

Blue Lake Rancheria: Microgrid Management System Microgrid & Renewable Integration



Project Background



- Blue Lake Rancheria, a century-old Native American reservation in Northern California, launched its low-carbon community microgrid that is helping power government offices, economic enterprises, and critical Red Cross safety shelter-in-place facilities across 100 acres.
- The microgrid uses decentralized energy resources and intelligent software to provide its residents and economic enterprises with reliable power without interruption.

Solution

- Siemens Spectrum Power Microgrid Management System (MGMS), an advanced software control solution is installed to manage and control the renewable generation sources of a 500 kW solar photovoltaic system and a 950 kWh Tesla battery storage system.
- The software accurately predict power needs and dynamically manage generation and distribution through integrated weather data, load forecasting, and load-shed scenarios.

Benefits

- Provides the ability to island and supply uninterrupted electric power for days during a real or simulated grid outage
- Achieves \$200,000 energy cost savings per year:
 - In grid-connected mode, the software will help the Tribe reduce peak loads and conduct other energy management optimization to help relieve pressures on the larger grid.
 - In cases of emergency when the larger grid is down, the system will operate in islanded mode.
 - In both scenarios, the software prioritizes the use of the cleanest and most financially beneficial forms of energy, in this case solar and battery storage, within a portfolio of on-site generation sources.
- Reduces annual greenhouse gas emissions by at least 150 tons CO2
- Grows Tribal clean energy jobs by 10%



“ Our partners have contributed their expertise and goodwill far above what we expected. This partnership approach has transformed our energy sector with significant employment and other economic co-benefits. ”

Arla Ramsey
Blue Lake Rancheria's Vice Chair