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Siemens, Blue Lake Rancheria, and Humboldt State University Partner to Install Low-Carbon Microgrid on Native American Reservation



- Microgrid will power entire 100-acre reservation including government offices, casino, hotel and Red Cross Safety Shelter
- Implementation of Siemens new microgrid management software that allows operators to intelligently manage distributed energy resources
- Blue Lake Rancheria one of 16 U.S. communities designated White House Climate Action Champions

Blue Lake Rancheria, a Native American reservation in Northern California, and Humboldt State University's Schatz Energy Research Center have partnered with Siemens to build a low-carbon community microgrid to power the government offices, economic enterprises, and critical Red Cross safety shelter-in-place facilities across 100 acres. The microgrid, funded in part through a \$5 million grant from the California Energy Commission's Electric Program Investment Charge (EPIC) program, will be powered by a 0.5 MW solar photovoltaic installation, 950 kWh battery storage system, a biomass fuel cell system, and diesel generators. Operators will manage and control these energy resources with Siemens Spectrum Power Microgrid Management System (SP MGMS) software. The microgrid will allow the reservation to operate independently of the power grid in coordination with local utility Pacific Gas & Electric. This project constitutes the largest solar array in Humboldt County, California and is estimated to reduce 150 tons of carbon per year.

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"This project shows the type of leadership and partnership that can advance California's climate and renewable energy goals, help transform our energy system and reduce greenhouse gas emissions," said California Energy Commissioner Karen Douglas. "This collaborative and innovative project will demonstrate how microgrid systems can increase energy resiliency and planning, a Humboldt County priority. Having a microgrid at Blue Lake Rancheria—an American Red Cross Disaster Center and federally recognized Native American Tribe—can increase public safety in emergency situations and the Rancheria will benefit from it year-round by having renewable energy to use and technology that can store it."

"This project is an exemplary and successful collaboration between tribal, local, state, and federal entities, assertively working toward clean energy initiatives," said Jana Ganon, Energy Director for the Rancheria. "When the Tribe started working on climate issues, it had a vision of powering the Rancheria with renewable resources. With this project, that vision is largely realized, and it is thanks to the Schatz Energy Research Center at Humboldt State University, the foresight and contribution by the California Energy Commission, Siemens, Pacific Gas and Electric, Colburn Electric, our other project partners, the Tribal government's investment and long term support, and the determination of our tribal staff."

Using Siemens microgrid management software, Blue Lake Rancheria will be able to accurately predict the reservation's power load needs and dynamically manage and control its distributed power generation through integrated weather and load forecasting. The reservation will use this detailed power usage insight to provide its residents and businesses with reliable, high-quality power without fear of outages or power interruption.

"Pacific Gas and Electric welcomes the opportunity to participate in this project and monitoring the progress as a case study on how microgrids can be deployed in our service area, using multiple sources of renewable energy," said Carl Schoenhofer, Humboldt Division Senior Manager for Pacific Gas and Electric. "We will be working closely with the project partners to ensure that all operation modes are done safely, and that the grid is protected as we work to expand these types of emergency power options."

"At a time when we're seeing efforts at the state and federal levels to reduce greenhouse gas emissions, this groundbreaking project will use software to manage a complex mix of power generation and storage to bring clean and reliable power to critical sites across Blue Lake Rancheria's 100-acre reservation," said Pat Wilkinson, head of Siemens Energy Automation. "Microgrids are one of the most intelligent, efficient, reliable, and secure ways to create and manage power for the needs of a 21st century power market, and we're proud that our technology will help Blue Lake Rancheria and Humboldt University continue to lead the way in implementing innovative energy systems."

The SP MGMS software is "operator-free" and does not require traditional 24-7 monitoring. The solution is built on a utility grade SCADA platform giving it the power to handle any microgrid application and ensure interoperability with other load control systems.

The microgrid is planned to be installed and operational by fall 2016.

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The Schatz Energy Research Center is a research and educational institute associated with the Environmental Resources Engineering Department at Humboldt State University. SERC's mission is to promote clean and renewable energy. For over two decades, the Center has designed, built, and installed numerous renewable energy systems, including the first fuel cell car licensed to drive in the U.S. and the first solar powered hydrogen fueling station. Currently, SERC is involved in setting quality standards for solar powered LED lighting products in Africa and Asia. Undergraduate and graduate students at the Center are able to participate in cutting-edge energy research as part of their education. <http://www.schatzlab.org>

The Blue Lake Rancheria Tribe, located in Humboldt County, California, is a federally recognized sovereign nation, organized under an Indian Reorganization Act Constitution. The Rancheria was established in 1908 within the aboriginal boundaries of the Wiyot people as a refuge for homeless Indians. In 1958 the Tribe was unlawfully terminated under P.L. 85-671. In 1983, after a 25-year fight that resulted in Tillie Hardwick v. United States decision, the Tribe was reinstated. Today the Tribe operates the Blue Lake Casino, Blue Lake Hotel, The Play Station 777, Sapphire Palace Event Center, and other economic enterprises to provide social services, public safety, education, and economic opportunity for tribal members and surrounding communities. For its efforts in climate action, greenhouse gas reductions, and community resiliency, the Tribe was recognized as a 2015-16 White House "Climate Action Champion." For more information please visit: www.bluelakerancheria-nsn.gov



