



EXECUTIVE CHAMBERS
HONOLULU

DAVID Y. IGE
GOVERNOR

Testimony of **Ford Fuchigami**
Administrative Director, Office of the Governor

Before the
House Committee on Energy & Environmental Protection
January 29, 2019
8:30 a.m., Conference Room 325

In consideration of
House Bill No. 557
RELATING TO ENERGY EFFICIENCY

Chair Lowen, Vice Chair Wildberger, and committee members:

Thank you for the opportunity to provide comments in **support of House Bill 557, Relating to Energy Efficiency** which clarifies current provisions that provide for variances to solar water heating installations in single family dwellings.

We defer specific comments to testimony submitted separately by the Department of Business, Economic Development & Tourism.

We appreciate your attention and will be available to answer your questions, should you have any at this time.



DAVID Y. IGE
GOVERNOR

MIKE MCCARTNEY
DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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Statement of
MIKE MCCARTNEY
Director

Department of Business, Economic Development, and Tourism
before the

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

Tuesday, January 29, 2019
8:30 AM

State Capitol, Conference Room #325

In consideration of
HB 557
RELATING TO ENERGY EFFICIENCY.

Chair Lowen, Vice Chair Wildberger, and members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) supports HB 557 which offers amendments to the present requirements related to variances granted to mandatory solar water heating installations in single family dwellings.

The proposed bill corrects and clarifies some language on the application form and eliminates the UL certification for the gas demand water heater, because UL does not certify gas demand water heaters. We note concerns about the provision to impose fines or penalties for false attestations in variance applications: there are already established ethical standards for licensed architects and engineers and our limited staffing will create challenges.

Thank you for the opportunity to testify.



SIERRA CLUB OF HAWAI'I

MĀLAMA I KA HONUA. *Cherish the Earth.*

HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

Tuesday Jan 29, 2019 8:30 AM Room 325

In SUPPORT of HB 557 Relating to energy efficiency

Aloha Chair Lowen, Vice Chair Wildberger, and members of the committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i **supports HB 557**, which amends the criteria for granting a solar water heater system variance and authorizes the Director of DBEDT to impose penalties and fines for false statements on variance applications.

This bill seeks to amend §196-6.5 of Act 204, regarding the solar water heater mandate for new single-family home construction. Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes and Act 155 (2009), an effort to clarify the administration of the Solar Hot Water Variance Law, stated 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.” However, as of January 2019, *nearly 7,000 variances have been requested and almost all of them approved for the installation of gas water heaters.*¹ 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 approved for new homes.

This bill closes the loophole abused by developers while still allowing individual homeowners to get an variance based on cost. If the architect or engineer who signs the variance request can prove that a solar hot water heater is cost-prohibitive over a life cycle analysis, and the energy coordinator agrees, then the variance would be granted and the developer is allowed to install whatever water heater they feel would be most appropriate for the situation. The intent of this bill is not to remove instant gas in new home construction entirely, but rather to empower the energy coordinator to exercise discretion while administering these variances, and prevent rubber stamping of gas variances not inline with state Renewable Portfolio Standard goals.

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

¹ http://energy.hawaii.gov/wp-content/uploads/2019/01/List-Jan_11_2019.pdf

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 should be amended.

Thank you very much for this opportunity to provide testimony in **support of HB 557**.

Mahalo,

A handwritten signature in cursive script that reads "Jodi Malinoski".

Jodi Malinoski, Policy Advocate

Testimony to the House Committee on Energy & Environmental Protection

Tuesday, January 29, 2019 8:30 a.m.
Conference Room 335, State Capitol
RE: House Bill 557 – Relating to Renewable Energy

Chair Lowen, Vice Chair Wildberger and Members of the Energy & Environmental Policy Committee

Hawaii Gas **opposes** HB 557 and provides the following **comments**:

HB 557 proposes to amend Act 204, section 196 -6.5, which provides a variance by which a single-family dwelling could be built without a solar water heater system. Under this statute:

1. New single-family dwelling must be built with a solar water heating system unless a variance is granted;
2. Variances are allowed by law, including if solar water systems are impracticable due to areas with poor solar resource, if the cost of the system is prohibitive, or if they install a demand water heater device

This bill seeks to undermine this flexibility and delay the variance application process through more onerous and complex application criteria that will impact consumers' ability to select a highly-efficient instantaneous gas water heating device, which is now also capable of operating on renewable natural gas.

I. Variance Process is Working: applications should be streamlined; not burdened with fear, ambiguity, and delays

We strongly disagree with the “findings” claimed in the preamble of HB 557, which suggest that the variance provisions are being misused to circumvent the objectives of the statute to the detriment of consumers and to the State’s progress toward its renewable energy goals. A review of DBEDT data on the variance applications and approvals shows the existing program is working as intended. Variances granted to the solar water heating mandate to date (from inception to 2018) are primarily from specific regions with:

- Poor solar resource
- Limited or no grid access
- Lower income communities
- Primarily Neighbor Islands

It is very concerning that this bill proposes to add civil penalties for following a proscribed state process by imposing the threat of “fines and penalties” on the applicant, even though there are no credible findings suggesting that the current program is being misused. The only “penalty” for a faulty application should be a denial of the application. Absolutely no evidence has been presented that the application process has been abused in any way, shape or form.

The State Auditor's report on the Hawaii State Energy Office (HSEO) characterized the variance process as "A Waste of Energy: Poorly designed and implemented, the Energy Office's processing of solar-water-heater variances wastes time and money."¹ It's equally very concerning that other proposed changes by the bill would add more layers of complexity to a system that is already not-a-level-playing field for non-solar clean energy technologies. Further, other proposed changes would lengthen the period of review from 30- to 60-days to a system that is already inefficient.

The Auditor's HSEO report also noted that the variance-approval process operates independently of the Counties, which are responsible for building plan reviews, permit approvals, and the physical inspection of installations and construction. Notably, the Auditor did not report that the variances were being misused as this bill characterizes.

II. State policies should create level playing fields; not pre-select winners/losers of technology and/or appliances; demand-water heaters are now compatible with renewable natural gas

As technology continues to advance, legislators should not pick winners and losers. Instead the state should be technology agnostic. The freedom for homeowners to choose how they heat their water is especially important given Hawaii is so remote.

It's important that Hawaii has a diverse supply portfolio as evidenced in the aftermath of the hurricanes in Puerto Rico and Texas. On demand gas water heaters offer the potential to allow residents to have hot water for cooking or sanitation 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.

Furthermore, on demand gas water heater technology can now run on renewable natural gas. This technology continues to advance so that it is affordable (without needing subsidies), energy efficient, reliable and now runs on renewable fuel. As we cannot predict changes in technology, this option would have been prematurely eliminated for Hawaii residents. In fact, this technology when run on renewable fuel is directly in line with the original intent of Act 204 to increase the use of renewable energy to protect the environment, reduce pollution, make housing more affordable, and enhance Hawaii's local economy. Furthermore, it enhances Hawaii residents' resiliency.

III. Government Policies must reconcile with each other - the needs of creating affordable housing, increasing local food production, renewable energy production, climate change and carbon neutral goals

The Governor highlighted policy goals in his state-of-the-state address to address the crisis of homelessness, continue to pursue renewable energy mandates and increase food production. Providing a strategic plan and pathways for the current competing goals is necessary for developers to build more affordable units, for energy producers to access developable lands for solar, wind or biomass farms, and for farmers to double food production. All are competing for the same resources of land, water, human resources and infrastructure. At the same time, we must work consistently to address and mitigate the impacts of global

¹ Audit of the Hawaii State Energy Office, A Report to the Governor and the Legislature of the State of Hawaii, January 2018.

warming and sea level rise while providing redundancy and resiliency to plan for natural and manmade disasters, shore up our economy and meet our clean energy needs.

The potential impacts of this bill on the goal of creating more affordable housing warrant careful study. Adding more requirements, civil fines and penalties, more ambiguity and more time delays to an already inefficient process also adds more costs, lengthens the timeline for housing development, and makes the pathway for homeownership more onerous and less attainable.

Mortgage qualification is one of the greatest challenges for affordable housing buyers. Rooftop solar heating systems constitute a significantly greater upfront investment cost compared to other water heating options. Demand water heaters cost less to install, average 80-90% less than solar hot water heater systems.

Balancing the cost of renewable energy to our fragile economy and lower income residents surely must not be ignored. Limiting energy options that are also efficient, affordable and reliable in favor of a “one-size fits all” solar water heating system (which may be suboptimal because over-sizing leads to higher maintenance and under sizing leads to excessive electricity consumption) ignores the socio-economic factor that nearly 50% of Hawaii’s households are income strapped or below poverty, according to a study commissioned by Aloha United Way.²

DBEDT’s HSEO data, when aggregated by location, show that gas-powered demand-water-heaters variances are more prevalent in isolated geographical areas, where household incomes are lower, where there is little or no solar resource, and limited or no access to an electric grid, or where grid reliability is challenging. For some applicants, restricting this variance further would leave no alternative to the residents to heat water. For others, restricting the variance would result in having to install an expensive, but inefficient solar hot water heating system and having to pay expensive local electric rates, (powered by diesel or fossil fuels) for water heating (a significant proportion of Hawaii’s solar hot water systems have grid-tied electric backup heaters and rely on grid-powered water pumps).

Highly portable, disaster-resistant fuels such as natural gas also play critical roles in shoring up homeowner resiliency and redundancies in the event of natural disasters. If the electrical grid goes down, many of the solar hot water heaters in the State will cease to operate – and the grid tends to go down disproportionately in parts of rural Hawaii. For instance, the county of Maui and Hawaii’s incidence rate of electrical utility customer disruptions under normal operations (excluding major weather events) is roughly twice that of Oahu’s³.

IV. Balancing Energy Efficiency and Costs

Demand-water-heaters are highly efficient and the full life cycle costs of that technology needs to be included in DBEDT’s life cycle model used in the variance application process.

A typical Hawaii Gas utility customer pays less per year for gas energy than they would for electricity to do the same tasks:

- Based on a typical family (4 people) using 70 gallons/day of hot water in Hawaii, customers could

² <https://www.auw.org/sites/default/files/pictures/AUW-ALICE%20Fact%20Sheet%20FINAL.PDF>

³ <https://www.hawaiianelectric.com/about-us/key-performance-metrics/service-reliability>

- save at least \$500 a year⁴
- Depending on fuel cost adjustments, this could result in nearly 37% cost savings that a gas customer could pay to operate similar electric water heating appliance.⁵

Currently, DBEDT's life cycle cost model favors one technology over the other and doesn't include the correct life spans of other technologies. The U.S. Department of Energy notes that most tankless water heaters have a life expectancy of more than 20 years. They also have easily replaceable parts that extend their life by many more years. In contrast, storage water heaters last 10–15 years.⁶ The values for the estimated technology life (years) are inaccurate default values and are locked cells in DBEDT's life cycle cost model for the variance application. Thus, values for gas demand water heaters should be adjusted to factor in the full life cycle cost of the on-demand water heating device.

V. Recommended Task Force

Before making further changes to the solar-water-heater variance program, Hawaii Gas respectfully recommends the committee support the formation of a task force to review the status of the variance program as well as the specific variance calculation inputs, due to reasons stated above, and determine the best permitting authority to process the variances.

At the least, we respectfully recommend the committee hold the bill for accurate analysis of the DBEDT data and further study of the potential harmful impacts of proposed changes to the current program, particularly given the unintended consequences of these amendments could hurt the most vulnerable in our state.

Thank you for the opportunity to testify on HB 557.

Sincerely,

Jeannine Souki
Director, Government Affairs and Corporate Communication

⁴ Energy factor values come from Energy Star's final criteria analysis for water heaters. Daily hot water use guidelines come from the U.S. Department of Energy's online calculator.

⁵ Based on electric cost \$0.28/kWh (Schedule R including FAC)
Based on gas cost \$4.50/therm (Schedule 20 including FAC)
Based on high-efficiency electric storage water heater
Based on gas tankless water heaters

⁶ <https://www.energy.gov/energysaver/water-heating/tankless-or-demand-type-water-heaters>



HAWAII TEAMSTERS AND ALLIED WORKERS, LOCAL 996

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Testimony to the House Committee on Energy & Environmental Protection

Tuesday, January 29, 2019 8:30 a.m.
Conference Room 335, State Capitol

RE: House Bill 557 – Relating to Renewable Energy

Chair Lowen, Vice Chair Wildberger and Members of the House Committee on Energy & Environmental Protection.

Chair Lee, Vice Chair San Buenaventura and Members of the Judiciary House Committee:

The Hawaii Teamsters and Allied Workers Union Local 996 stands opposed to HB 557.

The proposed amendment is another bill that eliminates the consumer choice for our members and other citizens. The amendment to impose “fines and penalties” seems to target and criminalize consumers, especially those living in low income communities, neighbor islands, and areas with poor solar resources.

Imposing “fines and penalties” on the basis of abuse with no examples to justify abuse is unfair. Furthermore, this proposal would lengthen the review period from 30 days to 60 days which is inefficient.

Our members and other consumers deserve a clear choice on how their homes are heated, when it comes savings, and especially when considering times of natural disasters. The Hawaii Emergency Management Agency estimates the loss of power 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 proposed amendments restricts our members and other consumers from a fair choice because the fear of being burdened with “fines and penalties” and a lengthened review process.

The citizens, our members, and your constituents deserve the option and look forward to your leadership in weighing these factors.

Thank you for the opportunity to testify on HB 557.

Cody Sula
Government Affairs Liaison
Hawaii Teamsters and Allied Workers, Local 996



Hawaii Solar Energy Association
Serving Hawaii Since 1977

**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO HB 557, RELATING TO ENERGY EFFICIENCY
BEFORE THE
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
ON
TUESDAY, JANUARY 29TH, 2019**

Chair Lowen, Vice-Chair Wildberger, and members of the committee, my name is Will Giese, and I represent the Hawaii Solar Energy Association, Inc. (HSEA)

HSEA **strongly supports HB 557**. 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.

This bill protects consumer choice.

In short, the amendments proposed in this bill *do not prevent individuals from choosing an instant gas water heater in situations where that choice makes sense*. The life cycle cost analysis for a water heating system built in a low sun hour zone would reveal that an instant gas heater would be an ideal choice for a consumer economically over the life of a system.

This bill makes a significant piece of legislation stronger.

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*

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

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

To date, over **6,896** variances have been requested and over **6,850** variance requests have been approved. Of those requests, over **6,492** 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?

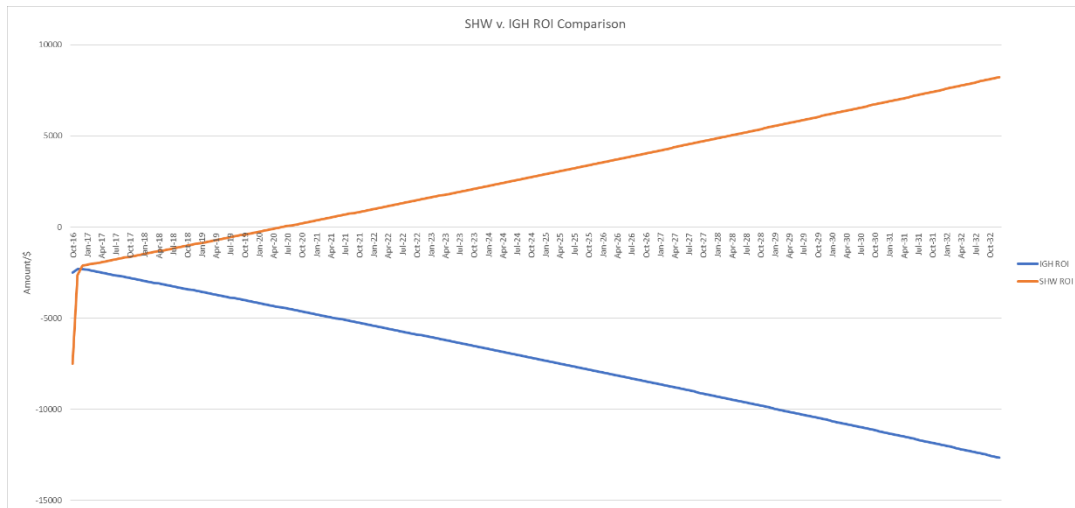
While the initial capital cost for an inefficient gas water heater may be less than a solar water heater when tax credits and rebates are not considered, over the life time of the systems this is simply not true. Developers who abuse §196-6.5 by constantly applying for instantaneous gas heater variances instead pass 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 capital 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 wgiесе@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.

Solar hot water systems are also able to store 80-120 gallons of hot water, enough for 24 hours of hot water use in the case of a power outage. Instant gas heaters do not have water tanks, thus customers are left without hot water for the duration of the outage.

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 557 ***empowers*** the Department of Business, Economic Development, and Tourism to give consumers efficient and cost saving choices, protects consumer choice, and simultaneously brings the state closer to it’s goal of 100% RPS by 2045.

We **strongly urge the committee to support** of HB 557.

Thank you for the opportunity to testify.

¹Order No.32052, Docket No. 2012-0036, 16–29



To: The House Committee on Energy & Environmental Protection
From: Sherry Pollack, Co-Founder, 350Hawaii.org
Date: Tuesday, 1/29/19

In strong support of HB 557

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org strongly supports **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

Sherry Pollack
Co-Founder, 350Hawaii.org



To: The House Committee on Energy & Environmental Protection
From: Brodie Lockard, Hawaii State Climate Lead, Organizing for Action
Date: Tuesday, January 29, 2019, 8:30 am

In strong support of HB 557

Dear EEP Chair Lowen, Vice Chair Wildberger and Committee Members—

Organizing for Action strongly supports HB 557.

HB 557 would require that the owner, and the architect or mechanical engineer, swear in writing to DBEDT that solar would not work or would be cost-prohibitive. HB 557 brings responsibility and much-needed oversight to the process.

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. Through January 2019, nearly 7,000 variance requests were filed; more than 99% were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended. 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 557 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). Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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. HB 557 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.

Please pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Brodie Lockard
Hawaii State Climate Lead, Organizing for Action

HB-557

Submitted on: 1/28/2019 8:24:35 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|-----------------------|---------------------------|---------------------------|
| David Mulinix | Our Revolution Hawaii | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I am writing in strongly support of **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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.

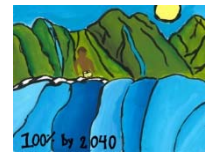
Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's renewable energy goals. Since the enactment of Act 204, nearly 7,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquefied 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.

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

Mahalo Nui Loa for your kind attention,

Dave Mulinix

Our Revolution Hawaii



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

January 29, 2019, 8:30 A.M.

Room 325

(Testimony is 4 pages long)

TESTIMONY IN STRONG SUPPORT OF HB 557

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members:

Blue Planet Foundation **strongly supports** House Bill 557, which seeks to tighten the loophole in the state's solar water heater mandate. **This bill isn't about eliminating options for homeowners in instances where solar doesn't make sense or is more expense.** House Bill 557 leaves the variance process in place as a means for those that truly need an exception, but it would close the currently exploited loophole.

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."**

According to state records,¹ more than **6,800 variance requests have been received through January 2019.** What's more, **over 98% of all variance requests received have been approved.**

House Bill 557 can 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 has been consistently 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.

House Bill 557 wisely clarifies that the coordinator—in this case the Hawai'i State Energy Office—does indeed have discretion to deny variance applications that do not meet the criteria

¹ See DBEDT Summary Chart of Solar Water Heater Variance Requests, January 11, 2019, *available at* http://energy.hawaii.gov/resources/solar-water-heater-variance/list-jan_11_2019.

for the rare exceptions specified in the law. This will ensure 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.

INTENT BEHIND HAWAI‘I’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 O‘ahu, 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. House Bill 557 rightfully recognizes the urgent need to close this loophole and prevent further misuse.

CLARIFICATION ON VARIANCE PROCESS IS URGENTLY NEEDED

The legislature’s concern about the potential for abuse was well founded. The number of variances requested and approved since the law took effect 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,² more than **6,800 variance requests have been received through January 2019.** What’s more, **over 98% 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 objectives enacted with 2017’s Act 32 (committing the state to the Paris Climate Agreement) and 2018’s Act 15 (setting a goal for carbon neutrality by 2045).

House bill 557 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).

² See DBEDT Summary Chart of Solar Water Heater Variance Requests, January 11, 2019, *available at*: http://energy.hawaii.gov/resources/solar-water-heater-variance/list-jan_11_2019.

CONCLUSION

Blue Planet Foundation strongly supports House Bill 557 to ensure 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.

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

Thank you for the opportunity to testify.

HB-557

Submitted on: 1/28/2019 3:03:52 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|--|---------------------------|---------------------------|
| Melodie Aduja | Oahu County Committee on Legislative Priorities of the Democratic Party of Hawai'i | Support | No |

Comments:

HB-557

Submitted on: 1/28/2019 11:58:57 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|--|---------------------------|---------------------------|
| Joseph Kohn MD | We Are One, Inc. - www.WeAreOne.cc - WAO | Support | No |

Comments:

There is no rational reason to pollute our own environment or destroy ecosystems.

www.WeAreOne.cc

HB-557

Submitted on: 1/27/2019 2:00:25 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

Additional Points for HB557:

***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.

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

***Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's renewable energy goals. Since the enactment of Act 204, nearly 7,000 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.

Sincerely,

Jonathan Boyne

96822

HB-557

Submitted on: 1/27/2019 2:02:48 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|----------------------|--------------|--------------------|--------------------|
| Carolynn Bell-Tuttle | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

HB-557

Submitted on: 1/27/2019 2:39:08 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Noel Morin | Individual | Support | No |

Comments:

I strongly support HB557. This bill will help ensure that we maximize the utilization of renewable energy. This should help mitigate the impact of a loophole to ACT 204 which has resulted in the use of gas heaters in lieu of solar hot water heaters. While ACT 204 was intended to allow occasional variances for gas heaters, it appears that most of the variance requests have been granted. This, in effect, has enabled continued dependency on gas.

In a state where sunshine is most abundant and solar hot water heating makes financial sense (we have solar hot water on our homes and rentals so we know this first-hand). It also makes a lot of sense for our environment. Please support HB557. It wil help us achieve our clean energy goals.

Noel Morin

HB-557

Submitted on: 1/27/2019 3:07:58 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|--------------|--------------|--------------------|--------------------|
| Noel Bobilin | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

P Noel Bobilin Volcano Hawaii

Additional Points for HB557:

***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.

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

***Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state's renewable energy goals. Since the enactment of Act 204, nearly 7,000 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-557

Submitted on: 1/27/2019 3:42:40 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Kanani Kai | Individual | Support | No |

Comments:

Linda J. Morgan

P. O. Box 377406

Ocean View, HI 96737

Hawaii State House of Representatives

Jan. 27, 2019

Dear Representatives:

I strongly support HB557 because it is a measure that would help reduce global climate change by requiring solar water heating in new homes. I moved here eighteen years ago from Paradise, CA. Five of my family members and many friends lost everything in the Camp Fire on Nov. 8, 2019. Each of them barely escaped with their life and only the clothes they wore. This horrific fire was partly caused by a drought related to climate change. A wildfire like this could easily happen in my home town of Ocean View on the Big Island, especially since we have only one fire hydrant in the whole community.

We need to do everything possible to reverse climate change and reduce its dangers. Please pass HB557.

Sincerely,

Linda J. Morgan

HB-557

Submitted on: 1/27/2019 6:00:11 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Koohan Paik | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support HB557 to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Koohan Paik-Mander

P.O. Box 5133, Honokaa, HI 96727

HB-557

Submitted on: 1/27/2019 6:45:16 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Peggy McArdle | Individual | Support | No |

Comments:

Aloha. I fully support HB 557. The solar variance abuse needs to stop. The abundant sun energy in Hawaii needs to be utilized completely. Mahalo.

HB-557

Submitted on: 1/27/2019 6:59:30 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Emily Garland | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support HB557 to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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Please pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Emily Garland

119 Kapiolani Street, Apartment 4

Hilo, HI 96720

HB-557

Submitted on: 1/27/2019 7:04:25 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Barbara Hershey | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support HB557 to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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Please pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Barbara Hershey

PO Box 156

Pepeekeo, HI 96783

HB-557

Submitted on: 1/27/2019 7:13:41 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Aloha legislators,

Please help us get off fossil fuel.

"The world's leading climate scientists have warned there is only a dozen years for global warming to be kept to a maximum of 1.5C, beyond which even half a degree will significantly worsen the risks of drought, floods, extreme heat and poverty for hundreds of millions of people." <https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report>

Mahalo.

Cory Harden

HB-557

Submitted on: 1/27/2019 7:24:16 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| sharon Levine | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

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Please pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Shar Levine

84-265 Farrington Hwy

Waianae, Hi. 96792

HB-557

Submitted on: 1/27/2019 8:47:48 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Vivien Lee | Individual | Support | No |

Comments:

HB-557

Submitted on: 1/27/2019 9:22:14 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support HB557 to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost-prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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 developers have been subverting the intention of this Act, taking advantage of a loophole that allows the variance to be easily obtained. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted! Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

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Please pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Dr. Lorna Holmes

215 N. King St #910 Honolulu, HI 96817

HB-557

Submitted on: 1/27/2019 9:36:46 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|-------------------------------|-------------------------------|
| Lynn Aaberg | Individual | Support | No |

Comments:

HB-557

Submitted on: 1/27/2019 11:02:54 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Dear Legislators,

I am deeply concerned that Hawaii, in word committed to 100% renewable energy, will not reach this goal in reality. However, HB557 gives our state a golden opportunity for "low-hanging" renewable energy conversion.

Act 204 of 2008 established the "solar water heater mandate" to benefit consumers. However, a variance in the Act is allowing the installation of thousands of gas water heaters in new single-family homes rather than the normally-mandated solar heaters. HB557 will restrict the variance to Act 204 so that its use is rarely approved.

Why limit the variance? Gas water heaters use liquid natural gas (LNG), a fossil fuel. Whether used here or on the mainland, LNG contributes to global warming. Transporting LNG to Hawaii is also a pollution concern and adds to this fuel's cost to consumers.

Because there are many new housing developments in the works in Hawaii, flagrant use of the current variance seriously offsets the good intentions of the law.

Solar water heating is "low-hanging fruit" for use of renewables in Hawaii. To not take full advantage of the sun to heat our water in Hawaii is nonsensical. We must realize the importance of each and every way we can bring clean energy to our state.

Please support HB557 this session to help reduce Hawaii's dependence on fossil fuels.

Thank you.

Sincerely,

Jan Pappas

Aiea, Hawaii

HB-557

Submitted on: 1/28/2019 12:35:39 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| christine trecker | Individual | Support | No |

Comments:

HB-557

Submitted on: 1/28/2019 7:12:38 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Harriet Burkholder | Individual | Support | No |

Comments:

HB-557

Submitted on: 1/28/2019 7:26:41 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 7:28:12 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Maria Walker | Individual | Support | No |

Comments:

Aloha,

I am writing to express my support for HB 557. It is imperative that we do all we can to slow down global warming, and our energy use is one of the best ways we can do this. The original concept of requiring new construction to have solar hot water is a great step in that direction, but unfortunately there have been abuses of the ability to apply for a variance, and HB 557 is a good effort to close the loopholes and help our island communities to become more energy efficient and make use of our great weather and sun exposure to meet our energy needs. It is most important here in Hawaii because of the need to import any fossil fuels we use, a double impact both for the carbon use of the fuel and the energy to ship it here.

Please support HB 557 and help it to pass to be voted on.

Mahalo, Maria Walker

PO Box 33, Kapa'a, HI , 96746

HB-557

Submitted on: 1/28/2019 7:50:53 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Please support HB557 and the abuse of variances to skirt our clean energy goals, which need to be hastened to a goal of 100% Clean Energy by 2030, not 2045.

Natural gas is not a source of Clean Energy.

Mahalos for supporting HB557!

HB-557

Submitted on: 1/28/2019 9:11:56 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Dear Chair, Co-Chair and Members of the Committee

Hawaii has the best potential for solar energy water heating on residences and commercial properties in America. Developers have been subverting the intent 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.

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

-Act 204 was meant to encourage the adoption of energy efficient water heaters on new homes that are congruent with the state’s renewable energy goals. Since the enactment of Act 204, nearly 7,000 variances have been requested and most of them approved for the installation of gas water heaters. Liquified 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.

Do the right thing!

Malachy Grange

1487 Hiikala Place #26

Honolulu, HI 96816

HB-557

Submitted on: 1/28/2019 9:13:41 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Elif Beall | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee Members,

I strongly support HB557 to end the abuse of the solar water heater variance.

Act 204 passed in 2008 was meant to encourage the adoption of energy efficient water heaters on new homes, to be consistent with the states's renewable energy goals.DBEDT was given power to approve variances, but this was supposed to be relied upon rarely. Developers have been subverting the Act and taking advantage of a loophole. As of this month, 7,000 variances have been requested, and 99% have been approved!

Please support HB557, a critical measure to end this abuse.

Thank you for the opportunity to testify in strong support of this important bill.

With aloha,

Elif Beall

Attorney, Kilauea, Kauai

HB-557

Submitted on: 1/28/2019 9:50:06 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Randy Ching | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support HB557 to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in strong support of this very important bill.

Randy Ching

Honolulu (makikirandy@yahoo.com)

HB-557

Submitted on: 1/28/2019 11:24:12 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| J Riverstone | Individual | Support | No |

Comments:

Dear Hawai'i Legislators,

I am writing as an individual citizen to lend my support to HB557, Relating to Energy Efficiency.

I have been employed in Hawai'i's solar industry for the past nine years (and have studied solar energy since 1990). My previous work has also included teaching at the college level and conducting research on the impacts of climate change.

As an energy consultant my work includes evaluating the costs and benefits of different types of energy systems. While solar hot water technology has not changed too much since the 1980s, in almost all cases it still makes sense to install solar hot water on a new residence. A tankless gas water heater will not typically last as long as a solar hot water system, and it uses fossil fuels, in conflict with the State's commitment to transition to 100% renewable energy.

The utility programs for installing PV systems in Hawai'i have changed, and most new residential PV installations now include batteries. Given the cost of batteries, prior to installing a PV system it makes sense to eliminate as much of the electric bill as possible by installing solar hot water and other efficiency measures. Like a battery on a PV system, a solar hot water system is a means of storing solar energy captured during the daytime for evening use. And both in terms of economics and energy efficiency, solar hot water is superior to using energy stored in a battery to heat water.

I urge you to support HB557 to remove the loopholes that allowed home builders to circumvent the original intent of section 196-6.5 of Act 204 of 2008.

Mahalo

Jerry Riverstone

HB-557

Submitted on: 1/28/2019 2:04:02 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Aloha Chair Lowern and Members of the Committee:

While in the past I may have supported the provisions of House Bill 557 to impose stiffer penalties on parties that have abused the variance provisions of the solar water heater (SWH) mandate, however, at this time, I believe the mandate needs to be reexamined given advances in technology and honoring customers who just prefer gas appliances.

I am still a firm supporter in the use of SWH systems when and where appropriate and cost-effective. When the SWH mandate was enacted the biggest obstacle to its installation was financing the cost of a SWH as a retrofit project. It was found that when a SWH was installed at the time of new construction, the financing cost could be rolled into the mortgage with immediate savings for the new homeowner. The mandate appeared to be more effective than solely relying on tax credits to stimulate the installation of SWHs in new construction.

However, today with the proliferation of photovoltaic systems and advances in technology, aggregated “smart” electric water heaters have the potential to serve as thermal storage to address the issue of excess power generation from PV systems and reduced demand during the mid-day period on the electrical grid. Electric water heaters may be an important tool to help provide a form of storage to balance and improve grid reliability and resiliency by “dumping” excess electricity into electric water heaters, therefore, its use should not be discouraged if can provide this important service.

With regard to customer preference, last year I was involved in the recovery and rebuilding efforts from the April flooding event on the Northshore of Kauai. In many homes that were damaged, one of the most requested appliance was an on-demand gas water heater. Many of these homeowners recognized the high efficiency and cost-saving incurred from these types of water heaters. There were several reasons why these residents did not install solar water heaters or have electric water heaters (1) heavy vegetation that blocked the sun or high valley walls that limited sunlight especially during the winter months, (2) living in older dwellings that could not handle additional electricity load, or (3) they viewed having gas (propane) appliances as more reliable and giving them more resiliency after a catastrophic event like hurricanes or floods especially living in a rural area.

Given the aforementioned changes in technology and acknowledging some customer's preferences for gas, I believe the solar water heater mandate should be reconsidered with more flexibility given to obtain a low/no carbon future.

Thank you for your consideration of my testimony.

Hermina Morita, P.O. Box 791, Hanalei, HI 96714

HB-557

Submitted on: 1/28/2019 2:31:18 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| pamela burrell | apollo Kaua'i | Support | No |

Comments:

Since 2005 Apollo Kaua'i has been advocating for sustainable energy. We, in fact, helped craft the bill here on Kaua'i some time ago mandating SHW on all new construction. The one loophole given at the time was understandable in certain cases, but has been sorely taken advantage of by most architects and then finally the builders.

I do hope the original intent of the solar hot water mandate is strengthened greatly. Climate Change is advancing far faster than predicted. Please strengthen the solar mandate.

Thank you for caring.

regards,

amela Burrell

HB-557

Submitted on: 1/28/2019 4:11:44 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

I oppose the proposed changes to ACT 204. The changes will only make it more difficult for people who cannot rely on consistent solar energy to access an energy efficient alternative. We need to remove obstacles for achieving clean energy diversity and reliable solutions that are affordable.

HB-557

Submitted on: 1/28/2019 4:30:51 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 4:37:01 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 4:38:20 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 4:38:23 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 4:46:34 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 5:06:53 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Tawnie Bigno | Hawaii Gas | Oppose | No |

Comments:

HB-557

Submitted on: 1/28/2019 5:11:51 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

HB-557

Submitted on: 1/28/2019 6:25:43 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

LATE

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

Comments:

LATE

HB-557

Submitted on: 1/28/2019 7:59:10 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

HB-557

Submitted on: 1/28/2019 8:35:21 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

LATE

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Darren Chang | Hawaii Gas | Oppose | No |

Comments:

LATE

HB-557

Submitted on: 1/28/2019 9:01:17 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Jared Pasalo | HAWAII GAS | Oppose | No |

Comments:

HB-557

Submitted on: 1/28/2019 10:51:25 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

LATE

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| David Criste | HAWAII GAS | Oppose | No |

Comments:

HB-557

Submitted on: 1/28/2019 11:34:38 PM

Testimony for EEP on 1/29/2019 8:30:00 AM

LATE

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| donovan egloria jr | Individual | Oppose | No |

Comments:

my experience in having a gas tankless water heater has been good. i think more people in the community should be properly educated on how it works, and how using gas is a benefit, not a negative in the energy sector

LATE

HB-557

Submitted on: 1/28/2019 11:37:25 PM
Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

I oppose this bill as written.



January 29, 2019

Representative Nicole E. Lowen, Chair
Representative Tina Wildberger, Vice Chair
House Committee on Energy & Environmental Protection

Comments and Concerns in Opposition to HB 557, Relating to Energy Efficiency: Gas, Electric Renewable Portfolio Standards

Tuesday, January 29, 2019, 8:30 a.m., in Conference Room 325

The Land Use Research Foundation of Hawaii (LURF) is a private, non-profit research and trade association whose members include major Hawaii landowners, developers and utility companies. LURF's mission is to advocate for reasonable, rational and equitable land use planning, legislation and regulations that encourage well-planned economic growth and development, while safeguarding Hawaii's significant natural and cultural resources, and public health and safety.

LURF appreciates the opportunity to provide comments **opposed** to this measure.

HB 557. This bill proposes to amend Hawaii Revised Statutes (HRS) Section 196-6.5, which requires a solar water heater system for new single-family residential construction except in certain cases where a variance is allowed. One such variance allows for installation of a demand water heater device; however, this measure proposes changes which would:

- 1) Require the life cycle cost for the device be less than a solar water heater system based on analysis in subsection (a)(2);
- 2) Authorize the coordinator to exercise discretion in denying any variance application deemed to be incomplete or insufficient pursuant to the requirements in subsection (a);
- 3) Extend the period from thirty days to sixty days, after which a variance shall be deemed approved if not denied; and
- 4) Authorize the Director of the Department of Business, economic development and Tourism to impose fines or penalties for false attestations in variance applications.

LURF's Position. LURF acknowledges the intent of this and other/prior similar versions of renewable energy measures aimed at obliterating all alternatives to solar-powered appliances given what proponents consider to be the unquestionable virtue of solar energy coupled with what is erroneously perceived as exploit and greed on the part of developers and construction companies which elect to utilize alternatively powered systems in their projects, however, simply put, these misconceptions and reported justifications for the amendments proposed by this bill have **not** thus far been convincingly proven or supported by credible facts or evidence, particularly when balanced against other currently prioritized and significant challenges being faced by this State, including affordable housing.

LURF's Opposition to HB 557 is Premised on the Following Reasons and Considerations:

1. Disallowance of the Installation of Demand Water Heaters is Inconsistent with the Current Focus on and Prioritization of the Affordable Housing Crisis by the State and the City.

As this Committee is well-aware, the unsustainable costs and onerous obligations now being cast upon developers by development requirements and standards are already of serious concern, as are the enactment of onerous regulations relating to the maintenance and operation of infrastructure, and development of educational facilities, all of which are proving to be potentially counterproductive to the State's long-term objective of creating more affordable housing.

LURF understands that rooftop solar heating systems constitute an expensive upfront investment cost compared to other water heating options, particularly in the affordable housing bracket since one of the greatest challenges for low-income housing buyers is mortgage qualification.

Attempting to keep projects viable and in line with affordable housing mandates, developers are offering potential home buyers efficient and cost-saving appliance alternatives such as demand water heaters, however, by doing so, are being unfairly and unjustifiably characterized as a subverted effort to utilize a loophole in the law to reduce their upfront costs, leaving buyers with higher energy bills. These types of unfounded allegations are improperly being relied upon as justification for proposed legislation such as the subject bill and amendment.

2. Credible Facts Are Required to Support the Alleged Need for this Unwarranted Legislation.

LURF's position is that proponents of this measure have failed to credibly present material facts or evidence to prove that the current variance application process is specious or that this proposed amendment is in fact necessary to close an alleged "loophole."¹ The intent and application of HB 557 is thus arguably unreasonable and unwarranted.

LURF is concerned since it has reviewed information reporting that tankless water heaters can run on renewable gas, and that while solar heaters are perceived to be 100 percent renewable, they inevitably feed from the electric grid which is currently approximately 75 percent powered by fossil fuels. Amongst other reported facts, tankless water heaters help to reduce carbon emissions by eliminating the need to heat an entire tank of water and have an average efficiency of 95 percent (whereas solar hot water efficiency cannot be tracked since cloudy days or night hot water usage that requires back-up electric heating cannot be accurately predicted or measured).

¹ LURF urges this Committee to review factual data from DBEDT relating to variances issued, which appears to indicate that the variance application process is in fact working as intended.

Prior to enacting unnecessary legislation which could potentially conflict with efforts currently being made to address the current affordable housing crisis, LURF believes that it may be advisable and prudent for this Committee to require support for this measure in the form of material facts and/or credible studies which would prove allegations being made by bill proponents. Such inquiry should include, for example, installation cost and future savings comparisons (i.e., upfront vs. sustained costs) between solar and other alternative energy systems; and whether the current solar water heater mandate is working as intended or is in fact being averted to determine whether claims being made by proponents in fact support the alleged need for the amendment to HRS Section 196-6.5.

3. Installation of Demand Water Heater Devices is Supported by a Myriad of Practical Reasons and Considerations.

LURF understands that there are also a number of other judicious, practical reasons to take into consideration to maintain demand water heaters as an approved alternative to solar systems for single-family homes in Hawaii:

- a. Demand Water Heater Devices can be operated by Renewable Natural Gas (RNG).** In 2018, working with the City & County and State, Hawaii Gas became the first -in-the-state to develop biogas from the Honouliuli Wastewater Treatment Plant, transforming the methane from sewage into usable RNG that can be used for Demand Water Heater Devices.
- b. Lower Cost of Tankless Water Heaters** – The equipment and installation cost of a tankless water heater system can reportedly be one-tenth of the cost of a solar hot water system.
- c. Alternatives Necessary to Drive Competitive Market Prices** – Alternative design/construction products and systems drive price competition in the marketplace, which is key to construction affordability. If only solar hot water systems were allowed, the cost of solar systems would undoubtedly rise.
- d. Efficient Suite of Appliances** – Demand water heaters are part of a larger suite of appliances powered by gas, clothes dryers, kitchen ranges/ovens and outdoor lanai appliance hook-ups. Single family home developers may offer this type of suite of products to create an economy of scale in savings to the homeowner.
- e. Use of Appliance during Power Outages** – Unlike electric appliances, gas-powered appliances can all be used during power outages minimizing disruption to daily living functions.
- f. On Demand Cost Only** – Demand water heaters heat water on demand, day or night, so homeowners only pay for the hot water used, not the hot water needed to be stored in a tank.
- g. Rooftop Real Estate** – Affordable and workforce housing demand efficient home floor plans with compact roof designs. Available rooftop space is often limited once required plumbing vents and attic vents are installed. Size 4’x8’ solar hot water panels (1 to 2 panels per home depending on size) demand prime rooftop surfaces for

optimum efficiency, taking up valuable rooftop space that could otherwise be used for photovoltaic panels. Demand water heaters are wall mounted, yielding maximum rooftop real estate for homeowners seeking net zero PV systems.

- h. Garage Real Estate** – Solar hot water tanks are typically located within the garage of a home, taking up space that could be otherwise used for needed storage space. If located within the home, solar tanks take up prime living space.
- i. Maintenance** – Demand water heaters have a lower maintenance and replacement cost, and would result in valuable savings for affordable housing and other residents.
- j. Value to Community** – Main gas lines supplying residential homes create a valuable infrastructure that services neighborhood commercial, restaurants and mixed used developments, bringing heightened value to the community.
- k. Hot Water Tank Increased Requirements** – Over the past several years, an increase in hot water tank requirements such as expansion tanks, seismic strapping and bollard/wheel stops, are ultimately resulting in the increased cost of a home.

4. Compliance with the Requirements Included in this Measure Would Be Confusing and Unreasonable.

The new provision added to HRS Section 196-6.5 (a)(4) in this version of the bill requiring the signature of a licensed architect or mechanical engineer that the life cycle cost for the demand water heater device is less than a solar water heater system based on a cost-benefit analysis (as required in subsection (a)(2)) is confusing and unreasonable. Does said added provision now require that two cost-benefit analyses be conducted for installation of a demand water heater device? What is the purpose of unreasonably requiring two cost-benefit analyses in such a situation other than increasing costs, causing delays and placing an undue burden on the developer/builder?

If the new provision was included to make clear that attestation of such an analysis is required when a demand water heater device is installed in lieu of the attestation of cost-benefit analysis pursuant to subsection (a)(2), further clarifying language must necessarily be included in this amendment.

Conclusion. LURF's position is that proponents of this measure have failed to credibly present any material facts or circumstances to prove that this proposed legislation is in fact necessary. The intent and application of this bill thus arguably remain unreasonable and unwarranted. LURF therefore believes it would be irresponsible for this Committee to agree to support this bill which may potentially stifle current efforts by the State and the City to address and work through the affordable housing crisis, and in turn, impact the overall economy, without thorough review and analysis of all the facts and information relating to the proposed amendment, as well as its potential consequences.

In view of the above discussion, LURF must **oppose HB 557**, and respectfully requests that this bill be held in this Committee. Thank you for the opportunity to provide comments relating to this measure.

LATE

HB-557

Submitted on: 1/29/2019 6:38:53 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|-------------------|--------------|--------------------|--------------------|
| Caroline Kunitake | Individual | Support | No |

Comments:

Aloha Chair Lowen, Vice Chair Wildberger, and Committee members,

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.

Mahalo,

Caroline Kunitake

HB-557

Submitted on: 1/29/2019 7:26:11 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

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

Comments:

LATE

LATE

HB-557

Submitted on: 1/29/2019 7:27:52 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Rene Umberger | Individual | Support | No |

Comments:

LATE

LATE

HB-557

Submitted on: 1/29/2019 8:09:58 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|------------------------|---------------------------|---------------------------|
| Gary Hooser | Pono Hawaii Initiative | Support | No |

Comments:

I am testifying in strong support, and I apologize for the lateness of my remarks.

As a State Senator at the time, I was the original sponsor of the Bill creating the solar hot water mandate for all new single family homes, that is now before you. The exception to a solar hot water unit substituting gas, that is now the subject of debate and which this bill is intended to correct, was intended at that time to be used only for those areas where solar hot water systems were not feasible (due to constant heavy cloud cover or similar situations). Solar is by far the lowest cost long term solution, and the ONLY solution that avoids fossil fuels completely. I have reviewed the proposed amendments and they are reasonable and straightforward. I encourage the committee to pass this measure as is and close this loophole which is now being egregiously abused.

Sincerely,

Gary Hooser - Pono Hawaii Initiative

LATE

HB-557

Submitted on: 1/29/2019 9:16:44 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---------------------|---------------------|---------------------------|---------------------------|
| Christopher Dean | Individual | Support | No |

Comments:

We need to promote residential and commercial rooftop solar. Hawaii was doing great before HELCO stopped their net metering. People should be paid a fair market rate for the energy they make. Individuals and businesses should be encouraged not only to make enough energy to cover their own consumption, but to make an excess amount of energy. HECO and subsidiaries claim "grid saturation" for the reason they are inhibiting the public from installing solar. The truth is they don't want to spend capital for storage systems. They see their economic model of taking from the many and giving to the few changing to a system where wealth is being distributed to the public and they don't want that, but they should, because if they don't do that, we will all suffer unimaginable environmental and economic collapse.

Global warming is real, burning fossil fuel is the cause and 50% of our coral reefs world wide are already dead. 70% will be dead in ten years. If nothing is done, all coral reefs will be extinct in 20 years. That means a target date for 100% renewable of 2045 is too late. We've known about this problem for over 150 years. We've been studying it for 50 years here in the U.S. and Hawaii. If you're feeling this rapid transition isn't feasible, or is unjust in some way, I think you should listen to your mother's voice from when you were a child, "Don't procrastinate or it will be a lot harder later." It's later, we're out of time. This is a global emergency unlike any we've ever had.

I'm not in favor of wind farms, solar farms, and other capital ventures where a single entity gets rich off the working class. These capital schemes require the consumption of land for industrial purpose causing serious environmental impact and are visually unpleasant. Why not generate electricity on land we've already ruined through commercial and residential development? Why ruin more land so a few people can get rich? Why not make it so that you, the person reading this, can make money, while simultaneously helping to save all life on Earth and preserving the beauty of Hawaii? By allowing each individual person and business to make a little money by allowing them to generate an excess amount of electricity and selling it back to the grid, we will be able to provide clean renewable energy to those operations who use so much energy they can not meet their demands by themselves. Perhaps we can become a net exporter of energy. If we're able to generate a substantial excess amount of energy in this fashion, we can build a hydrogen processing facility that uses sea water as a feed stock. That can be sold for hydrogen fuel cell vehicles here and around the Pacific rim. It won't matter that it takes a lot of energy to compress hydrogen, because we'll

have more energy than we know what to do with. Imagine that, a world where we have more energy than we can use and its all clean, no oil spills, no fracturing the earth and injecting poison, no tar sands mining, no mountaintop removal, no wars for oil, no smog, no mercury, lead and other poisons making us sick.

I see that the Hu Honua biomass generation proposal is getting a 100 million dollar tax credit if they're allowed to build their global warming, polluting, nightmare. Why not give that money to HECO to invest in storage systems instead?



LATE

**COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
State Capitol, Conference Room 325
415 South Beretania Street
8:30 AM**

January 29, 2019

RE: HB 557, RELATING TO ENERGY EFFICIENCY

Chair Lowen, Vice Chair Wildberger, and members of the committee:

My name is Gladys Quinto-Marrone, CEO of the Building Industry Association of Hawaii (BIA-Hawaii). Chartered in 1955, the Building Industry Association of Hawaii is a professional trade organization affiliated with the National Association of Home Builders, representing the building industry and its associates. BIA-Hawaii takes a leadership role in unifying and promoting the interests of the industry to enhance the quality of life for the people of Hawaii.

BIA-HAWAII is opposed to H.B. 557 which proposes to amend the criteria for granting a solar water heater system variance. It authorizes the Director of DBEDT to impose penalties and fines for false statements on variance applications.

The basic concept behind the solar mandate is that solar hot water heating systems use only sunlight and no fossil fuels. This is an incorrect assumption. Every solar hot water system includes an electrical back-up. This electrical back-up is the least efficient water heating system available today. In fact the technology used for electrical back-up in solar hot water heaters is no longer legal in pure electric water heaters due to its inefficiency. While the physical location of the house can have an impact on the solar efficiency, the greatest impact is the end-user. People that consume a large quantity of hot water due to family size and people who utilize much of their hot water in the morning are more likely to use their electrical back-up systems, regardless of location.

Furthermore the solar water system utilizes a single heat source storage in the tank. If the tank is in a remote location, especially in a larger home, the lag time for hot water at point of use is substantial. A standard shower head uses 2.5 gallons of water per minute. So if there is a two minute delay for hot water that is 5 gallons of wasted water per shower. For a family of four in a year that could be greater than 7000 gallons of water wasted. By comparison on demand systems are smaller with each home receiving two or three systems located closer to the point of usage. So while one system might be more energy efficient, it is certainly less water efficient.

Hawaii's homeowners, design professionals and builders deserve the opportunity to weigh these issues and arrive at appropriate decisions themselves. The existing mandate allows for this now. Making it more restrictive is not in the best interest of the people of Hawaii. That is why we oppose HB577 and appreciate the opportunity to express our views on the matter.

LATE

HB-557

Submitted on: 1/29/2019 9:38:42 AM

Testimony for EEP on 1/29/2019 8:30:00 AM

| Submitted By | Organization | Testifier Position | Present at Hearing |
|--------------|--------------|--------------------|--------------------|
| Dyson Chee | Individual | Support | No |

Comments:

I strongly support **HB557** to end the egregious abuse of the solar water heater variance. This bill would protect consumers by ensuring that the variance for a demand water heater may only be granted if solar water heating is impracticable and cost -prohibitive, and if no renewable technology system can be substituted as a primary energy source for heating water.

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. 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. Through January 2019, at last check nearly 7,000 variance requests were filed. More than 99% of the variance requests were granted. Further, it is clear that the variance requests are often not being submitted by the end consumer, as the legislature intended.

HB 557 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. Though gas water heaters are less expensive than solar for developers to install, they cost homeowners far more in the long run. Solar water heaters pay for themselves in three to four years.

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 pass HB 557 and end this blatant abuse that hurts consumers and the environment.

Thank you for the opportunity to testify in **strong support** of this very important bill.