Makai Ocean Engineering, Inc.’s Recent OTEC Activities at NELHA

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Abstract

Mr. Hartman will present an overview of the company and provide some details about one current project: Makai’s OTEC demonstration plant at the Natural Energy Laboratory of Hawaii Authority (NELHA) in Kona, Hawaii. Makai is the designer, owner, and operator of an Ocean Thermal Energy Conversion (OTEC) power plant and heat exchanger test facility at NELHA. While primarily intended for testing and evaluating heat exchangers for OTEC when it was built in 2011, a complete closed-cycle OTEC ammonia system at the facility was designed for expansion. In early 2015, Makai will install a turbine and connect OTEC electricity to the grid, making it the world’s largest OTEC power plant in current operation, and the first time closed-cycle OTEC power will ever be connected to a U.S. grid. The facility will enable Makai to take these important steps towards OTEC commercialization: Novel heat exchanger designs; Performance and corrosion data for both novel and off-the-shelf heat exchangers; Development of autonomous system controls; Operational experience with a real operational OTEC plant (power stability, grid connection issues, etc)

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