more about the benefits of the Enphase System, visit enphase.com/