



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM

NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

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HAWAII ANNOUNCES ALLIANCE WITH REPUBLIC OF KOREA TO DEVELOP AND BUILD AN ADVANCED MICROGRID AT THE NATURAL ENERGY LABORATORY IN KAILUA-KONA

KAILUA-KONA, HAWAII – A consortium of United States and Korean entities is announcing the design and construction of an advanced microgrid featuring artificial intelligence (AI), advanced photovoltaic (PV) solar panels and battery storage at the Hawai'i Ocean Science and Technology Park (HOST Park) which is administered by the Natural Energy Laboratory of Hawai'i Authority (NELHA). The consortium was awarded approximately \$2 million from the South Korean government under an international joint research competition specifically dedicated to boost collaboration between “mission innovation” member countries or those committed to substantially boost their national investments in clean energy research and development. The testbed demonstration site that includes detailed design, deployment, testing and evaluation of a microgrid, 500 kilo-watts of advanced PV panels and a 750-kilowatt-hour energy storage system (ESS) at the main seawater pump station at HOST Park in Kailua-Kona on the Island of Hawai'i. The microgrid is expected to be operational in 2022.

The strategic alliance, conceived and coordinated by the Hawai'i Natural Energy Institute (HNEI) at University of Hawai'i (UH) Manoa, includes the Korea Institute of Energy Technology Evaluation and Planning (KETEP), Encored, LG Electronics, Coast

Energy Capital Fund, University of Hawai'i, Seoul National University, Gwangju Institute of Science and Technology, and NELHA.

The project is a direct consequence of a memorandum of understanding executed between the State of Hawai'i and KETEP, signed by Governor David Ige in 2015 to mutually benefit both parties through cooperation and coordination of resources in the development of green energy technology, including energy efficiency, new and renewable energy, microgrid and energy storage systems.

"Projects like this demonstrate Hawai'i's commitment to building a clean energy economy through the deployment of cutting-edge technologies," Governor Ige said. "It also highlights Hawai'i's growing role as a test bed for innovative renewable energy projects in the Asia-Pacific region."

The project is funded in part with a grant of approximately \$2 million from KETEP. The funds are made available to KETEP via the Korea Ministry of Trade, Industry, and Energy as part of their International Energy Collaborative Research and Development Program.

Encored's Founder and CEO Dr. John Choe said, "This project provides the perfect opportunity to introduce optimized microgrid performance that harnesses our core technologies of AI analytics engines, real-time data platforms, and energy internet of things (IoT)." He added, "Encored was excited to lead the project in addition to implementing the big data reinforcement learning based prediction and optimization algorithms."

"NELHA believes that there is significant value in developing an advanced energy technology test-bed to address electricity delivery and grid integration problems within the site boundaries of our technology park," said Gregory P. Barbour, NELHA executive director. NELHA is the world's largest seawater utility operating in an isolated island environment and is a perfect demonstration testbed for this project as well as research and application of other advanced technologies such as grid visualization, smart metering, visualization and operations software, and renewable energy integration. "NELHA is pleased to match the funding from the Republic of Korea," said Barbour.

LG Electronics ESS Business Division Leader, Chris Ahn, said, "This is an extension of our commitment and worldwide interest in developing and expanding renewable energy-based, self-sustainable microgrids, in which ESS plays a critical role. We are deploying some of our latest advanced technology as part of this project."

UH President Dr. David Lassner stated, “The University of Hawai‘i’s HNEI initiated efforts to apply for grant funding from the South Korean government and the University is pleased to continue leading the formulation of this strategic alliance. We will be working closely with our prestigious counterparts at the Seoul National University and Gwangju Institute of Science and Technology to focus our efforts on the integration of law and regulation in Hawai‘i, guidelines for microgrid business models, and the creation of a replicable, localized new energy service model.”

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About Natural Energy Laboratory of Hawai‘i Authority (NELHA)

NELHA administers the world’s premier energy and ocean technology park. This unique master-permitted park is located on 870 acres of prime coastal property in Kailua-Kona, Hawai‘i and offers research support facilities for the development of renewable energy and other demonstration projects that utilize the unique resources found at the park. It is the world’s largest facility that continually brings ashore high quality, pristine supplies of both warm surface and cold deep seawater 24 hours a day with views to reap economic potentials from the dual temperature seawater delivery system and high solar insolation. Tenants located in HOST Park work at the pre-commercial, commercial, research and educational levels. It is the largest diversified economic development project in the State and is solely focused on developing green economic projects. More information on NELHA can be found at nelha.hawaii.gov.

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