Margaritaville Vacation Club by Wyndham Resorts

Microgrid

E-FINITY
Authorized Capstone Distributor

PROJECT CHALLENGE

Inspired by the lyrics and lifestyle of Jimmy Buffett's Margaritaville®, Margaritaville Vacation Club by Wyndham Resorts is a luxurious, off-grid, beachside resort nestled in a cove fringed by palm trees. Located on Water Bay at the eastern end of St. Thomas, it features over 264 rooms, 2 bars, and 2 pools. The owners of the resort decided they wanted to lower their energy costs and not be exposed to an unreliable utility grid. They sought a resilient, cost effective power solution, one that would allow the resort to expand in multiple phases, and have a power plant that could expand with it.

Triton Energy, a Caribbean fuel supplier and E-Finity designed a modular, power solution that was capable of being scaled up as the resort grew. Ultimately, the system would also reduce energy costs, increase power reliability, and significantly lower the resort's carbon footprint.

PROJECT SOLUTION

In December, 2014 E-Finity and Triton completed the on-site microturbine power plant. The new system started with a 1000 kW microturbine and expanded 2 years later with the addition of another 800 kW. The site now features two highly efficient, low emission microturbines that can generate up to 1,800 kW of electricity.

E-Finity Distributed Generation monitors the site and can remotely diagnose and troubleshoot issues with their state-of-the-art control system. The control system incorporates advanced monitoring and diagnostic capabilities that allows for 24/7 strategic energy management.

The resort is backed by E-Finity's comprehensive maintenance program designed to give financial peace of mind to customers by providing product life cycle costs at a fixed rate for both scheduled and unscheduled maintenance.

PROJECT PROFILE

Customer
Margaritaville Vacation Club by Wyndham Resorts

Location
St. Thomas, U.S. Virgin Islands

Commissioned
December 2014

Fuel
Propane

Technologies
1800 kW Power Plant

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said Shack Hawkins CEO,Triton Energy

PROJECT SOLUTION CONT'D

The entire system is fueled by clean-burning propane, which replaced the need for costly, higher-polluting fuels like diesel. The installation also included a 35,000-gallon, on-site propane storage tank that provides enough fuel to sustain on-site power generation for 14 consecutive days. With no grid connection, the oil-free, air-lubricated and air-cooled power system covers the resort's full electric load during peak occupancy. Thanks to the benefit of the microturbine's modular design, the system is able to continue running at high efficiency even in partial load conditions, such as during the off season when occupancy is lower.

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PROJECT RESULTS

The cost to operate the propane-fueled, power plant is roughly half that of purchasing local utility power. This has resulted in over $6 million USD in energy savings since start-up, all while the system has delivered 99.9997% uptime.

Added reliability was also key in that the resort no longer needed to rely on an unreliable electric utility grid. In fact, in fall 2017, the system continued to power through extreme conditions during Hurricane Irma, providing power to the resort and over 40 guests that had stayed to weather the storm. The resort was able to keep the guests comfortable and the food fresh while the majority of St. Thomas was without power for months.

Additionally, the high quality service provided by the E-Finity team has been a key component to system reliability and uptime.

Given the natural and sensitive beauty of the environment, one of the important benefits of the system implementation was its ability to significantly lower the resort's carbon footprint, reducing emissions by 5,000 carbon tons—the equivalent of taking roughly 500 cars off the road.

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