OutBack POWER™
an EnerSys company

Malankara Plantation

SOLAR + STORAGE CASE STUDY

SYSTEM SPECIFICATIONS	
Location	Malankara Tea Plantation, Kottayam, India
System Power	27kW system
Components	• (9) GVX 3048 inverter/chargers • (7) FLEXmax 80 charge controllers • (2) MATE3 system display controllers

OVERVIEW

Malankara Tea Plantations Limited is an active plantation company operating in a historical business complex. The office power consumption consists of 18 tons of air conditioning, followed by water pumps, three packing machines, IT/networking and lighting. It was connected to a private power grid owned by the local Maharaja, but the complex experienced frequent blackouts due to power shortages on the electrical grid. With rising energy costs and increased availability of government subsidies, management turned to TeamSustain to install solar panels on the existing roof while preserving the historical integrity of the structure.

CHALLENGE

- Install a renewable energy generation system and reduce power intake from the grid
- Preserve the historic office complex structure by engineering a solution that provides reliable energy
- Ensure uninterrupted power supply for the offices with backup power
- Mitigate emissions caused by diesel generator operation

SOLUTION

- TeamSustain executed the system design, engineering, installation and commissioning of the power plant using OutBack Power's advanced and efficient power electronics
- The solar arrays are powered by three-phase 27kW array of nine OutBack GVX 3048 inverter/chargers, seven FLEXmax 80 charge controllers and two MATE3 system display and controllers
- The charge controllers were additionally equipped for temperature compensation to facilitate proper charging of the battery bank, thus resulting in longer battery life

OUTCOME

- First Net-Zero energy building in India, with an energy cost savings payback in fewer than five years
- Complete disconnection from the unreliable grid, functioning solely on self-generated solar power
- Reduction of up to 47 tons of carbon emissions per year, saving an estimated 97% in diesel fuel consumption
- Capability to sell excess electricity back to the grid, making the complex an energy-plus building

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