



Hawaiian Electric and Amber Kinetics Begin Kinetic Energy Storage Demonstration with Support from Elemental Excelserator

(Union City, CA & Honolulu) March 12, 2018 – Hawaiian Electric, in partnership with Amber Kinetics and Elemental Excelserator, today held a traditional Hawaiian blessing ceremony to mark the launch of operations of a four-hour kinetic energy storage system powered by groundbreaking flywheel technology. The pilot project is the first commercial use of Amber Kinetics’ advanced technology in the U.S.

Hawaiian Electric and Amber Kinetics are testing the 8 kW / 32 kWh storage system for local grid reliability and support and aid in the integration of renewable energy. One 8 kW unit can power approximately 25 homes for one hour. Technical field data is being collected and is expected to guide planning for future utility-owned energy storage projects in Hawaii. Communications and controls Amber Kinetics is developing in collaboration with Hawaiian Electric will be tested in a real-world setting and scaled to other jurisdictions.

The five-ton flywheel stores electricity as rotational kinetic energy and is capable of charging and discharging for multiple duty cycles per day with no loss of capacity. The environmentally friendly system is 98 percent steel that can be fully recycled at the end of its 30-year design life. It was installed by American Electric, a Hawaii-based company, at Hawaiian Electric’s Campbell Industrial Park generating station on Oahu.

“Hawaiian Electric is eager to test the grid stabilizing and renewable energy storing of the flywheel,” noted Colton Ching, Hawaiian Electric senior vice president for planning and technology. “Our evaluation of this very promising energy storage system will help us determine how we can use flywheels to help integrate renewables at a lower cost while improving reliability and resiliency of the grid.”

Ed Chiao, co-founder and CEO of Amber Kinetics, said, “We are very pleased to be working with Hawaiian Electric. Our cost-effective technology has the potential to increase the Hawaiian Electric grid’s renewable energy capacity – an important goal shared by the State of Hawaii, Hawaiian Electric, Elemental Excelserator and Amber Kinetics.” In addition to Hawaiian Electric, Amber Kinetics is currently working with clients on four continents.

Elemental Excelserator, a growth accelerator and catalyst for the deployment and scale of new technologies, chose Amber Kinetics to be part of its portfolio because of high levels of solar and wind on Hawaii’s electrical grid. “If you are an energy storage company, Hawaii is probably one of your early markets. Solar plus storage is already at grid parity,” said Dawn Lippert, CEO of Elemental Excelserator. “Amber Kinetics is one example of how companies are leveraging the economics of energy storage in Hawaii to deploy their technology for the first time in a commercial setting.”

Amber Kinetics’ products offer substantial benefits for a wide range of utility and commercial applications. The firm’s breakthrough technology is the first to extend the duration and efficiency of flywheels from minutes to hours, resulting in safe, economical and reliable energy storage for a variety of utility-scale applications, including

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load shifting, peak shaving, frequency regulation, renewable firming and spinning reserve. The system is scalable and designed to allow for increased size through the addition of multiple flywheels.

The project afforded all who worked on it the opportunity to advance energy storage knowledge and experience. “Participating in this project has been an exciting opportunity to be part of the cutting-edge technology that is essential to Hawaii’s energy future,” added Cameron Pickle, project manager for American Electric Co., LLC, the electrical power systems contractor for the project.

About Hawaiian Electric

For 126 years, Hawaiian Electric Company has provided the energy that has fueled the islands' development from a Hawaiian kingdom to a modern American state. Hawaiian Electric Company and its subsidiaries Maui Electric Company and Hawaii Electric Light Company serve 95 percent of the state’s 1.4 million residents on the islands of Oahu, Maui, Hawaii Island, Lanai and Molokai. hawaiianelectric.com

About Amber Kinetics

Winner of *pv magazine’s* Array Changing Technology Award 2017, Amber Kinetics began shipping pre-commercial Kinetic Energy Storage Systems in September 2016 and commercial units in 2017. To date, the company’s fleet of demonstration units has accumulated over 35,000 hours of run time domestically and abroad. The firm is headquartered in Union City, CA. amberkinetics.com

About Elemental Excelsator

Elemental Excelsator helps startups change the world, one community at a time. Each year, the organization selects a cohort of 12-15 companies that best fit its mission and funds each company up to \$1 million to improve systems that impact people’s lives: energy, transportation, water, agriculture, and beyond. To date, Elemental Excelsator has awarded over \$22 million to 63 companies. Applications are open for their next cohort. elementalexcelerator.com/apply

About American Electric Co.

Since 1946, Hawai'i-based American Electric Co. has been involved in many of Hawaii’s most important electrical infrastructure projects, including: the initial construction of the Waiiau plant, major additions to the Kihei, Maui plant, construction of the Keahole CHP plant on Hawaii Island and most recently, the 110 MW biodiesel plant on Oahu. americanelectric.com

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