

KIUC Powers Kaua'i with 100% Renewable Energy

Līhu'e, Kaua'i, HI – 12/16/2019 – You would have never known it, but for five hours on Tuesday, December 10, electricity on Kaua'i was generated completely by renewable sources. It was one of eleven days since November 22 where KIUC has successfully supplied all of the grid's electric needs with 100% renewables for extended periods of several hours.

“We didn't use a drop of fossil fuel for a cumulative total of more than 32 hours during that time frame,” said KIUC's President and Chief Executive Officer, David Bissell. “We believe this is a unique accomplishment for a stand-alone electrical grid relying on small-scale renewable generation.”

The cooperative's renewable portfolio is comprised of a combination of distributed and utility-scale solar, one biomass plant, and a number of relatively small hydro generation facilities. KIUC's grid serves the entire island of Kaua'i; which has a population of about 100,000 including visitors, without any tie-in to other utilities.

For the past two years, KIUC has routinely achieved 90% or more renewable generation during the mid-day on sunny days. Last month, KIUC took steps to fully deploy renewable capabilities. “We want to provide the cleanest electricity possible, but we have to be mindful that our primary obligation is to provide safe, reliable power to our members at all times,” Bissell explained. “Our operations personnel needed ample time to put all the necessary pieces into place before pushing the envelope to 100% renewable. Now we're doing it routinely.”

Utility-scale battery storage systems at both the Tesla solar facility in Kapaia and the AES Distributed Energy facility in Lāwa'i contribute significantly to grid stability. These solar fields can simultaneously feed power to the grid and to the batteries for storage and use after sunset.

Additionally, the steam-injected gas turbine generator at Kapaia Power Station is the first of its kind to be retrofitted to run in synchronous condenser mode. This allows the generator, manufactured by General Electric, to provide inertia, fault current, voltage support and frequency stabilization to the grid without burning fuel. When power is needed, the turbine can be restarted within five minutes.

“GE was a tremendous partner in developing the ‘syncon’ capability at Kapaia, and it'll no doubt be replicated throughout the world,” said KIUC's Power Supply Manager, Brad Rockwell. He also credits Tesla and AES Distributed Energy for pioneering utility-scale solar storage projects on Kaua'i, which are now becoming the industry standard.

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“You can’t make this kind of groundbreaking progress without setting goals very high,” says Bissell. He credits current and past KIUC Board members for establishing aggressive targets for renewable production, dating back to 2008. “With the Board’s strategic vision, strong collaboration with our elected officials, the dedication of a highly competent staff and the support of our member-owners, our cooperative is proudly leading the way to a 100% renewable future not just on Kauai, but around the globe.”

To track KIUC’s progress, follow us on Facebook and Twitter, or visit the KIUC website:

www.kiuc.coop.



The AES Lāwa'i solar-plus-storage facility can provide up to 20 megawatts of direct-to-grid power during the day, along with five hours or 100 megawatt hours of electricity for use after sunset.

Photo credit: AES

Battery storage systems such as these at the Tesla facility in Kapaia are instrumental in providing stability to the grid during times of 100% renewable dispatch.

Photo credit: Tesla

