JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

JAMES KUNANE TOKIOKA
DIRECTOR

DANE K. WICKER
DEPUTY DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
KA ʻOIHANA HOʻOMOHALA PĀʻOIHANA, ʻIMI WAIWAI A HOʻOMĀKAʻIKAʻI

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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

Thursday, April 10, 2025
9:00 AM
State Capitol, Conference Room 325

In consideration of
SCR136, SD1
REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAII.

Chair Lowen, Vice Chair Perruso, and members of the Committee:

The Department of Business, Economic Development and Tourism (DBEDT) submits testimony in support of SCR136, SD1, which requests the Hawaii State Energy Office (HSEO) to convene a Geothermal Energy Working Group to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawaii.

Hawaii's transition to 100% renewable energy by 2045 is not only a statutory mandate but an economic imperative. While solar and wind continue to expand, firm renewable energy sources—such as geothermal—are critical for ensuring grid stability, energy affordability, and energy sovereignty.

Geothermal energy offers Hawaii a unique opportunity. Unlike intermittent renewables, geothermal is a firm, dispatchable energy resource. It can operate 24/7 and provide essential baseload capacity to complement variable renewables like solar and wind. It is especially valuable for neighbor island energy resilience, where energy infrastructure is more isolated, and the cost of imported fuel remains high.

As the Legislature and Governor have emphasized in recent energy policy and executive directives, we must accelerate local, clean energy generation. However, the geothermal industry in Hawaii has long faced challenges—including regulatory complexity, permitting uncertainty, land use restrictions, and community trust gaps—which have limited its growth.

In 2023 and 2024, DBEDT collaborated with the Hawaii Technology Development Corporation to lay the foundation for a Geothermal Roadmap. This roadmap includes:

- Assessing geothermal resource potential statewide using modern geophysical tools and indigenous knowledge.
- Identifying permitting and land use bottlenecks, with special attention to aligning with cultural and environmental stewardship.
- Coordinating with the Office of Planning and Sustainable Development (OPSD) on appropriate land use designation and long-range planning.
- Exploring how public-private investment can fund infrastructure for geothermal exploration and development.
- Evaluating opportunities for community-led and community-benefiting geothermal models, especially in areas with high energy costs and high potential, such as Hawaii Island.

The intent behind SCR136, SD1 is aligned with the direction DBEDT and HSEO have already begun exploring. Formalizing a Geothermal Energy Working Group with broad representation across agencies, counties, the utility sector, and the community will ensure a comprehensive and inclusive approach.

DBEDT supports the goals of SCR136, SD1 and sees this as a necessary step to unlock Hawaii's geothermal potential in a way that meets our renewable energy goals while empowering communities and protecting natural and cultural resources. We look forward to participating actively in this working group and contributing technical, planning, and economic expertise to its success.

Mahalo for the opportunity to testify in support of SCR136, SD1.

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

STATE OF HAWAII | KA MOKUʻĀINA ʻO HAWAIʻI
OFFICE OF THE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
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NADINE Y. ANDO
DIRECTOR | KA LUNA HOʻOKELE

DEAN I HAZAMA
DEPUTY DIRECTOR | KA HOPE LUNA HOʻOKELE

Testimony of the Department of Commerce and Consumer Affairs

Before the
House Committee on Energy & Environmental Protection
Thursday, April 10, 2025
9:00 a.m.
Conference Room 325

On the following measure:
S.C.R. 136, S.D. 1, REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAII

Chair Lowen and Members of the Committee:

My name is Michael Angelo, and I am the Executive Director of the Department of Commerce and Consumer Affairs (Department) Division of Consumer Advocacy. The Department supports this resolution.

The purpose of this resolution is to request that the Hawaii State Energy Office (HSEO) convene a Geothermal Energy Working Group (Working Group) to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawaii. In addition, the Working Group is requested to: (1) identify key regulatory, policy, and permitting challenges affecting geothermal energy in Hawaii; (2) review best practices from other jurisdictions with successful geothermal energy programs and consider best practices of Pacific island countries such as New Zealand; (3) assess the potential for geothermal expansion and its role in supporting energy resilience and affordability; and (4) provide

recommendations to the Legislature and Governor on policy and regulatory reforms necessary establish a clear and efficient pathway for geothermal energy in Hawaii. Furthermore, HSEO is requested to submit a report of its findings and recommendations, including any proposed legislation, to the Legislature no later than 20 days prior to the convening of the Regular Session of 2027.

The Department appreciates the resolution's intent to advance the State's commitment of achieving 100% renewable energy portfolio standards by 2045 and the recognition that work towards this commitment needs to be accelerated. As stated in the resolution, the Department also views geothermal energy as a form of firm renewable energy resource that can help provide grid stability. The Department also agrees that the development of geothermal energy in the State would be assisted by reviewing and investigating, among other things, methods and processes to establish efficient pathways to advance geothermal energy in the State. Furthermore, the Department appreciates the adoption of the Department's recommendation by the Committee on Energy and Intergovernmental Affairs to include the Executive Director of the Division of Consumer Advocacy of the Department, or the Executive Director's designee, as a member of the Working Group, since this division of the Department is statutorily mandated to represent, protect, and advance the interests of all consumers of utility services. The Department looks forward to working with the members of the Working Group and other invited stakeholders to help advance the progress and development of geothermal energy in the State.

Thank you for the opportunity to testify on this resolution.

LATE *Testimony submitted late may not be considered by the Committee for decision making purposes.

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

LEODOLOFF R. ASUNCION, JR.
CHAIR

NAOMI U. KUWAYE
COMMISSIONER

COLIN A. YOST
COMMISSIONER

STATE OF HAWAII
PUBLIC UTILITIES COMMISSION
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Testimony of the Public Utilities Commission

To the
House Committee on
Energy and Environmental Protection

April 10, 2025
9:00 a.m.

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

Measure: S.C.R. 136, S.D. 1
Title: REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAII.

Position:

The Public Utilities Commission ("Commission") supports this resolution and offers the following comments and amendments for consideration.

Comments:

The Commission supports the intent of this resolution to form a working group that would evaluate the regulatory and policy landscape surrounding geothermal energy in Hawaii. The Commission recognizes the potential of geothermal energy to support the state's goal of achieving 100% renewable energy by 2045, as well as the importance of considering such potential in a transparent and coordinated manner. The Commission appreciates this resolution's inclusion of the Commission on its proposed working group and stands ready to participate.

The Commission further supports the amendments made to this measure in the Senate Committee on Energy and Intergovernmental Affairs, which would improve the completeness of the resolution by additionally including relevant legislative committee members, a representative from the Division of Consumer Advocacy, and a representative from the Native Hawaiian community in the proposed working group.

Thank you for the opportunity to testify on this measure.

HAWAII STATE ENERGY OFFICE
STATE OF HAWAII

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARK B. GLICK
CHIEF ENERGY OFFICER

235 South Beretania Street, 5th Floor, Honolulu, Hawaii 96813
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Telephone: (808) 451-6648
Web: energy.hawaii.gov

Testimony of
MARK B. GLICK, Chief Energy Officer

before the
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Thursday, April 10, 2025
9:00 PM
State Capitol, Conference Room 325 and Videoconference

In Support of
SCR 136, SD1

REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAII.

Chair Lowen, Vice Chair Perruso, and Members of the Committee, the Hawai‘i State Energy Office (HSEO) supports SCR 136, SD1, which requests HSEO to convene a geothermal energy working group to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawai‘i.

The state’s energy transition to 100% RPS by 2045 will require the full diversity of available renewable resource options, despite much of the focus being on affordable and abundant intermittent solar and wind resources. Geothermal is a firm and dispatchable renewable energy resource that has enormous potential as an affordable means of energy security and reliability, and has the potential to have a transformative effect on Hawai‘i’s energy ecosystem.

However, potential roadblocks to advancing geothermal energy development require intergovernmental collaboration to overcome. These challenges include a lack of data on the geothermal and groundwater resources (resource potential), as well as uncertainty regarding the regulatory conditions for the permitting and construction of a new geothermal energy production plant. Relating to the understanding of resource potential, in 2024, Governor Josh Green, M.D., allocated $5 million from the

Coronavirus State Fiscal Recovery Fund for slim-hole geothermal resource characterization to identify possible locations for viable geothermal energy deployment. HSEO is working with the University of Hawai‘i’s Groundwater and Geothermal Resource Center (HGGRC) to conduct this resource assessment, building on their research and the existing body of knowledge. However, more funding is needed to determine the resource potential statewide. Given the uncertain regulatory conditions, a review of policy and regulations leading to actionable recommendations could help lower the barriers to geothermal energy production.

HSEO recognizes that, as stated in the resolution, “a coordinated, transparent, and community-inclusive process is essential to evaluating the role of geothermal energy in Hawai‘i”. HSEO emphasizes that a key priority of the State, and a foundation of the working group, should be guided by the understanding of the underlying geothermal resource potential. Establishing this working group provides an important opportunity to collaboratively evaluate pathways for responsibly deploying geothermal energy in Hawai‘i, address regulatory and community considerations, and inform the State’s broader energy goals.

This working group could allow HSEO and other stakeholders the ability to find viable solutions for allowing the potential of geothermal energy production to become a larger reality as we move towards our clean energy goals.

Thank you for the opportunity to testify.

JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
Ke Kia'āina o ka Moku'āina 'o Hawai'i

SYLVIA J. LUKE
LT. GOVERNOR
STATE OF HAWAII
Ka Hope Kia'āina o ka Moku'āina 'o Hawai'i

KALI WATSON
CHAIRPERSON, HHC
Ka Luna Ho'okele

KATIE L. LAMBERT
DEPUTY TO THE CHAIR
Ka Hope Luna Ho'okele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka 'Oihana 'Āina Ho'opulapula Hawai'i
P. O. BOX 1879
HONOLULU, HAWAII 96805

TESTIMONY OF KALI WATSON, CHAIR
HAWAIIAN HOMES COMMISSION
BEFORE THE HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
HEARING ON APRIL 10, 2025 AT 9:00AM IN CR 325

SCR 136, SD 1

April 10, 2025

Aloha Chair Lowen, Vice Chair Perruso, and Members of the Committee:

The Department of Hawaiian Home Lands (DHHL) **supports** this resolution requesting the Hawaii State Energy Office to convene a Geothermal Energy Working Group to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawai'i.

The Hawaiian Homes Commission requested that a permitted interaction group (P.I.G.) be established to study, evaluate, and recommend strategies related to geothermal exploration, feasibility, extraction, and/or use on Hawaiian Home Lands. DHHL is pursuing a multi-faceted approach to achieve its objectives, collaborating with the Hawaii State Energy Office (SEO) and the University of Hawaii's School of Ocean and Earth Science and Technology, specifically the Hawaii Institute of Geophysics and Planetology's Hawaii Groundwater and Geothermal Resources Center (HGGRC). DHHL has met with staff from the Hawaii Congressional Delegation and the U.S. Department of Energy (DOE). Additionally, the National Renewable Energy Laboratory (NREL), under contract with the US DOE's Geothermal Technologies Office, is conducting community-based listening sessions across the state, in which DHHL has been actively involved. DHHL believes this resolution establishes a step in the right direction toward the necessary and continued collaboration of the noted stakeholders and representatives.

Thank you for your consideration of our testimony.

DEPARTMENT OF HAWAIIAN HOME LANDS

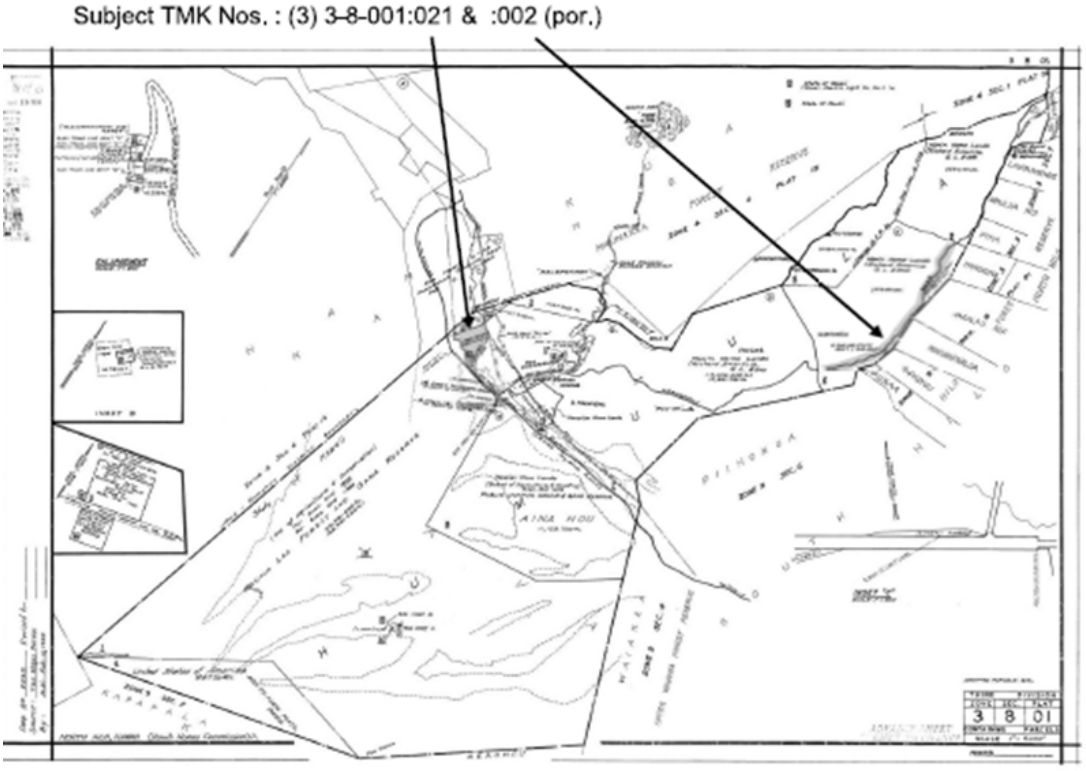
Geothermal Development Project

Summary
The Hawaii Department of Hawaiian Home Lands (DHHL), under the governance of the Hawaiian Homes Commission, through its Geothermal Permitted Interaction Group, continues to investigate the viability of geothermal production on Hawaiian Home Lands. The main sites under current consideration are on Hawaii Island: Humuʻula, Kawaihae, and South Point (Kaʻū). Humuʻula is the preferred development site, located directly next to lands leased by the Department of Defense for the Pōhakuloa Training Area.

DHHL is pursuing a multi-faceted approach to achieve its objectives, collaborating with the Hawaii State Energy Office (SEO) and the University of Hawaii's School of Ocean and Earth Science and Technology, specifically the Hawaii Institute of Geophysics and Planetology's Hawaii Groundwater and Geothermal Resources Center (HGGRC). DHHL has met with staff from the Hawaii Congressional Delegation and the U.S. Department of Energy (DOE). Additionally, the National Renewable Energy Laboratory (NREL), under contract with the US DOE's Geothermal Technologies Office, is conducting community-based listening sessions across the state, in which DHHL has been actively involved.

As this represents DHHL's initial effort to commercialize its geothermal resources, the Department continuously seeks guidance from geothermal specialists to assist in its mission. DHHL recognizes that establishing commercial energy projects is complex and capital-intensive. Therefore, the Department is exploring funding opportunities at both federal and state levels and seeking private industry partners who can facilitate third-party investments in a public-private partnership (PPP) to develop and operate the project.

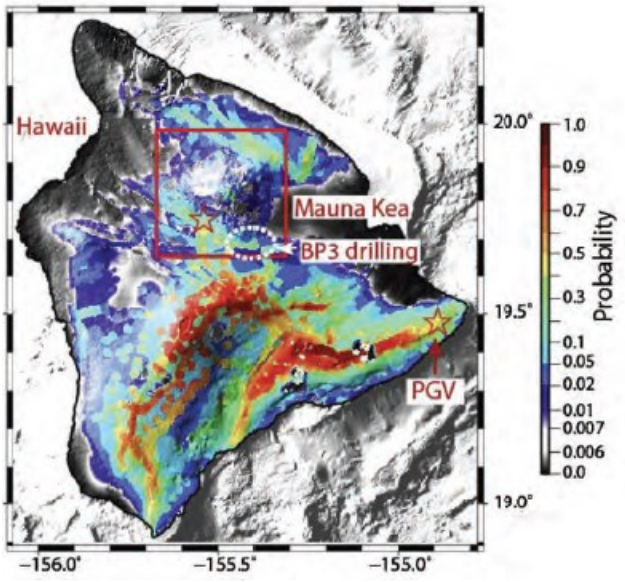
Recently, DHHL collaborated with HGGRC to have magnetotelluric (MT) testing and data collection take place at multiple sites within the DHHL's lands at Humuʻula and on the East Flank of Mauna Kea (see map below). This MT testing will further confirm or disprove the respective sites' suitability for geothermal power production. If this MT testing produces positive results, DHHL will move forward to financing and conducting exploratory slim-hole drilling. This step is crucial for further establishing the viability of the chosen site(s) for commercial geothermal production. The collected data will facilitate entering into a PPP with an experienced geothermal developer/operator.



Next Steps
The aforementioned MT testing on DHHL's lands commenced in October 2024. Contingent on securing funding, DHHL would like to commence slim-hole water well drilling in 2025.

State and Federal Policy and Funding
State: DHHL will request $20,000,000 in the state fiscal year 2025-2026 to develop slim-hole water wells for geophysical investigation, exploration, and identification of geothermal resources on Hawaiian home lands.

Federal: DHHL is considering policy proposals for submission to the Hawaii Congressional Delegation and is exploring USDOE funding opportunities to conduct MT testing and slim-hole water well drilling on various DHHL properties. In the long term, DHHL estimates that up to $200M of non-competitive federal funding is ultimately needed: (i) to determine which DHHL site(s) provides the "best" opportunity for commercial production of geothermal power, and (ii) to position such site(s) for PPP development.



Resource probability map for Hawaii Island. Red box outlines area of geophysical surveying. Stars indicate a Saddle Drill site where high temperatures were found (north) and Hawaii's only geothermal production site Puna Geothermal Venture (south)(Lautze et al., 2020)

Other Information

Findings from the December 9, 2016, geothermal investigation suggest the following:

- Information found to date at the DHHL sites investigated supports the elements required for a blind (no surface features) geothermal system to exist are present
- Further exploration is needed to determine if the elements combine sufficiently to create a viable geothermal resource at depth
- Blind, high enthalpy systems do exist in volcanic settings elsewhere globally
- Analysis of the PTA-1 core log from 1,000m showed zones of highly fractured rock & geothermal fluid-rock interaction occurred in the core
- Same core section saw a temperature increase from 40° C - 140°C (104°F - 284°F)
- Important information on 2 key control variables for the geothermal resource. Relevant for "ground-truthing" the apparent resistivity values from the Magnetotelluric (MT) survey
- Additional testing & exploration are needed to justify any exploration drilling (slim hole) at sites
- Sufficient information to warrant & justify moving forward to undertake further MT surveys to create a robust 3D subsurface model at a number of potential locations

Hydrothermally altered ground at Kilauea. Various alteration clays, discharging steam, silica residue, sulphur vents and areas of bare ground all indicate the presence of a subsurface steam zone.

Image by Gary Smith

Email: communications@ulupono.com

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
Thursday, April 10, 2025 — 9:00 a.m.

Ulupono Initiative supports SCR 136 SD 1, Requesting the Hawaii State Energy Office (HSEO) to Convene a Geothermal Energy Working Group to Evaluate the Regulatory and Policy Landscape Surrounding Geothermal Energy in Hawaii.

Dear Chair Lowen 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 SCR 136 SD 1, which requests that the HSEO convene a working group to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawaii.

Hawaii 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 Hawaii 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 Hawaii'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.

In order to ensure a transparent and responsible state approach, this resolution seeks to convene a working group of energy experts across the public and private sector to pave the way forward for future geothermal energy development throughout the State. Having a coordinated effort across all agencies and stakeholders will be key to the success of any geothermal program. We hope that this working group can allow for all those involved to be aligned and well-equipped with pertinent information and direction.

Thank you for the opportunity to testify.

Respectfully,

Micah Munekata
Director of Government Affairs

GoGreen AES Alternative Energy Solutions

DEDICATED TO

TRANSFORMING

HAWAII'S ENERGY

LANDSCAPE,

AND STRIVING

FOR A CLEANER

ENVIRONMENT

Woman & Native Hawaiian Owned

To: House Energy and Environmental Committee, Representative Nicole Lowen, Chair, Representative Amy Perusso, Vice Chair

Re: SB 964 – Waste to Energy Facilities on Neighbor Islands through Public-Private Partnerships

Hearing: Thursday, April 10, 2025
Position: In SUPPORT of the proposed amendments to SCR136 SD1

To:

- Amend title to "REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A NUCLEAR ENERGY WORKING GROUP TO STUDY THE FEASIBILITY OF USING ADVANCED GENERATION IV NUCLEAR POWER TECHNOLOGIES IN THE STATE"

Testimony in Support of Small Modular Reactors for Island Communities

Honorable Members of the Committee,

Thank you for the opportunity to provide testimony on the potential benefits of utilizing small modular nuclear reactors, hereinafter, referred to as SMRs. As we consider sustainable and resilient energy solutions, particularly in remote or isolated island locations, SMRs present a transformative opportunity for energy independence, environmental sustainability, economic growth, and the only possible way for Hawai'i to achieve their 2045 goal to be 100% dependent on renewable energy . I would like to highlight several reasons why SMRs are an ideal fit for Hawai'i and other island communities.

1. Energy Independence and Reliability

Hawai'i and other Island communities often face unique challenges when it comes to energy supply. Traditional power generation on islands often relies on imported fuels, such as diesel or natural gas, which can be expensive, unreliable, and subject to price volatility. SMRs offer a promising alternative by providing a locally-sourced, stable, and sustainable energy solution. These reactors are designed to be compact, modular, and scalable, enabling island communities to meet their energy needs without dependence on external sources.

SMRs can operate for extended periods without refueling, providing uninterrupted power for months or even years. This reduces the risk of power outages and enhances energy security, critical for communities that may struggle with supply disruptions due to extreme weather, transport limitations, or geopolitical factors.

2. Environmental Sustainability

Island communities are often highly dependent on their natural environment, and protecting it for future generations is paramount. SMRs are a clean energy technology with negligible carbon emissions during operation. Unlike fossil fuel-based power plants, SMRs do not contribute to air pollution or greenhouse gas emissions, making them an essential part of efforts to combat climate change.

Moreover, SMRs are capable of achieving a high energy density with a much smaller environmental footprint than traditional reactors. Given the delicate ecosystems that many island communities are part of, the small size and reduced environmental impact of SMRs make them an ideal energy solution, safeguarding natural resources while meeting the island's growing energy needs.

3. Safety and Security

One of the main concerns regarding nuclear energy is safety, but modern SMR designs incorporate cutting-edge safety features that make them among the safest forms of power generation available today. SMRs are built with passive safety systems, meaning that they require no active intervention to shut down in the event of an emergency. This inherent safety reduces the likelihood of accidents and makes them particularly suitable for remote island communities.

Additionally, the modular nature of SMRs allows for smaller, more manageable facilities that are easier to secure and operate than large, conventional nuclear plants. The ability to scale the reactors to match the specific needs of the island makes them a highly efficient and customizable solution.

4. Economic Viability and Job Creation

SMRs can stimulate local economies by creating skilled jobs in areas such as construction, operation, and maintenance of the reactors. The implementation of SMRs on an island can provide new employment opportunities and enhance workforce training, particularly in fields related to nuclear energy, engineering, and technical support. Furthermore, the lower operational costs associated with SMRs—due to their fuel efficiency and reduced maintenance requirements—can help lower electricity prices for island residents, making energy more affordable.

SMRs also offer a potential economic diversification strategy, particularly for island communities that may be heavily reliant on tourism, fishing, or agriculture. By integrating nuclear power, these communities can move toward a more resilient and sustainable energy mix, boosting economic stability and independence.

5. Scalability and Flexibility

The modularity of SMRs provides the flexibility to expand or downsize the power capacity based on the specific needs of the island community. This scalability means that a single SMR or a combination of SMRs can be deployed to meet both current and future energy demands. Additionally, this flexibility allows for integration with other renewable energy sources, such as wind, solar, geothermal, biomass, hydro, etc., creating a diverse and sustainable energy grid that is highly adaptable to changing circumstances.

6. Conclusion

In conclusion, small modular reactors represent a safe, reliable, and environmentally sustainable energy solution that could significantly benefit Hawai'i. By reducing reliance on imported fuels, enhancing energy security, protecting the environment, and fostering economic development, SMRs offer a unique opportunity to create a more resilient and sustainable future for islands around the world.

I urge you to consider the potential of SMRs as a key element in the energy strategy for island communities. Thank you for your time and attention to this important matter.

Best regards,

Russ Koehler

Russ Koehler, CEM
President
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HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

APRIL 10, 2025

SCR 136, SD1, REQUESTING THE HAWAI'I STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAI'I

POSITION: SUPPORT

Coalition Earth **supports** SCR 136, SD1, which requests the Hawai'i State Energy Office to convene a geothermal energy working group to evaluate the regulation and policy landscape surrounding geothermal energy in Hawai'i.

According to a report produced by the Hawai'i Climate Change Mitigation and Adaptation Commission, global sea levels could rise more than three feet by 2100, with more recent projections showing this occurring as early as 2060. In turn, over the next 30 to 70 years, approximately 6,500 structures and 19,800 people statewide will be exposed to chronic flooding. Additionally, an estimated $19 billion in economic loss would result from chronic flooding of land and structures located in exposure areas. Finally, approximately 38 miles of coastal roads and 550 cultural sites would be chronically flooded, on top of the 13 miles of beaches that have already been lost on Kaua'i, O'ahu, and Maui to erosion fronting shoreline armoring.

As we work to reduce carbon emissions and stave off the worst consequences of climate change, we must begin preparing for the adverse impact of sea level rise on our shores. We are now quantifying the speed at which we must act. We cannot continue to develop the 25,800-acre statewide sea level rise exposure area–one-third of which is designated for urban use–without risking massive structural damage and, potentially, great loss of life.

Just two years ago, we witnessed the impact of the climate emergency on our shores. On August 8, 2023, wildfires swept across Maui and killed at least 100 people, making it one of the nation's deadliest natural disasters. The spread of the fires has been attributed to climate change conditions, such as unusually dry landscapes and the confluence of a strong high-pressure system

to the north and Hurricane Dora to the south. The wildfires destroyed over 2,200 structures, including numerous residential buildings, historic landmarks, and school facilities. In September 2023, a report from the United States Department of Commerce estimated the total economic damage of the wildfires to be roughly $5.5 billion. Investing in renewable energy generation could not be more urgent, given the growing threat of climate catastrophes to our island home.

Therefore, **our state should take steps to hasten our transition to a clean energy economy and continue our fight against climate change, including by investing in the potential of geothermal resources, a nearly unlimited source of renewable energy.** The Earth's inner core is as hot as the surface of the sun. As that heat radiates, it heats the rocks and water just beneath the Earth's surface and the steam that process generates can be used to generate heat and electricity. Harnessing geothermal energy can be accomplished at any time, since geothermal resources are reliably available 24 hours a day, 365 days a year.

The United States leads the world in geothermal electricity capacity and generation. Yet, the U.S. has tapped less than 0.6 percent of its available geothermal electricity resources. The National Renewable Energy Laboratory estimates that there is enough geothermal potential under our nation's grounds to constantly produce 4,248,879 megawatts of energy. Notably, geothermal energy presents an opening for an almost seamless transition of investment, technology, and personnel away from fossil fuels. While the needed capital investment for geothermal ranges from $3,000 to $6,000 per kilowatt–as compared to solar and terrestrial wind, which run just $1,700 to $2,100 per kilowatt–this cost is declining as investments in new technology are being made. In terms of both economic and clean energy generation, we cannot afford to miss out on these opportunities.

Our state needs to establish a framework for expanding geothermal exploration and the development of utility-scale geothermal initiatives, goals that can be further accelerated through partnerships with research institutions like the University of Hawai'i's Groundwater and Geothermal Resources Center. Doing so would stimulate further possibilities for aligning public funding and private sector investment for geothermal power generation. Geothermal energy was also identified as both a near-term and mid-term decarbonization pathway in the Hawai'i State Energy Office's *Hawai'i Pathways to Decarbonization Report*, released in 2024.

We must avoid environmental risks when exploring geothermal energy. Relatedly, we should not engage in any geothermal expansion on Hawaiian homelands without beneficiary support. Yet, we would be remiss not to investigate the significant geothermal potential that resides, quite literally, within our island home. As the World Resources Institute has stated, "Next-generation geothermal as a promising path to a zero-carbon power grid. It's a clean, cost-effective way to fill supply gaps when solar and wind aren't available." In that way, geothermal has the capacity to play a major role in strengthening energy resilience for our state.

Coalition Earth is a nongovernmental organization that works to preserve the well-being of people and our planet. We champion policies that advance climate resilience, clean energy, public health, and economic fairness for working families. ***Contact us at info@coalitionearth.org.***

Sustainable Energy Hawai‘i

sustainableenergyhawaii.org
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Testimony in SUPPORT of SCR136_SD1
Geothermal Energy Working Group

April 8, 2025

HOUSE OF REPRESENTATIVES
THE THIRTY-THIRD LEGISLATURE
REGULAR SESSION OF 2025

COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Rep. Nicole E. Lowen, Chair
Rep. Amy A. Perruso, Vice Chair

Committee Members:
Rep. Kahaloa, Rep. Sean Quinlan, Rep. Matthias Kush

I'm testifying on behalf of **Sustainable Energy Hawai‘i (SEH)**, a 501(c)3 non-profit and CBO 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, 100% locally sourced renewable energy.

SEH supports SCR136_SD1, which requests

> *"THE HAWAI'I STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAI'I."*

SEH supports establishing **a broad-based working group of stakeholders to evaluate the status and impacts of the regulatory environment surrounding the research and development of geothermal power generation technology across the State of Hawai‘i.**

> The governor issued Executive Order No. 25-01 calling for, among other actions to "*... stabilize and reduce energy costs, lower the State's carbon footprint, fortify energy security, and gain access to capital for the energy transition ...*"

In theory, Hawai'i has geothermal resources available statewide. However, the extent of those resources and to what degree they may be commercially viable remain unknown. What we do know includes:

- We now know that solar, wind and battery storage will not support the scope or scale required for Hawai‘i's energy transition without the presence of firm, dispatchable and baseload power generation. There are only two technologies which can deliver that availability of generation without carbon emissions: Geothermal and Nuclear.

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- Given the need and expense to characterize those resources, and in light of the governors' call in the above-referenced Executive Order to “gain access to capital for the energy transition,” public sector funding will not be sufficient to realize the goal. Private sector investment will be required.
- Historically, that investment has met with resistance due to at least two obstacles, both of which can be mitigated through regulatory modernization…
    - The absence of state-sponsored scientific-data-gathering required to derisk private sector investment, and
    - An existing regulatory environment that contributes to Hawai‘i’s reputation as a state where it can be difficult to do business.

As this resolution does not seek to appropriate funds in support of the proposed working group’s operation and given the urgency the state has to explore remedies for the issues facing geothermal research and private sector investment, I respectfully ask for the committee’s support in passing Senate Concurrent Resolution No. 136 S.D.1.

Sincerely

Peter Sternlicht
Member, Board of Directors
Sustainable Energy Hawai‘i

Environmental Caucus of
The Democratic Party of Hawai‘i

April 9, 2025

Testimony in Opposition to SCR136 SD1 REQUESTING THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAI‘I

TO: Chair Nicole E. Lowen, Vice Chair Amy A. Perruso, and Members of the Committee on Energy & Environmental Protection

DATE: Thursday, April 10, 2025, **TIME:** 9:00 a.m. **PLACE:** Conference Room 325 & Via Videoconference

FROM: Environmental Caucus of the Democratic Party of Hawai‘i

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

The Environmental Caucus of the Democratic Party of Hawai‘i respectfully opposes SCR136 SD1, which requests the Hawai‘i State Energy Office to convene a working group to evaluate the regulatory and policy landscape surrounding geothermal energy in Hawai‘i. While we recognize the importance of exploring renewable energy sources to achieve Hawai‘i’s decarbonization goals, there are significant concerns regarding the focus on geothermal energy that warrant caution.

Key reasons for opposing SCR136 SD1 include:

- **Environmental Risks:** Geothermal energy development, particularly in areas with cultural and environmental significance such as Hawai‘i Island, poses risks including habitat destruction, water contamination, and volcanic disruption.
- **Cultural Sensitivity:** Geothermal energy projects have historically clashed with Native Hawaiian cultural values and practices, such as those tied to Pele, the Hawaiian goddess of volcanoes. Prioritizing this energy source risks further marginalizing Indigenous perspectives.
- **Questionable Long-Term Viability:** Geothermal energy requires specific geological conditions and is limited to particular areas, making it less versatile compared to solar, wind, or ocean energy solutions.

- **Lack of Public Confidence:** Previous controversies surrounding geothermal projects, including concerns about transparency, community engagement, and environmental harm, have eroded public trust in this energy source.
- **Diversification of Efforts:** Rather than convening a working group solely for geothermal energy, it would be more prudent to focus on advancing diversified renewable energy sources that align with community values and environmental priorities.

We urge the Committee to consider these factors and prioritize renewable energy initiatives that are inclusive, culturally sensitive, and environmentally sustainable.

Mahalo nui loa for the opportunity to provide testimony.

Melodie Aduja and Alan Burdick
Co-Chairs, Environmental Caucus Democratic Party of Hawai‘i

Hawaii SCR 136

Hon. Representative Nicole E. Lowen, Chair
Energy and Environmental Protection Committee

NEUTRAL Position

My name is Christine King and I am the Director of the Gateway for Acceleration in Nuclear (GAIN) initiative. This testimony serves as a neutral submission of information to the Energy and Environmental Protection Committee and does not endorse, support, or oppose any legislation.

The GAIN initiative is a framework for establishing public-private partnerships created by the U.S. Department of Energy, Office of Nuclear Energy and operates out of Idaho National Laboratory. We facilitate access to the technical, regulatory and financial support needed to accelerate the commercialization of advanced nuclear technologies. As technologies move closer to commercialization, our focus is to engage with state and local leaders to understand their needs first. GAIN can connect them with national lab resources to help understand how nuclear energy might serve their needs in the future.

GAIN has been tracking legislation across state and local governments to assess the potential for new nuclear power generation by mandating focused feasibility studies on new nuclear technology. Since 2020, states have ordered over 20 studies to be conducted by legislative interim committees, specialized working groups, state agencies or contracted consulting firms. The following studies generally provide an overview of the technical, economic and political impacts of new nuclear technology:

Kentucky SJR79 (2023): Establish the Nuclear Energy Development Working Group within the Energy and Environment Cabinet to study and identify barriers to nuclear energy development in the state; develop recommendations for a permanent nuclear authority; and consult with federal, state, and local agencies and organizations.
Completed study: Although spent nuclear fuel, and radioactive waste in general, is of heightened concern in Kentucky, the Working Group concluded that there are no insurmountable barriers to nuclear energy development in the state. The report lays the groundwork for the establishment of a permanent nuclear energy organization within state government. This recommendation was based on the many factors affecting nuclear energy development in Kentucky. This is the first step to building institutional capacity and establishing dedicated resources for nuclear energy ecosystem advancement. The report has the suggested framework for the creation of the Kentucky Nuclear Energy Development Authority.

Michigan HB6019 (2022): Require an outside consulting firm to provide for a feasibility study of nuclear energy generation in the state, including economic and environmental advantages and disadvantages, ways to maximize nuclear-related workforce, socioeconomic assessment and impact analysis, and the timeline for development.

Completed study: Michigan is in a uniquely advantageous position with operational and decommissioned nuclear power plants that can host new nuclear projects, and SMRs have the potential to shorten nuclear project timelines considerably.

New Hampshire HB543 (2022): Establish a commission to perform an analysis on the advances in Generation IV reactors, passive safety systems, nonelectric applications, potential siting options within the state, federal incentives for nuclear power generation and potential obstacles with federal nuclear regulation.
Completed Study: First-of-a-kind reactors will have a better chance of success in regulated markets as construction costs can be spread out over time; advanced nuclear power is necessary for reducing emissions in New Hampshire, and cost efficiency and reliability of new nuclear is the primary driver of interest as opposed to climate change.

Colorado HB1247 (2023): Pueblo Innovative Energy Solutions Advisory Committee Xcel Energy-Colorado has assembled a diverse group of Pueblo community leaders to evaluate and recommend future clean energy generation strategies that will be needed to replace the existing coal units at Comanche Generation Station. The Pueblo Innovative Energy Solutions Advisory Committee (PIESAC) will consider broad economic impacts to ensure the City of Pueblo and Pueblo County will continue to prosper with tax revenue, high-paying and highly skilled jobs, and a workforce pathway benefiting local citizens. This initiative will ensure an increased focus on the priorities of Pueblo, community engagement, and accountability in Xcel Energy's utility system as the company transitions to delivering 100% carbon-free energy by 2050 to its Colorado customers and communities.

Current Pending Legislation:

Delaware SCR18 (2025): Would establish the Delaware Nuclear Energy Feasibility Task Force to examine the feasibility, economic impact, regulatory considerations, energy reliability, and environmental implications of deploying Small Modular Reactors (SMRs) in Delaware.

Oregon 2410 (2025): Would exempt an SMR "demonstration project" in Umatilla County from the state's moratorium; additionally, would require ODOE and Department of Land Conservation and Development to submit a report on restrictive state statutes and land use requirements of an SMR deployment. Finally, would submit the legislation, if enrolled, via ballot initiative to the people of Umatilla Country for approval or rejection.

Massachusetts S2258 (2025): Would establish a commission to study the inclusion of nuclear energy in Massachusetts energy planning. This bill was filed on behalf of a nuclear group called "Eco-Nuclear".

This testimony provides just a few examples of the kinds of nuclear-related feasibility studies completed and underway. If interested in other studies or working groups not covered in this

document, we would be happy to help connect you with that information. If there are any outstanding questions regarding the above resources, please do not hesitate to contact me as GAIN has a commitment to continued support of stakeholders.

Thank you for your time,

Christine King

SCR-136-SD-1
Submitted on: 4/8/2025 2:35:09 AM
Testimony for EEP on 4/10/2025 9:00:00 AM

Submitted By	Organization	Testifier Position	Testify
Eva Majerova	Individual	Support	Written Testimony Only

Comments:

I support this

SCR-136-SD-1
Submitted on: 4/9/2025 7:56:24 AM
Testimony for EEP on 4/10/2025 9:00:00 AM

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

Comments:

The State of Hawaii should encourage geothermal development by supporting geothermal research and promoting efficiency in geothermal regulations. Please support this resolution.

SUPPORT for SCR136_SD1 - Geothermal Energy Working Group

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

Hearing: Thursday, April 10, 2025

SCR136_SD1, which requests "THE HAWAII STATE ENERGY OFFICE TO CONVENE A GEOTHERMAL ENERGY WORKING GROUP TO EVALUATE THE REGULATORY AND POLICY LANDSCAPE SURROUNDING GEOTHERMAL ENERGY IN HAWAII."

The ability to generate firm, clean, self-generated, baseload power is a critical bulwark against both natural and man made calamities. Hawaiian energy self-sufficiency is an urgent and important goal that benefits all who call Hawai'i home.

Establishing a working group of stakeholders to evaluate the current regulatory environment and to propose enabling legislation or regulatory changes needed for the development of geothermal energy.

Please support this measure and provide the resources for the working group to be successful.

Thank you for this opportunity to testify.

Respectfully,

Keith Neal
Waimea