

**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**  
KA 'OIHANA HO'OMOHALA PĀ'OIHANA, 'IMI WAIWAI  
A HO'OMĀKA'IKA'I

**JOSH GREEN, M.D.**  
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Statement of  
**JAMES KUNANE TOKIOKA**  
Director

Department of Business, Economic Development, and Tourism  
before the

**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION**

Tuesday, February 4, 2025

9:00 AM

State Capitol, Conference Room 325 and Videoconference

In support of

**HB 1020**

**RELATING TO A PROGRAM TO CHARACTERIZE CARBON SEQUESTRATION  
POTENTIAL AND UNDERGROUND WATER RESOURCES STATEWIDE.**

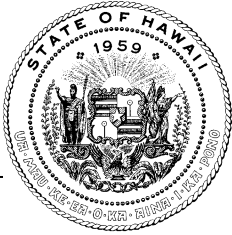
Chair Lowen, Vice Chair Perruso and Members of the Committee.

The Department of Business, Economic Development and Tourism (DBEDT) supports its priority House Bill No. 1020, a Governor Green Administration Package Bill. This bill establishes a statewide underground water and carbon sequestration characterization program via slim hole bores and a related statewide environmental assessment.

This measure serves to overcome obstacles that have limited Hawai'i from fully developing its geothermal potential. It takes into consideration that geothermal exploration is commercially risky and expensive, with developers investing in multiple exploration wells before finding a reliable geothermal resource, often without success. Since private investors usually cannot mitigate and manage this risk independently without first having confidence in where such resources can be found, the absence of that knowledge means that the geothermal resource will continue to not be developed outside of the few areas in Puna where tests have proven it exists. Therefore, DBEDT feels the funding requested in this bill is appropriate and justified.

Understanding that geothermal power plants have insignificant greenhouse gas (GHG) emissions and that geothermal plays an important role in helping Hawai'i meet its firm renewable needs, DBEDT believes government support to identify areas of geothermal potential is an appropriate first step toward incentivizing private sector investment and development of state-of-the-art geothermal resources. HB 1020 provides that needed support.

Thank you for the opportunity to support this measure.



# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Testimony of  
**MARK B. GLICK, Chief Energy Officer**

before the  
**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION**

Tuesday, February 4, 2025  
9:00 AM  
State Capitol, Conference Room 325 and Videoconference

In Support of  
**HOUSE BILL NO. 1020**

## **RELATING TO A PROGRAM TO CHARACTERIZE CARBON SEQUESTRATION POTENTIAL AND UNDERGROUND WATER RESOURCES STATEWIDE.**

Chair Lowen, Vice Chair Perruso and members of the Committee, I am writing in strong support of House Bill No. 1020, a Green Administration and DBEDT Priority Bill which conducts statewide research to identify the location and temperature of underground water resources as well as the potential for carbon sequestration.

Such slim-hole test wells are a high priority of Hawai'i's updated energy strategy because of the potential to clearly identify where geothermal resources might exist on Maui, Hawai'i, and O'ahu. The ultimate goal is to stimulate private sector investment in producing safe, reliable and affordable firm renewable energy that can make Hawai'i energy self-sufficient.

The Hawai'i State Energy Office (HSEO) supports HB1020 as our preferred bill on slim-hole resource characterization research. This bill amends chapter 196 HRS to include a carbon sequestration and underground water resource characterization program implemented by HSEO, including a statewide environmental assessment and meetings with nearby counties and communities that are crucial in local determination of how public trust resources like geothermal can be appropriately pursued.

This measure also requires HSEO to submit a progress report, findings, and any proposed legislation resulting from the research findings to the legislature. To effectively and broadly conduct this research, HSEO requests \$16,500,000 for fiscal years 2025-

2026 and the same sum for fiscal years 2026-2027 to carry out this program. HB1020 also includes HSEO's request for \$135,000 for fiscal year 2025-2026 and the same sum for fiscal year 2026-2027 to support one full-time equivalent permanent position to be dedicated to coordinate this program.

In 2023, HSEO 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 stored in rocks and fluids and brought as steam to the earth's surface using deep wells. The steam drives turbines to generate electricity. The slim-hole research of water resources through this measure can reveal where hot water sufficient to power electricity generation may be present in key areas throughout the state. This program will also deliver core samples that may reveal the potential for carbon sequestration.

The Center for Strategic and International Studies notes that like solar and wind energy, modern geothermal power plants have insignificant greenhouse gas (GHG) emissions with life-cycle emissions six to twenty times lower than natural gas and four times lower than solar photovoltaic (PV) energy due to the materials used to construct the plants.

Concurrently, HSEO will engage energy stakeholders at the community level during 2024 and beyond to gain insight on how and where geothermal development can appropriately take place in ways that meaningfully benefit the affected communities.

Several obstacles have limited Hawai'i from fully developing its geothermal potential. Geothermal exploration is commercially risky and expensive. Developers have to drill multiple exploration wells before finding a reliable geothermal resource, and sometimes they do not find one at all. Private investors usually cannot mitigate and manage this risk independently.

Given the importance of geothermal in helping Hawai'i meet its firm renewable needs, government support to identify areas of geothermal potential is an appropriate first step towards incentivizing private sector investment and development of state-of-the-art geothermal resources. HB1020 provides that needed support.

Thank you for the opportunity to testify.

**BOARD OF WATER SUPPLY  
KA 'OIHANA WAI  
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February 4, 2025

The Honorable Nicole Lowen, Chair  
and Members  
Committee on Energy and Environmental Protection  
House of Representatives  
Hawai'i State Capitol, Room 325  
Honolulu, Hawai'i 96813

Dear Chair Lowen and Members:

Subject: House Bill 1020: Relating to a Program to Characterize Carbon Sequestration Potential and Underground Water Resources Statewide

The Honolulu Board of Water Supply (BWS) offers the following comments to House Bill (HB) 1020:

The Hawaii State Energy Office should consult with the State Department of Health Underground Injection Control Program, the Commission on Water Resource Management – Ground Water Regulation Branch and the various County Departments or Boards of Water Supply on the evaluation of water resources and siting of carbon sequestration wells. We understand that the injection of CO<sub>2</sub> can reduce the porosity of basalt formations which could impact the yields of proposed saltwater wells for desalination. If porosity is decreased because of chemical reactions from pumping CO<sub>2</sub> into a basalt formation, saltwater well yields can drop significantly. The siting of CO<sub>2</sub> injection wells must not be in proximity to existing or proposed salt water extraction wells for desalination.

Thank you for the opportunity to testify and provide comments to HB 1020.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Ernest Y. W. Lau', is written over the typed name.

ERNEST Y. W. LAU, P.E.  
Manager and Chief Engineer



Email: [communications@ulupono.com](mailto:communications@ulupono.com)

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION  
Tuesday, February 4, 2025 — 9:00 a.m.

**Ulupono Initiative strongly supports HB 1020, Relating to a Program to Characterize Carbon Sequestration Potential and Underground Water Resources Statewide.**

Dear Chair Lowen and Members of the Committee:

My name is Mariah Yoshizu, and I am the Government Affairs Associate 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 strongly supports HB 1020**, which establishes a statewide underground water and carbon sequestration resource characterization program via slim hole bores and a related statewide environmental assessment.

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 validates the strong support for continued investment and advancement in renewable energy solutions to meet our collective energy goals.

This bill is a forward-looking initiative that prioritizes scientific research and environmental stewardship. By identifying geothermal and carbon sequestration resources, this measure supports Hawai'i's broader goals of achieving energy resilience and combating climate change. Resource characterization through slim-hole bores offers a minimally invasive method for gathering critical data, ensuring that these activities are conducted responsibly and with minimal environmental disruption. This approach reflects a commitment to balancing energy

*Investing in a Sustainable Hawai'i*

development with environmental protection.

The bill also emphasizes robust community engagement, which is essential for building trust and ensuring that local concerns and priorities are considered throughout the program. Engaging with counties, individuals, and civic organizations allows for the incorporation of valuable insights, ensuring the program aligns with community needs and aspirations. This commitment to collaboration can foster public support, create opportunities for education about renewable energy and carbon sequestration, and pave the way for sustainable resource management. Effective community engagement has been shown to enhance the success of similar initiatives by promoting transparency and inclusivity.

Finally, the legislation's provision for progress and final reports to the legislature, as well as making findings publicly accessible, highlights its dedication to accountability and knowledge-sharing. The use of mapping software and publicly available data ensures that the information gathered will be a resource for policymakers, researchers, and the public. This transparency will strengthen public confidence in the program and provide a foundation for informed decision-making. The proposed funding and staffing allocations are essential to make certain that the program is adequately supported, enabling Hawai'i to advance its renewable energy and sustainability goals effectively for the benefit of its residents.

Thank you for the opportunity to testify.

Respectfully,

Mariah Yoshizu  
Government Affairs Associate

**HB-1020**

Submitted on: 1/28/2025 8:33:39 PM

Testimony for EEP on 2/4/2025 9:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Andrew Crossland	Individual	Oppose	Written Testimony Only

Comments:

**I STRONGLY OPPOSE** this unnecessary Bill. I urge all members of the Committee to **VOTE NO** on this Bill.



**HB-1020**

Submitted on: 1/29/2025 8:17:12 AM

Testimony for EEP on 2/4/2025 9:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
William K. Chang	Individual	Oppose	Written Testimony Only

Comments:

We fought against CO2 ocean sequestration off Keahole Point years ago to prevent acidification of our ocean waters. This will change the chemical composition of our land.

**HB-1020**

Submitted on: 1/30/2025 1:18:18 PM

Testimony for EEP on 2/4/2025 9:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jacqueline S. Ambrose	Individual	Support	Written Testimony Only

Comments:

YES to - Establishes a statewide underground water and carbon sequestration resource characterization program via slim hole bores and a related statewide environmental assessment.

**HB-1020**

Submitted on: 2/1/2025 12:52:20 PM

Testimony for EEP on 2/4/2025 9:00:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alice Kim	Individual	Support	Written Testimony Only

Comments: With research experience in Hawaii’s groundwater resources and basalt carbon sequestration, the Hawaii Groundwater and Geothermal Resources Center at the University of Hawaii at Manoa should execute the Slim-Hole Resource Characterization under the administrative oversight of the Hawaii State Energy Office.