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

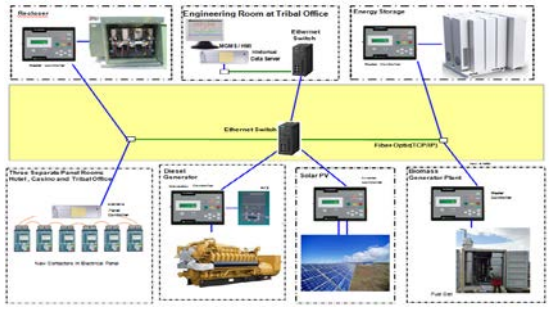
- Siemens Spectrum Power Microgrid Management System (MGMS), an advanced software control solution based on a powerful utility distribution SCADA platform, will be installed to integrate and automate:
  - 700 kW Load includes Casino, Hotel, Tribal Offices
  - 1 MW Diesel generator for base generation
  - 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

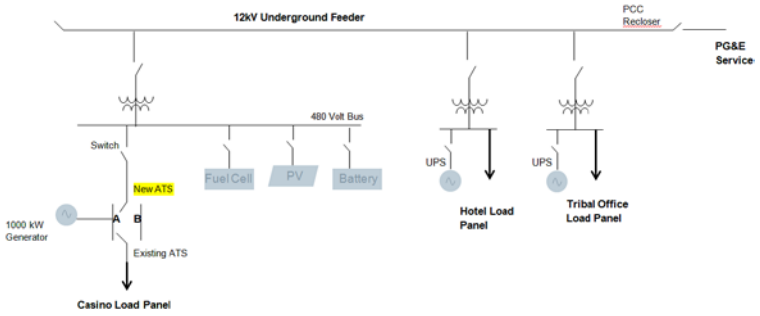
Benefits

- 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 CO_2

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





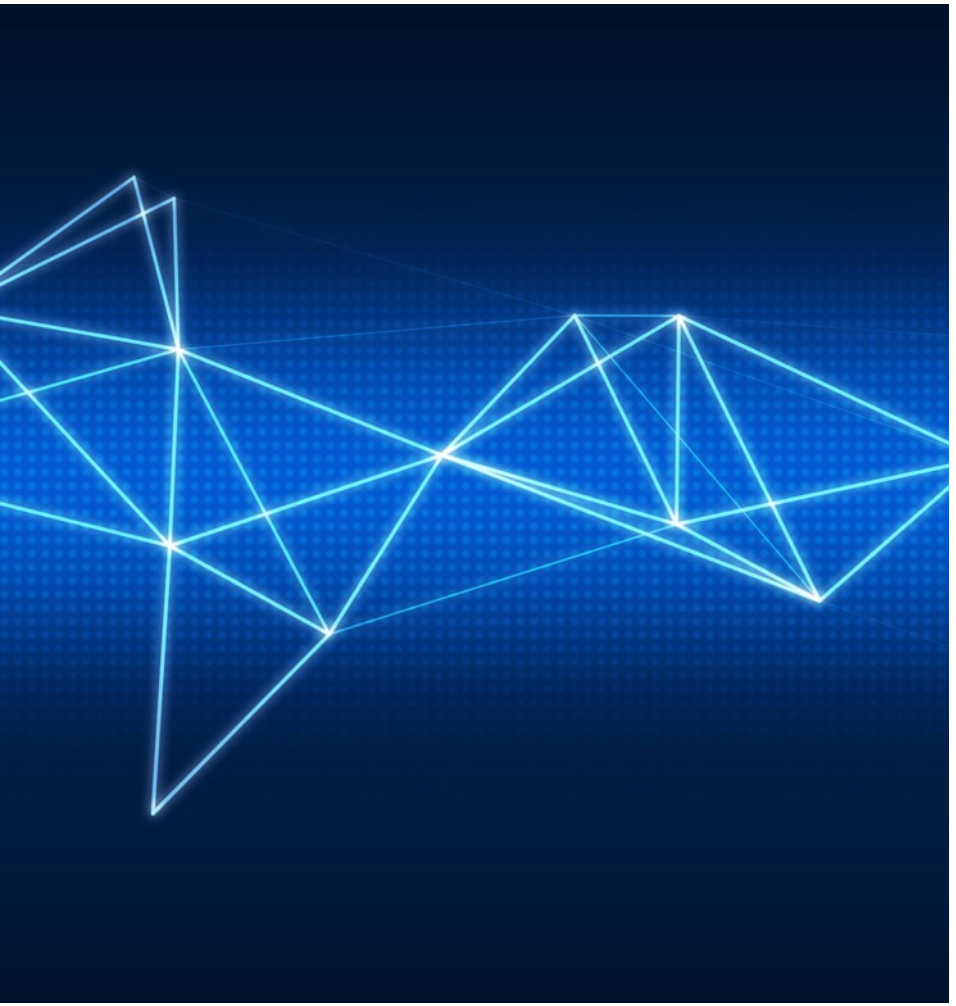
Algonquin College - ESCO2
Conservation + Sustainability + Innovation

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…



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