

WRITTEN TESTIMONY

TESTIMONY BY KALBERT K. YOUNG
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
STATE OF HAWAII
TO THE HOUSE COMMITTEES ON ENERGY AND ENVIRONMENTAL PROTECTION
AND ECONOMIC DEVELOPMENT & BUSINESS
ON
HOUSE BILL NO. 338

February 7, 2013

RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS TO ASSIST
A SEAWATER AIR CONDITIONING PROJECT IN WAIKIKI.

House Bill No. 338 authorizes the issuance of special purpose revenue bonds (SPRB) of up to \$200,000,000, to assist Kaiuli Energy, LLC, in the planning, design, and construction of its seawater air conditioning district cooling system in and around Waikiki, Oahu, pursuant to Part V, Chapter 39A, Hawaii Revised Statutes.

The Department has no position on the issuance of SPRBs as contemplated in this bill. The Department would like to remind the Legislature and prospective issuers that should the legislation be approved, approval of SPRB issuance will still require further discussion and satisfactory review of the financing components involved in the transaction.

Thank you for the opportunity to provide testimony on this measure.

Written Statement of
YUKA NAGASHIMA
Executive Director & CEO
High Technology Development Corporation
before the
HOUSE COMMITTEES ON ENERGY & ENVIRONMENTAL PROTECTION
AND
ECONOMIC DEVELOPMENT & BUSINESS

Thursday, February 7, 2013
8:30 a.m.
State Capitol, Conference Room 325
In consideration of

**HB 338 RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS
TO ASSIST A SEAWATER AIR CONDITIONING PROJECT.**

Chairs Lee and Tsuji, Vice Chairs Thielen and Ward, and Members of the Committees on Energy & Environmental Protection and Economic Development & Business.

Thank you for the opportunity to submit testimony on this bill.

The High Technology Development Corporation (HTDC) supports HB 338 which authorizes Special Purpose Revenue Bonds to Kaiuli Energy, LLC to build a seawater air conditioning (SWAC) district cooling system to serve Waikiki and nearby areas on the island of Oahu.

As a manufacturer of energy technology systems, Kaiuli Energy is the type of company HTDC supports. Furthermore, the SWAC cooling system is a positive step for the State in achieving its renewable energy goals.

Thank you for the opportunity to offer these comments.



Written Statement of
DARRYL NAKAMOTO, Partner
Kaiuli Energy

before the
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
And
HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS

Thursday, February 7, 2013
8:30 AM

State Capitol, Conference Room 325

In consideration of
HB 338
RELATING TO THE ISSUANCE OF SPECIAL PURPOSE REVENUE BONDS TO
ASSIST A SEAWATER AIR CONDITIONING PROJECT IN WAIKIKI

Date: February 5, 2013

To: Chair Lee, Chair Tsuji, and Committee Members

Kaiuli Energy is in support of this measure that will allow the State of Hawaii to issue Special Purpose Revenue Bonds (SPRBs) for the development of a district cooling system for Waikiki.

Kaiuli Energy was founded in 2011 with the goal to be a global leader in ocean sourced energy development. Its current focus is on developing a 22,500 ton Waikiki based seawater air conditioning (SWAC) system, which is designed to provide district cooling to replace the energy-intensive central refrigeration system of a traditional air conditioning at individual buildings. The natural resource of cold seawater is used to chill freshwater that will be delivered to structures with centralized air conditioning systems.

A 22,500 ton SWAC system offers:

- Conservation of approximately 106,000 barrels of oil/year
- Reduction of approximately 48,000,000 kWh/year
- Reduction of potable water usage by approximately 157,000,000 gallons/year
- Reduction of sewage discharge by approximately 69,000,000 gallons/year
- Reduction of harmful gas emissions of approximately 50,000 tons/year
- Alignment with HCEI's goals of End-Use Efficiency and next generation technologies

There are five parameters that favor potential SWAC project locations. They are: access to cold water, high density of customer load, year-round air conditioning utilization, high electricity

rates, and a good marine environment. A Waikiki system satisfies all five parameters. Other locations where SWAC projects are currently in operation are:

- Stockholm, Sweden – 80,000 tons
- Toronto, Canada – 75,000+ tons
- Amsterdam, Netherlands – 35,000 tons
- Cornell University, Ithaca, New York – 20,000 tons
- Bora Bora, French Polynesia – 3,000 tons

Our customers will be hotels and other buildings in and around the Waikiki and Ala Moana areas that have large air conditioning loads. It is estimated that air conditioning usage represents up to 45% of these buildings' total electricity costs. Not only will these SWAC customers benefit through substantial savings on electricity rates, SWAC customers will also realize significant savings on water and sewage consumption. In addition, these hotels, resorts, retail centers and other commercial and residential entities will be able to market themselves as environmentally conscious and friendly consumers.

The project is estimated to take five years to complete with the delivery of chilled water beginning in 2018. The estimated total project cost of the Waikiki SWAC system is projected to be approximately \$225 million.

Kaiuli's management team is comprised of Hawaii business and community leaders with the necessary experience critical to the project's success. As the former CFO of Hoku Corporation, I have over seven years of experience in alternative energy and raising funds for large scale ventures. In addition, Rob Iopa, president of WCIT Architecture, has extensive experience and expertise in entitling, designing and constructing large complex projects in Waikiki and urban Honolulu, and Ray Soon has over 40+ years consulting and delivering on construction projects in Hawaii.

Thank you for the opportunity to share our thoughts with you.

PROJECT:

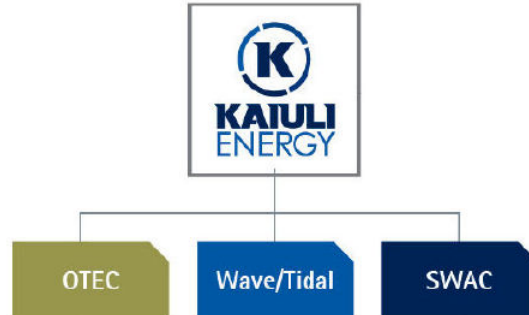
Construct a 22,500 ton Seawater Air Conditioning in Waikiki

FINANCING:

Requesting \$200 million in Hawaii Special Purpose Revenue Bonds

TIMELINE:

Operations beginning mid -2018 - 3 years of entitlement/2 years of construction



ENVIRONMENTAL BENEFITS:

Based on a 22,500 ton SWAC system:

- + Reduction of imported fossil fuels by up to 106,000 barrels of oil/year
- + Reduction of electrical usage by up to 48,000,000 kWh/year
- + Reduction of harmful emissions by up to 50,000 tons/year
- + Reduction of potable water usage by up to 157,000,000 gallons/year
- + Reduction of sewer production by up to 69,000,000 gallons/year

ECONOMIC BENEFITS:

- + Elimination of up to 14 megawatts of new generating capacity (equivalent to one year of HECO load growth)
- + \$200M worth of construction improvements and job creation
- + Economic multiplier effects on money that stays in Hawaii's economy
- + Ability to market a green Waikiki
- + Significant electricity, water, and sewage savings for customers





**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

NEIL ABERCROMBIE
GOVERNOR

RICHARD C. LIM
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377
20130123125110

January 24, 2013

The Honorable Senator Mike Gabbard, Chair
Senate Committee on Energy and Environment
Twenty-Seventh State Legislature
State Capitol Room 201
Honolulu, Hawaii 96813

Dear Chair Gabbard:

This letter is to verify that the Department of Business, Economic Development, and Tourism (DBEDT) has received and reviewed the business plan submitted by the Kaiuli Energy, LLC - Waikiki Seawater Air Conditioning business venture.

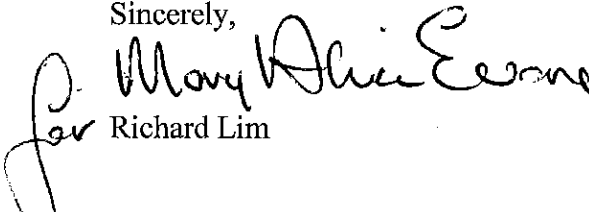
The business venture outlined in this proposal seeks to develop a seawater air conditioning (SWAC) system for the district of Waikiki in Honolulu, Hawaii. The long term goals include developing additional SWAC projects and expanding Kaiuli's product offerings to other ocean sourced energy technologies, which include, but are not limited to, ocean thermal energy conversion and wave and tidal energy.

The targeted customers are hotels and other buildings in and around the Waikiki/Ala Moana area that use air conditioning throughout the day and have large air conditioning loads. It is estimated that air conditioning usage represents up to 45% of these buildings' total electricity costs. It is anticipated that any building using a centralized air conditioning system and within an approximate two-mile radius of the district cooling station is a potential customer for the Waikiki SWAC system.

DBEDT ultimately defers statements of financial findings to the Department of Budget and Finance for consideration of special purpose revenue bond allocation. Furthermore, this letter only validates the existence and review of the aforementioned business plan without opinion and should not be considered an endorsement of Kaiuli Energy, LLC.

We appreciate the opportunity to offer these statements regarding Kaiuli Energy, LLC.

Sincerely,


for Richard Lim

NEIL ABERCROMBIE
GOVERNOR



KALBERT K. YOUNG
DIRECTOR

LUIS P. SALAVERIA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE

P.O. BOX 150
HONOLULU, HAWAII 96810-0150

EMPLOYEES' RETIREMENT SYSTEM
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
OFFICE OF THE PUBLIC DEFENDER
PUBLIC UTILITIES COMMISSION

ADMINISTRATIVE AND RESEARCH OFFICE
BUDGET, PROGRAM PLANNING AND
MANAGEMENT DIVISION
FINANCIAL ADMINISTRATION DIVISION
OFFICE OF ECONOMIC RECOVERY
AND REINVESTMENT (ARRA)

January 28, 2013

Mr. Darryl Nakamoto, Partner
Kaiuli Energy, LCC
725 Kapiolani Boulevard, Suite C400
Honolulu, HI 96813

Dear Mr. Nakamoto:

Subject: Kaiuli Energy, LLC
Seawater Air Conditioning
Special Purpose Revenue Bonds

This letter is in response to requests from yourself and Senator Gabbard's office. The Department of Budget and Finance (the "Department") reviewed Kaiuli Energy, LLC's (Kaiuli) Business Plan. (A copy of the revised Business Plan was emailed to Mr. Scott Kami on January 24, 2013.) This letter will confirm that the Department has reviewed, without rendering an opinion, Kaiuli's Business Plan. According to the Business Plan, Kaiuli was founded in 2011 and currently does not generate any revenue. As such, the Department would expect that further details be presented as this project progresses.

Please be advised that pursuant to Section 39A-154(b), HRS, and Chapter 6-10, Hawaii Administrative Rules, the Department is required, among other things, to determine whether Kaiuli is a responsible party in order to issue the bonds, as follows:

“(b) The department shall not enter into any project agreement with respect to any project unless the legislature shall have first authorized the issuance of special purpose revenue bonds to finance the project pursuant to section 39A-157 and the department has determined that:

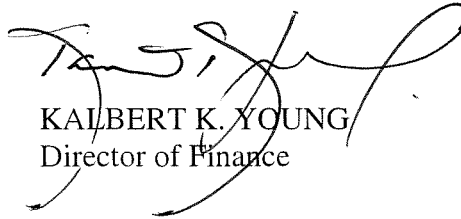
(1) The project party is a responsible party, whether by reason of economic assets or experience in the type of enterprise to be undertaken through the project, or otherwise; or

(2) The obligations of the project party under the project agreement will be unconditionally guaranteed by a person who is a responsible party, whether by reason of economic assets or experience in the type of enterprise to be undertaken through the project, or otherwise. [L 1981, c 122, pt of §2; am L 2007, c 44, §7]”

Mr. Darryl Nakamoto
Kaiuli Energy
January 28, 2013
Page 2

Thank you for giving the Department the opportunity to review on Kaiuli's Business Plan. Should you have any questions, please call Scott Kami, Administrator, Financial Administration Division, at 586-1612.

Sincerely,



KALBERT K. YOUNG
Director of Finance

c: Senator Mike Gabbard



January 30, 2013

Kaiuli Energy, LLC
Attention: Robert K. Iopa, Partner
725 Kapiolani Blvd, Suite 400
Honolulu, HI 96813

Re: Kaiuli Energy, LLC's Deep Seawater Cooling System

Dear Mr. Iopa,

Thank you for soliciting our interest and participation in the chilled water cooling system that Kaiuli Energy is developing to service Waikiki. As the owner of the Sheraton Waikiki, the Royal Hawaiian Resort – A Luxury Collection, the Westin Moana Surfrider, and the Sheraton Princess Kaiulani, we are a significant provider of hotel and lodging in Waikiki and a company that has been at the forefront in our industry in the adoption of more sustainable technologies and practices. We consider the proposed chilled water cooling system to be ideal for our business as it has the prospect of reducing our costs, promoting sustainable energy and the reduction in greenhouse emissions, and contributing to our brand.

We look forward to continuing to work with Kaiuli Energy to realize this project and of course consider ourselves a prime candidate to be a customer of Kaiuli Energy for the long term. Please keep me apprised of this exciting project and let me know if you or your team members need anything additional from me.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Dickhens".

Greg Dickhens
President
Kyo-ya Hotels & Resorts, LLC



Gerard C. Gibson
Area Vice President

January 22, 2013

Kaiuli Energy
725 Kapiolani Boulevard
Suite C-400
Honolulu, HI 96813

Dear Kaiuli Energy,

Thank you for taking the time to discuss your planned seawater air conditioning (SWAC) project for Waikiki. Based on the potential electricity, water, and sewage savings that you are projecting, we are interested in being a SWAC customer.

We view the cost of fossil fuel increases as a part of every year's budget process. It would help the industry tremendously if we could not only stem the tide of increase but find a lower, sustainable way to continually help with our eroding margins. We realize the cost of considering such a bold adventure is extremely expensive and will take commitment from the stakeholders.

We appreciate Kaiuli's bold approach to the energy challenge and plan to support the effort going forward in an effort to ultimately enter into a long-term agreement.

Best regards,

A handwritten signature in green ink, appearing to read 'G.C. Gibson', with a long horizontal stroke extending to the right.

Gerard C. Gibson

2005 Kalia Road, Honolulu, HI 96815
Tel: 808 949 4321 Direct Line: 808 941 9226
Fax: 808 947 7800
email: jerry.gibson@hilton.com
Reservations: www.hilton.com or 1-800-HILTONS





January 25, 2013

Scott W. H. Seu
Vice President
Energy Resources and Operations

Darryl Nakamoto
Kaiuli Energy
725 Kapiolani Blvd. C400
Honolulu, HI 96813

Re: Hawaiian Electric Company Inc., Renewable Energy Support

Dear Mr. Nakamoto:

Hawaiian Electric Company continues to strongly support adoption of seawater air conditioning throughout Hawaii wherever this renewable technology is technically and economically viable. Seawater air conditioning helps achieve the state's clean energy goals including reducing dependence on imported fossil fuels and increasing use of local, clean energy sources.

Hawaiian Electric has contracted for its headquarters building to participate in a seawater air conditioning project currently under development in downtown Honolulu and has urged electricity customers in the area to consider joining as well. Considering the scale of air conditioning use in areas such as Waikiki, the University of Hawaii at Manoa and elsewhere, there remain great potential benefits in further reduction of fossil fuel use and environmental impacts.

Seawater air conditioning benefits for the state and individual customers includes:

- Reduced dependence on imported fossil fuels;
- Support for electricity rate stability;
- Offset in the growing demand of electricity;
- Contribution toward meeting Hawaii's renewable energy goals;
- Support of environmentally beneficial renewable energy programs;
- Large and quantifiable savings in potable water and sewer waste use; and
- Significant reduction in use of toxic air-conditioning chemicals.

We endorse the clean energy characteristics of seawater air conditioning and recommend other potential users consider a seawater air conditioning to replace conventional electric A/C systems.

Sincerely,



Gerard C. Gibson
Area Vice President

Written Statement of

**Gerard C. Gibson
Area Vice President
Hilton Worldwide**

before the

SENATE COMMITTEE ON ENERGY AND ENVIRONMENT

In consideration of

SB 23

**Relating to the Issuance of Special Purpose Revenue Bonds to Assist a Sea Water
Air Conditioning (SWAC) Project**

Date: January 24, 2013

To: Chair Mike Gabbard and members

Hilton Worldwide **supports SB 23** which authorizes the issuance of special purpose revenue bonds to Kaiuli Energy for the development of a seawater air conditioning district cooling facility and chilled water distribution system for Waikiki.

Thank you for the opportunity to submit this testimony in support of the above bill.



Gerard C. Gibson
Area Vice President

January 22, 2013

Kaiuli Energy
725 Kapiolani Boulevard
Suite C-400
Honolulu, HI 96813

Dear Kaiuli Energy,

Thank you for taking the time to discuss your planned seawater air conditioning (SWAC) project for Waikiki. Based on the potential electricity, water, and sewage savings that you are projecting, we are interested in being a SWAC customer.

We view the cost of fossil fuel increases as a part of every year's budget process. It would help the industry tremendously if we could not only stem the tide of increase but find a lower, sustainable way to continually help with our eroding margins. We realize the cost of considering such a bold adventure is extremely expensive and will take commitment from the stakeholders.

We appreciate Kaiuli's bold approach to the energy challenge and plan to support the effort going forward in an effort to ultimately enter into a long-term agreement.

Best regards,

A handwritten signature in green ink, appearing to read 'G.C. Gibson', with a long horizontal stroke extending to the right.

Gerard C. Gibson



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Testimony of
Ernest K. Nishizaki
Executive Vice President
Kyo-ya Company, LLC

**Support of HB 338
Relating to the Issuance of Special Purpose Revenue Bonds
To Assist a Seawater Air Conditioning Project in Waikiki**

House Committee on Energy & Environmental Protection
&
House Committee on Economic Development & Business
Thursday, February 7, 2013
8:30 am
Conference Room 325

Good Morning Chairs Lee and Tsuji, Vice-Chairs Thielen and Ward, and members of these two House Committees. My name is Ernest Nishizaki, representing Kyo-ya Company, LLC.

Kyo-ya has been part of the Hawaii community for over 50 years. Our five Hawaii properties—The Royal Hawaiian, the Moana Surfrider, the Princess Kaiulani, the Sheraton Waikiki, and the Sheraton Maui—have an aggregate inventory of approximately 4,660 hotel rooms and suites. Our company is among Hawaii's largest private employers providing work opportunity for over 3,400 Hawaii residents.

Our company supports the intent of this bill for the following reasons:

- Reduction of approximately 40% of our electricity usage and costs—while our hotels have continued to implement energy efficiency measures, our electricity costs have increased 72% over the past six years.
- Environmentally sustainable—reduced dependency on fossil fuel-generated electricity; reduction in the carbon emissions; reduced usage of potable water for our cooling towers; and reduced sewer outflow.
- “Greening” of Waikiki—important marketing opportunity for the increasing number of environmental sensitive consumer.

Kyo-ya strongly supports HB 338, which will allow issuance of special purpose revenues to provide necessary funding for the construction of a deep seawater air conditioning district cooling system for Waikiki. We sincerely appreciate the time and consideration of the Chairs and the Committee Members to bring forward this legislation.

Thank you for the opportunity to provide this testimony.



MAKAI OCEAN ENGINEERING, INC.

P.O. BOX 1206 KAILUA, OAHU, HAWAII 96734 USA

Testimony To
House Committee on Energy and Environmental Protection

Relating To
H.B. 338

Relating to the Issuance of Special Purpose Revenue Bonds to Assist Kaiuli Energy Sea
Water Air Conditioning (SWAC) Project in Waikiki

By
Billy Pieper, Makai Ocean Engineering

Date: January 22, 2013

To: Chair Lee and members

The purpose of this proposed bill is to issue special purpose revenue bonds to assist Kaiuli Energy to develop a district cooling system for Waikiki. Makai Ocean Engineering is in support of this measure.

Air conditioning is estimated to make up about 45% of the electrical consumption in Waikiki each year. The use of deep cold seawater as a source of cooling can result in a significant decrease in energy consumption.

Makai is a longtime advocate of utilizing deep cold seawater as an efficient, renewable and environmentally sound source for large commercial cooling systems. Makai has successfully developed the technology to safely design, engineer and deploy deep ocean pipelines which are used to draw cold water from miles offshore. This cold seawater coupled with a heat exchanger reduces the need for energy intensive refrigeration systems. In some cases, we have seen energy savings approach upwards of 80%.

This technology has been successfully utilized at a number of places around the world.

- Cornell University where a pipeline was installed in Lake Cayuga to access cold water to provide air conditioning for the Cornell University campus and parts of the public school system.
- Toronto Canada where 3 separate pipelines, were deployed to access cold water in Lake Ontario
- Natural Energy Lab (NELHA) on Hawaii Island
- Intercontinental Resort and Spa - Bora Bora, Tahiti
- Curacao Airport *

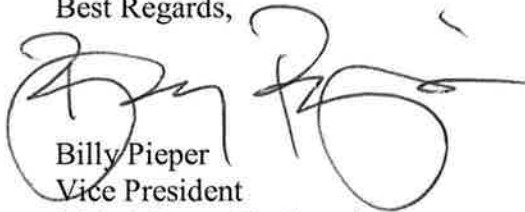
- Downtown District – Downtown Honolulu, HI *

* under planning and/or development

Kaiuli Energy is requesting your assistance for these special purpose revenue bonds to assist financing its proposed project in Waikiki. We believe that this is an excellent opportunity for the private and public sector to cooperatively work together in developing cooling systems using Hawaii's largest natural resource, its deep oceans. This project will encompass significant job creation and upwards of \$200M worth of capital expenditures will remain with Hawaii companies. Makai Ocean Engineering would encourage you to support this measure.

Thank you for the opportunity to share these thoughts with you.

Best Regards,



Billy Pieper
Vice President

Makai Ocean Engineering



Email: communications@uluponoinitiative.com

HOUSE COMMITTEES ON ENERGY & ENVIRONMENTAL PROTECTION/ECONOMIC DEVELOPMENT & BUSINESS
Thursday, February 7, 2013 — 8:30 a.m. — Room 325

Ulupono Initiative Supports HB 338, Relating to the Issuance of Special Purpose Revenue Bonds to Assist a Seawater Air Conditioning (SWAC) Project

Chair Lee and Tsuji, Vice Chairs Thielen and Ward, and Members of the Committee:

My name is Kyle Datta, General 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 grown food, increase renewable energy, and reduce/recycle waste. Ulupono supports this measure to allow the State of Hawai'i to issue Special Purpose Revenue Bonds (SPRBs) for the development of a district cooling system for Waikiki.

Ulupono Initiative seeks to promote and invest in innovative sustainability ideas and business models that have the potential to make a significant difference for Hawai'i. We work with, and invest in, businesses that show this potential for innovation, have local leadership. We strive to invest in ideas and inspiration born in Hawai'i to reach the needs of Hawai'i, and use technologies and models that can be replicated and have potential global applicability.

Ulupono is testifying in support of HB 338, which will allow the State to issue Special Purpose Revenue Bonds (SPRBs) for the development of a seawater air conditioning (SWAC) district cooling system for Waikiki. We support Kaiuli's request because we believe SWAC technology is proven and will help replace the energy-intensive central refrigeration system of a traditional air-conditioning system. Kaiuli is targeting hotels and other buildings in the Waikiki and Ala Moana areas that could benefit from SWAC which will include substantial savings on electricity and water consumption, system replacement costs, and maintenance costs. This technology is known to provide substantial savings of energy and fresh water, both of which are critical to our economy and sustainability. In addition, it will also help the State move closer to its HCEI clean energy goals and support Hawai'i's vital tourism industry.

Thank you for the opportunity to provide this testimony.

Sincerely,

Kyle Datta
General Partner





**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS**

February 7, 2013, 8:30 A.M.

Room 325

(Testimony is 2 pages long)

TESTIMONY IN SUPPORT OF HB 338

Chairs Lee and Tsuji and members of the committees:

The Blue Planet Foundation supports HB 338, authorizing the issuance of special purpose revenue bonds to Kaiuli Energy, LLC, to assist with planning, design, and construction of a seawater air conditioning district cooling facility and chilled water distribution system.

As we consider strategies for kicking Hawai'i's 5-million-gallon-per-day oil habit, our tendency is to focus on alternative sources of fuel and electricity. We look to clean, renewable energy sources to replace dirty fossil fuel power. We also look for ways to reduce the amount we use—and waste—through efficiency and conservation. What we often overlook is the reality that fuel and electricity are means to an end. Electricity is not what we really want. What we really want is light when it's dark, hot water for a shower, and a comfortable temperature indoors. What if we could cut out the middleman and put an abundant natural resource to work in place of electricity? Seawater air conditioning is a clean energy solution that does just that.

Air conditioning is a voracious consumer of electricity. On O'ahu, the cooling of commercial buildings year-round is responsible for a whopping 20 percent of the island's electricity demand. Kaiuli Energy has proposed a solution that precludes the need to cool water with electricity, one that stands to save substantial amounts of electricity—displacing fossil fuel imports—annually.

Applying the same technology that has been cooling buildings in Toronto, Stockholm, Amsterdam, and elsewhere, Kaiuli is proposing district cooling system that will serve the Waikiki, Ala Moana, and University of Hawaii area. The plan will pump seawater from over 1,000 feet deep to an onshore cooling station. There, the 40-some degree water will pass through a heat exchanger that transfers the seawater's coldness to a pipeline of freshwater that circulates in a closed loop. The chilled freshwater connects to buildings' existing air conditioning infrastructure, providing natural AC that doesn't require large, electricity-hungry chillers in each building. The seawater, slightly warmer than when it left the ocean, is returned to the ocean.

Electricity is versatile, but it is difficult and costly to make and store. The genius behind seawater air conditioning technology is that the cold seawater can chill buildings 24/7, much like solar water heaters provide hot showers even after the sun has set. Our ocean directly improves our lives in so many ways: food, therapy, recreation, scenery. Let's also recognize its enormous potential in helping to meet our energy needs. While researchers continue to work on ways to harness wave power and ocean thermal power, buildings in dense areas should readily convert to seawater air conditioning, a renewable energy solution that is practical and proven.

Thank you for the opportunity to testify.

thielen3 - Charles

From: mailinglist@capitol.hawaii.gov
Sent: Monday, February 04, 2013 1:51 PM
To: EEPtestimony
Cc: mendezj@hawaii.edu
Subject: *Submitted testimony for HB338 on Feb 7, 2013 08:30AM*

HB338

Submitted on: 2/4/2013

Testimony for EEP/EDB on Feb 7, 2013 08:30AM in Conference Room 325

Submitted By	Organization	Testifier Position	Present at Hearing
Javier Mendez-Alvarez	Individual	Support	No

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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