



STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
P.O. BOX 150
HONOLULU, HAWAII 96810-0150

WRITTEN ONLY
TESTIMONY BY CRAIG K. HIRAI
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
TO THE SENATE COMMITTEE ON WAYS AND MEANS
ON
SENATE BILL NO. 3195, S.D. 1

February 18, 2022
10:00 a.m.
Room 211 and Videoconference

RELATING TO THE DEPARTMENT OF HAWAIIAN HOME LANDS

The Department of Budget and Finance (B&F) offers comments on this bill.

Senate Bill No. 3195, S.D. 1, provides start-up funds to investigate, explore, and identify geothermal resources on Hawaiian home lands, and appropriates an unspecified amount of general funds for FY 23 to be expended by the Department of Hawaiian Home Lands for this purpose.

B&F notes that, with respect to the general fund appropriation in this bill, the federal Coronavirus Response and Relief Supplemental Appropriations Act requires that states receiving Elementary and Secondary School Emergency Relief (ESSER) II funds and Governor's Emergency Education Relief II funds must maintain state support for:

- Elementary and secondary education in FY 22 at least at the proportional level of the state's support for elementary and secondary education relative to the state's overall spending, averaged over FYs 17, 18 and 19; and
- Higher education in FY 22 at least at the proportional level of the state's support for higher education relative to the state's overall spending, averaged over FYs 17, 18 and 19.

Further, the federal American Rescue Plan (ARP) Act requires that states receiving ARP ESSER funds must maintain state support for:

- Elementary and secondary education in FY 22 and FY 23 at least at the proportional level of the state's support for elementary and secondary education relative to the state's overall spending, averaged over FYs 17, 18 and 19; and
- Higher education in FY 22 and FY 23 at least at the proportional level of the state's support for higher education relative to the state's overall spending, averaged over FYs 17, 18 and 19.

The U.S. Department of Education has issued rules governing how these maintenance of effort (MOE) requirements are to be administered. B&F will be working with the money committees of the Legislature to ensure that the State of Hawai'i complies with these ESSER MOE requirements.

Thank you for your consideration of our comments.

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

JOSH GREEN
LT. GOVERNOR
STATE OF HAWAII



WILLIAM J. AILA, JR.
CHAIRMAN
HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

P. O. BOX 1879
HONOLULU, HAWAII 96805

**TESTIMONY OF WILLIAM J. AILA, JR, CHAIRMAN
HAWAIIAN HOMES COMMISSION
BEFORE THE SENATE COMMITTEE ON WAYS AND MEANS
DECISION MAKING ON FEBRUARY 18, 2022 AT 10:00AM VIA VIDEOCONFERENCE**

IN SUPPORT OF

SB 3195, SD1, RELATING TO THE DEPARTMENT OF HAWAIIAN HOME LANDS

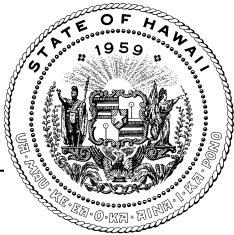
February 18, 2022

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran and members of the Committee:

The Department of Hawaiian Home Lands (DHHL) supports this bill that appropriates moneys for the investigation, exploration, and identification of geothermal resources on Hawaiian home lands.

One of the five objectives of DHHL's Energy Policy is to facilitate the use of diverse renewable energy resources. Specific activities noted in the policy is to identify properties in DHHL's land inventory that have potential for renewable energy projects and pursue the leasing of those lands that are identified as suitable for renewable energy projects. The policy explicitly notes that first priority should be given to entities that would provide "firm" renewable energy power such as garbage-to-energy (mass-burn), geothermal, pump-storage hydropower, solar-thermal and second priority to "as-available" renewable energy power such as wind, solar-photovoltaic, and wave. Since this bill is in line with DHHL's Energy Policy, the Department asks that the Committees pass this measure.

Thank you for your consideration of our testimony.



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

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Testimony of
SCOTT J. GLENN, Chief Energy Officer

before the
SENATE COMMITTEE ON WAYS AND MEANS

Friday, February 18, 2022
10:00 AM
State Capitol, Conference Room 211 & Videoconference

**SUPPORT
SB 3195, SD1
RELATING TO DEPARTMENT OF HAWAIIAN HOME LANDS.**

Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports SB 3195, SD1, which appropriates moneys to the Department of Hawaiian Home Lands (DHHL) for the investigation, exploration, and identification of geothermal resources on Hawaiian home lands.

HSEO's comments are guided by its mission to promote energy efficiency, renewable energy, and clean transportation to help achieve a resilient, clean energy, decarbonized economy.

HSEO believes geothermal energy can play a significant role in achieving 100% renewable energy generation statewide and supports incentives for its development. HSEO supports the exploration of geothermal resources on DHHL lands as geothermal can provide long-term revenues and resources to DHHL. Geothermal investigation, exploration, and identification requires upfront capital and can be costly to confirm the viability of a geothermal resource for energy and hydrogen production. Support for geothermal resource exploration can help attract private capital for potential development. Certain exploratory activities can also indicate the existence of geothermal for other uses such as direct use of steam from the ground. Data and knowledge gained from exploration can also inform the on-site potential of other resources such as groundwater and soil composition.

HSEO defers to the appropriate agencies for comment on the fiscal, administrative, and regulatory impacts of this proposal.

HSEO supports this bill provided that its passage does not replace or adversely impact priorities indicated in the Executive Supplemental Budget.

Thank you for the opportunity to testify.



Environmental Caucus of The Democratic Party of Hawai'i

To: The Honorable Donovan M. Dela Cruz , Chair
The Honorable Gilbert S.C. Keith-Agaran, Vice Chair
Senate Committee on Ways and Means

Re: **SB3195, SD1 – RELATING TO THE DEPARTMENT OF HAWAIIAN HOME LANDS**

Hearing: Friday, February 18, 2022, 10:00 a.m., Conference Room 211 and Via Videoconference

Position: Strong Support

Aloha, Chair Dela Cruz and Vice Chair Keith-Agaran and Members of the Committee on Ways and Means:

The Environmental Caucus of the Democratic Party of Hawai'i strongly supports SB 3195, SD1 and requests that this measure be PASSED by your Committee. This bill would appropriate moneys to the Department of Hawaiian Home Lands for the investigation, exploration, and identification of geothermal resources on Hawaiian home lands.

Geothermal energy (heat from the earth) taps the volcanically-heated water and steam that occurs naturally in certain areas in Hawaii, particularly the younger islands of Maui and Hawaii where volcanic activity has been most recent. Three things are needed to produce geothermal energy: heat; a working fluid such as water or steam; and permeable rocks which allow the working fluid to move within the geothermal reservoir, picking up heat which can be brought to the surface through a geothermal well. Hawaii's geothermal resource is "hydrothermal," or water dominated, due to ample seawater and rainwater permeating the island's lava foundation.

The Environmental Caucus supports this measure because it will provide for the exploration of geothermal resources, another form of renewable energy, which is consistent with the State's goal of transitioning to 100% renewable energy by Year 2045. In addition, geothermal resources would be an important economic driver for the Department of Hawaiian Home Lands on lands which may not be suitable for residential use but suitable for hydrothermal use. Mahalo nui loa for this opportunity to testify. Please pass this bill.

Respectfully submitted,

Melodie Adyja

Alan Burdick

Co-Chairs, Environmental Caucus of the Democratic Party of Hawai'i

Email: legislativepriorities@gmail.com



Sustainable Energy Hawai'i

1143 Kukuau St., Hilo, HI 96720

sustainableenergyhawaii.org

February 17, 2022

STRONG SUPPORT for SB3195 SD1 RELATING TO THE DEPARTMENT OF HAWAIIAN HOME LANDS.

Dear Chair Dela Cruz, Vice-Chair Keith-Agaran, and members of the Ways and Means Committee,

I am Richard Ha, Chair of Sustainable Energy Hawai'i, a coalition of concerned citizens dedicated to improving the quality of life of Hawaii residents through affordable renewable energy.

Sustainable Energy Hawai'i is in strong support of SB3195 SD1.

We have always believed that we should allocate more money to investigate the geothermal resources throughout the Hawaiian islands. This bill will appropriate funds to explore this valued resource on Hawaiian Homelands.

It is only fitting that the people of Hawaiian ancestry benefit through lower costs for their electrical needs and generate revenues to help sustain DHHL and the beneficiaries while reducing the importation of fossil fuels.

Thank you for this opportunity to testify.

Richard Ha
Chair
Sustainable Energy Hawai'i

Sustainable Energy Hawaii is an all-volunteer, 501(c)3 dedicated to furthering energy self-sufficiency for Hawaii Island. For more information, visit sustainableenergyhawaii.org.

SB-3195-SD-1

Submitted on: 2/12/2022 7:08:29 AM

Testimony for WAM on 2/18/2022 10:00:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Neil Frazer	Individual	Support	No

Comments:

Aloha Chair Dela Cruz, Vice-Chair Keith Agaran and Members of the Committee:

Hawaii has been blessed with enormous amounts of geothermal energy. Our volcanoes, being hotspot volcanoes, are relatively well mannered—not given to explosions such as the recent explosive eruption in Tonga. The technology for producing geothermal power is well understood, and improves with every passing year. By "improves" I mean that the required temperature difference (between the source rocks at depth and the earth's surface) necessary for efficient power production continues to shrink. It is possible that geothermal power production is feasible on all the main islands, not just Hawaii Island.

In addition to being blessed with geothermal energy, we have also been blessed with an opportunity to help save the world from anthropogenic global warming. The base of each of our islands consists of seawater saturated basalt. The Carbfix project in Iceland has shown that such rocks are a nearly ideal medium for sequestering carbon dioxide (CO₂) in the form of stable carbonate minerals. As global temperatures continue to rise, and governments become increasingly desperate to remove CO₂ from the atmosphere, there is likely to be a very high demand for direct air capture and CO₂ sequestration, both of which require large amounts of power.

In view of the above, a modest investment in the exploration of Hawaii's geothermal potential seems like a good idea to me.

Disclosure: I am a professor in the Department of Earth Sciences at UH Mānoa. In the course of my research activity I helped my colleagues with the Play Fairway project of the Hawaii Geothermal and Groundwater Resources Center by developing statistical algorithms to combine various types of geological and geophysical evidence in order to estimate the probabilities of geothermal resources throughout the islands. However, the opinions expressed above are my own. As far as I can tell the University of Hawaii has no opinions other than a general belief in the benefits of a college education.

Mahalo for this opportunity to testify, and for your unselfish service to the people of Hawaii.

SB-3195-SD-1

Submitted on: 2/16/2022 2:11:26 PM

Testimony for WAM on 2/18/2022 10:00:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Alice Kim	Individual	Support	No

Comments:

Geothermal energy production on the Hawaiian home lands can benefit the people of Hawaii including Native Hawaiians because geothermal energy can offer the following:

- Lower the cost of electricity
- Greatly reduce carbon emissions involved with creating energy
- Generate revenues for the betterment of Native Hawaiians
- Increase the self-sustainability of the Hawaiian islands and reduce the import of oil
- Create local professional jobs

Historically, native Hawaiians have used volcanic heat directly for bathing and cooking as reported by native folklore and Western explorers in the 1800s. Hawaiians bathed in the warm waters of Waiwelawela, a warm pond at Cape Kumukahi, for health. At Sulphur Banks, Kilauea Iki, and the Napau Crater Trail, Hawaiians cooked food wrapped in leaves underground and above steam cracks.

Similarly, New Zealand, another group of Pacific islands, has a long, extensive history of using geothermal. Before European contact, the Maoris usually lived in volcanically heated areas. The Maoris used thermal pools for cooking, bathing, healing, cleaning, dyeing, childbirth, and burial. Continuing on the Maori's traditions of using volcanic heat directly, today, New Zealand uses geothermal directly for drying timber, raising fish, tourism, drying milk, and heating space.

Geothermal energy now provides more than 17 percent of New Zealand's energy and serves as one of New Zealand's cheapest energy sources. Indigenous Maori tribes are benefitting from the geothermal power plants on their tribal lands. The Te Ahi O Maui geothermal plant resulted from a partnership between Eastland Generation and the Kawerau A8D Ahu Whenua Trust. It operates in the trust's land in Kawerau geothermal field.

New Zealand has demonstrated that geothermal energy can be produced while improving the quality of life for its residents including Maoris, respecting the Maori culture, and caring for the environment. Hawaii can do the same for the betterment of the native Hawaiians.

Personal Testimony Presented

February 17, 2022

by

Garrett Apuzen-Ito, Ph.D.

In consideration of Senate Bill 3195
Relating Department of Hawaiian Home Lands

My name is Garrett Apuzen-Ito and I am a geophysicist in the Department of Earth Sciences, at the University of Hawai'i at Mānoa, however, this testimony does not represent the position of the Department of Earth Sciences or the University of Hawai'i.

I SUPPORT SB 3195 SD1 because all of the evidence and information that I am aware of shows that meeting the State's goal of achieving 100% renewable electrical energy generation will require numerous diverse sources that *must include more geothermal*. As demonstrated by the Puna Geothermal Venture geothermal plant on the Big Island, geothermal provides the reliable base load, regardless of day-versus-night, sun-versus-clouds, or whether the wind blows or not. This steady base load is essential for providing a more stable and predictable supply within our power grids.

Geothermal comes at a relatively large upfront investment, but the data show that the lifetime costs are low, with minimal land footprint per kilowatt hour, and with minimal risks to the environment and human health. Investigation, exploration, and identification are necessary parts of the initial investment that can lay the foundation for further investment by production companies.

Again, achieving 100% renewable electrical energy will absolutely require the clean, long-term cost-effective, base load provided by geothermal energy. It will help Hawai'i achieve the electrical energy independence we all seek and greatly offset the environmental costs associated with fossil fuel mining and burning. Please support SB3195 SD 1.

Thank you for the opportunity to provide testimony.

LATE

SB-3195-SD-1

Submitted on: 2/17/2022 4:38:25 PM

Testimony for WAM on 2/18/2022 10:00:00 AM

Submitted By	Organization	Testifier Position	Remote Testimony Requested
Bronsten Kossow	Individual	Support	No

Comments:

Please support, also would request that the study would extend to health and well-being in the consideration of the study. Mahalo.