We chose OutBack products for the Malankara Tea Plantation because of their reputation for reliability in a tropical climate with extreme temperatures. OutBack’s rugged systems deliver uninterrupted power and cut diesel emissions for air conditioning and other major energy loads. Despite regular power cuts in the surrounding grid, the Malankara Tea Plantation stays online with clean, solar backup power and maintains historic heritage status with this creative solution."

George Mathew  
Vice President, TeamSustain  
TeamSustain is an OutBack Power Distributor
Solution

While off-grid posed an enticing solution, the Indian government emphasized solar PV installations with capital subsidies of 90-Rupees per watt up to a maximum of 30 percent of the project cost. The Malankara Plantation executives decided to install solar arrays on a space-frame structure on four columns cantilevered over the roof, to not disturb the building’s architecture and preserves its heritage status. 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 for their modular design, field serviceability, reliability and durability. The arrays consist of 25kW modules in space frames, comprised of thin-film PV elements. The Malankara Plantation also installed OutBack FLEXmax 80 Charge Controllers with maximum power point tracking (MPPT) capability, providing 30 percent higher yield compared to conventional charge controllers, and the OutBack MATE3 System Display and Controller to remotely program and monitor the OutBack system. The charge controllers were additionally equipped for temperature compensation to facilitate proper charging of the battery bank, thus resulting in longer battery life.

Benefits

- First Net-Zero energy building in India
- 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 generated back to the grid, making the complex an energy-plus building