CASE STUDY

OFF-GRID

➤ SPICE VILLAGE RESORT, INDIA

TROJAN® BATTERY COMPANY

"TROJAN BATTERIES WERE CHOSEN BY TEAMSUSTAIN DUE TO THEIR REPUTATION FOR HIGH QUALITY AND RELIABILITY, THE FACT THAT THEY WERE MADE IN THE USA, AND BECAUSE THE SIZE OF THE INDUSTRIAL BATTERIES MET THE SPECIFICATIONS OF THE PROJECT DESIGN."

GEORGE MATHEW ➤ TEAMSUSTAIN

➤ LOCATION	➤ CHALLENGE	➤ SOLUTION	➤ OUTCOME
Spice Village Resort, India	To convert a generator-powered resort to an eco-friendly destination.	To provide a battery-based solar system with Trojan deep-cycle industrial batteries.	Spice Village expects to save nearly $45,000 per year by switching to solar energy.

72 BATTERIES

256 TONS DECREASE OF CO_2 EMISSIONS

$45,000 ANNUAL SAVINGS

LOCATION

Spice Village, founded in 1992, is a 56-cottage, solar-powered, off-grid eco-resort on the border of the Periyar Tiger Reserve in the Kerala province of Southern India.

CHALLENGE

Although the resort was connected to the grid, it relied heavily on diesel generators due to poor grid quality. Power was supplied to the resort by two generators which ran eight hours a day and produced almost 62,000 kWh a year. These were noisy, dirty, costly to maintain, and the transporting of fuel to the remote resort was expensive.

The resort marketed itself as a "tribute to the ancient ways of life" where "birdsong takes the place of television." The generators certainly didn't enhance the "back-to-nature" experience. This, combined with the rising wave of eco-tourism, convinced Spice Village to convert to solar and "go green."

SOLUTION

A 65kWp battery-based PV system was designed to generate enough solar electricity to meet 100 percent of the resort's power needs. The energy produced by the PV modules is stored in 72 Trojan deep-cycle flooded IND29-4V* Industrial batteries. Trojan's Industrial line of flooded deep-cycle batteries is designed for 1,500 cycles at 80 percent depth of discharge and is specifically engineered to withstand the rigorous conditions of renewable energy applications including extreme temperatures, remote locations, and the intermittent nature of solar power generation.

SYSTEM SPECIFICATIONS

- Batteries: (72) Trojan deep-cycle SIND 04 2145* batteries
- Dual-Mode Inverter-Chargers: (9) SMA Sunny Island 5048
- PV String Inverters: (9) SMA Sunny Mini Central 7000HV
- Solar modules: (650) 100Wp a-Si thin film PV modules
- Racking: Space frame structure

**The Solar Industrial SIND 04 2145 battery was previously known as the IND29-4V battery.*

OUTCOME

The anticipated payback time for the PV system is five years. This project is also eligible to earn carbon credits since there is an expected carbon reduction of 256 tons of CO_2. Overall, Spice Village expects to save nearly $45,000 per year by switching to solar energy.

BATTERY SOLUTION

- Quality and Durability
- Easy Maintenance
- Ideal for RE Applications

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