



HAWAII STATE ENERGY OFFICE STATE OF HAWAII

235 South Beretania Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone:
Web:

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARK B. GLICK
CHIEF ENERGY OFFICER

(808) 451-6648
energy.hawaii.gov

Testimony of
MARK B. GLICK, Chief Energy Officer

before the
HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

Wednesday, March 20, 2024
2:00 PM
State Capitol, Conference Room 329 and Videoconference

Providing Comments on
SB 2518, SD2, HD1

RELATING TO GEOTHERMAL ENERGY EXPLORATION.

Chair Nakashima, Vice Chair Sayama, and members of the Committee, the Hawai'i State Energy Office (HSEO) offers comments of SB 2518, SD2, HD1, which provides resources for the Hawai'i State Energy Office to conduct and administer a statewide environmental assessment for a geothermal resource characterization program under the direction of the Hawai'i Groundwater and Geothermal Resources Center of the University of Hawai'i.

HSEO supports the intent of this measure as an essential first step to inform the location and value of potential water, geothermal, and geological resources. However, HSEO respectfully suggests removing 'environment' to all references of 'environmental assessment' to avoid confusion with Hawai'i's environmental review process.

Because geothermal exploration and identification requires a significant investment by developers of upfront capital, it is appropriate for the State to provide underlying research to confirm the viability of geothermal, an important dispatchable renewable energy resource. This measure appropriately identifies the University of Hawai'i's Groundwater and Geothermal Resources Center as the appropriate research organization to work with HSEO to stimulate the private sector investment for geothermal electricity power generation. Such 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 provide information about resources such as groundwater and about soil composition for potential locations for carbon sequestration.

In 2023, HESO analyzed market gaps in firm renewable resources and long duration storage, especially geothermal and pumped hydro, and developed policies and pursued funding opportunities to fill those gaps. Geothermal energy is heat that was generated during the planet's formation and stored in rock and fluids and brought as steam to the earth's surface using deep wells. The steam drives turbines to generate electricity. Geothermal was also identified as both a near-term and mid-term decarbonization opportunity in the *Hawai'i Pathways to Decarbonization Report*, submitted to the 2024 Hawai'i Legislature¹[\[OBJ\]](#)

Accordingly, HSEO believes geothermal energy has the potential to play an extremely significant role in meeting Hawai'i's energy objectives of reliability, affordability, and diversification. That is why geothermal resources are a key part of Hawai'i's energy strategy as an indigenous source of dispatchable renewable energy for electricity production, with the potential for any excess to be used for the production of hydrogen.

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

Thank you for the opportunity to testify.

¹ Hawai'i State Energy Office. *Hawai'i Pathways to Decarbonization*. 2023. https://energy.hawaii.gov/wp-content/uploads/2022/10/Act-238_HSEO_Decarbonization_FinalReport_2023.pdf

SB-2518-HD-1

Submitted on: 3/19/2024 1:38:16 PM

Testimony for CPC on 3/20/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
DOUGLASS S ADAMS	County of Hawaii Dept of Research & Development	Support	Written Testimony Only

Comments:

Chair Nakashima, Vice Chair Sayama and Members of the Committee on Consumer Protection and Commerce:

Thank you for the opportunity to testify in strong support of SB2518 SD2 HD1, which requires and appropriates funds for the Hawaii State Energy Office to conduct a statewide environmental assessment for, and subsequently administer, a geothermal resources characterization program under the direction of the Hawaii Groundwater and Geothermal Resources Center at the University of Hawaii. This is a vital use of funds as our county and state look to reduce the amount and expense of fossil fuel in the near term. Geothermal resources are part of a diversified portfolio of energy generation sources, which can support the opportunity to reduce both climate change impacts and electricity and transportation costs. We agree with the need to engage with communities on our island to ensure utilization of this generation source is conducted with the opportunity to address their perspectives.

We highly encourage the Committee to pass SB2518 SD2 HD1 through to the House of Representatives with a favorable recommendation.

very respectfully

Douglass S Adams

Director of Research and Development

County of Hawaii



Email: communications@ulupono.com

HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Wednesday, March 20, 2024 — 2:00 p.m.

Ulupono Initiative supports SB 2518 SD2 HD1, Relating to Geothermal Energy Exploration.

Dear Chair Nakashima and Members of the Committee:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food, renewable energy and clean transportation choices, and better management of freshwater resources.

Ulupono supports SB 2518 SD2 HD1, which requires and appropriates funds for the Hawai'i State Energy Office to conduct a statewide environmental assessment for, and subsequently administer, a geothermal resources characterization program under the direction of the Hawai'i Groundwater and Geothermal Resources Center at the University of Hawai'i.

Hawai'i needs all viable forms of renewable energy to meet the 100% renewable portfolio standard by 2045. New data underscores the widespread support among residents for this transition. Between October 2023 and January 2024, Ulupono Initiative partnered with Anthology Research to conduct a statewide public opinion survey on energy in Hawai'i involving 1,985 surveys across all four counties. With a margin of error +/- 2.21%, this is arguably the most extensive and comprehensive study on the topic to date. The findings are compelling.

A staggering 91% of respondents expressed their support for the expansion of renewable energy resources throughout the islands. Moreover, the importance of developing Hawai'i's own energy resources was emphasized across all counties by the residents. This resounding endorsement from the community underscores support is strong for continued investment and advancement in renewable energy solutions to meet our collective energy goals.

Furthermore, the Hawai'i State Energy Office in its recently published Hawai'i Pathways to Decarbonization Report identifies, among other things, the significant need for additional

Investing in a Sustainable Hawai'i

renewable energy generation to meet broader economy-wide decarbonization goals.¹ Wind and solar alone are not enough. Firm sources, such as geothermal, will also be necessary. Hawai'i also faces many competing demands for available land, and geothermal projects use the least amount of land per megawatt of renewable power produced. As reported by Hawai'i Public Radio in 2019, "[\[r\]esearch recently presented](#) by graduate student Ted Brennis with the [Hawai'i Groundwater and Geothermal Resources Center](#) indicates that where resources are available, geothermal is competitive with wind and solar on both cost and land use."² In the case of land use, this is actually an understatement, as geothermal is not merely competitive but in fact uses much less land per megawatt.

Most residents seem to believe the Big Island is the only place in which geothermal energy can be commercially produced, and yet that assumption has never been thoroughly researched and confirmed. It's worth noting that Ulupono's 2024 survey showed that there is broad support for geothermal energy statewide, and more importantly more than 60% of respondents stated they would support the construction of a utility-scale geothermal power plant in their community if it meant a \$30 per month savings per household.

Ulupono supports the work of the Hawai'i Groundwater and Geothermal Resources Center, to further the discovery and development of geothermal resources. This bill will dedicate resources to the staffing and field work necessary for geothermal research into its potential.

Thank you for the opportunity to testify.

Respectfully,

Micah Munekata
Director of Government Affairs

¹ Hawai'i Pathways to Decarbonization Act 238, Session Laws of Hawai'i 2022, Report to the 2024 Hawai'i State Legislature December 2023. https://energy.hawaii.gov/wp-content/uploads/2024/01/Act-238_HSEO_Decarbonization_Report.pdf

² <https://www.hawaiipublicradio.org/local-news/2019-07-25/unexplored-geothermal-potential-may-offer-solution-to-renewables-reliability-problem>. Report cited can be found at <https://www.higp.hawaii.edu/hggrc/wp-content/uploads/2019/07/Brennis-Ted-2019.07.23-Thesis-Presentation.pdf>



**Hawaiian
Electric**

**TESTIMONY BEFORE THE HOUSE COMMITTEE ON
CONSUMER PROTECTION & COMMERCE**

**SB 2518, SD2, HD1
Relating to Geothermal Energy Exploration**

Wednesday, March 20, 2024
2:00 PM
State Capitol, Conference Room 329

Greg Shimokawa
Director, Renewable Acquisition
Hawaiian Electric

Dear Chair Nakashima, Vice Chair Sayama, and Members of the Committee,

My name is Greg Shimokawa and I am testifying on behalf of Hawaiian Electric in support of SB 2518, SD2, HD1, Relating to Geothermal Energy Exploration which seeks to appropriate funds for the continued exploration of geothermal resources in Hawaii and community outreach activities.

Hawaiian Electric supports continued exploration of geothermal resources and community outreach to help accelerate the development of renewable energy projects, support the State's Renewable Portfolio Standards ("RPS") requirements, reduce reliance on imported fossil fuels, stabilize and reduce volatility of customers' bills, reduce greenhouse gas emissions, and assist with post-pandemic economic recovery.

Hawaiian Electric defers to policy makers and those impacted on the appropriateness of funding allocations stipulated in the bill, yet generally supports the intent of exploring and identifying the State's geothermal resources and renewable energy potential. Accordingly, Hawaiian Electric supports SB 2518, SD2, HD1.

Thank you for this opportunity to testify.



**Testimony to the House Committee on Consumer Protection and Commerce
Wednesday, March 20, 2024, at 2PM
Conference Room 329 & Video Conference**

RE: SB2518 SD2 HD1 Relating to Geothermal Energy Exploration

Aloha Chair Nakashima, Vice Chair Sayama, and Members of the Committee:

The Chamber of Commerce Hawaii Supports (“The Chamber”) **supports SB2518 SD2 HD1**, which appropriates funds for the Hawaii State Energy Office to conduct a statewide environmental assessment for, and subsequently administer, a geothermal resources characterization program under the direction of the Hawaii Groundwater and Geothermal Resources Center at the University of Hawaii.

Geothermal energy exploration is a pivotal step towards our state’s resiliency sustainability goals. By harnessing the Earth’s natural heat through geothermal optimization, we significantly reduce our reliance on fossil fuels, mitigate environmental impact and increase our island’s independence.

Investing in geothermal technology not only promotes renewable and clean energy but also contributes to job creation and energy independence. Support for geothermal energy is a crucial investment for a greener, more resilient future for our state.

The Chamber is Hawaii’s leading statewide business advocacy organization, representing about 2,000+ businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the “Voice of Business” in Hawaii, the organization works on behalf of members and the entire business community to improve the state’s economic climate and to foster positive action on issues of common concern.

On behalf of The Chamber, thank you for this opportunity to testify.



www.sustainableenergyhawaii.org

March 19, 2024

STRONG SUPPORT FOR SB 2518 SD2 HD1 – RELATING TO GEOTHERMAL ENERGY EXPLORATION.

Aloha Chair Nakashima, Vice Chair Sayama, and members of the Committees,

Sustainable Energy Hawai'i (SEH) supports SB 2518 SD2 HD1, *which "Requires and appropriates funds for the Hawai'i State Energy Office to conduct a statewide environmental assessment for, and subsequently administer, a geothermal resources characterization program under the direction of the Hawai'i Groundwater and Geothermal Resources Center at the University of Hawai'i."*

Hawai'i has unique geothermal and groundwater resources that, properly utilized, will contribute to the State's energy independence and economic resilience and enable social equity. SB 2518 SD2 HD1 will help fund efforts to help us understand the nature of the geothermal resource across the state, an important step in the process of identifying and developing future geothermal energy production infrastructure.

More must be done to fully understand the various environmental, cultural, and economic considerations before we can realize the benefits of our groundwater and geothermal opportunities. SB 2518 SD2 HD1 will enable this understanding by investing in research and exploration efforts.

Thank you for the opportunity to testify,

A handwritten signature in black ink, appearing to read "Noel Morin", is written over a light gray rectangular background.

Noel Morin
Chair, Board of Directors
Sustainable Energy Hawai'i
noel@sustainableenergyhawaii.org

Sustainable Energy Hawai'i is a 501(c)3 non-profit dedicated to improving the quality of life for Hawai'i residents. Our mission is to enable an economic, social, and environmental revival in Hawai'i through a just transition to sustainable, locally sourced renewable energy and, to that end, the creation of a thriving clean hydrogen economy.



HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE

March 20, 2024, 2:00 PM

Room 329

TESTIMONY IN SUPPORT OF SB 2518 SD2 HD1

Aloha Chair Nakashima, Vice Chair Sayama, and members of the Committee:

Blue Planet Foundation **supports SB 2518 SD2 HD1**, which appropriates funding to the Hawai'i State Energy Office for geothermal energy exploration in partnership with the Hawai'i Groundwater and Geothermal Resources Center at the University of Hawai'i.

Blue Planet Foundation is a Hawai'i-based nonprofit organization committed to help Hawai'i cut its carbon emissions and avoid the worst impacts of climate change. Through our advocacy for renewable energy, energy efficiency, and clean transportation, we seek to make our communities stronger, our energy more secure, our environment healthier, and our economy more robust.

Hawai'i is fortunate to have a variety of clean energy options to meet our 100% renewable portfolio standards by 2045. While solar and wind energy face challenges of intermittency, geothermal has the potential to provide low-carbon, firm renewable energy—expanding and diversifying our local energy system as we move our islands closer to 100%.

Blue Planet supports research for geothermal for the following reasons:

Renewable and Sustainable: Geothermal energy is a renewable resource, meaning it can be replenished naturally over time. In Hawai'i, where there is significant volcanic activity, geothermal energy provides a continuous and reliable source of power without relying on finite fossil fuels.

Stable and Baseload Power: Geothermal power plants can provide baseload power, meaning they can generate electricity consistently, unlike some other renewable sources like solar and wind, which depend on weather conditions. This stability helps ensure a reliable electricity supply for Hawai'i's residents and businesses.

Reduced Greenhouse Gas Emissions: Geothermal energy is a low-carbon energy source, emitting minimal greenhouse gases compared to fossil fuels like coal, oil, and natural gas. By utilizing geothermal energy, Hawai'i can reduce its carbon footprint and contribute to mitigating climate change.

Energy Independence: Harnessing geothermal energy helps reduce Hawai'i's dependence on imported fossil fuels for electricity generation. This enhances energy security and resilience by diversifying the energy mix and reducing exposure to volatile fuel prices and supply disruptions.

Achieving Hawai'i's ambitious clean energy and resilience goals will require a diverse mix of renewable, local energy sources and types. This bill is a first step towards identifying where geothermal energy might be located in our state, so that further exploration and necessary community engagement can follow.

Thank you for the opportunity to submit testimony in support of SB 2518.



IDG | **INNOVATIONS
DEVELOPMENT
GROUP**

3/19/24

Roberta Cabral
5184 Iroquois Ave
Ewa Beach, Hawaii 96706

Testimony of
Roberta Cabral of Innovations Development Group, Inc.

SB2518
Relating to Geothermal Energy Exploration

Dear,

Chair Nakashima & Vice Chair Sayama, and the Members of the Consumer Protection & Commerce Committee:

On behalf of Innovations Development Group, Inc. and myself, I am submitting this testimony in **STRONG SUPPORT** of **SB2518**, relating to **GEOTHERMAL ENERGY EXPLORATION**.

Hawaii is the most oil dependent & energy insecure state in the United States. We rely heavily on imported fossil fuels for our energy needs and pay the highest electricity rates in the country. The State of Hawaii has made a commitment to changing our energy reality and to become leaders in clean, renewable energy through a bold energy agenda, by achieving 100 percent clean energy by the year 2045. Along with reducing our islands' dependency on fossil fuels and increasing efficiency measures, the clean energy plan is also contributing to the state's economic growth.

Fortunately we are blessed with ample geothermal power on Hawaii island. As you know, we have already invested in a great deal of research into understanding the nature of what Pele has provided and how best to access her energy for the good of all.

This measure promotes geothermal energy as the most reliable & affordable source of FIRM power for Hawaii, and lays a clear foundation to ensure that this source of firm power will be developed in a manner that benefits those who are the legal beneficiaries of the public trust.

Today, we all recognize that geothermal renewable energy resources are "minerals" under State law & as such are assets of the Public Trust. The time has come for the State of Hawaii to prioritize the development of these precious resources in order to ensure that our State can become energy self-

sufficient and independent in future years. In addition, the IDG believes that Public Trust energy resources should be developed in a way that brings direct and tangible benefits to the 'consumers' of our State who also happen to be the beneficiaries of the public trust.

Geothermal energy is an asset of the public trust. It is defined as a mineral by Hawaii statutes, and as such is a public energy resource. Although the State owns the resource, the State has never managed & developed it as a 'trust asset'. Rather, geothermal energy has been developed on private land to the benefit of private parties with the State receiving only mineral royalties. The time has come for the State to prioritize the development of geothermal energy (and all other renewable energy resources of the trust) pursuant to its trust obligation that requires that the State develop these resources for the benefit of the State and its public & native Hawaiian beneficiaries.

The State of Hawaii is facing a serious energy & fiscal crisis. We badly need to expedite the development of our own State renewable resources and to ensure that the manner in which these precious and invaluable resources are developed brings a direct benefit to those who own the resources.

Today, more than ever, Geothermal should be a critical component of Hawaii's sustainable energy future. It is a clean, reliable, mature, firm base-load energy technology that will be key to Hawaii's sustainable energy mix.

I urge you to pass SB2518 and finally clear the way for Hawaii to build an energy secure future, reducing our dependence on fossil fuels that is built on firm, baseload renewable energy found in abundance in our islands that is available for all people, from keiki to kupuna, that is culturally appropriate, environmentally sustainable, and economically sensible for present and future generations.



Indigenous Consultants, LLC

Mililani B. Trask, Principal

P.O.Box 6377 ❖ Hilo, HI 96720

Mililani.trask@gmail.com



Date: Wednesday, March 20, 2024

Time: 2:00 pm

Place: Conference Room 329

House Committee: – CPC

Re: SB 2518 - Relating to Geothermal Energy Exploration

Aloha Senators,

Indigenous Consultants (IC) is a Hawaii based, indigenous LLC owned and operated by Native Hawaiians. It was created to assist indigenous peoples in developing their renewable energy resources in ways that are: Culturally appropriate, environmentally green and sustainable, socially responsible and economically equitable and affordable. For several years the IC has worked with Innovations Development Group in New Zealand and indigenous Maori developing geothermal resources, which are trust assets of Maori Land Trusts. In addition, the IC has acted as a consultant to other indigenous people in Hawaii and Asia who are addressing development of their trust renewable energy resources in ways that; directly benefit their people, bring in revenues, create small business opportunities and ensure fair & affordable rates to consumers, including themselves and their communities.

Testimony in Strong Support

Hawaii is the most energy insecure State in the Union. Hawaii is currently experiencing a crisis in energy among the many issues affecting our state from water and food security, affordable housing and the devastating impact of the recent fires in Maui. Our energy crisis is due largely to the fact that Hawaii exports billions of dollars a year for fossil fuel and a lack of infrastructure to support firm, renewable generation. These revenues are not being made available for growth and expansion of our economy because they are diverted to pay for fossil fuel despite the fact that Hawaii has a great bounty of indigenous renewable energy, including geothermal energy that is a ‘mineral’ and an asset of the public trust. The State and its agencies & regulatory bodies, including the PUC, have a trust & fiduciary obligation to inventory & develop these renewable assets in a way that benefits the public and Native Hawaiians who are the beneficiaries of the public trust.

One of the primary barriers to Hawaii's energy self-sufficiency is the conflict of interest that exists because the electric utility that owns & manages the grid is also in the business of energy generation using fossil fuels and facilities that can only be run on fossil fuels of their own bio-fuel plants. These facilities cannot interface with geothermal or other renewable energy sources.

Geothermal energy development should be a key component of Hawaii's Renewable energy future. The technology is mature, having been implemented successfully around the world in countries like New Zealand (Aotearoa), Iceland and the Philippines among others. Geothermal is also a clean, renewable, firm power capable of being a baseload for our electricity needs here in Hawaii.

This bill is needed in order to facilitate the immediate exploration of the States geothermal public trust assets in light of the energy needs Hawaii is facing due to the requirements of the Hawaii Clean Energy Initiative. Exploration for geothermal resources capable for energy development is the first step that is needed to determine what can be done here in Hawaii in a safe, responsible and equitable manner. Forty years ago, Hawaii's statutes anticipated that the State of Hawaii would expend millions of dollars testing the viability of our geothermal resources so that the State could then determine which lands were suitable for geothermal development, and thereafter designate these areas as 'geothermal sub-zones' for private sector development. Now is the time to make good on that promise.

Sincere Regards,

A handwritten signature in black ink, appearing to read "Mililani B. Trask", with a horizontal line extending to the right.

Mililani B. Trask – Indigenous Consultants LLC

Aloha Chair Nakashima, Vice chair Sayama and members of the CPC

Strong for support SB2518

Hawaii must develop it’s abundant, ubiquitous geothermal energy resource that is available on every island. Geothermal energy is available around the clock, around the year, and just below our feet.

The oil market shocks of the Ukraine invasion is a warning that Hawaii must become energy sovereign and resilient. While continuing to add wind and solar generation Hawaii must urgently develop geothermal energy resources. Current blackouts exemplify the need to develop 24 X 7 X 365 local geothermal energy.

For consideration of the committee the table below shows geothermal generation has the lowest Levelized Cost of Energy. Dispatchable geothermal energy generation is clearly a winning choice for Hawaii’s future. Support geothermal development! Support SB2518!

Table B1b. Estimated unweighted levelized cost of electricity (LCOE) and levelized cost of storage (LCOS) for new resources entering service in 2040 (2021 dollars per megawatthour)

Plant type	Capacity factor (percent)	Levelized capital cost	Levelized fixed O&M ^a	Levelized variable cost	Levelized transmission cost	Total system LCOE or LCOS	Levelized tax credit ^b	Total LCOE or LCOS including tax credit
Dispatchable technologies								
Ultra-supercritical coal	85%	\$48.97	\$5.71	\$23.64	\$1.14	\$79.46	NA	\$79.46
Combined cycle	87%	\$9.10	\$1.68	\$32.11	\$1.16	\$44.05	NA	\$44.05
Advanced nuclear	90%	\$57.31	\$16.15	\$10.71	\$1.10	\$85.28	-\$5.07	\$80.20
Geothermal	90%	\$22.84	\$16.44	\$1.21	\$1.42	\$41.91	-\$2.28	\$39.63
Biomass	83%	\$37.86	\$18.10	\$29.36	\$1.21	\$86.53	NA	\$86.53
Resource-constrained technologies								
Wind, onshore	40%	\$29.45	\$7.89	\$0.00	\$2.74	\$40.08	NA	\$40.08
Wind, offshore	43%	\$64.77	\$30.58	\$0.00	\$2.66	\$98.01	NA	\$98.01
Solar, standalone ^c	29%	\$23.42	\$6.41	\$0.00	\$3.59	\$33.42	-\$2.34	\$31.07
Solar, hybrid ^{c,d}	28%	\$30.93	\$13.99	\$0.00	\$3.71	\$48.63	-\$3.09	\$45.54
Hydroelectric ^d	56%	\$46.11	\$11.85	\$3.86	\$2.02	\$63.83	NA	\$63.83
Capacity resource technologies								
Combustion turbine	10%	\$50.84	\$8.37	\$52.59	\$10.07	\$121.87	NA	\$121.87
Battery storage	10%	\$58.93	\$29.64	\$21.66	\$10.24	\$120.47	NA	\$120.47

Source: U.S. Energy Information Administration, *Annual Energy Outlook 2022*

^a O&M = operations and maintenance

^b The tax credit component is based on targeted federal tax credits such as the Production Tax Credit (PTC) or Investment Tax Credit (ITC) available for some technologies. It reflects tax credits available only for plants entering service in 2040 and the substantial phaseout of both the PTC and ITC as scheduled under current law. Technologies not eligible for PTC or ITC are indicated as *NA*, or *not available*. The results are based on a regional model, and state or local incentives are not included in LCOE and LCOS calculations. See text box on page 2 for details on how the tax credits are represented in the model.

^c Technology is assumed to be photovoltaic (PV) with single-axis tracking. The solar hybrid system is a single-axis PV system coupled with a four-hour battery storage system. Costs are expressed in terms of net AC (alternating current) power available to the grid for the installed capacity.

Mahalo,

Keith Neal

SB-2518-HD-1

Submitted on: 3/19/2024 6:37:04 AM

Testimony for CPC on 3/20/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Alice Kim	Individual	Support	Written Testimony Only

Comments:

As the State of Hawaii should encourage groundwater exploration and carbon sequestration, I strongly support SB 2518.

As Hawaii is the only U.S. state without an official geological survey, the University of Hawaii (UH) contributed a bulk of what we know about Hawai‘i’s geology. As a UH research unit, the Hawaii Groundwater and Geothermal Resources Center (HGGRC) is well equipped for groundwater research. Through HGGRC, the state’s most prominent earth scientists are researching Hawaii’s groundwater resources. HGGRC obtained land access for research from dozens of landowners across the state. For research equipment, HGGRC has access to \$1 million worth of geophysical equipment and a \$3 million drill rig.

HGGRC is now exploring carbon sequestration with Hawaii’s basaltic rocks, which make up almost all of Hawaii’s land mass. As the first organization in Hawaii to conduct this research, HGGRC is collaborating with research institutions outside of Hawaii. One of the institutions, Lawrence Berkeley National Laboratory, has already developed considerable expertise in this type of carbon sequestration.

This project will involve geotechnical and hydrological research, engineering, and application and may bring the state to net zero or negative carbon emissions. The project will improve the understanding of Hawaii’s groundwater resources and will promote the state’s sustainability goals.

HGGRC has also provided students and new professionals hands-on research experiences and education. Over the years, HGGRC sponsored employment of dozens of employees, and HGGRC scientists provided academic advising for undergraduate and graduate students.

Please invest in developing knowledge of water--our most precious resource--and carbon dioxide storage and mineralization in Hawaiian basalt. We must also invest in highly skilled, educated professionals and infrastructure for Hawaii’s future livelihood and sustainability. Please support SB 2518.

SB-2518-HD-1

Submitted on: 3/19/2024 9:48:43 AM

Testimony for CPC on 3/20/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Glen Kagamida	Individual	Support	Written Testimony Only

Comments:

SUPPORT FOR MORE ENERGY SOURCES.

MAHALO!

SB-2518-HD-1

Submitted on: 3/19/2024 11:57:13 AM

Testimony for CPC on 3/20/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
David S. De Luz, Jr.	Individual	Support	Written Testimony Only

Comments:

Aloha!

As the State of Hawaii should encourage groundwater exploration and carbon sequestration, I **STRONGLY** support SB 2518.

As Hawaii is the only U.S. state without an official geological survey, the University of Hawaii (UH) contributed a bulk of what we know about Hawai'i's geology. As a UH research unit, the Hawaii Groundwater and Geothermal Resources Center (HGGRC) is well equipped for groundwater research. Through HGGRC, the state's most prominent earth scientists are researching Hawaii's groundwater resources. HGGRC obtained land access for research from dozens of landowners across the state. For research equipment, HGGRC has access to \$1 million worth of geophysical equipment and a \$3 million drill rig.

HGGRC is now exploring carbon sequestration with Hawaii's basaltic rocks, which make up almost all of Hawaii's land mass. As the first organization in Hawaii to conduct this research, HGGRC is collaborating with research institutions outside of Hawaii. One of the institutions, Lawrence Berkeley National Laboratory, has already developed considerable expertise in this type of carbon sequestration.

This project will involve geotechnical and hydrological research, engineering, and application and may bring the state to net zero or negative carbon emissions. The project will improve the understanding of Hawaii's groundwater resources and will promote the state's sustainability goals.

HGGRC has also provided students and new professionals hands-on research experiences and education. Over the years, HGGRC sponsored employment of dozens of employees, and HGGRC scientists provided academic advising for undergraduate and graduate students.

Your support and consideration to invest in developing knowledge of water--our most precious resource--and carbon dioxide storage and mineralization in Hawaiian basalt. We must also invest in highly skilled, educated professionals and infrastructure for Hawaii's future livelihood and sustainability. Mahalo for the opportunity in allowing me to submit my this testimony and **STRONGLY** ask for your support SB 2518.

Mahalo

Ryan Matsumoto
1244 Hunakai St.
Honolulu, Hawaii 96816

March 19, 2024

SB2518
Relating to Geothermal Energy Exploration

Chair Nakashima & Vice Chair Sayama, and the Members of the Consumer Protection & Commerce Committee:

I am submitting this testimony in **STRONG SUPPORT** of **SB2518**, relating to **GEOTHERMAL ENERGY EXPLORATION**.

Hawaii is the most oil dependent & energy insecure state in the United States. We rely heavily on imported fossil fuels for our energy needs and pay the highest electricity rates in the country.

The State of Hawaii has made a commitment to changing our energy reality and to become leaders in clean, renewable energy through a bold energy agenda, by achieving 100 percent clean energy by the year 2045. Along with reducing our islands' dependency on fossil fuels and increasing efficiency measures, the clean energy plan will also contribute to the state's economic growth.

Today, more than ever, Geothermal should be a critical component of Hawaii's sustainable energy future. It is a clean, reliable, mature, firm base-load energy technology that will be key to Hawaii's sustainable energy mix.

I believe in the need for a whole new collaborative approach to energy independence and compliance with the Hawaii Clean Energy Initiative through meaningful policy changes, committed long-term investment by all stakeholders, real cultural protections and equitably shared profits while bringing access to global industry experience, cleaner technologies, enhanced environmental awareness, and a commitment to sustainable energy development & community participation.

The State of Hawaii has a responsibility to all its residents to provide affordable and clean electricity for all by utilizing its natural resources to support the development of clean, safe and affordable renewable energy. Energy security is a core tenet of life in an island-based economy and for far too long have the residents of Hawaii suffered unnecessarily.

I urge you to pass SB2518 and for Hawaii to finally take the tangible steps needed to clear the way to build an energy secure future, reducing our dependence on fossil fuels that is built on firm, baseload renewable energy found in abundance in our islands that is available for all.

I hope I can count on your support.

SB2518
Relating to Geothermal Energy Exploration

I am submitting this testimony in **STRONG SUPPORT** of **SB2518**, relating to **RELATING TO GEOTHERMAL ENERGY EXPLORATION**.

Hawaii has every reason to be proud of its commitment to moving to [100 percent renewable energy by 2045](#). But we have much to do to get there. The recent blackouts throughout Oahu once again highlight Hawaii's need to supplement the availability of another firm renewable energy power source.

Fortunately we are blessed with ample geothermal power on Hawaii island. As you know, we have already invested in a great deal of research into understanding the nature of what Pele has provided and how best to access her energy for the good of all.

Today, more than ever, Geothermal should be a critical component of Hawaii's sustainable energy future. It is a clean, reliable, mature, firm base-load energy technology that will be key to Hawaii's sustainable energy mix.

I believe in the need for a whole new collaborative approach to energy independence and compliance with the Hawaii Clean Energy Initiative through meaningful policy changes, committed long-term investment by all stakeholders, real cultural protections and equitably shared profits while bringing access to global industry experience, cleaner technologies, enhanced environmental awareness, and a commitment to sustainable energy development & community participation.

To achieve that understanding we must have a robust community outreach campaign that gives everyone a chance to listen, learn and voice their concerns. The community needs to know that we understand and will be properly responsive to any concerns they might raise.

The State of Hawaii has a responsibility to all its residents to provide affordable and clean electricity for all by utilizing its natural resources to support the development of clean, safe and affordable renewable energy. Energy security is a core tenet of life in an island-based economy and for far too long have the residents of Hawaii suffered unnecessarily.

I urge you to pass SB2518 and finally clear the way for Hawaii to build an energy secure future, reducing our dependence on fossil fuels that is built on firm, baseload renewable energy found in abundance in our islands that is available for all people, from keiki to kupuna, that is culturally appropriate, environmentally sustainable, and economically sensible for present and future generations.