

HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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Testimony of SCOTT J. GLENN, Chief Energy Officer

before the HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Thursday, March 18, 2021 9:15 AM State Capitol, Conference Room 325, Via Videoconference

in support of SB 987, HD1 (proposed) RELATING TO GREENHOUSE GAS EMISSIONS.

Chair Lowen, Vice Chair Marten, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports SB 987, HD1 (proposed), which establishes deadlines for all state facilities 10,000 square feet and larger to implement cost-effective energy efficiency measures; provides that agencies that perform energy efficiency retrofitting may receive appropriations for such measures; authorizes HSEO to have access to and collect all utility bills and energy usage data for state-owned facilities and to make this data available to the public; establishes a goal of achieving at least a twenty-five percent reduction by 2025 in electricity consumption of state facilities; and, requires, where feasible and cost-effective, the design of all new state building construction to maximize energy and water efficiency, maximize energy generation potential, and use building materials that reduce the carbon footprint of the project.

The objectives of energy efficiency, cost control, lower energy bills, and leading by example outlined in SB 987, HD1 (proposed), are consistent with HSEO's mission "to promote energy efficiency... to help achieve a resilient clean energy economy" in accordance with Section 196-71(a), Hawai'i Revised Statutes. It is also consistent with the Chief Energy Officer's duties to "provide technical assistance to state and county agencies to assess and implement projects and programs related to energy conservation and efficiency, renewable energy, clean transportation, energy resiliency, and related measures."

HSEO agrees that energy efficiency is the most cost-effective way to reduce energy usage, and has worked over the years with a number of state agencies in facility benchmarking, energy audits, and energy savings performance contracts. HSEO has observed that there are always more, and sometimes new, energy savings and bill reduction opportunities.

HSEO is working closely with Hawaii Energy and state agencies to assess opportunities to reach a target goal of 25% by 2025 reduction from a 2005 baseline year. HSEO has consistently been measuring facility electricity reduction using 2005 as the baseline year. Also, the use of 2005 as the baseline year is consistent with the United Nations' baseline year and the Paris Agreement, which Hawai'i committed to support and to "be aligned with" in Part I of <u>Act 32 of 2017</u>. Further, a 2005 baseline acknowledges and builds on the work of those agencies which have already undertaken initiatives to reduce electricity consumption.

HSEO's analysis shows that since 2005, state agencies' total electricity consumption has declined by 17 percent. HSEO believes that, with legislative and administrative support, and the Energy Efficiency in State Buildings Project described in the attachment, that amount can increase to 25 percent by 2025. The calculated CO₂ avoidance potential for over 70 million kWh per year, using the current generation mix on Oahu of about 75% fossil fuel, assuming CO₂ production from low sulfur fuel oil of about 173 pounds of CO₂ per million Btu, and a heat rate on O'ahu of above 11,000 Btu per kWh, is over 50,000 tons of CO₂ per year of potential reductions in greenhouse gas emissions.

HSEO also agrees that designing new state buildings to maximize energy and water efficiency, identifying energy generation potential, and using building materials that reduce the carbon footprint, where feasible and cost-effective, are in alignment with the State's clean energy and decarbonization goals to further avoid future greenhouse gas emissions associated with new construction and operation.

Hawaii State Energy Office Testimony SB 987, HD1 (proposed) - Relating to Greenhouse Gas Emissions - Support March 18, 2021

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

In summary, HSEO supports SB 987, HD1 (proposed), to maximize the nearterm savings and long-term energy performance of State buildings.

Thank you for the opportunity to testify.

Energy Efficiency in State Buildings (EESB)

25% energy use reduction by 2025

Proactive management of energy costs by State agencies is expected to result in cost savings as well as improved facility operation. The Energy Efficiency in State Buildings project takes a comprehensive and coordinated approach to this objective.

Goal: Reduce state departmental energy use by 25% (from 2005 levels) by 2025.¹

Hawaii Revised Statutes, Section 196-30, requires that "each state department with responsibilities for the design and construction of public buildings and facilities" is to evaluate the energy efficiency of public buildings larger than 5,000 square feet or using more than 8,000 kilowatt-hours annually. The goal of 25% reduction by 2025 builds upon that requirement by setting a target amount and date.

Coordination:

Coordination will be provided by the Hawaii State Energy Office (HSEO) and Hawaii Energy.

Status:

A previous State (HSEO and partners) project benchmarked 416 public facilities, including more than 2,600 buildings covering more than 29 million square feet. By the end of 2019, the State agencies' energy use was 17.5% less that it was in 2005, the baseline year. The figure below shows the percentage change from 2005 to 2019 and the relative magnitude of electricity purchases by agencies.



Background:

Energy Performance Contracting in Hawai'i

Agencies have been pursuing energy retrofits since 1996. State and local government agencies' savings from the performance contracting program^{*2} (since its introduction by the State Energy Office in 1996) are expected to total an estimated \$1.1 billion in energy costs over the life of the contracts, and a cumulative amount of electricity equal to the amount used by 396,586 homes in one year. The projects comprise over 112 million square feet in 295 existing buildings and facilities. Hawaii Revised Statutes, Section 196-30, also requires that every five years, major facilities be "retro-commissioned."

Plan:

HSEO coordinates provision of technical assistance and training with Hawaii Energy to support State agencies in financing energy efficiency and cost reductions via operational changes, energy savings performance contracts, or other mechanisms.

Funding: Pursue-federal funding and use of existing HSEO consultants to support technical assistance and to finance and incentivize the proposed work with state agencies.

Year 1 (2021-2022)

Identify highest potential ("Tier 1") State facilities for immediate action using the results of the previous benchmarking study, working with agencies that are among the highest energy users and have not yet achieved the 25% energy savings goal.

Tier 1 agencies include: University of Hawaii, Department of Education, Department of Health, Department of Defense, Hawaii Public Library System, and Hawaii Health Systems Corporation. DAGS, as the building operations and manager for many state facilities, would also assist and participate in both Tiers 1 and 2. In partnership with HSEO and Hawaii Energy, this State agency cohort would identify, address, and implement energy retrofit and operational savings opportunities.

	FY05	FY19	Change FY05 - FY19	Maximum Annual Use with 25% Reduction	Additional Reduction from 2019 Levels to Reach Goal	Estimated Additional Savings
Agency	kWh	kWh	%	kWh	kWh	\$
UH	186,135,017	187,264,956	0.6	139,601,263	47,663,693	14,156,117
DOE	143,491,511	114,391,027	-20.3	107,618,633	6,772,394	2,011,401
DOH	25,800,739	27,273,819	5.7	19,350,554	7,923,265	2,353,210
HSPLS	8,477,520	7,508,738	-11.4	6,358,140	1,150,598	341,728
DOD	6,703,102	5,885,274	-12.2	5,027,327	857,947	254,810

Year 2 (2022-2023)

Identify "Tier 2" State facilities with energy efficiency retrofit potential. For both Tier 1 and Tier 2 sites, identify demand response or other potential tariff /aggregator participation options to reduce State agency energy (electricity and fuel) costs. Tier 2 agencies would include: DBEDT, DLNR, FTZ, HTA-CC and NELHA. HHFDC and DHHL would be the housing and other agencies included in Tier 2.

Agency	Year(s)	Contract Amount (\$)	Est. Savings Over Life of Contract (\$)
UH-Hilo	1996-2012	\$6,402,695	\$14,630,066
County of Hawaii	1997-2026	\$2,215,546	\$8,157,880
County of Kauai	1998-2012	\$525,965	\$1,205,990
City & County of Honolulu	2001-2025	\$11,900,205	\$36,066,761
Hawaii Health Systems Corporation	2002-2022	\$21,936,997	\$55,766,364
Judiciary	2003-2012	\$1,474,406	\$9,785,036
DAGS Phase I	2009-2029	\$36,873,266	\$72,580,767
PSD	2010-2030	\$25,511,264	\$57,211,112
UH Community Colleges	2012-2032	\$34,207,392	\$37,000,000
City & County HNL Kailua Wastewater	2013-2033	\$6,054,178	\$13,693,910
DAGS Phase II	2013-2033	\$17,400,000	\$28,000,000
DOT	2013-2034	\$309,506,592	\$795,560,746
Honolulu Board of Water Supply	2016-2036	\$33,125,398	\$56,846,668
	Total	\$507,133,904	\$1,186,505,300

Energy Performance Contracts in Hawaii as of October, 2020

Notes:

- ¹ The commitment to the 25% reduction, and the use of 2005 as the baseline year, are consistent with the United Nations' baseline year and the Paris Agreement, which Hawai'i committed to support and to "be aligned with" in Part I of <u>Act 32 of 2017</u>.
- ² With an Energy Performance Contract, a State or County agency enters into an agreement with a private Energy Services Company (ESCO) to purchase and install an Energy Conservation Measure (possibly including photovoltaics). The agency uses a portion of the electricity bill savings from those energy conservation measures to, over time, reimburse the ESCO for the cost of the equipment and installation (and maintenance, if included in the agreement). This allows the private contractor to purchase and install equipment that reduces energy and water use in government-owned facilities, based on the future savings from the energy conservation measures, with no required up-front payment by the government agency. Under the agreement, the ESCO will guarantee the savings – and pay for any shortfall.



March 16, 2021

- TO: Chair Lowen and members of EEP Committee
- RE: SB 987 SD2 Relating to Greenhouse Gas Emissions

Support for hearing on March 18

Americans for Democratic Action is an organization founded in the 1950s by leading supporters of the New Deal and led by Patsy Mink in the 1970s. We are devoted to the promotion of progressive public policies.

We support SB 987 SD2 as it would establish a Sustainable Aviation Fuel Task Force within the Hawaii natural energy institute to develop a state action plan to reduce the greenhouse gas intensity of international air transportation from Hawaii.

We like focusing on aviation fuel as it accounts for the largest sector of fossil fuel emissions, greater than ground transportation and far greater than electricity generation. The industry proclaims this to be a high priority, promising clean flights on short hops across Europe, much like interisland flight, and the challenge will double for high altitude trans-oceanic flights, where the greenhouse gas emissions have deadlier effect.

We need to be prepared to implement and promote all options that may become available.

Thank you for your favorable consideration.

Sincerely,

John Bickel, President





Testimony to the House Committee on Energy & Environmental Protection Thursday, February 18, 2021 at 9:15 A.M. Written Testimony

RE: SB 987, SD 2, Proposed HD 1, RELATING TO GREENHOUSE GAS EMMISSIONS

Chair Lowen, Vice-Chair Marten, and Members of the Committee:

The Chamber of Commerce Hawaii ("The Chamber") **supports** SB 987, SD 2, Proposed HD 1 which:

- 1. Requires and establishes deadlines for state facilities, except smaller facilities and facilities at Aloha Stadium, to implement cost-effective energy efficiency measures to help reduce greenhouse gas emissions;
- 2. Directs the Hawaii state energy office to collect utility bill and energy usage data for state-owned buildings and to make the data publicly available;
- 3. Establishes a goal for the State to achieve at least a twenty-five per cent reduction in the electricity consumption of state facilities;
- 4. Provides that certain agencies that perform energy efficiency retrofitting may continue to receive a certain amount of appropriations for energy expenditures; and
- Beginning 7/1/2022, requires, where feasible and cost-effective, the design of all new state building construction to maximize energy and water efficiency, maximize energy generation potential, and use building materials that reduce the carbon footprint of the project.

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.

Hawaii continues to play a leading role in protecting our environment and increasing energy efficiency. We believe in the benefits of a sustainable future, but we must ensure that solutions that would affect the business community do not impede or create unintended burdens on entrepreneurs. Policies need to be shaped to create common



ground, especially so that businesses can have the flexibility to develop and create sound solutions to address these important issues.

As such, we believe SB 987, SD 2, Proposed HD 1 is leading by example to advance clean energy benefits in state facilities.

Thank you for this opportunity to provide testimony.

45 North King Street, Suite 500 • Honolulu, Hawai'i 96817 • HawaiiEnergy.com • P: (808) 839-8880 • F: (808) 441-6068

Before the House Committee on Energy & Environmental Protection Thursday, March 18, 2021, 9:15am

Testimony in Support of the Proposed HD1 to SB987 SD2: Relating to Greenhouse Gas Emissions

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

Thank you for the opportunity to testify in support of the proposed HD1 to Senate Bill 987 SD2.

Hawai'i Energy works to empower island families and businesses on behalf of the Hawai'i Public Utilities Commission (PUC) to make smart energy choices to reduce energy consumption, save money, and pursue a 100% clean energy future. Energy efficiency is the cheapest option to help us achieve our 100% clean energy goal by eliminating waste and being more efficient.

As the state looks to establish a task force to develop a state action plan to reduce the greenhouse gas emissions generated by air transportation in and from the state, it is imperative for the State government to lead by example. Hawai'i Energy supports the proposed HD1 that emphasizes improving energy efficiency in State facilities. The State of Hawai'i has benefitted from a successful Energy Savings Performance Contract (ESPC) program that drove a significant level of energy savings projects between 2009 and 2015. Hawai'i Energy estimates that since 1996, Hawai'i government agencies have saved, on average, more than 5 million kilowatt hours a year, equating to over \$24 million in savings, with the majority of this coming through ESPCs.

ESPC procurements have significantly dropped since 2015, due to a number of potential factors, including previously completed projects, the expiration of the approved ESCO vendor list, and other non-energy priorities among others. With advances in technologies that increase efficiency coupled with the number of buildings that are still largely inefficient, opportunity remains for further improvement. ESPCs have demonstrated the ability to help the State save money without any capital budget allocation, which is now more important than ever.

This bill requires the State agencies to implement cost-effective energy efficiency measures, meaning that the savings will be greater than the cost of upgrade. Given Hawai'i has the highest energy rates in the country, energy efficiency can deliver significant cost savings which need to be harvested during these challenging budgetary times. Upgrades that cannot pay for themselves do not need to be implemented, ensuring fiscal responsibility.

Tackling energy use at state facilities will take time, manpower, and, in some instances, funding. State agencies have the flexibility to implement energy efficiency measures through ESPC, but it could also be funded through the Green Energy Market Securitization (GEMS) so that no upfront capital is required. The legislation does not limit state agencies from also funding the upgrades through capital improvement budgets if that is preferred.

As the State looks at ways to help local businesses recover from COVID-19, efficiency projects at state facilities can help to expand the economy and create opportunities for economic growth in the energy industry. We also need to support energy efficiency contractors who have been negatively impacted by

COVID-19, including loss of business, project delays and staff reduction. Hawai'i Energy stands ready to assist agencies with educational and engineering resources, as well as financial incentives to help launch these projects.

We appreciate the efforts made by the State Legislature, the Hawai'i State Energy Office and other State agencies, and various stakeholders to improve on the 2020 version. Thank you for the opportunity to testify in support of the proposed HD1 to SB987 SD2.

Sincerely, Brian Kealoha Executive Director Hawaiʻi Energy



Email: communications@ulupono.com

HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION Thursday, March 18, 2021 — 9:15 a.m.

Ulupono Initiative <u>supports</u> SB 987 SD 2 Proposed HD 1, Relating to Greenhouse Gas Emissions

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 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; and better management of freshwater and waste.

Ulupono <u>supports</u> SB 987 SD 2 Proposed HD 1, which requires and establishes deadlines for state facilities, except smaller facilities and facilities at Aloha Stadium, to implement cost-effective energy efficiency measures to help reduce greenhouse gas emissions; directs the Hawai'i State Energy Office to collect utility bill and energy usage data for state-owned buildings and to make the data publicly available; establishes a goal for the State to achieve at least a 25% reduction in the electricity consumption of state facilities; provides that certain agencies that perform energy efficiency retrofitting may continue to receive appropriations for energy expenditures; and, beginning 7/1/2022, requires, where feasible and cost-effective, the design of all new state building construction to maximize energy and water efficiency, maximize energy generation potential, and use building materials that reduce the carbon footprint of the project.

Ulupono supports energy efficiency measures to lower consumption across the State. As Hawai'i's energy issues become increasingly complex and challenging, we appreciate this committee's efforts to look at policies that reduce the State's overall energy demand, which in return should save the State, and taxpayers, money. We recommend adding in a deadline to meet the State's 25% reduction of electricity consumption goal.

Meeting the State's 100% renewable goal by 2045 will require everyone's commitment and it is important for the State government to lead the way.

Thank you for the opportunity to testify.

Respectfully,

Micah Munekata Director of Government Affairs

Investing in a Sustainable Hawai'i

SB-987-SD-2

Submitted on: 3/16/2021 10:17:34 PM Testimony for EEP on 3/18/2021 9:15:00 AM

Submitted By Organization		Testifier Position	Present at Hearing
Ted Bohlen	Climate Protectors Hawaii	Support	No

Comments:

To: The Honorable Nicole Lowen, Chair, the Honorable Lisa Marten, Vice Chair, and Members of the House Committee on Energy and Environmental Protection

From: Climate Protectors Hawaii (by Ted Bohlen)

Re: Hearing SB987 SD2 HD1 PROPOSED RELATING TO GREENHOUSE GAS EMISSIONS .

Hearing: Thursday, March 18, 2021, 9:15 a.m., by videoconference

Aloha Chair Lowen, Vice Chair Marten, and members of the House Committee on Energy and Environmental Protection:

Position: STRONG SUPPORT SB932 SD2 HD1 PROPOSED

The Climate Protectors Coalition is a group focused on reversing the climate crisis. As a tropical island State, Hawaii will be among the first places harmed by the global climate crisis, with more intense storms, loss of protective coral reefs, food insecurity, and rising sea levels destroying our shorelines. We must do all we can to reduce our carbon footprint and become carbon negative as soon as possible.

The purpose of this Act is to ultimately reduce greenhouse gas emissions by:

(1) Requiring state facilities, with the exception of smaller facilities and facilities at Aloha Stadium, to implement cost-effective energy efficiency measures;

(2) Directing the Hawaii state energy office to collect all state-owned facilities' utility bill and energy usage data and make this data publicly available;

(3) Establishing a goal for the State to achieve at least a twenty-five per cent reduction in the electricity consumption of state facilities;

(4) Providing that certain agencies that perform energy efficiency retrofitting may continue to receive a certain amount of appropriations for energy expenditures; and

(5) Beginning July 1, 2022, requiring, where feasible and cost-effective, the design of all new state building construction to maximize water efficiency, energy efficiency, and energy generation potential, and to use building materials that reduce the carbon footprint of the project.

Mahalo for the opportunity to testify in **strong support** of the intent of this very important legislation.

Climate Protectors Coalition (by Ted Bohlen)



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

March 18, 2021, 9:15 A.M. Video Conference

TESTIMONY IN SUPPORT OF SB 987 PROPOSED HD1

Aloha Chair Lowen, Vice Chair Marten, and members of the Committee:

Blue Planet Foundation **supports the proposed HD1 of SB 987**, an important energy efficiency measure that will reduce the taxpayer burden of state energy bills, create new jobs in clean energy, and decrease our carbon emissions. These are critical objectives—particularly given the dramatic economic challenges that Hawai'i faces. What's more, passing this measure will demonstrate that the State of Hawai'i leads by example.

The proposed HD1 of SB 987 is needed today

Energy efficiency is foundational to achieve Hawai'i's critical clean energy and climate objectives, such as the state's 100% renewable energy requirement, carbon neutrality goal, and commitments to the Paris climate targets. The proposed HD1 of SB 987 amplifies existing state efficiency efforts and brings renewed focus to the successful Energy Savings Performance Contract program. The measure also brings needed transparency on state building energy use to make visible even more savings opportunities. Finally, the proposed HD1 ensures that new construction anticipates our future energy and climate goals by maximizing feasible and cost-effective energy efficiency and energy generation design features and using building materials that reduce the carbon footprint of the project.

While the state has made some strides toward energy efficiency, considerable opportunities remain to decarbonize state buildings and reduce energy costs for taxpayers. The facilities that the State of Hawai'i owns and/or manages comprise one of the largest electricity users in the state. While the use of energy savings performance contracting—mainly during the period between 2009 and 2014—helped some agencies reduce their energy consumption, many agencies did not participate. Additionally, no new energy service contracts have been awarded by state agencies for nearly five years and, in some cases, some performance contracts were last awarded ten years ago. Since that time, technology has evolved significantly and is far more efficient, resulting in greater cost-saving benefits for the state.

HRS 196-19 states "Agencies shall retire inefficient equipment on an accelerated basis where replacement results in lower life-cycle costs." Instead, the State continues to utilize old and inefficient equipment in many facilities that do not meet this requirement and waste taxpayer money. The proposed HD1 of SB 987 would help to identify new energy savings opportunities and revitalize the successful performance contracting program.

The proposed HD1 of SB 987 Helps Address the State's Employment, Economic, and Budget Challenges

Energy efficiency is not only foundational to achieving our critical climate and clean energy goals, it boosts employment, economic activity, and tax revenue. State energy efficiency projects will keep hundreds of people employed at a time when the State is struggling to find new economic engines without tourism. As indicated in the "Hawai'i Clean Energy Initiative 2008-2018" report, energy efficiency employed 5,100 people statewide.¹ A BW Research Partnership report on COVID-19's economic crisis in August 2020 reported that Hawai'i lost nearly 3,800 clean jobs, or 25.2% of the clean energy workforce, since before the pandemic spread—including 1,704 in the energy efficiency sector.² These are well-paying jobs that could be regained through the adoption of the proposed HD1.

The reduction in state energy costs resulting from the energy efficiency projects can help reduce the projected budget shortfall. Critically, investment in energy efficiency projects through innovative performance contracting do not require any state or capital improvement project funds and instead can be funded through the energy savings. Further, energy efficiency projects will generate tax revenues for the state through the construction projects subject to the state's general excise tax.

Conclusion

The proposed HD1 of SB 987 is a keystone energy efficiency measure that will reduce the taxpayer burden of state energy bills, create new jobs in clean energy, and decrease our carbon emissions. At its core, however, the proposed HD1 is about more than just operating efficient buildings. This measure is a promise that the state will lead by example and serve as a model for residents and the private sector for our clean energy transformation. The new requirements in the proposed HD1 will inspire and demonstrate to everyone—consumers, building owners and managers, contractors—on how we use energy, make changes, and construct our buildings today for generations of tomorrow. The proposed HD1 of SB 987 shows how the State of Hawai'i is leading by example on how our energy culture is changing.

Thank you for the opportunity to provide testimony.

¹ See https://www.nrel.gov/docs/fy18osti/70709.pdf

² See https://bwresearch.com/covid/docs/BWResearch_CleanEnergyJobsCOVID-19Memo_July2020.pdf

<u>SB-987-SD-2</u> Submitted on: 3/16/2021 10:03:49 AM Testimony for EEP on 3/18/2021 9:15:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Lois Crozer	Individual	Support	No

Comments:

We can start by having the A/C turned down.

<u>SB-987-SD-2</u> Submitted on: 3/17/2021 11:28:27 AM Testimony for EEP on 3/18/2021 9:15:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Kaikea K. Blakemore	Individual	Support	No

Comments:

Support

SB-987-SD-2

Submitted on: 3/17/2021 2:01:00 PM Testimony for EEP on 3/18/2021 9:15:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Janet Pappas	Individual	Support	No

Comments:

Dear EEP, CPC and FIN Chairs, Vice Chairs and Committee Members,

I am writing in support of SB987, Proposed Version HD1 (**NOT** SD2), regarding energy efficiency of most of the States' buildings.

The legislature finds that:

- energy efficiency is the most cost-effective way to reduce greenhouse gas (GHG) emissions due to electricity generation and consumption
- maximizing efficiency (i.e., reducing demand for power generation) is a major part of reaching the State's goal of 100% renewable energy by 2045
- energy used to power buildings accounts for *more than 50%* of the electricity used in the State

Based on these facts, improving energy efficiency across the state of Hawaii should be mandatory. The State should lead by example and then provide assistance for businesses, homeowners and renters. Proposed bill SB987 HD1 (along with home/business efficiency improvements and fleet electrification bills) would go a long way towards meeting our energy transition goals.

I recommend a podcast series on Spotify "How to Save a Planet", episode: "Breaking Buildings' Addiction to Fossil Fuels" to see how one man built a company to retrofit buildings for efficiency in all areas (fuel, heating/air conditioning, refrigeration, use of energy efficient building materials, etc.). He also employs a programmer who has put each building's data (age, size, fuel usage, # windows, etc., etc.) into a database that helps him determine the best options for each building); he has so far retrofitted 1000 buildings.

These projects, after thorough research and planning, should be started as soon as possible; the savings we will all enjoy will be immediate and benefit the entire state.

Please pass Proposed Bill SB987 HD1.

Thank you for listening and for the opportunity to testify.

Sincerely,

Jan Pappas - Aiea, Hawaii