

Blue Lake Rancheria - Microgrid Project

Challenge

- Demonstrate a low carbon-based microgrid for a critical community facility
- Install a microgrid that is capable of powering a Red Cross shelter in an emergency
- Integrate renewable photovoltaic and biomass power, battery storage, diesel generation, and controllable demands into an islandable microgrid

Solution

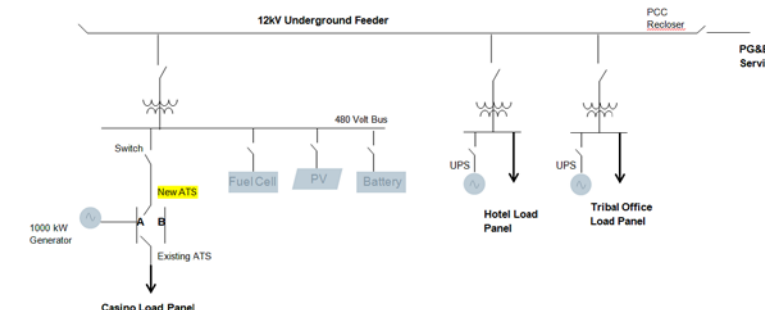
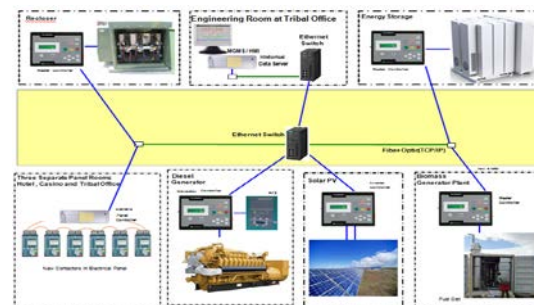
- Siemens Spectrum Power Microgrid Management System (MGMS), an advanced software control solution based on a powerful utility distribution SCADA platform, will be installed to integrate and automate:
 - 700 kW Load includes Casino, Hotel, Tribal Offices
 - 1 MW Diesel generator for base generation
 - Renewable generation sources including:
 - 500 kW Solar PV
 - 950 kWh Battery
 - Economic dispatch of solar/battery system
- Siemens PTI Electrical System Stability and Grid Impact Study

Benefits

- Provides the ability to island and supply uninterrupted electric power for at least 7 days during a real or simulated grid outage
- Achieves renewable energy generation > 40% of annual production
- Enables participation in one or more PG&E demand response programs
- Reduces annual electrical consumption from the grid of at least 680 MWh
- Achieves at least 25% energy cost savings over 1 year of operation
- Reduces annual greenhouse gas emissions by at least 195 metric tons CO₂

Project Profile

- Blue Lake Rancheria - Blue Lake, CA
- Native American Reservation
- Estimated Peak Load: ~700KW
- Project Partners: PG&E, Idaho National Lab, Tesla, REC solar, Humboldt University Schatz Energy Research Center, California Energy Commission
- Project start date January 2017



Algonquin College - ESCO2 Conservation + Sustainability + Innovation

SIEMENS



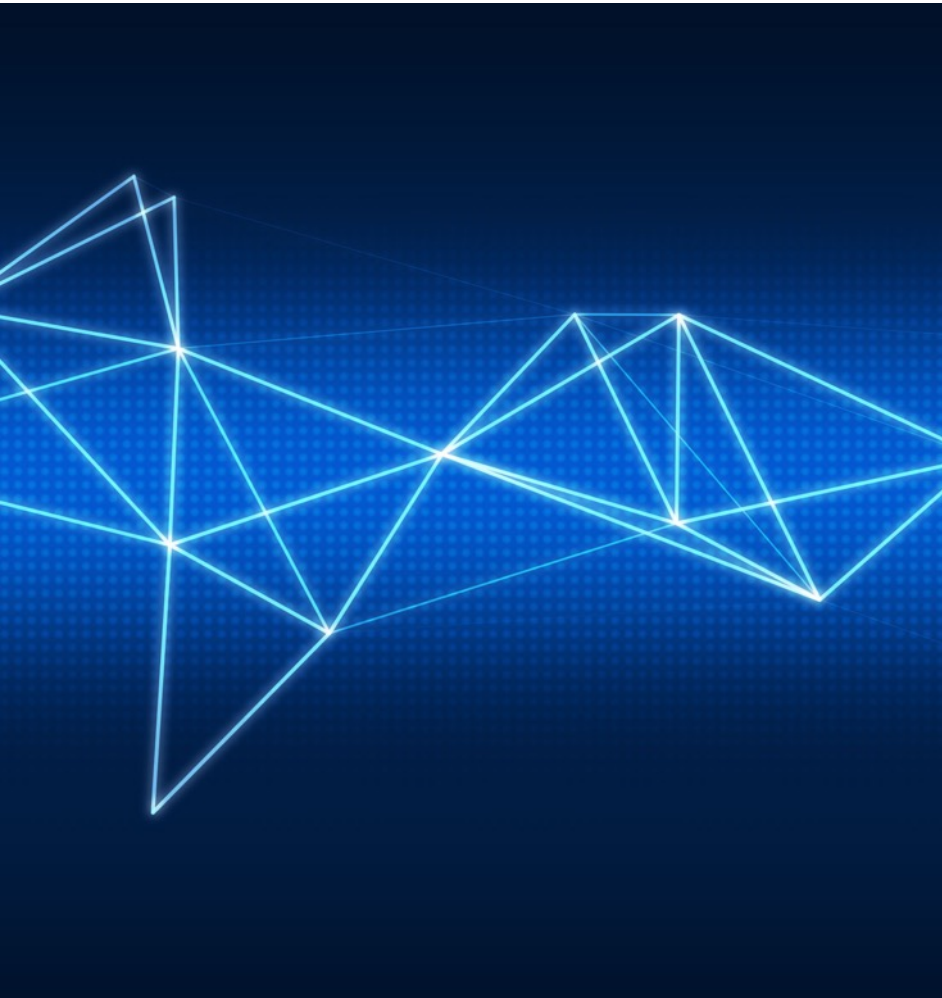
Results

- \$3.2M in Annual Cost Savings
- \$52M in Improvements
- \$3.2M in Incentives
- \$24M of addressed Deferred Maintenance

Scope of Services

- Water and Energy reduction measures, Utility Bill Management and fuel procurement services
- Cogeneration Plant, Solar PV, Power Storage, EV charging and Microgrid Energy Management
- Advanced integrated Energy Management tools
- Applied Research, Sustainability Program, new curriculum development...

A promotional graphic for the Algonquin College / Siemens ESCO2 partnership. The top section features the logos for 'ALGONQUIN COLLEGE' and 'SIEMENS' in white text on a green background, separated by a diagonal line. Below the logos, the text 'Working Together towards a Sustainable Algonquin.' is displayed. The central part of the graphic features the 'ESCO2' logo in large, bold, white letters. To the left of the logo are three small icons: a water drop, a lightning bolt, and a flame. To the right of the logo is a large, stylized green arrow pointing upwards and to the right, with the text 'INCREASE SAVINGS' at the top and 'DECREASE WASTE' at the bottom. The bottom of the graphic is decorated with four small, square photographs showing people engaged in various activities: two men standing together, a woman holding a plant, a man pointing at a screen, and a group of people working on a project.



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