

Email: communications@ulupono.com

HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS Wednesday, February 7, 2018 — 9:30 a.m. — Room 309

Ulupono Initiative <u>Strongly Supports</u> HB 1864 HD 1, Relating to Renewable Energy Technologies

Dear Chair Evans, Vice Chair Keohokalole, 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 better management of waste and fresh water. 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 <u>strongly supports</u> **HB 1864 HD 1**, which provides a tax credit for ocean thermal energy conversion systems, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i.

Ulupono is supportive of new renewable technologies to help Hawai'i wean itself off imported fossil fuels. New technologies are expensive to research and develop but once it demonstrates viability, it can attract other funding sources. The impact of new, clean renewable energy generation systems will provide benefits to society in the long run.

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.

Thank you for this opportunity to testify.

Respectfully,

Murray Clay Managing Partner

Submitted on: 2/5/2018 8:02:55 AM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Randy Ching		Support	No

Comments:

Chair Evans, Vice Chair Keohokalole and Committee members,

I support HB1864. Ocean Thermal Energy Conversion is appropriate for Hawaii because of our warm climate and the closeness of buildings to the ocean, particularly in downtown Honolulu.

OTEC can produce electricity or directly air condition large buildings, at a fraction of the current cost in Hawaii. One study estimates power generation would cost as little as 7 cents per kilowatt-hour, compared with 26 to 34 cents per KWH through HEI. OTEC works best where the temperature difference between surface and deep water is greatest, as in Hawaii.

OTEC produces no waste products, requires minimal fuel, has no appreciable environmental impact, and is one of the continuously available renewable energy resources that could contribute to base-load power supply.

OTEC may also be the best method for air conditioning downtown Honolulu.

Please pass HB 1864. OTEC should be one of our renewable energy options.

Thank you for the opportunity to testify.

Randy Ching

Honolulu / makikirandy@yahoo.com

LEGISLATIVE TAX BILL SERVICE

TAX FOUNDATION OF HAWAII

126 Queen Street, Suite 304

Honolulu, Hawaii 96813 Tel. 536-4587

SUBJECT: INCOME, Extend Renewable Energy Credit to Ocean Thermal

BILL NUMBER: HB 1864, HD-1

INTRODUCED BY: House Committee on Energy & Environmental Protection

EXECUTIVE SUMMARY: Expands the income tax credit for renewable energy technologies to include ocean thermal energy conversion systems constructed for the purposes of research and development.

BRIEF SUMMARY: Amends HRS section 235-12.5 to provide a credit of 35% of actual cost of an ocean thermal energy conversion research and development system, up to a cost limit of \$1.5 million.

Defines "Ocean thermal energy conversion research and development system" as an energy conversion system: (1) designed to use temperature differences in ocean water to produce electricity; (2) constructed and used for research and development purposes; (3) for which construction commenced after December 31, 2017; (4) that generates one hundred kilowatts or more; and (5) is certified by the Hawaii state energy office.

EFFECTIVE DATE: On January 28, 2045, applies to taxable years beginning after December 31, 2018.

STAFF COMMENTS: Lawmakers need to keep in mind two things. First, the tax system is the device that raises the money that they, lawmakers, like to spend. Using the tax system to shape social policy merely throws the revenue raising system out of whack, making the system less than reliable as there is no way to determine how many taxpayers will avail themselves of the credit and in what amount. The second point to remember about tax credits is that they are nothing more than the expenditure of public dollars, but out the back door. If, in fact, these dollars were subject to the appropriation process, would taxpayers be as generous about the expenditure of these funds when our kids are roasting in the public school classrooms, there isn't enough money for social service programs, or our state hospitals are on the verge of collapse?

If lawmakers want to subsidize the purchase of this type of technology, then a direct appropriation would be more accountable and transparent.

Furthermore, the additional credit would require changes to tax forms and instructions, reprogramming, staff training, and other costs that could be massive in amount. A direct appropriation, or adding on to an existing program such as Hawaii Energy, may be a far less costly method to accomplish the same thing.

Digested 2/3/2018



NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY



An Authority of the State of Hawaii attached to the Department of Business, Economic Development & Tourism

Statement of
Gregory P. Barbour
Executive Director
Natural Energy Laboratory of Hawaii Authority
before the

HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT AND BUSINESS

Wednesday, February 7, 2018 9:30 am State Capitol, Conference Room 309

in consideration of

HB 1864 H.D.1 RELATING TO RENEWABLE ENERGY TECHNOLOGIES.

The Natural Energy Laboratory of Hawaii Authority (NELHA) supports the intent of HB 1864 H.D. 1 which would encourage private sector investment in renewable energy technologies that would broaden the States diverse portfolio in energy technologies.

We defer to the Department of Taxation and Department of Budget and Finance as to the impact on the States Financial plan.

Thank you for the opportunity to offer these comments.



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

LUIS P. SALAVERIA DIRECTOR

MARY ALICE EVANS

(808) 586-2355 (808) 586-2377

Telephone:

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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

Statement of LUIS P. SALAVERIA

Director

Department of Business, Economic Development, and Tourism before the

HOUSE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS

Wednesday, February 7, 2018 9:30 a.m. State Capitol, Conference Room 309

in consideration of HB1864, HD1
RELATING TO RENEWABLE ENERGY TECHNOLOGIES.

Chair Evans, Vice Chair Keohokalole and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) offers comments on HB1864, HD1, which expands the income tax credit for renewable energy technologies to include ocean thermal energy conversion systems constructed for the purposes of research and development. This bill also requires the Hawaii State Energy Office within DBEDT to certify the ocean thermal energy conversion research and development system.

We appreciate the overall concept of this bill as it includes initiatives supportive of our renewable energy goals, but we are concerned about the cost implications generated by this proposal. Specifically, we do not have the required industry technical expertise to conduct the ocean thermal energy conversion systems certification. As such, we would require additional funding and/or staff to implement our requirements under this bill.

Should the Legislature move forward with this measure, we request that the Legislature specify what is meant by certification of the ocean thermal energy conversion systems and clearly specify what components of the system are appropriate to receive the tax credit.

We defer to the Department of Budget and Finance on the impact on the State budget from this bill and the Department of Taxation on its ability to administer its duties under this bill.

Thank you for the opportunity to offer these comments on HB1864, HD1.

<u>HB-1864-HD-1</u> Submitted on: 2/5/2018 5:30:45 PM

Testimony for EDB on 2/7/2018 9:30:00 AM

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

Comments:

Submitted on: 2/5/2018 5:33:52 PM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Nanea Lo		Support	No

Comments:

Dear Chair Evans, Vice Chair Keohokalole and Committee members,

I am writing in SUPPORT of HB 1864.

I am apart of <u>350.org</u> which is the largest international organization dedicated to stopping climate change. 350Hawaii.org supports HB1864 HD1.

Ocean Thermal Energy Conversion is a very promising technology that has not been widely used. It is very well-suited to Hawaii because of our latitude, our warm climate, and the proximity of so many large buildings to water, particularly in downtown Honolulu.

OTEC can produce electricity or directly air condition large buildings, at a fraction of the current cost in Hawaii. One study estimates power generation would cost as little as \$0.07 per kilowatt-hour [1], compared with \$0.26 to \$0.34 through HEI [2]. OTEC works best where the temperature difference between surface and deep water is greatest, generally within 20° of the equator (Hawaii is at 19.9°) [3].

OTEC produces no waste products, requires minimal fuel, has no appreciable environmental impact, and is one of the continuously available renewable energy resources that could contribute to base-load power supply [4].

OTEC may also be the best method for air conditioning downtown Honolulu, Hawaii Kai and the Ko Olina area. Its use makes just as much sense as solar water heaters, which have been required on new Hawaii homes by state law since 2010.

The first operational OTEC plant in the world opened in Hawaii in 2015. The revenues generated from the plant, which supply the NELHA facility where it is located, are reinvested to fund more research and development in OTEC technology [5].

Companies researching OTEC deserve at least as much tax benefit as companies and individuals installing the mature technologies of solar and wind power.

Please support this bill so OTEC can eventually take its place, if appropriate, next to other renewable energy technologies.

Thank you for the opportunity to testify. Nanea Lo

<u>HB-1864-HD-1</u> Submitted on: 2/5/2018 6:03:40 PM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Patricia Blair		Support	No

Comments:

Submitted on: 2/5/2018 7:55:23 PM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Melodie Aduja	OCC Legislative Priorities	Support	No

Comments:

PRESENTATION OF THE

OAHU COUNTY COMMITTEE ON LEGISLATIVE PRIORITIES DEMOCRATIC PARTY OF HAWAII

TO THE COMMITTEE ON ECONOMIC DEVELOPMENT & BUSINESS

HOUSE OF REPRESENTATIVES

TWENTY-NINTH LEGISLATURE

REGULAR SESSION OF 2018

Wednesday, February 7, 2018

9:30 a.m.

Hawaii State Capitol, Conference Room 309

RE: **Testimony in Support** of HB 1864 HD1, RELATING TO RENEWABLE ENERGY TECHNOLOGIES

To the Honorable Cindy Evans, Chair; the Honorable Jarrett Keohokalole, Vice-Chair and Members of the Committee on Economic Development & Business:

Good morning. My name is Melodie Aduja. I serve as Chair of the Oahu County Committee ("OCC") Legislative Priorities Committee of the Democratic Party of Hawaii. Thank you for the opportunity to provide written testimony on House Bill No. 1864 HD1, regarding Ocean Thermal Energy Conversion income tax credit.

The OCC Legislative Priorities Committee is in favor of House Bill No. 1864 HD1 and support its passage.

House Bill No. 1864 HD1 is in accord with the Platform of the Democratic Party of Hawai'i ("DPH"), 2016, as it expands the income tax credit for renewable energy technologies to include ocean thermal energy conversion systems constructed for the purposes of research and development.

Specifically, the DPH Platform provides that "[w]e support energy independence, self-sufficiency, affordability and reliability for Hawai'i through the development of renewable alternative energy sources. Specifically, we need to support policies that foster the development of energy production methods that de-emphasize carbon-based fuels and promote renewable sources such as wind, solar, wave, geothermal and Ocean Thermal Energy Conversion (OTEC)." (Platform of the DPH, P. 9, Lines 452-456 (2016)).

Given that House Bill No. 1864 HD1 provides for Ocean Thermal Energy Conversion income tax credit, it is the position of the OCC Legislative Priorities Committee to support this measure.

Thank you very much for your kind consideration.

Sincerely yours,

/s/ Melodie Aduja

Melodie Aduja, Chair, OCC Legislative Priorities Committee

Email: legislativeprorities@gmail.com, Tel.: (808) 258-8889



To: The House Committee on Economic Development & Business

From: Brodie Lockard, 350Hawaii.org, 808-262-1285

Date: Wednesday, 2/7/18

In support of HB 1864 HD1

Dear Chair Evans, Vice Chair Keohokalole and Committee members,

I am the founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org supports HB1864 HD1.

Ocean Thermal Energy Conversion is a very promising technology that has not been widely used. It is very well-suited to Hawaii because of our latitude, our warm climate, and the proximity of so many large buildings to water, particularly in downtown Honolulu.

OTEC can produce electricity or directly air condition large buildings, at a fraction of the current cost in Hawaii. One study estimates power generation would cost as little as \$0.07 per kilowatt-hour [1], compared with \$0.26 to \$0.34 through HEI [2]. OTEC works best where the temperature difference between surface and deep water is greatest, generally within 20° of the equator (Hawaii is at 19.9°) [3].

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OTEC may also be the best method for air conditioning downtown Honolulu, Hawaii Kai and the Ko Olina area. Its use makes just as much sense as solar water heaters, which have been required on new Hawaii homes by state law since 2010.

The first operational OTEC plant in the world opened in Hawaii in 2015. The revenues generated from the plant, which supply the NELHA facility where it is located, are reinvested to fund more research and development in OTEC technology [5].

Companies researching OTEC deserve at least as much tax benefit as companies and individuals installing the mature technologies of solar and wind power.

Please support this bill so OTEC can eventually take its place, if appropriate, next to other renewable energy technologies.

Thank you for the opportunity to testify.

 $https://web.archive.org/web/20070626183941/http://www.pichtr.org/luis_vega_otec_summary.pdf$

- [2] https://www.hawaiianelectric.com/billing-and-payment/rates-and-regulations/average-price-of-electricity
- [3] https://web.archive.org/web/20051126110351/http://www.nrel.gov/otec/markets.html
- [4] https://en.wikipedia.org/wiki/Ocean_thermal_energy_conversion
- [5] https://www.scientificamerican.com/article/hawaii-first-to-harness-deep-ocean-temperatures-for-power/

350Hawaii.org:

Brodie Lockard
Sherry Pollack
Dave Mulinix
Dr. Lorna Holmes
Tom DiGrazia
John Grandinetti
Katherine Boyles-Thompson
Calley O'Neill

Calley O'Neill Noa Eads Leianna Eads

DAMIEN A. ELEFANTE DEPUTY DIRECTOR



STATE OF HAWAII DEPARTMENT OF TAXATION

830 PUNCHBOWL STREET, ROOM 221 HONOLULU, HAWAII 96813

http://tax.hawaii.gov/ Phone: (808) 587-1540 / Fax: (808) 587-1560 Email: Tax.Directors.Office@hawaii.gov

To: The Honorable Cindy Evans, Chair

and Members of the House Committee on Economic Development & Business

Date: February 7, 2018

Time: 9:30 A.M.

Place: Conference Room 309, State Capitol

From: Linda Chu Takayama, Director

Department of Taxation

Re: H.B. 1864, H.D. 1, Relating to Renewable Energy Technologies

The Department of Taxation (Department) appreciates the intent of H.B. 1864, H.D. 1, but has concerns about its ability to administer the provisions of this bill and offers the following comments for your consideration.

H.B. 1864, H.D. 1, amends Hawaii Revised Statutes (HRS) section 235-12.5, which governs the Renewable Energy Technologies Income Tax Credit (RETITC). A summary of key provisions are as follows:

- Adds "ocean thermal energy conversion research and development system[s]" to the RETITC, allowing individual and corporate taxpayers who install such a system to claim a tax credit up to thirty-five percent of the actual cost of the system, or a cap of \$1.5 million, whichever is less;
- Defines an ocean thermal energy conversion research and development system as an energy conversion system that is
 - o Designed to use temperature differences in ocean water to produce electricity;
 - o Constructed and used for research and development purposes;
 - o For which construction began after December 31, 2017;
 - o That generates one hundred kilowatts or more; and
 - o Is certified by the Hawaii state energy office.
- Directs the Director of Taxation (Director) to prepare any forms necessary to claim the tax credit:
- Authorizes the Director to require the taxpayer to furnish reasonable information to ascertain the validity of their claim for the credit;
- Has a defective effective date January 28, 2045; and
- Applies to taxable years beginning after December 31, 2018. First, the Department notes that the House Committee on Energy & Environmental

Department of Taxation Testimony EDB HB 1864 HD1 February 7, 2018 Page 2 of 2

Protection amended this measure by specifying that an ocean thermal energy conversion research and development system must generate at least 100 kilowatts of electricity and be certified by the Hawaii State Energy Office in order to be considered eligible for this credit.

The Department appreciates this attempt to help define this new category of systems by adding certain criteria to the statute. However, the Department suggests further clarification as the 100 kilowatt requirement is not applied to a specific period. The current definition does not provide enough guidance for taxpayers to determine whether they are able to claim more than one credit. With respect to the new certification requirement itself, the Department defers to the Hawaii State Energy Office regarding its ability to certify these systems.

The RETITC has historically been very difficult to administer, primarily due to the fact that the statute contains no definition for the word "system," but still caps credit amounts on a per-system basis. This ambiguity has caused much confusion for taxpayers and industry participants and has resulted in a much larger than anticipated number of RETITC claims.

The ambiguity in the statute was addressed by the Department's enactment of administrative rules pertaining to this tax credit in November 2012. However, the addition of this new RETITC category of systems, without a more detailed explanation of what is and what is not a "system," may create new uncertainty for taxpayers and industry.

Ocean thermal energy conversion is a relatively new technology that is still being refined; there is no comparable tax credit at the federal level. To resolve any ambiguity, the Department recommends statutorily defining the term "system". The federal Bureau of Ocean Energy Management may be able to provide information and guidance on defining the term.

Finally, the Department notes that it is able implement H.B. 1864, H.D. 1 as the House Committee on Energy & Environmental Protection amended the measure so that it applies to taxable years beginning after December 31, 2018.

Thank you for the opportunity to provide comments.

Submitted on: 2/6/2018 7:21:12 AM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Maren Anka		Support	No

Comments:

Dear Chair Evans, Vice Chair Keohokalole and Committee members,

I am writing on behalf of myself and more importantly, my child. I hope that our community takes climate change seriously and we start making an effort to find more sustainable energy sources for our islands

Ocean Thermal Energy Conversion is a very promising technology that has not been widely used. It is very well-suited to Hawaii because of our latitude, our warm climate, and the proximity of so many large buildings to water, particularly in downtown Honolulu.

OTEC can produce electricity or directly air condition large buildings, at a fraction of the current cost in Hawaii. One study estimates power generation would cost as little as \$0.07 per kilowatt-hour [1], compared with \$0.26 to \$0.34 through HEI [2]. OTEC works best where the temperature difference between surface and deep water is greatest, generally within 20° of the equator (Hawaii is at 19.9°).

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OTEC may also be the best method for air conditioning downtown Honolulu, Hawaii Kai and the Ko Olina area. Its use makes just as much sense as solar water heaters, which have been required on new Hawaii homes by state law since 2010.

The first operational OTEC plant in the world opened in Hawaii in 2015. The revenues generated from the plant, which supply the NELHA facility where it is located, are reinvested to fund more research and development in OTEC technology [5].

Companies researching OTEC deserve at least as much tax benefit as companies and individuals installing the mature technologies of solar and wind power.

Please support this bill so OTEC can eventually take its place, if appropriate, next to other renewable energy technologies.

Thank you for the opportunity to testify.

Submitted on: 2/6/2018 10:34:52 AM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing	
Taurie Kinoshita		Support	No	

Comments:

I support HB 1864 HD1, thank you for your consideration.



Submitted on: 2/6/2018 7:47:31 PM

Testimony for EDB on 2/7/2018 9:30:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
tlaloc tokuda	n/a	Support	No

Comments:

I belong to 350 HI and support all renewable energy and keeping fossil fuels in the ground.

I support HB1864 for OTEC.

Ocean Thermal Energy Conversion is a very promising technology that has not been widely used. It is very well-suited to Hawaii because of our latitude, our warm climate, and the proximity of so many large buildings to water, particularly in downtown Honolulu.

OTEC can produce electricity or directly air condition large buildings, at a fraction of the current cost in Hawaii. One study estimates power generation would cost as little as \$0.07 per kilowatt-hour [1], compared with \$0.26 to \$0.34 through HEI [2]. OTEC works best where the temperature difference between surface and deep water is greatest, generally within 20° of the equator (Hawaii is at 19.9°) [3].

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Companies researching OTEC deserve at least as much tax benefit as companies and individuals installing the mature technologies of solar and wind power.

Please support this bill so OTEC can eventually take its place, if appropriate, next to other renewable energy technologies.

Thank you for the opportunity to testify.





Testimony to the House Committee on Economic Development & Business

Wednesday, February 7, 2018 9:30 a.m. Conference Room 309, State Capitol RE: House Bill 1864

Chair Evans, Vice Chair Keohokalole, and Members of the Committee on Economic Development & Business

I would like to provide the following comments in support of HB1864.

HB1864 Expands the income tax credit for renewable energy technologies to include ocean thermal energy conversion system.

The Hawaii State goal of achieving 100% renewable energy by 2045 will be very difficult to achieve unless a diverse portfolio of technologies is fostered in the state. In addition, we recommend that the state needs renewable firm power, which biomass energy generation provides and support the addition of biomass energy into this bill. In addition, a biomass generation plant adds to the resiliency and redundancy of power generation that will be crucial for citizens and ratepayers in the event of a natural or manmade disaster. A biomass energy generation facility will also create positive economic impacts for our state.

We stand in strong support of allowing income tax credit to biomass technology effective immediately.

Thank you for the opportunity to testify.

Levi Medeiros





Pepeekeo, HI | San Francisco, CA

Testimony to the House Committee on Economic Development & Business

Wednesday, February 7, 2018 9:30 a.m. Conference Room 309, State Capitol RE: House Bill 1864

Chair Evans, Vice Chair Keohokalole, and Members of the Committee on Economic Development & Business

I would like to provide the following comments in support of HB1864.

HB1864 Expands the income tax credit for renewable energy technologies to include ocean thermal energy conversion system.

We support the concept that biomass energy should also be included in this measure because it has the potential to generate positive economic impact in the community, and provides for critical renewable firm power. In addition, the state should embrace and encourage investment into our state, especially in the area of renewable energy. There would be a considerable amount of jobs created as well as the ripple effect in the community.

Please pass HB1864 with the addition of biomass technology effective immediately.

Mahalo for allowing me to testify.

Wesly De Malle Wesly DeMotta