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Testimony on
H.B. NO. 516
RELATING TO SEAWATER AIR CONDITIONING
Before the
House of Representatives
COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Tuesday, February 14, 2017
By
Eric Masutomi, CEO and President
Honolulu Seawater Air Conditioning, LLC

Chair Lee, Vice Chair Lowen, and Members of the Committee:

Honolulu Seawater Air Conditioning, LLC (HSWAC) strongly supports H.B. 516, which would appropriate funds for the design and installation of pipes, valves, and heat exchangers within 12 State of Hawaii Buildings in the Capitol District. These improvements will facilitate the connection of each building's existing chilled water distribution system to HSWAC's Downtown Honolulu District Cooling system.

From the birth of deep-water cooling at the Natural Energy Laboratory of Hawaii Authority (NELHA) in the 80's at Keahole Point on the island of Hawaii, District Cooling systems using deep sea or ocean water as a cooling source have been successfully implemented on a municipal scale throughout the world and the continental U.S. - many of which have been in operation for decades. Now, with years of diligent planning, permitting and predevelopment work completed, HSWAC's Downtown Honolulu District Cooling system is poised to bring this homegrown technology to broader use in Hawaii.

Air conditioning of buildings is a voracious consumer of energy. If approved, this bill will enable the State to retrofit its Capitol District properties to connect to and utilize the District Cooling service to be offered by HSWAC. It will allow the State to discontinue its reliance on existing, inefficient, and fossil-fuel dependent on-site cooling equipment (chillers, cooling towers, etc.) and, instead, take advantage of our natural ocean environment to meet a significant portion of its cooling needs and measurably contribute directly to the State's sustainability and 100% renewable energy objectives.

In addition to the significant sustainability and renewal energy benefits associated with deep water cooling – collectively for the affected State properties, 40% reduction in water usage, 40% reduction in sewage discharge, and 30% reduction of fossil fuel based energy - HSWAC's District Cooling service will provide substantial long term operational benefits to the State of Hawaii. The pipes, valves and heat exchangers to be installed under this measure will take the place of a complex cluster of chillers, cooling towers, and associated pumping in each building, all of which require constant and costly maintenance, repair and replacement to guarantee long term trouble-free and dependable operation.

Further, the construction of HSWAC's Chilled Water Service will also bring substantial, additional economic benefit for the State of Hawaii, generating more than 288 million dollars in construction spending and more than 960 construction jobs during the construction phase of the service. It will also generate over 55 million dollars in State revenues over a twenty-year term of service.

Thank you for this opportunity to testify.



Email: communications@ulupono.com

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Tuesday, February 14, 2017 — 8:30 a.m. — Room 325

Ulupono Initiative Strongly Supports HB 516, Relating to Seawater Air Conditioning

Dear Chair Lee, Vice Chair Lowen, and Members of the Committee:

My name is Murray Clay and I am Managing Partner of the Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable, clean, renewable energy; and reduce waste. Ulupono believes that self-sufficiency is essential to our future prosperity and will help shape a future where economic progress and mission-focused impact can work hand in hand.

Ulupono strongly supports HB 516, which authorizes the issuance of general obligation bonds for seawater air conditioning facilities, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i. As Hawai'i's energy issues become more complex and challenging, we appreciate this committee's efforts to look at policies that support renewable energy production.

The Honolulu Seawater Air Conditioning (HSWAC) project is a 28,000 ton district cooling system, which, via a closed fresh chilled water loop system, transfers the naturally cold temperature of deep ocean water to provide the chilled water used in downtown air conditioning systems. The technology was originally developed locally at the Natural Energy Laboratory of Hawai'i Authority on Hawai'i Island, where the pipes installed 30 years ago are still operational. Since then, Seawater air conditioning technology has been installed in countries around the world. It is being used and creating savings even in countries that do not have year round air conditioning demand. With year-round demand this will make even more sense in Hawai'i and will help replace the energy-intensive central refrigeration system of a traditional air-conditioning system.

HSWAC is targeting buildings that could benefit from substantial savings on electricity and water consumption, system replacement costs, and maintenance costs. The project is fiscally sustainable for participating buildings as it eliminates the responsibility and risk of owning and operating air condition equipment, hedges against future electricity, water, and sewer price volatility for the next two decades. Building owners will save on future capital expenditures and ongoing operational expenses.

Investing in a Sustainable Hawai'i

By using 44 degree seawater via a freshwater loop instead of conventional on-site chiller systems to cool buildings, electricity consumption can be cut 70 – 80 percent, which equates to a 30 percent reduction in the building’s total energy usage. HSWAC is projected to save an estimated 77 million kilowatt-hours of power a year, which is equivalent to a 20 megawatt wind farm or a 40 megawatt solar farm. That is enough to power more than 10,000 homes a year and eliminate the need to burn 178,000 barrels of oil a year. In addition, a 40 megawatt solar farm, depending on design, can take up 140 – 200 acres of land while HSWAC will only occupy a 0.6 acre lot in Kakaako. HSWAC is one of the State’s largest energy efficiency projects.

This technology is known to provide substantial savings of energy and fresh water, both of which are critical to our economy and sustainability. HSWAC will reduce potable water consumption for air conditioning by 260 million gallons annually, reduce sewage production up to 84 million gallons annually, and avoids 168 million pounds of carbon dioxide emissions annually (15,000 cars). In addition, it will also help the State move closer to its HCEI clean energy goals. This designation will help to spur greater success in energy efficiency projects that can help Hawai‘i become less dependent on imported fossil fuels.

In addition, the project has secured the land for its central plant and satisfactorily completed all environmental reviews including a State of Hawai‘i Environmental Impact study, a Federal Environmental Impact Study, and obtained federal 401 Water Quality and National Pollutant Discharge Elimination System permits.

During the construction phase, the project is expected to generate \$288 million in construction activity, 960 construction jobs, \$13.6 million in general excise taxes, and \$16.1 million in income taxes. Meanwhile, during the project’s operation, it is expected to generate \$41 million in general excise taxes, and \$14 million in state taxes over the next two decades.

The State’s use of the HSWAC system will catalyze adoption by other government, institutional, and private sector buildings in Downtown Oahu. Successful development of the system will support future seawater air conditioning projects in the State and globally.

For the reasons above, Ulupono is an investor in the HSWAC project and believes it will help Hawai‘i to be more environmentally and economically sustainable while improving the quality of life for local residents.

Downtown buildings will use the funding in this bill to connect its infrastructure to the HSWAC piping system. Thank you for this opportunity to testify.

Respectfully,

Murray Clay

Managing Partner



February 14, 2017

Representative Chris Lee, Chair
Representative Nicole Lowen, Vice Chair
House Committee on Energy & Environmental Protection

Support of HB 516 Relating to Seawater Air Conditioning (Authorizes the issuance of general obligation bonds for seawater air conditioning facilities for certain state buildings in the Capitol District.)

EEP Hrg: Tuesday, February 14, 2017, 8:30 a.m., in Conference Room 325

The Land Use Research Foundation of Hawaii (LURF) is a private, non-profit research and trade association whose members include major Hawaii landowners, developers and a utility company. LURF's mission is to advocate for reasonable, rational and equitable land use planning, legislation and regulations that encourage well-planned economic growth and development, while safeguarding Hawaii's significant natural and cultural resources, and public health and safety.

LURF supports HB 516, which would authorize the issuance of general obligation bonds for seawater air conditioning facilities for certain state buildings in the Capitol District.

While this particular seawater air conditioning project involves the production of energy for twelve state buildings, LURF believes that the use of new seawater air conditioning technology could be used by other state, county and private organizations in an effort to save energy costs and meet the State's goals relating to sustainability and 100% renewable energy.

LURF respectfully urges the House Committee on Energy & Environmental Protection to **favorably consider and pass** this measure.

Thank you for the opportunity to present testimony regarding this measure.