JOSH GREEN, M.D. GOVERNOR

> SYLVIA LUKE LT. GOVERNOR

MARK B. GLICK CHIEF ENERGY OFFICER

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HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Testimony of MARK B. GLICK, Chief Energy Officer

before the SENATE COMMITTEE ON ENERGY AND INTERGOVERNMENTAL AFFAIRS

Tuesday, February 4, 2025 3:02 PM State Capitol, Conference Room 016 and Videoconference

Providing Comments on SB 1588

RELATING TO NUCLEAR ENERGY.

Chair Wakai, Vice Chair Chang, and Members of the Committee, the Hawai'i State Energy Office (HSEO) offers comments on SB 1588, which establishes the Nuclear Energy Task Force within the Hawaii State Energy Office, requires an interim report to the Legislature prior to the convening of the 2026 legislative session, and requires a final report forty days prior to the convening of the 2027 legislative session.

HSEO notes that Article XI, section 8, of the Hawaii State Constitution states that "No nuclear fission power plant shall be constructed or radioactive material disposed of in the State without the prior approval by a two-thirds vote in each house of the legislature."¹

Nationally, Advanced Small Modular Reactors (SMRs) have emerged as a goal of the U.S. Department of Energy to develop safe, clean, and affordable nuclear power options. SMRs can be built in relatively small physical footprints, reduced capital investment over full scale nuclear plants and can provide incremental power generation at sizes ranging from tens of megawatts up to hundreds of megawatts. Development of light water-cooled SMRs, which undergo licensing review by the Nuclear Regulatory Commission (NRC), may initially be deployed around 2030 at a price that has yet to be determined. For those reasons, HSEO will continue to monitor developments with SMRs.

The formation of a nuclear energy task force may be a number of years premature, given the current lack of cost, management of nuclear waste, production and safety information on SMRs.

Also, Governor Green's direction to HSEO has been to "conduct a full-scale analysis of every possible energy source, except nuclear, that can accelerate Hawaii's transition away from fossil fuel dependence."

Therefore, HSEO requests that the creation of a nuclear task force be set aside until commercial SMR units have been installed elsewhere, and operational data, installation cost, and waste management systems have been developed and can be evaluated for applicability in Hawaii.

Thank you for the opportunity to testify.

¹ Hawaii State Constitution. <u>https://lrb.hawaii.gov/constitution/</u>.



Sustainable Energy Hawai'i

sustainableenergyhawaii.org info@sustainableenergyhawaii.org

February 3, 2025

SUPPORT for SB1588 - RELATING TO NUCLEAR ENERGY

Dear Chair Wakai, Vice Chair Chang, and Committee members.

I'm testifying on behalf of **Sustainable Energy Hawai'i (SEH)**, a 501(c)(3) non-profit dedicated to improving the quality of life for Hawaii Island residents. Our mission is to enable an economic, social, and environmental revival in Hawaii through a just transition to sustainable, 100% locally sourced renewable energy and the creation of a thriving clean hydrogen economy.

SEH supports SB1588, which 'Establishes the Nuclear Energy Task Force within the Hawai'i State Energy Office. Requires reports to the Legislature.'

Hawaii has an aggressive and much-needed goal to transition its energy system to one that is clean, renewable, and sustainable. This is critical not only to decarbonize but also for energy sovereignty. We have made good progress in deploying renewable energy solutions like solar, wind, and storage, and some progress with geothermal. However, a broader, more comprehensive approach that will provide a reliable, affordable, and secure energy future is needed, especially considering the power required to electrify the transportation sector. We cannot afford to leave options unexplored.

SB1588 will establish a task force that will ensure that we evaluate all viable, clean energy solutions, including advanced nuclear technologies.

Advanced nuclear power may complement Hawaii's renewable energy portfolio by providing a reliable, clean base-load power source. The promise is such a technology operates at high capacity factors, reducing the need for storage solutions. Importantly, next-generation nuclear solutions, such as small modular reactors (SMRs), potentially offer safer and more flexible deployment options with lower risks associated with waste. Any nuclear technology must be fully studied and feted by technical experts for the unique requirements of Hawaii.

SEH supports the study of advanced nuclear technologies. The proposed task force will help us understand the environmental and social considerations, economic feasibility, and regulatory challenges associated with the technology and determine its role in Hawaii's energy future.

We urge the Committee to pass SB1588.

Thank you for this opportunity to testify. Respectfully,

Keith Neal Policy Lead, Sustainable Energy Hawai'i sustainableenergyhawaii.org



Generation Atomic 1878 Pascal Street Saint Paul, MN 55113

February 3rd, 2025

Dear Chair Wakai, Vice Chair Chang, and Members of the Hawaii Senate Energy and Intergovernmental Affairs Committee:

Generation Atomic is a grassroots organization dedicated to advocating for nuclear energy as a crucial tool for addressing climate change and ensuring energy security. We write in support of S.B. 1588, which would establish a Nuclear Energy Task Force within the Hawaii State Energy Office.

Since 2016, Generation Atomic and its volunteers have been working to spread awareness of the many benefits of nuclear energy in a carbon-constrained world, both in the public square and in statehouses across the US and abroad.

We commend the Legislature's forward-thinking approach in considering advanced nuclear technologies as part of Hawaii's clean energy future. As an island state heavily dependent on fossil fuels, especially oil, Hawaii faces unique energy challenges that advanced nuclear technologies could help address. The proposed task force represents an important first step in thoroughly evaluating this potential solution.

While we strongly support the bill as written, we respectfully suggest expanding the scope of the task force's study to include additional key considerations beyond the power sector that would strengthen the final analysis.

We recommend expanding the financial evaluation to include an economic impact analysis that includes long-term indirect benefits of advanced nuclear operations. This should examine both shortand long-term impacts on investors and ratepayers, the quality and quantity of any additional jobs created within the nuclear energy supply chain, and the broader economic benefits for local communities. Additionally, we also encourage the task force to explore Hawaii-specific applications of nuclear technology beyond electricity generation. This includes examining the potential for clean hydrogen production, desalination capabilities to enhance water security, and opportunities for process heat in industrial applications.

Nuclear energy is a powerful tool for reducing carbon emissions while providing reliable, emission-free, and affordable baseload power. This technology's benefits can also extend well beyond the grid, addressing challenges like water shortages, long-term employment, and reduction of carbon emissions in other hard-to-abate sectors. Any study of the feasibility of using advanced nuclear power technologies in Hawaii would benefit greatly from the inclusion of these additional applications.

We appreciate the opportunity to provide testimony on this important measure and are available as a resource to the task force should this bill be enacted.

Thank you for your consideration,

Eric Meyer	Madison Schroder	Philip Hult
Executive Director	Policy Coordinator	Development Coordinator
Generation Atomic	Generation Atomic	Generation Atomic

<u>SB-1588</u>

Submitted on: 2/3/2025 10:18:05 AM Testimony for EIG on 2/4/2025 3:02:00 PM

Submitted By	Organization	Testifier Position	Testify
JACK SHRIVER	Individual	Support	In Person

Comments:

Aloha, my name is Jack Shriver. I have been a resident of Hawaii for about 22 years, and involved in the energy field for 35 years. Like all of us, I hope that my children can afford to live here if they choose to, and the availability and cost of energy is one of the key underpinnings of our economic viability. Over the course of my career I have served 22 years as a trained and certified nuclear engineer in the United States Navy, 10 years as a Hawaiian Electric employee and energy project developer, and I am curently employed with a major engineering firm that focuses on the design of electrical infrastructure.

I fully support all of Hawaii's efforts to transition to a modern, clean, reliable, resilient, affordable, and locally produced energy economy. All of my experience leads me to the conclusion that these goals cannot be accomplished using the technologies and plans that are currently under consideration. Nuclear power may or may not be a critical element to our energy future, but any plans that do not evaluate the viability of modern nuclear technology are incomplete. Major strides in the nuclear energy field have been made in the last decade that warrant a thorough review in comparison to other technologies and the current plans to achieve our goals here in Hawaii.

I fully support the initiative to form a task force to review this technology and whether it would be beneficial to our lives here in Hawaii, and I look forward to participating and seeing the results!

Respectfully,

Jack Shriver

Peter Sternlicht. An Individual Resident of Hawai'i Island Statement in Support of SB1588

COMMITTEE ON ENERGY AND INTERGOVERNMENTAL AFFAIRS

Senator Glenn Wakai, Chair Senator Stanley Chang, Vice Chair

Dear Chairman Wakai, Vice Chairman Chang and members of the Committee,

Energy is the master resource. All economic activity depends upon its availability and its affordability. For these reasons and more, I strongly support SB1588.

We now know that firm, dispatchable and baseload power is needed to effectively decarbonize Hawaii's electrical grid. There are only two technologies that are suited to provide that type of energy: Geothermal and nuclear. We need both.

This bill is an opportunity to gather the critical data needed to further Hawaii's energy sovereignty. I encourage characterizing nuclear technology, especially within the current categories of Gen III and Gen IV nuclear and for them to be studied in detail. Within the latter category, Gen IV, Molten Salt Reactors (MSR) is reported to be a very promising, safe technology utilizing very low radiation materials for heat generation and within an extremely small footprint.

Knowledge is a powerful tool to use when crafting public policy. I wholeheartedly support passage of SB1588 which wisely strives to achieve that end.

Respectfully,

PLA STU

Peter Sternlicht Pepeekeo, HI 96783

<u>SB-1588</u> Submitted on: 2/3/2025 5:24:55 PM Testimony for EIG on 2/4/2025 3:02:00 PM



Submitted By	Organization	Testifier Position	Testify
Lynda Williams	Individual	Oppose	Written Testimony Only

Comments:

Aliha,

I am writing as a resident of Hawaii and a physicist and nuclear power expert to strongly urge you to oppose <u>HB558</u>. This bill, which seeks to establish a Nuclear Energy Task Force, is unnecessary and misaligned with Hawaii's constitution, its commitment to renewable energy, and the values of its residents. Allowing HB558 to move forward would waste valuable resources and risk steering our state away from its sustainable energy goals.

Key Reasons for Opposition

- 1. Hawaii's Constitutional Ban on Nuclear Power Hawaii's constitution explicitly prohibits nuclear fission power plants without legislative approval (Article XI, Section 8). This critical provision protects the health and safety of Hawaii's residents and reflects long-standing public opposition to nuclear energy.
- Nuclear Ban on the Island of Hawaii The County of Hawaii has already enacted ordinances banning nuclear energy. HB558 disregards these laws and undermines the community's dedication to safer, cleaner alternatives.
- 3. Transporting Nuclear Fuel is a Hazard

As an isolated island chain, Hawaii faces unique and significant risks in transporting nuclear fuel over vast ocean distances. Any accidents during transport could have catastrophic consequences for Hawaii's pristine marine environment and tourism-dependent economy.

- 4. Nuclear Waste Storage is Infeasible Hawaii's geological instability, including frequent earthquakes, volcanic activity, and tsunami risks, makes it an unsafe location for storing nuclear waste. There are no viable long-term solutions for safely containing radioactive materials in such a volatile environment.
- 5. Small Modular Reactors (SMRs) Are Not Viable

Proponents of SMRs fail to address their unproven nature, unresolved safety risks, and economic inefficiency. As noted in my <u>recent article</u>, SMRs remain largely theoretical and lack adequate testing. Additionally, the push for SMRs often serves the private interests of billionaires looking to power AI data centers rather than benefiting the people of Hawaii.

- 6. Hawaii's Renewable Energy Goals
- Hawaii is already on the path to achieving 100% renewable energy by 2045 through Act 97 (2015). Nuclear energy is not renewable, and pursuing it would divert attention and resources from proven, sustainable solutions like solar, wind, and geothermal power.
- 7. The Task Force is Redundant and Wasteful Creating a Nuclear Energy Task Force is unnecessary. Hawaii's constitution, existing laws, and community values have already rejected nuclear power as a viable option. Establishing this task force would waste time and taxpayer resources.

I respectfully request that you uphold Hawaii's constitution, prioritize its renewable energy future, and honor the voices of its people by opposing HB558.

Thank you for your attention to this critical issue and for your dedication to Hawaii's sustainable energy future. If you need an expert witness on the issue, do not hesitate to contact me.

Aloha,

Lynda Williams

Physicist, Hilo.

808-313-2070



To:The Senate Committee on Energy and Intergovernmental Affairs (EIG)From:Sherry Pollack, 350Hawaii.org

Date: Tuesday, February 4, 2025, 3:02pm

In strong opposition to SB1588



Aloha Chair Wakai, Vice Chair Chang, and members of the EIG committee,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org is in **strong opposition to SB1588** that establishes the Nuclear Energy Task Force within the Hawai'i State Energy Office.

This bill is not only a distraction from Hawaii achieving our clean energy goals, it could pose serious harms to our health and environment.

The following are just a few of the serious concerns we have regarding this measure:

Transporting Nuclear Fuel is a Hazard

As an isolated island chain, Hawaii faces unique and significant risks in transporting nuclear fuel over vast ocean distances. Any accidents during transport could have catastrophic consequences for Hawaii's pristine marine environment and tourism-dependent economy.

Nuclear Waste Storage is Infeasible

Hawaii's geological instability, including frequent earthquakes, volcanic activity, and tsunami risks, makes it an unsafe location for storing nuclear waste. There are no viable long-term solutions for safely containing radioactive materials in such a volatile environment.

Hawaii's Renewable Energy Goals

Hawaii is already on the path to achieving 100% renewable energy by 2045 through Act 97 (2015). Nuclear energy is not renewable, and pursuing it would divert attention and resources from proven, sustainable solutions like solar and wind.

We urge the Committee to HOLD this measure. Nuclear energy has no place in Hawaii's clean energy future.

Mahalo,

Sherry Pollack Co-Founder, 350Hawaii.org

<u>SB-1588</u> Submitted on: 2/3/2025 5:58:16 PM Testimony for EIG on 2/4/2025 3:02:00 PM



Submitted By	Organization	Testifier Position	Testify
Dave Mulinix	Testifying for Greenpeace Hawaii	Oppose	Remotely Via Zoom

Comments:

Aloha EIG Chair Wakai, Vice Chair Chang, and Committee Members <u>DeCoite</u>, <u>Fevella</u>, <u>Richards</u>,

My name is Dave Mulinix, Representative of Greenpeace Hawaii. On behalf or our thousands of members and supporters in the state of Hawaii we stand in STRONG OPPOSITION to SB1588 Establishes the Nuclear Energy Task Force within the Hawai'i State Energy Office.

Just fourquick points:

1) Hawaii's constitution explicitly prohibits nuclear fission power plants without legislative approval (Article XI, Section 8). This critical provision protects the health and safety of Hawaii's residents and reflects long-standing public opposition to nuclear energy.

2) Creating a Nuclear Energy Task Force is unnecessary. Hawaii's constitution, existing laws, and community values have already rejected nuclear power as a viable option. Establishing this task force would waste time and taxpayer resources.

3) The Three Mile Island, Chernobyl, and Fukushima nuclear power plant disasters have all proven that nuclear power is not safe, clean, or cheap.

4) For some 70 years the US government has searched the entire Earth and has found no safe place to store nuclear waste.

We count on your common sense to vote against SB1588.

Mahalo,

Dave Muliniix, CoFounder & Hawaii State Representative

Greenpeace Hawaii



<u>SB-1588</u> Submitted on: 2/3/2025 8:13:22 PM Testimony for EIG on 2/4/2025 3:02:00 PM

Submitted By	Organization	Testifier Position	Testify
laurel brier	Testifying for Kauai Climate Action Coalition	()nnose	Written Testimony Only

Comments:

Bad idea strongly opposed by informed environmental groups. Dangerous to transport, unsafe to dspose of, not renewable, extremely expensive, bad investment. Unacceptable

<u>SB-1588</u> Submitted on: 2/3/2025 9:54:16 PM Testimony for EIG on 2/4/2025 3:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Patrice Choy	Individual	Oppose	Written Testimony Only

Comments:

I strongly oppose SB1588.

Hawaii does not need a Nuclear Energy Task Force. To establish this entity will only encourage the development of nuclear facilities on our island(s).

Haven't we learned our lessons when it comes to nuclear power? We cannot forget what happened in Hiroshima, Nagasaki and Fukushima.

Hawaii has enough military poisoning to deal with and we cannot afford to add a potentially disastrous nuclear source in our homeland.

<u>SB-1588</u> Submitted on: 2/3/2025 11:05:56 PM Testimony for EIG on 2/4/2025 3:02:00 PM



Submitted By	Organization	Testifier Position	Testify
Ann Pitcaithley	Individual	Oppose	Written Testimony Only

Comments:

I am in strong opposition to SB1588.

The following issues make nuclear power in Hawaii completely unrealistic.

Nuclear energy fails to align with Hawaii's goal to utilize renewable energy. The waste that nuclear plants produce would pose a great threat to Hawaii. With Hawaii's isolated nature, the reactor waste would have to be stored on the island. With nuclear accidents such as Chernobyl, Three Mile Island and Fukushima there is an unease that comes with the Nuclear Power process. With the risks of natural disasters, Hawaii may shy away from nuclear power as a viable option for the future.

Another constraint that Nuclear Power faces in Hawaii is the size. A typical power plant on the island of Oahu generates 100 MW, from the EIA data, the typical Nuclear Power Plant generates 2,000 MW. Thus, a typical Nuclear Power is far too large for an island like Oahu. Along with too large of an output, another power plant in Hawaii could just be too large in general. Finding a proper building site for a nuclear power plant could be difficult on the Islands of Hawaii. These reasons and many others, present looming obstacles for Nuclear Power.

There are many difficult, if not impossible, hurdles that Nuclear Power would have to go through to contribute to electricity production in Hawaii. Other problems such as geography, waste and size add to the list that is preventing nuclear power in Hawaii. I do not see Nuclear Power contributing to Hawaii's electricity production. Hawaii has an abundance of natural resources that they can harness for energy such as wind, solar, geothermal and the ocean. With developing technology and those natural resources Hawaii should be able to reach their goals without Nuclear Power.

Thank you for allowing me to provide testimony



<u>SB-1588</u> Submitted on: 2/4/2025 8:20:04 AM Testimony for EIG on 2/4/2025 3:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Michael Goodwin	Individual	Oppose	Written Testimony Only

Comments:

Please prevent this bill from proceeding. As law it would violate our Constitution.