OutBack POWER™
an EnerSys company

Fire Mountain Solar

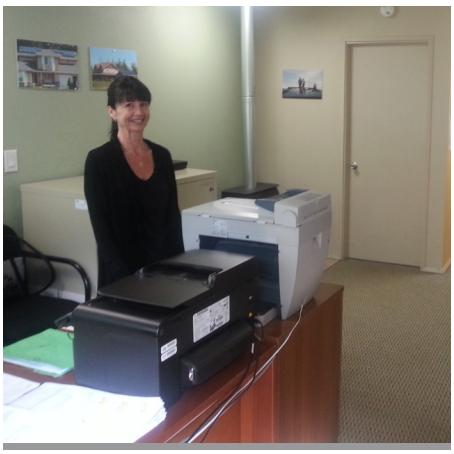
SOLAR + STORAGE CASE STUDY

SYSTEM SPECIFICATIONS	
Location	Mt. Vernon, Washington
System Power	8.0kW PV system
Components	• Radian GS8048 inverter/charger • (3) FLEXmax 60 charge controllers • MATE3 system display and communications

OVERVIEW

Founded in 2001 in Mt. Vernon, Washington by Tim Nelson, Fire Mountain Solar provides renewable energy solutions and systems for residential and commercial clients in Washington State and around the United States. The company's experienced team builds and installs a variety of off-grid, grid-tied and grid-tied with battery backup solar energy systems. In fact, when it came time for OutBack Power to install solar at its own Washington-based headquarters, Fire Mountain Solar's know-how was the natural choice for the project given its vast experience and expertise with installing OutBack equipment for grid/hybrid solar power and 14 years' experience with off-grid solar electricity.

In 2007, Fire Mountain Solar applied its expertise to its own firm by upgrading its headquarters' off-grid solar and wind systems. Tim and wife Alana Nelson's design built in power redundancy in case part of the system ever had to be taken offline; the team wanted to easily configure the equipment for continued electricity generation during maintenance. Since the Fire Mountain headquarters is connected to the PV system atop the Nelson's home, they wanted to ensure their renewable energy system acted as an exemplary part of Fire Mountain Solar's showroom in addition to reliably powering their everyday electrical loads. In September 2013, Fire Mountain Solar rallied their off-grid neighborhood to raise the money to bring in the grid to supplement electrical power, as opposed to the expensive propane generators they were using in off-peak production hours and throughout the winter. They needed to make sure the new system maximized return from net metering and provided electricity in the event of a power outage.



CHALLENGE

- Update an already green office environment to energy independence with a reliable source of renewably-generated electricity
- Improved reliability and efficiency with an upgraded renewable energy system; eliminate the need for a costly on-site propane generator
- Showcase the company's commitment to green standards and establish best practices for renewable energy-based projects and demonstrate the results to clients

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SOLUTION

As veterans of the Washington State solar industry, Fire Mountain Solar naturally turned to OutBack when it came time to upgrade their own system, for their initial upgrade, and again for the latest upgrade to a grid/hybrid system. The renewable energy firm originally selected FLEXpower components to handle energy from renewable sources and manage battery charging and discharging in 2007. By functioning as an on-site showroom for renewable energy, the OutBack Power system demonstrated Fire Mountain Solar's commitment to solar technology and provided real-life validation of a greener lifestyle for the company's prospective clients. Since installing the original system, Fire Mountain Solar was able to further save on energy when the electric grid was extended to the neighborhood.

For this second energy overhaul, Fire Mountain Solar selected the Radian Series inverter/charger to handle energy conversion between its solar PV and its headquarters. This system is achieving payback on its initial investment through utility savings from net metering, allowing the organization to take advantage of grid energy during overcast days and spin its meter back during times of excess power generation. The FLEXpower equipment from Fire Mountain Solar's original off-grid project at the headquarters in 2007 was donated to a friend, and still works today providing renewable energy conversion to another off-grid location.

OUTCOME

- Fire Mountain Solar is now a net-zero organization, generating 100% of its power from renewable sources, with conversion help from OutBack Power's Radian-centered system
- Fire Mountain Solar led the movement for connecting the neighborhood to the power grid by showing its community that grid/hybrid power would be cleaner and cheaper than running solar augmented by gas powered generators
- Fire Mountain Solar can make informed recommendations to clients and enjoys a competitive advantage due to its in-house solar system with battery backup, especially as more customers approach the company for projects that incorporate grid independence
- Reduces expenses associated with grid electricity by offsetting demand using solar PV and saves $150 per month in propane spending during the late fall and winter compared to Fire Mountain Solar's previous electricity scenario

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