



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

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Statement of
LUIS P. SALAVERIA
Director
Department of Business, Economic Development, and Tourism
before the
HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

Tuesday, February 13, 2017
2:00 p.m.
State Capitol, Conference Room 329

in consideration of
HB2109, HD1
RELATING TO SOLAR WATER HEATERS.

Chair Takumi, Vice Chair Ichiyama, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) **supports** HB 2109, HD1, which limits the acceptance to Hawaii's solar water heater (SWH) mandate variance applications to applications for variance that (1) show SWHs are cost prohibitive or (2) use a renewable energy technology system to heat water.

The Hawaii State Energy Office (HSEO), an office of DBEDT, works with state and county agencies, energy stakeholders, and the local community to encourage and facilitate energy efficiency and conservation, including the oversight of the SWH Variance applications. The HD1 is consistent with the original intent of the SWH mandate (Act 204 SLH 2008), to reduce dependence on fossil fuels by installing a SWH for new single-family dwellings whenever it is cost effective.

Thank you for the opportunity to offer testimony on HB2109, HD1.



To: The House Committee on Consumer Protection & Commerce
From: Sherry Pollack, 350Hawaii.org
Date: Friday, 2/9/18

In strong support of HB 2109 HD1

Aloha Chair Takumi, Vice Chair Ichiyama and Committee members,

I am Vice President of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. On behalf of our members and supporters, 350Hawaii.org strongly supports HB 2109 HD1, which requires that solar water heater variance applications be signed by the architect or mechanical engineer attesting to the need for the variance, narrowing available criteria for granting a variance. Moreover, we recommend that the law be expanded to include all duplexes, triplexes, condos, or other multi-family dwellings.

The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are consistent with the state's renewable energy portfolio standard of 100% by 2045. The variances are supposed to be relied on very rarely, but developers have been subverting the intention of this Act, taking advantage of a loophole that allows the variance to be easily obtained. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed.

HB 2109 is a critical measure to ensure that the variance abuse is stopped, particularly as developers continue to seek variances to install gas water heaters for thousands of homes being built on some of the most abundant sun zones in the country.

Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, the legislature must close the loophole to avoid backtracking on our commitment to reaching 100% renewable energy.

Please support HB 2109 HD1.

Thank you for the opportunity to testify.

Sherry Pollack
350Hawaii.org



HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

February 13, 2018, 2:00 P.M.

Room 329

(Testimony is 5 pages long)

TESTIMONY IN STRONG SUPPORT OF HB 2109 HD1, SUGGESTED AMENDMENT

Aloha Chair Takumi, Vice Chair Ichiyama, and Committee members:

Blue Planet Foundation **strongly supports** House Bill (HB) 2109 HD1, which seeks to close the loophole in the state's solar water heater mandate.

Solar water heating is recognized as a hugely efficient—and cost-saving—strategy for most homes. Since 2010, the state has required solar water heating in all new homes. But this law has a variance process for rare exceptions where solar just doesn't work. Unfortunately, this variance has been abused by developers, despite the legislature's intent that **variances "will be rarely, if ever, exercised or granted."**

HB 2109 provides amendments to Hawaii's solar water heating law that close the fossil fuel loophole and protect consumers, while promoting the state's energy security and sustainability. **Closing the loophole is necessary and urgent.** For example, a large production builder is seeking variances to install gas water heaters for thousands of homes being built on the Ewa Plain—one of the most abundant sun zones in the nation. Without a policy to close the loophole, this misuse of the variance process will continue to the detriment of consumers and to the detriment of the state's progress toward renewable energy.

Blue Planet respectfully requests that the Committee amend HB 2109 HD1 to align the variance process with the clear legislative intent behind Hawaii's solar water heater mandate, as a preferred alternative to the language presented in the current HD1 draft of HB 2109. These suggested amendments seek to ensure that when variances are granted (albeit "rarely"), only grid-interactive water heaters or heat pump water heaters are to be used in place of a solar water heater. In other words, only water heaters that further our clean energy goals and add value to our increasingly renewable electric grid will be deemed viable replacements that align with the original intent of law.

Our suggested language is at the end of this testimony.

INTENT BEHIND HAWAII'S SOLAR WATER HEATER LAW IS CLEAR

As summarized in the preamble, in 2008 the legislature passed Act 204, which for the benefit of consumers required that new homes shall utilize solar water heating except in very narrowly limited circumstances through a variance process. In 2009's Act 155, the legislature took the

extraordinary step of expressly addressing concerns with potential implementation of the solar water heating law and its variance process. Act 155 explained that it “present[ed] a range of measures to reach aggressive energy goals while balancing the interests of various stakeholders.”

Part VII of Act 155 focused on the solar water heater law and explained that in passing Act 204, the legislature “found that retrofitting a home for a solar water heater after [the home] was constructed was more costly, and that such upfront costs . . . were substantial barriers for the average consumer. The financial barriers can be addressed, however, by including the installation of a solar water heater into the purchase price and mortgage of a home, where the cost of the system may pay for itself immediately.”

The current solar water heater mandate includes a variance process by which a single family dwelling can be built without a solar water heater if (1) “installation is impracticable due to poor solar resource,” (2) “installation is cost-prohibitive based upon a life cycle cost-benefit analysis,” (3) a “renewable energy technology system [e.g. solar photovoltaic system] is substituted for use as the primary energy source for heating water,” or (4) a “demand water heater device approved by Underwriter Laboratories, Inc., is installed; provided that at least one other gas appliance is installed in the dwelling.”

In contemplating variance no. 4, the legislature identified the potential for abuse and sought to further clarify its intent. In Act 155, the legislature found “that it [was] necessary to clarify the intent of the variance provision that allows for a demand water heater device [i.e. gas water heater]. **There is a potential that this provision may be used to allow a developer/builder, the purchaser of a water heating device, of a single-family dwelling, to circumvent the policy objectives of Act 204.**” (Emphasis added). The legislature noted that it “intended for a consumer to have the option to use gas appliances with the full knowledge that such a system may be more costly and less efficient. To obviate any attempt to circumvent Act 204, then, the legislature intends that if the potential variance applicant is not the party who will ultimately pay for the energy cost consumption, then only [variance exceptions (1), (2) or (3)] should apply.”

The legislature was unambiguous: **the legislature intended for the solar water heater law variance process to bar any attempt by developers/builders to build housing tracts using gas water heaters.** Such housing tracts, including huge tracts presently undergoing development on Oahu, are not eligible for the gas water heater variance (i.e. variance no. 4) because the application for a variance is not sought by the consumer (who will “ultimately pay for the energy cost consumption”) but rather by the developer/builder.

An interpretation to the contrary would mean that new homeowners are locked in to homes with fossil fuel water heaters and are unwittingly subjected to higher energy costs over years of home ownership. Yet this misinterpretation prevails in the state’s current implementation of the solar water heater variance process. HB 2109 HD1 rightfully recognizes the urgent need to close this loophole and prevent further misuse.

CLARIFICATION ON THE PROCESS FOR VARIANCE REQUESTS IS URGENTLY NEEDED

The legislature's concern about the potential for abuse was well founded. As noted in the preamble to HB 2109 HD1, the number of variances requested and approved is in the thousands.

In Act 155, the legislature explained that it intended **“that the variances provided for in [Act 204] will be rarely, if ever, exercised or granted** because the burden of proof will lie with the applicant to demonstrate that a solar water heater system, regardless of location or circumstance, is not cost-effective in the context of a thirty-year mortgage term.” (Emphasis added).

According to state records,¹ **5,627 variance requests have been received as of January 11, 2018**, with a single architect responsible for submitting over 2,200 of those variance requests. What's more, **over 99% of all variance requests received have been approved**. These numbers far exceed the *“rarely, if ever, exercised or granted”* variances envisioned by the legislature when passing the law. Arbitrary approval of essentially all requests simply because the forms have been filled out is contrary to the law's intent.

In addition, the vast majority of variance requests are for gas water heaters. These facts paint a stark picture. Building out new fossil fuel infrastructure would be plainly at odds with the state's commitment to transition to 100% renewable energy and the state's effort to comply with its climate change obligations enacted with 2017's Act 32 (committing the state to the Paris Climate Agreement).

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

SUGGESTED AMENDMENT

Blue Planet respectfully requests that the Committee amend HB 2109 HD1 to align the variance process with the clear legislative intent behind Hawaii's solar water heater mandate, as a preferred alternative to the language presented in the current HD1 draft of HB 2109. The suggested amendments provided below seek to ensure that when variances are granted (albeit “rarely”), only grid-interactive water heaters or heat pump water heaters are to be used in place of a solar water heater. In other words, only water heaters that further our clean energy goals and add value to our increasingly renewable electric grid will be deemed viable replacements that align with the original intent of law. The suggested amendments also clarify that discretion may be used in denying any variance application deemed incomplete or insufficient to ensure

¹ See DBEDT Summary Chart of Solar Water Heater Variance Requests, Jan. 11, 2018, *available at* http://energy.hawaii.gov/wp-content/uploads/2018/01/List-Jan_11_2018.pdf

that any variances granted are in accordance with the intent of the law and further our progress toward a fossil fuel free future for the state.

Our suggested amendments to Section 2 of HB 2109 HD1 are as follows:

§196-6.5 Solar water heater system required for new single-family residential construction.

(b) If a variance is granted for a property that will be connected to an electric utility grid, a grid-interactive water heater or a heat pump water heater shall be used in place of a solar water heater. For the purposes of this paragraph, "grid-interactive water heater" means an electric resistance water heater fitted with grid-integrated controls that are capable of participating in an electric utility load controls or demand response program.

(~~b~~c) A request for a variance shall be submitted to the coordinator on an application prescribed by the coordinator and shall include a description of the location of the property and detailed justification for the approval of a variance using the criteria established in subsection (a), and the type of replacement water heater being used in accordance with subsection (b). The coordinator may exercise discretion in denying any variance application deemed incomplete or insufficient to satisfy the criteria in subsections (a) and (b). A variance shall be deemed approved if not denied within ~~thirty working~~ sixty calendar days after receipt of the variance application. The coordinator shall publicize:

(1) All applications for a variance within seven days after receipt of the variance application; and

(2) The disposition of all applications for a variance within seven days of the determination of the variance application.

(~~e~~) The director of business, economic development, and tourism may adopt rules pursuant to chapter 91 to impose and collect fees to cover the costs of administering variances under this section, and to impose appropriate penalties or fines for false attestations in variance applications. The fees, fines, or penalties, if any, shall be deposited into the energy security special fund established under section 201-12.8.

(~~e~~) Nothing in this section shall preclude any county from establishing procedures and standards required to implement this section.

(~~e~~) Nothing in this section shall preclude participation in any utility demand-side management program or public benefits fee program under part VII of chapter 269.

CONCLUSION

Blue Planet Foundation strongly supports HB 2109 HD1 with our suggested amendment to better align the variance process with the clear legislative intent and clarify that discretion can be exercised when reviewing variance requests.

Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

We look forward to working with the legislature on this key policy.

Thank you for the opportunity to testify.



Hawai'i Energy

YOUR CONSERVATION & EFFICIENCY PROGRAM

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Before the House Committee on Consumer Protection & Commerce
Tuesday, February 13, 2018, 2:00 PM, Conference Room 329
HB2109: Relating to Solar Water Heaters

Chair Takumi, Vice-Chair Ichiyama, and Members of the Committee

Thank you for the opportunity for to testify in strong **support** for HB2109 HD1.

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 by reducing energy consumption, saving money, and pursuing a 100% clean energy future.

In 2008, the Hawai'i legislature passed Acts 204 and 105 as the legislature had "found that retrofitting a home for a solar water heater after [the home] was constructed was more costly and that such upfront costs...were substantial barriers for the average consumer." The legislature further explained that "the financial barriers can be addressed . . . **by including the installation of a solar water heater into the purchase price and mortgage of a home, where the cost of the system may pay for itself immediately.**"

Hawai'i Energy agrees with the legislature and advocates for the installation of cost-effective energy efficiency measures at the time of construction as this presents the lowest cost to the consumer. Additionally, residents will see a significant benefit over the next 20 years with most, if not all, of their water heating costs eliminated through the installation of solar water heaters. According to the U.S. Department of Energy, this results in homeowners paying between \$13 - \$20 more per month in a 30-year mortgage.

Hawai'i Energy has found solar water heaters reduce electrical consumption in a home between 20 – 40%, depending on the size of the home and the number of occupants. This translates to savings of \$20 to \$60 in savings on the occupant's electric bill each month. **This significant savings can help homeowners cover all of their expenses and ensure their ability to stay in their homes.**

The Hawai'i Energy program offers rebates for existing homes to retrofit their electric water heater to solar water heating due to the tremendous savings. However, the program does not offer rebates on new construction as solar water heating is mandated by law.

HB2109 HD1 addresses the current loophole in the law by requiring the architect or licensed engineer to attest that the installation of solar water heating would be cost-prohibitive in accordance to what is stipulated by law. The bill also grants the coordinator receiving the variance the ability to deny any variance application that the coordinator deems incomplete or insufficient which is important for enforcement.

Thank you for the opportunity to testify in strong **support** of HB2109 HD1.

Brian Kealoha
Executive Director



Testimony to the House Committee on Consumer Protection and Commerce

Tuesday, February 13, 2018 2:00 p.m.
Conference Room 329, State Capitol
RE: House Bill 2109 HD1

Chair Takumi, Vice Chair Ichiyama and Members of the Committee on Consumer Protection and Commerce

Hawaii Gas **opposes** HB2109 HD1 and provides the following **comments**

HB2109 HD1 proposes to amend Act 104, which provides a variance by which a single-family dwelling could be built without a solar water heater. One variance currently allows for a demand water heater; however, the amendments proposed eliminate the option for an energy efficient tankless on demand water heater, as well as eliminate poor solar resource as a viable reason for a variance.

In fact, the efficient tankless instantaneous water heater equipment used in a residential setting fed by the utility gas distribution system or a propane tank, especially in isolated geographical areas, where there is little or no solar resource, nor access to an electric grid would leave no alternative to the residents to heat water.

That said, Hawaii Gas remains committed to procuring fuel that is cleaner and more renewable and has been taking actions to do so with its first renewable natural gas project to come on line in 2018. With committed projects to date, Hawaii Gas expects to reduce the equivalent of over 100,000 barrels per year of imported oil to the state once the projects are fully operational.

In addition, as the Governor and the State Legislature have highlighted, one of the top challenges in the State is affordable housing. Since rooftop solar heating systems are an expensive investment in comparison to other water heating options (be it gas or electric), removing or restricting the variance option can make housing even more expensive and unaffordable for many people. This is particularly true in the affordable housing bracket, as one of the largest challenges for affordable housing purchasers is mortgage qualification. Mandating expensive up-front costs has the potential impact of lowering the pool of moderate-to low-income residents who can qualify for mortgages. For comparison, a typical residential solar hot water system will cost \$4,000-\$8,000, whereas, a demand water heater costs only a fraction of that. When these amounts are included in a typical 30- year mortgage, the accumulated interest is substantial. On-Demand water heaters are an affordable, reliable and energy efficient option now, particularly given a resident only uses heat energy when they need it, and the appliances do not receive any additional funding from the State (as compared to an ITC for solar). The variances issued to date



reaffirm the upfront cost savings as a significant motivator with roughly 96% being granted within USDA Rural Development Areas. These areas consist of some of the lowest income census tracts in the state.

Proponents of eliminating the demand water heater variance also argue that the current variance exemption allows developers to avert the state's solar water heating mandate. Based on figures obtained from the Hawai'i State Energy Office, only about 11% of new home permits were variances related to the demand water heater variance for Oahu. The solar water mandate is working as intended. The people who would be hurt by this legislation are from rural areas, who often don't have access to the electric grid, or intermittent access to power and do not have good solar resource such as in east Hawaii, Molokai and Lanai, Kauai, Maui and Oahu. And, these areas are overlaid by the lowest income areas as well.

Two thirds of all variances granted since 2010 were for the Island of Hawaii, most notably East Hawaii. These homes are often remote and have many resource challenges, including lack of county water (use catchment tanks), poor solar resource, lack of access to the electric grid, or intermittent service from the electric grid. Gas-powered, instantaneous water heaters are often the only available water heating source. Solar water heating systems in these areas could provide only a fraction of a household's needs for part of the year, at best. Homeowners must utilize multiple propane tanks as the only fuel to heat their water. When solar resource is intermittent or poor, and there is also no access to an electric grid, these occupants would be left with no hot water under HB2109.

In addition, gas water heaters also offer the potential to allow residents to have hot water, in the event of a power outage. This was the case in Kauai after Hurricane Iniki, where residents were still able to have hot water during the time of the recovery. Solar hot water systems (a significant proportion of which utilize electricity for pumping and controls, and many of which have supplemental electrical heating elements) or any grid-connected electrical-based alternative, will invariably be subject to system outages. As noted in HB 2249, "The Hawaii emergency management agency estimates that under a best-case scenario, it would take at least fourteen days after landfall of a category four hurricane on Oahu to restore eighty per cent of grid power. Most public emergency shelters in the State do not have the capacity to provide two weeks of electrical service and relief from the mainland is dependent upon a functioning airport and seaport".

Lastly, solar hot water heaters are grid connected because the sun does not shine ALL the time. When the hot water tank is not able to be adequately heated by the solar resource, as in cloudy days or when there is high demand for hot water by multiple users as may be the case in many



multigenerational homes, the system will be powered by the electric grid, often unbeknownst to the user. Currently this electric usage is approximately 70% fueled by fossil fuels, and those with solar water heating may have unanticipated increases in their electric bill.

Thank you for the opportunity to testify on HB 2109.



Hawaii Solar Energy Association
Serving Hawaii Since 1977

**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO HB 2109 HD1, RELATING TO SOLAR WATER HEATERS
BEFORE THE
HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE
ON
TUESDAY, FEBRUARY 13TH, 2018**

Chair Takumi, Vice-Chair Ichiyama, and members of the committee, my name is Will Giese, and I am the Executive Director of the Hawaii Solar Energy Association, Inc. (HSEA).

The HSEA was founded in 1977 to further solar energy and related arts, sciences and technologies with concern for the ecologic, social and economic fabric of the Hawaiian Islands. Our membership includes the majority of locally owned and operated solar installers, contractors, distributors, manufacturers, and inspectors across all islands.

HSEA strongly supports HB 2109 HD1. This bill would amend §196-6.5 regarding the solar water heater mandate for new single-family home construction. This bill seeks to amend several parts of the statute to encourage the deployment of renewable energy and energy efficient devices in line with state goals.

Act 204 of the 2008 regular legislative session¹ first established §196-6.5 as a means to encourage the adoption of inexpensive and energy efficient water heaters in new single-family home construction. Subsequently, in 2009 the legislature passed Act 155 which, specifically in Part VII, sought to clarify the administration of the Solar Hot Water Variance Law. Act 155 asserted that variances would be “rarely, if ever, exercised or granted because the burden of proof will lie with the applicant to demonstrate that a solar water heater system, regardless of location or circumstance, is not cost effective in the context of a thirty-year mortgage.”² Act 155 also specifically states (emphasis added):

“Therefore, the legislature intended for a consumer to have the option to use gas appliances with the full knowledge that such a system may be more costly and less efficient. To obviate any attempt to circumvent Act 204, then, the legislature intends that **if the potential variance applicant is not the party who will ultimately pay for the energy cost consumption, then only paragraph (1), (2), or (3) of subsection (a) in section 196-6.5, Hawaii Revised Statutes, should apply.**”

The intent of the legislature was clear: Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes wherever possible and in line with state’s

¹ See Act 204 and Gov. Msg. No. 947 on June 26, 2008 during the twenty-fourth state legislature in the state of Hawai‘i.

² See Act 155, Part VII, Twenty-fifth State Legislature, State of Hawaii, July 1, 2009.



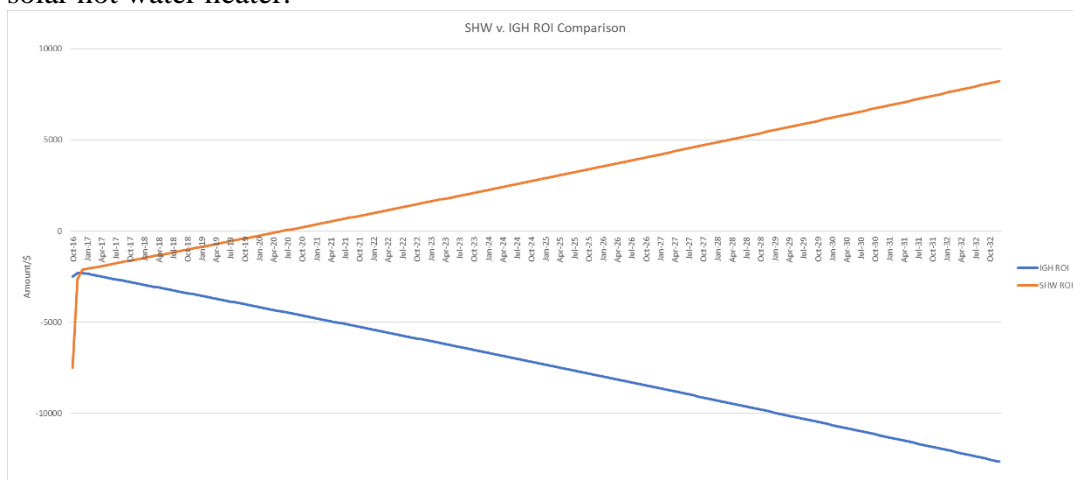
Hawaii Solar Energy Association Serving Hawaii Since 1977

goals *and* any variance request for instant gas water heaters should *rarely if ever* be granted.

To date, **5,627** variances have been requested and **5,599** variance requests have been approved. Of those requests, **5,290** of the requests have been for the installation of an instantaneous gas water heater as allowed in §196-6.5 (a)(4). Just this year, there have been instantaneous gas heater variances applied and approved in as many days. How can it be, in a state that currently has no infrastructure to support large amounts of natural gas and such ambitious renewable energy goals, that almost 5,300 gas water heaters have been installed on new homes? Was it the intent of Act 204 and Act 155 to allow for the application and approval of this many variances?

While the initial capitol cost for an inefficient gas water heater may be less than a solar water heater when tax credits and rebates are not considered, over the life time of the systems this is simply not true. Developers who abuse §196-6.5 by constantly applying for instantaneous gas heater variances instead past the cost burden onto the consumer and the state. Consumers who utilize instantaneous gas heaters over the lifetime of their appliance will spend an additional \$8,000 on therms compared to a savings of over \$8,200 for a solar hot water heater of comparable size. In fact, when credits and rebates are taken into account for instantaneous gas heaters and solar hot water heaters, the return on investment for the energy consumer of a solar hot water heater is within two years of installation.³

In testimony submitted on previous versions of this bill, some testifiers pointed out that the *initial capital cost* of a solar hot water is higher than that of an instant gas water heater. The upfront cost savings are realized by the *developer*, and over the life of a water heater the cost/therm far exceeds the savings on initial capitol cost when compared to a solar hot water heater.



³ The HSEA staff has conducted an analysis of the payback of SHW and IGH systems with or without credits and rebates and considering current and future cost-per-therm of residential utility gas. Please contact Will Giese at (808) 232-8371 or by email at wgiese@hsea.org for more information.



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Furthermore, the testifiers assert that “as water heaters also offer the potential to allow residents to have hot water, in the event of a power outage.” ***This is actually false***, as a majority of instant gas water heaters installed today do not have a standing pilot available during a power outage and would be just as likely to not function during a power outage event as a standard grid connected AC-pumped solar hot water system. However, solar hot water systems have been and are installed today with connections through either off-grid capable inverters or through standalone PV modules providing DC power, which add resiliency and stability during power outages.

In certain rare situations it makes sense for the installation of an instantaneous gas water heater. Vacation homes that are occupied for only a few months in a year or homes with very poor solar irradiance would be suitable candidates of IGH. However, homes being built in residential areas like Ho’opili and Koa Ridge, where residents will live year-round and where solar irradiance is higher than on almost any other place in the state, **do not make sense.**

HB 2109 empowers the Department of Business, Economic Development, and Tourism to give consumers efficient and cost saving choices, while simultaneously bringing the state closer to it’s goal of 100% RPS by 2045.

We strongly urge the committee to support of HB 2109 SD1.

Thank you for the opportunity to testify.

February 12, 2018

Testimony to the House Committee on Consumer Protection and Commerce
Tuesday, February 13, 2018 2:00 p.m.
Conference Room 329, State Capitol
RE: House Bill 2109 HD1

Aloha Chair Takumi, Vice Chair Ichiyama and Members of the Committee on Consumer Protection and Commerce,

HPM opposes HB2109 HD1 and provides the following comments:

HB2109 requires that architects or mechanical engineers sign solar water heater variance applications. It also eliminates “poor solar resource” as an allowable variance.

HPM Building Supply is a 96-year-old company servicing all islands in the state and is headquartered in Kea’au on the East side of Hawai’i Island the Island. Since the inception of our home package program in the 1980’s we have literally assisted thousands of residents in designing their house, securing architectural stamps and building permits, selecting home building materials and navigating the challenges of building in Hawai`i.

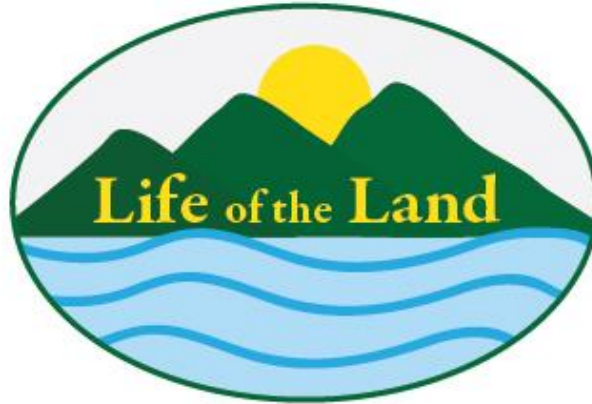
Due to the affordability of land, HPM often works with landowners in the East and South areas of Hawai’i Island. These areas are often remote and have many resource challenges, including lack of County water, lack of access to or intermittent service from the electric grid, and poor solar resource. In these cases, tankless on-demand water heaters are often the only available alternative.

In addition to solar systems not being effective in areas with low daily solar resources, solar systems are also much more expensive than tankless solutions. A typical residential solar hot water system costs \$4,000-\$8,000, compared to the much smaller cost of an on-demand water heater. Furthermore, requiring the added step of securing an architect or engineer to attest and provide the cost analysis required as part of the application will also increase the time and cost to the homeowner. These increased costs significantly impact of the ability of low to moderate-income residents to qualify for mortgages, and potentially make many projects unfeasible.

You must defer this bill because of the harm it will cause to many aspiring home builders across our state, especially those who are already the most challenged to fulfill the dream of owning their own home.

Thank you for the opportunity to testify.

Jason Fujimoto
HPM Building Supply
Phone 808-966-5629
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COMMITTEE ON CONSUMER PROTECTION & COMMERCE

Rep. Roy M. Takumi, Chair
Rep. Linda Ichiyama, Vice Chair

Tuesday, February 13, 2018
2:00 P.M.
Conference Room 329

HB 2109, HD1 RELATING TO SOLAR WATER HEATERS

Aloha Chair Takumi, Vice Chair Ichiyama, and Members of the Committee

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for 47 years. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. Like the use of variances for land decisions, which is supposed to be relied on very rarely, variances for water heaters is out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved about 99 percent of the over 5,000 variance requests that were filed.

This bill would require that the owner, and the architect or mechanical engineer, to swear in writing to DBEDT that solar would not work. The law should be expanded to include all duplexes, triplexes, condos, or other multi-family dwellings.¹

Mahalo,

Henry Curtis
Executive Director

¹ http://energy.hawaii.gov/wp-content/uploads/2011/09/FAQs-SWH-Variance-2_3_2017.pdf

HB-2109-HD-1

Submitted on: 2/12/2018 1:47:51 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---|---------------------------|---------------------------|
| Melodie Aduja | OCC Legislative Priorities Committee | Support | No |

Comments:



SIERRA CLUB OF HAWAII
MĀLAMA I KA HONUA. *Cherish the Earth.*

HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE

Tuesday, February 13, 2018 2:00PM Conference Room 329

In SUPPORT of HB 2109 HD1 Relating to solar water heaters

Aloha Chair Takumi, Vice Chair Ichiyama and members of the Committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i, a member of the Common Good Coalition, **supports HB 2109 HD1**, requiring that (1) solar water heater variances be signed by the architect or mechanical engineer attesting to the need for the variance, (2) any tankless water heater installed instead of a solar water heater be energy efficient, and (3) the individual who would pay for the energy costs sign the application for a solar water heater variance.

To understand the intent of HB 2109 HD1, we must first review the intent of Act 204 (enacted in 2008) and Act 155 (enacted in 2009) for context.

HB 2109 HD1 seeks to amend §196-6.5 of Act 204, regarding the solar water heater mandate for new single-family home construction, which serves to encourage the adoption of inexpensive and energy efficient renewable energy water heaters in new single-family home. The measure also seeks to amend several sections of the statute to encourage the implementation of renewable energy and energy efficient devices congruent with state goals, and give greater power to DBEDT to exercise discretion in the administration of these variances.

Act 155, an effort to clarify the administration of the Solar Hot Water Variance Law, states that variances would be “rarely, if ever, exercised or granted because the burden of proof will lie with the applicant to demonstrate that a solar water heater system, regardless of location or circumstance, is not cost effective in the context of a thirty-year mortgage” and further, “Therefore, the legislature intended for a consumer to have the option to use gas appliances with the full knowledge that such a system may be more costly and less efficient. To obviate any

attempt to circumvent Act 204, then, the legislature intends that if the potential variance applicant is not the party who will ultimately pay for the energy cost consumption, then only paragraph (1), (2), or (3) of subsection (a) in section 196-6.5, Hawai'i Revised Statutes, should apply.”

To be clear: liquified natural gas (LNG), especially when using hydraulic fracturing (fracking) for extraction, *is not clean energy*. Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes *that are congruent with the state's goals of 100% by 2045* and, further, any variance request for gas water heaters should rarely, if ever, be granted. Since the enactment of 204, however, *over 5,600 variances have been requested and over 5,300 of them approved for the installation of gas water heaters*. It does not follow that, in a state that currently has no infrastructure for full-scale natural gas--not to mention in addition to its ambitious renewable energy goals--that thousands of gas water heaters have been installed in news homes and with no evidence of slowing.

Also of importance to note is that the initial implementation costs--when considering available tax credits and rebates--the return on investment over time for solar water heaters is less than for gas heaters, especially in many regions (e.g., Ho'opili, Koa Ridge) where solar irradiance is high. HB 2109 HD1 gives the Department of Business, Economic Development, and Tourism (DBEDT) the authority to provide consumers with efficient and cost saving choices, while simultaneously bringing the state closer to it's goal of 100% by 2045.

The Sierra Club of Hawai'i cannot support any program that increases the use of fossil fuels in our state, and neither should the legislature. The intent of Act 204 and Act 155 was clear: increase the use of renewable green energy and energy efficient construction and decrease the use of fossil fuels to heat water. As it stands now, §196-6.5 is not following the intent of the original law nor the intent of the state's 100% RPS goals and needs to change immediately.

Thank you for the opportunity to testify in **support of HB 2109 HD1**.



Email: communications@ulupono.com

HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE
Tuesday, February 13, 2018 — 2:00 p.m. — Room 329

Ulupono Initiative Strongly Supports HB 2109 HD 1, Relating to Solar Water Heaters

Dear Chair Takumi, Vice Chair Ichiyama, and Members of the Committee:

My name is Murray Clay and I am Managing Partner of the Ulupono Initiative, a Hawai'i-based impact investment firm that strives to improve the quality of life for the people of Hawai'i by working toward solutions that create more locally produced food; increase affordable, clean, renewable energy; and better management of waste and fresh water. Ulupono believes that self-sufficiency is essential to our future prosperity and will help shape a future where economic progress and mission-focused impact can work hand in hand.

Ulupono strongly supports HB 2109 HD 1, because it aligns with our goal of increasing the production of clean, renewable energy in Hawai'i.

Solar water heaters are one of the most cost effective investments a homeowner can make if they would like to reduce their electricity usage. This investment seems most appropriate for new housing developments as the new owner can maximize their energy and cost savings from the start. However, variances to the solar water heater mandate have been approved over 99% of the time, which was not the intent of the Legislature at the time of the mandate's passage. This has led, in effect, to a lot less solar water heater investments than should have been executed.

As Hawai'i's energy issues become more complex and challenging, we appreciate this committee's efforts to look at policies that support renewable energy production.

Thank you for this opportunity to testify.

Respectfully,

Murray Clay
Managing Partner

Investing in a Sustainable Hawai'i

HB-2109-HD-1

Submitted on: 2/11/2018 3:30:40 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Carlton York | Individual | Oppose | No |

Comments:

There should be no restriction on alternative energy solutions !

HB-2109-HD-1

Submitted on: 2/11/2018 5:42:29 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Janet Graham | Individual | Support | No |

Comments:

I support this bill because it enables the original intent of Act 204 to come through. The following points explain it clearly.

- The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

- Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intention of Act 204, building homes as cheaply as possible, putting future energy costs on home buyers, and the climate change 'cost' on all of society.

- The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

- Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

- As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America, not only sea level rise. We should therefore be more concerned than any other state with utilizing the bountiful renewable resource that sunshine represents, not allowing developers to dodge the act.

-We should be setting an aggressive legislative example for the rest of America and for the world. HB2109 represents an effort to limit the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

-Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

-Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's goals of 100% by 2045. Since the enactment of Act 204, over 5,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquefied natural gas (LNG), especially when using hydraulic fracturing (fracking) for extraction, is not clean energy, it is a potent greenhouse gas. It is of grave concern that thousands of gas water heaters have been installed in new homes and with no evidence of slowing. These efforts to accelerating climate disruption must be stopped for the sake of our children's future and malama the aina

HB-2109-HD-1

Submitted on: 2/11/2018 5:49:37 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Patricia Blair | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/11/2018 5:51:32 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Linda Morgan | Individual | Support | No |

Comments:

HB 2109 closes the loophole that has allowed developers to install gas water heaters on new buildings rather than legally required solar water heaters. In warm, sunny Hawaii, it makes no sense to burn a fossil fuel to heat water. Solar water heaters get us closer to the goal of 100% renewable energy usage. This bill must be passed!

HB-2109-HD-1

Submitted on: 2/11/2018 6:13:08 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| L.M. Holmes | Individual | Support | No |

Comments:

What is the point of passing the law if automatic variances are issued? 30% variances is far too many to be justified.

HB-2109-HD-1

Submitted on: 2/11/2018 6:43:16 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| tlaloc tokuda | Individual | Support | No |

Comments:

i am a member of 350 HI who's aim is to keep fossil fuel in the ground. I support HB 2109 for the following reasons:

- The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

- Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intention of Act 204, building homes as cheaply as possible, putting future energy costs on home buyers, and the climate change 'cost' on all of society.

- The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

- Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

- As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America, not only sea level rise. We should therefore be more concerned than any other state with utilizing the bountiful renewable resource that sunshine represents, not allowing developers to dodge the act.

-We should be setting an aggressive legislative example for the rest of America and for the world. HB2109 represents an effort to limit the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

-Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

-Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's goals of 100% by 2045. Since the enactment of Act 204, over 5,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquefied natural gas (LNG), especially when using hydraulic fracturing (fracking) for extraction, is not clean energy, it is a potent greenhouse gas. It is of grave concern that thousands of gas water heaters have been installed in new homes and with no evidence of slowing. These efforts to accelerating climate disruption must be stopped for the sake of our children's future.

HB-2109-HD-1

Submitted on: 2/11/2018 8:36:08 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Joseph Kohn MD | Individual | Support | No |

Comments:

www.WeAreOne.cc

HB-2109-HD-1

Submitted on: 2/11/2018 9:59:11 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| laura Ramirez | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/11/2018 10:03:51 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Cory Harden | Individual | Support | No |

Comments:

Aloha legislators,

Please close the huge loophole reducing the number of energy-saving solar water heaters. Gas must be shipped in. Sunshine is delivered free.

mahalo,

Cory Harden, Hilo

HB-2109-HD-1

Submitted on: 2/11/2018 11:58:43 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Jonathan Boyne | Individual | Support | No |

Comments:

-The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

- Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intention of Act 204, building homes as cheaply as possible, putting future energy costs on home buyers, and the climate change 'cost' on all of society.

- The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

- Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

- As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America, not only sea level rise. We should therefore be more concerned than any other state with utilizing the bountiful renewable resource that sunshine represents, not allowing developers to dodge the act.

-We should be setting an aggressive legislative example for the rest of America and for the world. HB2109 represents an effort to limit the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

-Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

-Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's goals of 100% by 2045. Since the enactment of Act 204, over 5,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquefied natural gas (LNG), especially when using hydraulic fracturing (fracking) for extraction, is not clean energy, it is a potent greenhouse gas. It is of grave concern that thousands of gas water heaters have been installed in new homes and with no evidence of slowing. These efforts to accelerating climate disruption must be stopped for the sake of our children's future.

To: The House Committee on Consumer Protection & Commerce
From: Brodie Lockard, 808-262-1285
Date: Tuesday, February 13, 2018

In strong support of HB 2109

Dear Chair Takumi, Vice Chair Ichiyama and Committee members--

I strongly support HB 2109.

The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're being greatly abused. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intention of Act 204, building homes as cheaply as possible, putting future energy costs on home buyers, and the climate change cost on all of society.

HB 2109 is a critical measure to ensure that this trend does not continue as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America. We should be very concerned with developers dodging the act. HB2109 limits the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes. Liquefied natural gas (LNG), especially when fracked, is not clean energy. It is a potent greenhouse gas. It is of grave concern that thousands of gas water heaters have been installed in new homes with no credible proof they're needed.

Thank you for this opportunity to submit testimony.

Brodie Lockard

HB-2109-HD-1

Submitted on: 2/12/2018 9:13:07 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|----------------------|---------------------|---------------------------|---------------------------|
| Mary Whispering Wind | Individual | Support | No |

Comments:

I SUPPORT HB2109,

Please protect our environment. Organic natural agriculture, without toxic contamination of our food and environment is necessary to protect the health, safety, and economic future of Hawaii's citizens.

Mahalo for your concerned consideration,

Mary Whispering Wind
PWT Maui, volunteer

HB-2109-HD-1

Submitted on: 2/12/2018 10:14:32 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Tulsi Greenlee | Individual | Support | No |

Comments:

Please support this bill. Thank you Tulsi Greenlee

HB-2109-HD-1

Submitted on: 2/12/2018 10:52:42 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| John NAYLOR | Individual | Support | No |

Comments:

Aloha All,

Please close this loop hole! 100% of all new construction should include Solar H2O heating or at the very least adequate PV dedicated to water heating. Please also include State incentives for existing homes and buildings to upgrade to solar.

Mahalo, John Naylor Makawao

HB-2109-HD-1

Submitted on: 2/12/2018 11:52:26 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Jayson Medeiros | Individual | Oppose | No |

Comments:

On Lanai, we have areas that do not have good sun. Please let us continue to have the option to go another way than solar water heating which is expensive. I strongly oppose this measure that will severely limit my options. Please keep the existing law the way it is. Thank you for your time.

HB-2109-HD-1

Submitted on: 2/12/2018 12:09:48 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Joelle Aki | Individual | Oppose | No |

Comments:

On Lanai, we don't have many options and are limited in money available. Please help us keep the options available for water heating on new homes. Some of our people prefer to have gas for efficiency and cost. Please do not limit what we can do. Let us decide for ourselves. Mahalo for listening.

HB-2109-HD-1

Submitted on: 2/12/2018 12:16:33 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Allen Ashitomi | Individual | Oppose | No |

Comments:

Please do not get rid of our options. Solar, gas, other...let me decide. Thank you.

HB-2109-HD-1

Submitted on: 2/12/2018 12:44:59 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| James Temple | Individual | Oppose | No |

Comments:

Oppose. Please let us have options on Molokai. Thank you.

HB-2109-HD-1

Submitted on: 2/12/2018 12:51:35 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Seena Clowser | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 12:53:52 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Edwardo Wond | Individual | Oppose | No |

Comments:

From Molokai: We do not want any change to this law. Please let us have a choice. No more government telling me what I can or cannot do. Aloha.

HB-2109-HD-1

Submitted on: 2/12/2018 1:00:11 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Meredith Buck | Individual | Support | No |

Comments:

- The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

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- The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

- Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

- As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America, not only sea level rise. We should therefore be more concerned than any other state with utilizing the bountiful renewable resource that sunshine represents, not allowing developers to dodge the act.

-We should be setting an aggressive legislative example for the rest of America and for the world. HB2109 represents an effort to limit the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

-Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

-Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's goals of 100% by 2045. Since the enactment of Act 204, over 5,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquefied natural gas (LNG), especially when using hydraulic fracturing (fracking) for extraction, is not clean energy, it is a potent greenhouse gas. It is of grave concern that thousands of gas water heaters have been installed in new homes and with no evidence of slowing. These efforts to accelerating climate disruption must be stopped for the sake of our children's future.

HB-2109-HD-1

Submitted on: 2/12/2018 1:00:56 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Ricky Sanchez | Individual | Oppose | No |

Comments:

Solar is limited in certain parts of Lanai and some of us like to live off grid. Please do not let us lose the option of gas when solar does not work. Solar is expensive too. Let us decide. Thank you.

HB-2109-HD-1

Submitted on: 2/12/2018 1:35:38 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Les Alcantara | Individual | Oppose | No |

Comments:

Please vote no on this bill for the people of Lanai. Thank you.

HB-2109-HD-1

Submitted on: 2/12/2018 1:49:28 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Edwin Kaaana | Individual | Oppose | No |

Comments:

Please allow the Molokai people to have choice. Some of our areas do not have good sun. We want to be able to have other ways to get our hot water. Plus too the solar systems are expensive. Give us the choice on Molokai. Thanks.

HB-2109-HD-1

Submitted on: 2/12/2018 1:49:54 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Nanea Lo | Individual | Support | No |

Comments:

Hello,

My name is Nanea Lo and I'm writing in to ask please support this bill.

- The Legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control. Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

- Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intention of Act 204, building homes as cheaply as possible, putting future energy costs on home buyers, and the climate change 'cost' on all of society.

- The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

HB 2109 is a critical measure to ensure that this trend does not balloon as large production builders continue to seek a steady stream of variances to install gas water heaters for thousands of homes being built on some one of the most abundant sun zones in the nation (e.g., the Ewa Plain).

- Closing the loophole is necessary and urgent to avoid backtracking on our commitment to reaching 100% renewable energy and meeting our climate commitments.

- As a small, remote island state, Hawaii is more vulnerable to all the effects of climate change than any other state in America, not only sea level rise. We should therefore be

more concerned than any other state with utilizing the bountiful renewable resource that sunshine represents, not allowing developers to dodge the act.

-We should be setting an aggressive legislative example for the rest of America and for the world. HB2109 represents an effort to limit the use of this variance with a real test of need, certified by the architect, developer and intended end user of the building.

-Water heating uses more energy than any other single item in most homes. It's the most effective and easiest place to save energy in houses. If we're serious about saving energy in Hawaii, water heater variances need to be drastically reduced.

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Thank you for your consideration,

Nanea Lo

HB-2109-HD-1

Submitted on: 2/12/2018 1:55:24 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Richard Cook | Individual | Oppose | No |

Comments:

Please do not vote in favor of this measure. On Molokai, we do not have the money to put solar on every new home and putting the cost in the mortgage just makes it more expensive. Please give us the option for gas. Thank you.

HB-2109-HD-1

Submitted on: 2/12/2018 2:01:36 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Perry | Individual | Oppose | No |

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 2:23:04 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|----------------------|---------------------|---------------------------|---------------------------|
| Aria Juliet Castillo | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 5:29:52 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Malachy Grange | Individual | Support | No |

Comments:

Please Malama our Aina!

Your represent us and thus are caretakers of our wonderful Islands. Please consider generations to come and do the right thing for us, not the carbon fuel companies (including LNG).

The legislature passed Act 204 in 2008 requiring solar water heaters for all new buildings but allowed DBEDT to approve variances for gas heaters. The variances are supposed to be relied on very rarely, but they're out of control.

Thirty percent of new homes are built without solar water heaters. DBEDT has approved 5,416 of 5,429 (99.8%) of the variance requests that were filed. The legislature must close the loopholes that allow applicants to circumvent the objectives for solar water heating systems to ensure we are on track and do not undermine our clean energy goals.

The intention of Act 204 has been subverted by allowing an easily obtained variance, with no burden of proof of the veracity of the claims made in applying for the variance.

Aloha and Mahalo

Malachy Grange / the.malachy@gmail.com

HB-2109-HD-1

Submitted on: 2/12/2018 5:48:08 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Lucia You | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 6:00:01 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|----------------------|---------------------|---------------------------|---------------------------|
| Theodora Akau Gaspar | Individual | Oppose | No |

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 7:41:34 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Kathy Shimata | Individual | Support | No |

Comments:

As many residences as possible should have solar water heaters.

HB-2109-HD-1

Submitted on: 2/12/2018 7:47:19 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Sylvia Dolena | Pele Lani Farm LLC | Oppose | No |

Comments:

Although well intentioned, I oppose this HB 2109 regarding On-demand tankless water heaters (after HD1) which will not be allowed for new residences...which prevents a lot of off-power new homes to be permitted should the amendment to HB2109 pass. Lot of poor people in Puna will be affected.

HB-2109-HD-1

Submitted on: 2/12/2018 6:23:57 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

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

Comments:

HB-2109-HD-1

Submitted on: 2/12/2018 7:56:01 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Terez Amato Lindsey | Individual | Oppose | No |

Comments:

Pear remove the amendment HD1 from this bill add this bill will have many unintended consequences for people living in remote rural areas. Thank you.

Terez Amato Lindsey, Kihei

HB-2109-HD-1

Submitted on: 2/12/2018 8:48:01 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Jessie L Gonsalves | Individual | Oppose | No |

Comments:

Joy, adding the required solar water heater on top of the required septic system adds approximately \$10,000 to the cost of a new home plus the contractors mark up. This will significantly impact owner-builders, especially 1st time owner builders, who are building on restricted budgets. This will negatively affect young couples starting out and retired folks with reduced incomes, native Hawaiians and other lower income residents who have dreams of building their own homes. I have built and designed homes for owner builders on the big Island for almost four years and this one-two punch is the biggest impact I have seen.

Sincerely,

Doug Macdonald

Black Sands, Kalapana

HB-2109-HD-1

Submitted on: 2/12/2018 9:19:57 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| natasha sky | Individual | Oppose | No |

Comments:

Dear Comittee members, please OPPOSE this bill. "On-demand tankless water heaters (after HD1) will not be allowed for new residences...which prevents a lot of off-power new homes to be permitted should the amendment to HB2109 pass. Lot of poor people in Puna will be affected."

HB-2109-HD-1

Submitted on: 2/12/2018 9:53:24 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Kauai Trainer | Individual | Oppose | No |

Comments:

I AM OPPOSED TO HB2109 HD1. I LIVE OFF THE GRID AND HAVING A TANKLESS WATER HEATER IS THE MOST EFFICIENT WAY FOR ME GET HOT WATER. ALSO, HILO IS FREQUENTLY OVERCAST AND EVEN THOUGH I HAVE SOLAR ENERGY TO RUN APPLICANCES, I STILL HAVE TO RUN A GAS GENERATOR MONTHLY BECAUSE THERE IS A "POOR SOLAR RESOURCE"; THE VERY THING THAT THIS BILL STRIKES. PLEASE DO NOT PASS THIS BILL. FOR HILO RESIDENTS WHO LIVE OFF THE GRID, IT UNFAIRLY MAKES IT MORE TIME CONSUMING AND EXPENSIVE TO HAVE SOLAR WATER HEATERS. HOT WATER ON DEMAND UNITS ARE WAY MORE EFFICIENT, CHEAPER AND EASIER TO INSTALL.

HB-2109-HD-1

Submitted on: 2/12/2018 10:40:46 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|--|---------------------------|---------------------------|
| Hazen komraus | Kalapana Seaview Estates Community Association | Oppose | No |

Comments:

I fully endorse the intent of this bill but object to the ramifications of it. As an off-grid builder i find it onerous to the cost of building and alleviating our housing and energy issues. In my experience the durability of solar hot water systems is poor. While they function they are wonderful, but the panels do not survive our environment very well, here in Puna particularly the panels often last less than ten years. This is a function of weather and low pH cache ment water corroding the piping. Panels are rarely repairable. They are expensive. When there is a substantial PV solar system being installed i reccommend an electric hot water heater be installed. We frequently have periods of weeks without much sun. That puts quite a strain on an expensive system and it's expensive battery bank. A battery bank ruined by abuse can cost thousands and even tens of thousands of dollars to replace. A simple \$250 on demand propane heater can alleviate the situation. It also lowers the cost of being off-grid and removes one of the largest draws on the grid. The vast majority of solar PV systems can not support an electric on demand heater. Thus you leave those who are investing in sustainable electricity usage without a way to heat water. I would argue that a house with PV and an on demand propane heater easily uses less electricity than a grid-tie house without such an option. Grid-tie is also an increasingly rare and difficult option in most areas due to HECO resistance and poor grid compatibility. This bill while well intended is counterproductive to its intent. I do support the deisre to see less blanket variance applications, that is clearly an abuse. Mahalo for your consideration. Please feel free to contact me.

HB-2109-HD-1

Submitted on: 2/13/2018 3:51:37 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Deborah Ward | Individual | Comments | No |

Comments:

Aloha, Chair and Committee members,

While the overall intent of this bill is good, please do not remove the ability to include on-demand water heaters in new construction. These are efficient, and are important components in our farm and home operation, and they make energy sense. Thank you!

HB-2109-HD-1

Submitted on: 2/13/2018 8:42:00 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Scott Garris | Individual | Oppose | No |

Comments:

STRONGLY OPPOSE



HAWAII TEAMSTERS AND ALLIED WORKERS, LOCAL 996

Affiliated with the International Brotherhood of Teamsters

1817 Hart Street
Honolulu, Hawaii 96819-3205

Telephone: (808) 847-6633
Fax: (808) 842-4575

Testimony to the House Committee on Consumer Protection and Commerce

Tuesday, February 13, 2018 2:00 p.m.
Conference Room 329, Hawaii State Capitol building
Re: House Bill 2109 HD1

Chair Takumi, Vice Chair Ichiyama and Members of the Committee on Consumer Protection and Commerce

The Hawaii Teamsters and Allied Workers Union Local 996 stands opposed to HB 2109 HD1.

The proposed amendment to eliminate energy efficient tank less on-demand water heater as well as eliminate poor solar resource as a viable reason for a variance is a mistake.

Our members along with other citizens who reside in rural settings depend on the distribution of gas to heat water or power stoves. Residents often don't have access to the power grid or encounter intermittent power and in some cases when connected pay increasing costs. It is a much cheaper alternative than solar and more reliable during times of hurricanes or other civil emergencies that have an impact on the power grid.

The Hawaii Emergency Management Agency estimates the loss of power generation during a civil emergency could last 14 days or more. Gas-powered water heaters and stoves would be the only available source of heating until power is restored.

The citizens, our members, and your constituents deserve the option and look forward to your leadership to stop the mistake from happening.

Thank you for the opportunity to testify on HB 2109.

HB-2109-HD-1

Submitted on: 2/13/2018 9:56:44 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Saturnino Doctor | Individual | Oppose | No |

Comments:

Why remove this water heating option that has benefitted many citizens. Give the people the freedom to choose that works best for the user. Go look in Japan and other European countries using tankless water system successfully. Kill this Bill change.

HB-2109-HD-1

Submitted on: 2/13/2018 11:48:50 AM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Chris Madsen | Individual | Oppose | No |

Comments:

Aloha, regarding outlawing tankless water heaters. I follow green energy very closely. What has been done at UCLA is very good for the future of clean burning hydrogen. They are using a supercapacitor to create solar power and hydrogen fuel. It only requires the sun and water to create both electricity and. storable hydrogen fuel.

It makes more sense to allow the tankless water heaters and then require a switch over to hydrogen units as they break over time. The result is still clean energy and storable fuel is better for heating water than electricity is. This is truly green energy as only water is released when the hydrogen is burned.

All the excess solar power that is created during very peak sunny times can be used to create hydrogen gas that will store indefinitely until it is needed. It may only be 50% efficient process but that is energy we are currently just wasting. This same process on a larger scale would allow power plants to run on Hydrogen at night (instead of importing fossil fuels). So before you go outlawing a small household device that might only run 20 minutes a day you should consider what is being done on a larger scale.

Mahalo,

Chris Madsen

HB-2109-HD-1

Submitted on: 2/13/2018 12:54:19 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Lana Olson | Individual | Support | No |

Comments:

HB-2109-HD-1

Submitted on: 2/13/2018 1:26:43 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Elizabeth McDermott | Individual | Support | No |

Comments:

I write in strong support of HB2109 HD1. Every home built in our islands that can accomodate solar heating panels should be using solar, not given an exception to use fracked gas. Using gas in no way moves us toward our goal of reducing climate change as the fracking process releases greenhouse gases, pollutes our countries water, and has left land all over the continental U.S. unstable. If we want our state to be a leader fighting climate change, which we will feel the effects of more powerfully than most other states, we need to move Hawaii entirely off of fossil fuels. No developer operating here should be installing gas water heating when there are other better options.

HB-2109-HD-1

Submitted on: 2/13/2018 1:50:41 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Shannon Rudolph | Individual | Support | No |

Comments:

Support

HB-2109-HD-1

Submitted on: 2/13/2018 2:25:03 PM

Testimony for CPC on 2/13/2018 2:00:00 PM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Laura Gray | Individual | Support | Yes |

Comments:

We need to transition off of fossil fuels as soon as possible. Water heaters that use the sun are an important way to do that.because solar water heaters are so much more efficient than any other heaters.