

HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

(808) 587-3807

Testimony of **SCOTT J. GLENN, Chief Energy Officer**

before the **HOUSE COMMITTEES ON ENERGY & ENVIRONMENTAL PROTECTION AND HOUSING**

Thursday, March 12, 2020
10:45 AM
State Capitol, Conference Room 423

Comments in consideration of **SB 1289, SD2 RELATING TO ROOFTOP SOLAR INSTALLATION.**

Chairs Lowen and Brower, Vice Chairs Wildberger and Matayoshi, and Members of the Committees, the Hawaii State Energy Office (HSEO) offers comments on SB 1289, SD2, which would assign to “the coordinator” the responsibility for granting variances for “a new single-family dwelling that is part of a development of twenty or more dwellings and does not include a rooftop solar energy generation system” and states that a variance application shall be accepted “if submitted by an architect or electrical engineer.. who attests that..” and lists three possible attestations.

Our comments are guided by our mission to promote energy efficiency, renewable energy, energy resiliency, and clean transportation to help achieve a decarbonized economy.

We appreciate the intent of the proposal to make better use of the energy that is delivered to rooftops in Hawaii on a daily basis, in order to help us reach the goal of 100% renewable electricity.¹ However, a legally-enforceable requirement needs to include clear and consistent definitions. The proposed language is unclear as to what is included in a rooftop solar installation or a rooftop solar energy generation system, which would make it difficult to administer and enforce.²

¹ It's expected that, to meet the 100% RPS, most residential rooftops in Hawaii will have photovoltaics by 2045.

² Unlike a “solar water heater system” (referenced in the bill’s introductory section), which is a rooftop system that produces thermal energy, a photovoltaic system is a rooftop system that produces electricity, and which may or may not be able to interconnect to the electrical grid without on-site energy storage (batteries), limitations on energy export, or grid upgrades. There are currently

We do not have an estimate of the resources – both staffing and funding – that would be required for HSEO or others to carry out the “variance application” tasks associated with this bill.

In last year’s hearing on this measure, several testifiers alluded to California’s solar mandate law. HSEO observes that the structure, effectiveness, modifications, staffing requirements, and other relevant aspects of California’s experience could be very informative to this discussion, and recommends that further discussion and development of this concept be informed by recommendations and lessons learned in California. Information from the implementation experience in California could also inform the Integrated Grid Planning effort currently under way in Hawaii.³

Other important considerations in the context of rooftop solar systems, and the potential energy storage for excess daytime energy produced by those systems, are neighborhood energy generation and storage systems that could contribute to the resiliency of all of the energy loads in the area – including traffic signals, schools, businesses and community centers – and to what extent an integrated approach to improving the reliability and affordability of the overall energy system can be developed.

Finally, the term “coordinator” in Chapter 196, Hawaii Revised Statutes, is not defined.

Thank you for the opportunity to testify.

numerous existing rooftop photovoltaic systems that have not yet been interconnected to the electric grid, sometimes because grid upgrades have not yet been completed. Some of those upgrades are delayed due to discussions of who pays for the upgrade costs: all utility customers, or just the customer whose system would push the circuit voltage above the acceptable limit? Sometimes these interconnection discussions and cost studies can take several months, or more, to complete.

³ Docket No. 2018-0165, <https://dms.puc.hawaii.gov/dms/dockets?action=details&docketNumber=2018-0165>



Pono Hawai'i Initiative

Josh Frost - President • Patrick Shea - Treasurer • Kristin Hamada
Nelson Ho • Summer Starr

Thursday, March 12, 2020

Relating to Rooftop Solar Installation
Testifying in Support

Aloha Chair and members of the committee,

The Pono Hawai'i Initiative (PHI) **supports SB1289 Relating to Rooftop Solar Installation**, which prohibits building permits for new-single family dwellings that are part of a larger development if they do not include a rooftop solar energy generation system.

This measure will help Hawai'i move towards its goals of 100% renewable energy by 2045. These types of measure will help by requiring more developments to utilize green energy, increasing the use of renewable energy and lowering the use of imported fossil fuels.

For all these reasons, we urge you to vote in favor of this measure.

Mahalo for the opportunity,
Gary Hooser
Executive Director
Pono Hawai'i Initiative

SB-1289-SD-2

Submitted on: 3/10/2020 9:31:57 AM

Testimony for EEP on 3/12/2020 10:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Climate Protector	Climate Protectors Coalition	Support	No

Comments:

March 12, 2020

The Honorable Nicole E. Lowen, Chair

House Committee on Energy & Environmental Protection

The Honorable Tom Brower, Chair

House Committee on Housing

State Capitol, Room 423

Honolulu, Hawaii 96813

RE: Senate Bill 1289, SD2 Relating to Rooftop Solar Installation

HEARING: Thursday, March 12, 2020, at 10:45 a.m.

Aloha Chair Lowen, Chair Brower and Members of the Joint Committees,

I am Ken Hiraki Government Affairs Director, testifying on behalf of the Hawai'i Association of REALTORS® (“HAR”), the voice of real estate in Hawai'i, and its over 10,000 members. HAR **opposes** Senate Bill 1289, SD2, which prohibits the issuance of building permits beginning on January 1, 2022, for new single-family dwellings that are part of a development of twenty or more dwellings and do not include a rooftop solar energy generation system, unless a variance is granted.

Hawai'i REALTORS® believe that rooftop solar energy generation systems provide great benefits to a homeowner. However, installation of solar energy generation systems can average \$15,000 to \$30,000 or more depending on the single-family home. This expense will be added into the already high cost of housing in Hawai'i, placing homeownership even further out of reach for many of Hawai'i's residents.

As such, HAR believes that homeowners should be encouraged to install rooftop solar energy generation systems, but it should not be mandated.

Mahalo for the opportunity to testify.



Imanaka Asato
A LIMITED LIABILITY LAW COMPANY

March 11, 2020

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

Representative Tom Brower, Chair
Representative Scot Z. Matayoshi, Vice Chair
Members of the House Committee on Housing
Thirtieth Legislature, Regular Session of 2020

RE: **SB 1289, SD2 – RELATING TO ROOFTOP SOLAR INSTALLATION**
Hearing Date: March 12, 2020 at 10:45 a.m.

Aloha Chair Lee and Members of the Committee on Judiciary,

Mahalo for the opportunity to submit testimony on behalf of D.R. Horton Hawaii LLC (“D.R. Horton”) in **OPPOSITION** to SB 1289, SD2 – RELATING TO ROOFTOP SOLAR INSTALLATION. D.R. Horton is one of Hawaii’s largest home builders and has been providing affordable housing and first-time buyer homes for Hawaii’s families throughout Oahu for over forty years. D.R. Horton is also a leader in energy efficient, sustainable and smart homes and supports the legislature’s efforts to promote sustainability. In fact, D.R. Horton has committed to an overall sustainability plan for its Ho’opili master planned community in East Kapolei.

Under the Ho’opili plan, D.R. Horton has included numerous sustainable features in the homes including:

- EV Ready homes with attached garages;
- PV Ready homes
- Smart Home System
- Energy Efficient Air Conditioning - High efficiency variable speed ductless split AC with minimum 20 SEER rating
- Grid Interactive Water Heaters (“GIWH”) - Participation in HECO’s GIWH program
- Water Conserving Features - low flow plumbing fixtures, Energy Star appliances, and wireless water submeters at multi-family condo units to track individual unit usage
- Dual Glazed Windows
- LED Lighting

- Ceiling Fans – buyer’s options
- Solatube – Installed in 10% of homes and offered as a buyer’s options
- Solar Attic Fan - Installed in 10% of homes and offered as a buyer’s options
- Refuge Recycling – within multi-family condominium communities
- Recycled Water - Participation in the City’s R1 recycled water system infrastructure

D.R. Horton agrees that it is critical for an island state like Hawaii to address and mitigate the impacts of climate change. However, we strongly feel that the lack of housing, particularly affordable housing, is another critical issue facing our State and hampering the ability for our local families to remain in Hawaii. Policy makers at all levels have recently identified the lack of affordable housing as a top priority needing our collective attention. We offer the following for further consideration, discussion and research:

1. **Fragile buyer qualification environment vs increased cost to housing** – recent cost estimates for a PV system at a Ho’opili single family home ranged from \$28,000 - \$38,000. In mortgage terms, this represents a \$126 to \$171 increase in monthly payments at a 3.5% interest rate.

Kindly allow us to share how this increase will have a profound impact on today’s buyer demographic. Ho’opili is a large master planned community in East Kapolei selling multi-family and single family homes to affordable buyers, first time home buyers and first time move up buyers. In September of 2019, D.R. Horton analyzed a sampling of 40 homebuyer loan capacities. Of the 40 loans, 28 were conventional loans and 12 were Fair Housing Act (“FHA”) loans. The average debt-to-income ratio of this sampling was 42-44%, anything higher would result in loan disqualification. A \$126 per month increase in monthly mortgage payments under these loans would result in the disqualification of 11 of the 28 conventional loan buyers and 8 of the 12 FHA loan buyers. In short, if new single family homes at Ho’opili were mandated to install PV systems in September 2019, 48% of buyers seeking a loan would NOT have qualified for a mortgage.

2. **State and Federal tax credits will expire at the end of 2021** – tax incentives are set to expire in less than 2 years that will make it that much more costly to install a PV system in new single family homes.
3. **SB1289 does not apply to all single family homes requiring a building permit** – it targets larger scale production home developments (20 homes or more), the very projects that are needed for the State to make significant strides in building much needed housing inventory. Accordingly, D.R. Horton is deeply concerned that additional mandates, such as requiring a rooftop solar energy generation system, will substantially increase the cost of housing. Many local families are barely able to afford a home of their own due to the high cost of land, infrastructure

House Committee on Energy &
Environmental Protection
House Committee on Housing
March 11, 2020
Page 3

and construction. Additional additive costs will put a home out of reach of those least able to afford it. The result will be even more local families being forced to continue renting, living with family members or migrating out of Hawaii. If the state insists on including a mandate, we suggest limiting the mandate to photovoltaic ready infrastructure. We have attached a draft HD1 version for your consideration.

In order to keep the cost of housing from spiraling out of control, we urge you to defer SB 1289, SD2 or to amend the bill to require photovoltaic ready infrastructure rather than rooftop solar generation system.

Mahalo for your consideration,

Michael L. Iosua, Partner
Imanaka Asato, LLLC



Imanaka Asato
A LIMITED LIABILITY LAW COMPANY

March 11, 2020

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

Representative Tom Brower, Chair
Representative Scot Z. Matayoshi, Vice Chair
Members of the House Committee on Housing
Thirtieth Legislature, Regular Session of 2020

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House Committee on Energy &
Environmental Protection
House Committee on Housing
March 11, 2020
Page 3

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In order to keep the cost of housing from spiraling out of control, we urge you to defer SB 1289, SD2 or to amend the bill to require photovoltaic ready infrastructure rather than rooftop solar generation system.

Mahalo for your consideration,

Michael L. Iosua, Partner
Imanaka Asato, LLLC

A BILL FOR AN ACT

RELATING TO ROOFTOP SOLAR INSTALLATION.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that rooftop solar photovoltaics are an important part of Hawaii's one hundred per cent renewable energy target. Similar to the requirement of installing a solar water heater system for all new construction of single-family dwellings under section 196-6.5, Hawaii Revised Statutes, adding a rooftop solar energy generation system requirement for new, single-family homes will help Hawaii achieve its renewable energy goals. This solar installation requirement will help reduce Hawaii's dependence on nonrenewable energy sources and lead to a more sustainable future.

The legislature also finds that adding a solar energy generation system during the construction phase significantly reduces the system installation cost for homeowners versus adding solar photovoltaics post-construction. Additionally, solar installation during construction allows home buyers to finance systems at traditional, low mortgage rates.

The legislature further finds that Hawaii policymakers and utilities have identified distributed energy resources, such as customer-sited solar photovoltaics and battery energy storage

systems, as key technologies that enable Hawaii residents and businesses to benefit from and contribute to the State's transition to a resilient, affordable, and one hundred per cent clean, electric power system. Furthermore, the federal solar tax credit, also known as the investment tax credit, will expire on December 31, 2021, for residential solar energy systems, which may have the effect of de-incentivizing the installation of rooftop solar photovoltaics.

The purpose of this Act is to prohibit the issuance of building permits beginning on January 1, 2022, for new single-family dwellings that do not include a rooftop solar energy generation system, unless a variance is granted.

SECTION 2. Chapter 196, Hawaii Revised Statutes, is amended by adding a new section to part I to be appropriately designated and to read as follows:

"§196- Photovoltaic infrastructure installation required for new single-family residential construction. (a) On or after January 1, 2022, no building permit shall be issued for a new single-family dwelling that is part of a development of twenty or more dwellings and does not include photovoltaic infrastructure, unless the coordinator approves a variance. A variance application shall only be accepted if submitted by an architect or electrical engineer licensed under chapter 464, who attests that:

(1) Installation is impracticable due to poor solar resource;

(2) Installation is cost-prohibitive based upon a life cycle cost-benefit analysis that incorporates the average residential utility bill and the cost of the new rooftop solar energy generation system with a life cycle that does not exceed twenty years; or

(3) A renewable energy technology system, as defined in section 235-12.5, is substituted for use as the primary energy source for electricity.

For purposes of this section "photovoltaic infrastructure" shall mean conduit and electrical panels necessary to interconnect a residence with on-site solar energy generation facilities with the electrical grid in compliance with applicable laws, statutes, and utility tariffs.

(b) A request for a variance shall be submitted to the coordinator on an application prescribed by the coordinator and shall include a description of the location of the property and justification for the approval of a variance using the criteria established in subsection (a). A variance shall be deemed approved if not denied within sixty working days after receipt of the variance application. The coordinator shall publicize:

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

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

(c) The director of business, economic development, and tourism may adopt rules pursuant to chapter 91 to impose and collect fees to cover the costs of administering variances under this section. The fees, if any, shall be deposited into the energy security special fund established under section 201-12.8.

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

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

SECTION 3. New statutory material is underscored.

SECTION 4. This Act shall take effect on June 18, 2050.

Report Title:

Rooftop Solar Installation; New Residential Construction Requirement

Description:

Prohibits the issuance of building permits beginning on January 1, 2022, for new single-family dwellings that are part of a development of twenty or more dwellings and do not include a rooftop solar energy generation system, unless a variance is granted. Takes effect on 6/18/2050. (SD2)

The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.

SB-1289-SD-2

Submitted on: 3/11/2020 9:42:26 AM

Testimony for EEP on 3/12/2020 10:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Regina Gregory	EcoTipping Points Project	Support	No

Comments:



**Hawaiian
Electric**

**TESTIMONY BEFORE THE HOUSE COMMITTEES ON
ENERGY AND ENVIRONMENTAL PROTECTION
&
HOUSING**

S.B. 1289, SD2

Relating to Rooftop Solar Installation

Thursday, March 12, 2020
10:45 am
State Capitol, Conference Room 423

Kaiulani Shinsato
Director, Customer Energy Resources Programs
Hawaiian Electric Company, Inc.

Dear Chair Lowen and Chair Brower, Vice Chair Wildberger and Vice Chair Matayoshi,
and Members of the Committees,

My name is Kaiulani Shinsato and I am testifying on behalf of Hawaiian Electric Company, Inc. (Hawaiian Electric). Hawaiian Electric provides the following **comments regarding S.B. 1289, SD2**, Relating to Rooftop Solar Installation.

Hawaiian Electric supports the intent of S.B. 1289, SD2, which encourages the adoption of rooftop solar in the State. However, the bill may incentivize exporting rooftop solar systems in areas where there is already high rooftop solar concentration, thus possibly resulting in costly upgrades and/or interconnection studies, borne by either the interconnecting customer or all customers, to ensure that these additional systems can be safely interconnected. In this regard, the bill is at odds with the Hawaiian Electric Companies' Integrated Grid Planning ("IGP") process, which is already underway and is the subject of an open proceeding before the Hawai'i Public Utilities Commission. The IGP planning process is centered on identifying grid needs

and services first, including cost-effective locations, sequence and timing, and then obtaining them cost-effectively through procurements and/or programs that could be location specific. Energy and grid services from these systems should be taken and compensated based on grid needs, defined by the utility and approved by the Public Utilities Commission through the IGP process so that these systems are cost-effective for all customers and do not have unintended adverse consequences, particularly for our most vulnerable communities.

With respect to customer clean energy resources, our objective is to ensure that these resources are adopted in a way that facilitates a cost-effective path to 100% clean energy for our State, which means we must look out for all customers, not only those with rooftop solar systems. Our long-term path to 100% clean energy by 2045 calls for rooftop solar on every single-family home on Oahu. Thus, customer resources are an important part of our strategy, but only if they are integrated in coordination with the rest of the electric grid and aligned with our resource plans that holistically consider all customers. Policy that does not consider alignment with the complex resource plans that have been developed by the Companies, vetted by many experts, regulators, and stakeholders over many years may unintentionally undermine our State's path to 100% clean energy.

Thank you for this opportunity to testify.



March 11, 2020

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

Representative Tom Brower, Chair
Representative Scot Z. Matayoshi, Vice Chair
Members of the House Committee on Housing

RE: **SB 1289, SD2 – RELATING TO ROOFTOP SOLAR INSTALLATION**
Hearing date: March 12, 2020 at 10:45 a.m.

Aloha Chair Lowen, Chair Brower and members of the committees,

Mahalo for the opportunity to submit testimony on behalf of NAIOP Hawaii in **OPPOSITION** to SB 1289, SD2 – RELATING TO ROOFTOP SOLAR INSTALLATION. NAIOP Hawaii is the local chapter of the nation's leading organization for office, industrial, retail, residential and mixed-use real estate. NAIOP Hawaii has over 200 members in the State including local developers, owners, investors, asset managers, lenders and other professionals. NAIOP Hawaii is generally supportive of efforts to promote sustainability. We are, however, concerned with the tremendous burden an additional mandate places on the cost of building homes in Hawaii, especially affordable housing.

SB 1289, SD2 would prohibit the issuance of building permits beginning on January 1, 2022, for new single-family dwellings that are part of a development unless the homes include a rooftop solar energy generation system. Despite the legislature's efforts to address Hawaii's critical affordable housing shortage, it appears that bills requiring additional housing mandates that drastically increase the cost of housing are continuously introduced.

Hawaii's residents and businesses are already among the most heavily taxed in the entire country. There are already significant development mandates which increase the cost of building residential units, which has significantly exacerbated the lack of affordable housing in Hawaii. Requiring rooftop solar systems could easily increase the cost of housing by \$30,000 to \$40,000 per unit. At a time when even minor increases to the cost of housing place home prices beyond the affordability measure, such a substantial increase would clearly put homeownership out of reach for most local

Members of the House Committee on Energy
& Environmental Protection
Members of the House Committee on Housing
March 11, 2020

families. Again, this is drastically contradictory to the legislatures stated efforts to support affordable housing. In addition, there is no indication that the electrical infrastructure could support rooftop solar generation systems on every new home, thus slowing down the pace of homebuilders.

In order to keep the cost of housing from spiraling out of control, the City should resist the urge to place additional costs on development. For these reasons, we urge the committee to defer SB 1289, SD2. Alternatively, the committees should at least reduce the mandate to only require photovoltaic infrastructure, which would allow those families who choose to install solar to do so, as opposed to mandating the full rooftop solar systems.

Mahalo for your consideration,

Catherine Camp, President
NAIOP Hawaii



**Testimony to the House Committees on Energy and Environmental Protection,
and Housing**

**Thursday, March 12, 2020 at 10:45 A.M.
Conference Room 423, State Capitol**

RE: SB 1289 SD2, RELATING TO ROOFTOP SOLAR INSTALLATION

Chairs Lowen and Brower, Vice Chairs Wildberger and Matayoshi and Members of the Committees:

The Chamber of Commerce Hawaii ("The Chamber") **opposes** SB 1289 SD2, which prohibits the issuance of building permits beginning on January 1, 2022, for new single-family dwellings that are part of a development of twenty or more dwellings and do not include a rooftop solar energy generation system, unless a variance is granted.

The Chamber is Hawaii's leading statewide business advocacy organization, representing 2,000+ businesses. Approximately 80% of our members are small businesses with less than 20 employees. As the "Voice of Business" in Hawaii, the organization works on behalf of members and the entire business community to improve the state's economic climate and to foster positive action on issues of common concern.

For the 2020 Legislative Session, both Chambers of the Hawaii State Legislature, and Governor Ige's Administration put forward a comprehensive package of bills to improve the quality of life for Hawaii's middle-class families. A large part of the package attempted to address housing affordability. Adding additional energy mandates to the construction of a new home will unfortunately raise the cost of housing in Hawaii.

Previously, the Legislature mandated the installation of solar water heaters on all new single-family residential dwellings in Hawaii. Prior to the mandate, the state had provided tax credits to homeowners who purchased a solar water heating system. The utility companies had a list of solar water heater installation companies who were familiar with the tax credit program, and this incentive attracted existing homeowners to install solar water heating systems. But once the mandate law was passed, the tax credits were eliminated and there was no incentive for existing homeowners to install a solar water heating system.

If the goal is to move the state to be less dependent on fossil fuels, we prefer the use of incentives rather than mandates, letting consumers make their own choices.

Thank you for the opportunity to provide testimony on SB 1289 SD2.



**TESTIMONY TO THE HOUSE COMMITTEES ON ENERGY AND ENVIRONMENTAL PROTECTION,
AND HOUSING**

State Capitol, Conference Room 423
415 South Beretania Street
10:45 AM

March 12, 2020

RE: SENATE BILL NO. 1289 SD 2, RELATING TO ROOFTOP SOLAR INSTALLATION

Chairs Lowen and Brower, Vice Chairs Widberger and Matayoshi, and members of the committees:

My name is Dwight Mitsunaga, 2020 President 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. Our members build the communities we all call home.

BIA-Hawaii is strongly opposed to S.B. 1289 SD 2, which proposes to mandate a rooftop solar energy generation system (i.e. photovoltaic; PV) to be installed on all new single-family residential dwellings that are not granted a variance beginning on 1/1/2022.

In 2020, the median price of a new home on Oahu was roughly \$762,000. Mandating the installation of a PV system will increase the cost of a new home by \$15,000 to \$29,000, depending on the size of the structure. This session, both Chambers of the Hawaii State Legislature, along with Governor Ige's administration, put forward a comprehensive package of bills to improve the quality of life for Hawaii's middle-class families. A large part of the package attempted to address housing affordability. Adding more energy mandates to the construction of a new home will raise the cost of housing in Hawaii.

Previously, the Legislature mandated the installation of solar water heaters on all new single-family residential dwellings in Hawaii. Prior to the mandate, the state had provided tax credits to homeowners who purchased a solar water heating system. The utility companies had lists of solar water heater installation companies who were familiar with the tax credit program. This was the incentive to attract existing homeowners to install solar water heating systems. Once the mandate law was passed, the tax credits were eliminated and there was no longer any incentive for existing homeowners to install a solar water heating system. If the goal is to move the state to be less dependent on fossil fuels, we should learn from past mistakes and use incentives rather than mandates, thus letting consumers make their own choices.

We strongly oppose S.B. 1289 SD 2 and appreciate the opportunity to express our views on the matter.



**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
HOUSE COMMITTEE ON HOUSING**

March 12, 2020, 10:45 a.m.
(*Testimony is 2 pages long*)

TESTIMONY IN SUPPORT OF HB 2413 WITH ***PROPOSED AMENDMENTS***

Aloha Chair Lowen, Chair Brower, and Members of the Committees:

Hawaii PV Coalition supports SB 1289 SD2, which advances Hawaii’s ambitious renewable energy goals by ensuring new homes are built with rooftop solar. This bill would result in (1) lowered home construction costs, (2) reduced electricity costs and added resilience for new homeowners, and (3) significantly lowered costs circuit and transmission costs to all ratepayers.

This bill is smart policy, and is a potential unicorn “win-win-win” situation. California already requires new homes to be built with rooftop solar. In many situations, ***solar installers pay home developers for the opportunity to install.*** Solar installers see lowered costs of acquiring customers, and are able to pass these savings back to the homebuilders and new home owners. This can be thousands of dollars per install or, for a larger home construction project, millions of dollars in reduced construction costs.

New homeowners will have the option of either (1) purchasing the solar system through a home mortgage, or (2) leasing the system with no additional upfront cost to the customer, and savings demonstrated on their electric bill each month. California determined the average homeowner would see approximately \$40 savings each month on their electric bill, a number that is likely to be greater in Hawaii.

This measure additionally offers a means to diminish the cost of new distribution and transmission infrastructure. For new housing developments, infrastructure is likely overbuilt: planners assume the full load of these new homes will be added to the electrical grid. However, customers will likely install energy efficiency and rooftop solar

on their homes (average of 30% of all single family homes in Hawaii today have rooftop solar). As a result, the new electrical load is not seen on the grid, and the cost of this unnecessary infrastructure is borne by the ratepayer-at-large. The smart approach is to build rooftop solar and energy efficiency efforts first, and avoid millions of dollars of unnecessary new infrastructure.

Finally, it is necessary to note that Hawaii will not achieve its 100% RPS goal without solar on all roofs. This goal cannot be achieved unless new buildings are designed and built with rooftop solar at the start.

Proposed Amendments:

As with any bill, improvements can be made. Here, HPVC recommends mandating a minimum size of 5 kW for each installed rooftop solar system to ensure customers are getting an adequately sized system. This is below the median sized system in Hawaii of 7.6 kW, but should address the electric needs of a majority of future homeowners (particularly assuming increased electrification over time).

Further, current electric interconnection tariffs make the use of energy storage a necessity to ensure customer economics. Energy storage also advances public policy goals of expanding resilience and allowing greater amounts of renewable energy on the grid.

We suggest including the following definition that addresses these two concerns:

A rooftop solar energy generation system is defined as a photovoltaic system with electricity-generating solar panels, mounted on a rooftop on or near the property in question, of of at least 5 kilowatts of generating capacity and associated energy storage.

We encourage you to move this measure forward. Mahalo for the opportunity to submit these comments.

The Hawaii PV Coalition was formed in 2005 to support the greater use and more rapid diffusion of solar electric applications across the state. Working with business owners, homeowners and local and national stakeholders in the PV industry, the Coalition has been active during the state legislative sessions supporting pro-PV and renewable energy bills and helping inform elected representatives about the benefits of Hawaii-based solar electric applications.

LATE



Hawaii Solar Energy Association
Serving Hawaii Since 1977

**TESTIMONY
OF THE
HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO
SB1289, RELATING TO ROOFTOP SOLAR INSTALLATION
BEFORE THE
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
AND THE
HOUSE COMMITTEE ON HOUSING
MARCH 12, 2020**

Aloha Chair Lowen, Chair Brower, and members of the Committees. My name is Will Giese and I am the Executive Director of the Hawaii Solar Energy Association (“HSEA”).

I STRONGLY SUPPORT SB 1289 SD2. This measure requires a rooftop solar energy generation system to be installed on all new single-family residential dwellings that are not granted a variance beginning on 1/1/2022.

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

Solar energy technology, such as solar photovoltaic and solar hot water, are proven to help people **save money** on their energy bill, **reduce electrical demand** and the use of **fossil fuels**, and **combat climate change**. With some of the highest amount of solar energy installations per capita, bills like SB1289 are well in line with Hawaii’s renewable energy goals and should be passed immediately.

Hawaii still gets over 80% of its energy from dirty fossil fuels, and consumers are paying the price through high energy bills and carbon emissions. In the last 20 years, the price of solar energy has dropped to all time lows and it gets more affordable every single day. Rolling the cost of a solar system into the price of a new home makes it even more affordable. Similar policy enacted last year in California found that a homeowner would actually **save almost \$20,000 in energy and maintenance costs** over the life of a 30 year mortgage.

SB1289 is a big bill and will likely generate controversy. Luckily, several of these arguments have been made and overcome in California and are as if not more applicable in Hawaii. The HSEA offers the following points to offer further clarification on this important measure:



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SB1289 Will Not Substantially Raise New Home Prices

Similar to the solar water heater mandate, SB1289 will not significantly raise the median home price in Oahu, which was close to \$800,000 per home. Solar on new construction has significantly lower development costs due to lower permitting fees, zero customer acquisition costs, lower financing costs, and a variety of other factors.

In addition, the solar systems installed on these homes as part of a mandate will immediately allow the consumer to save money on their energy bills. In turn, the new home owner will redistribute that wealth back into the local economy, generating tax revenue for the state that would otherwise not have been generated.

SB1289 Will Help Accelerate Grid Innovation Across the State

Currently, there are numerous dockets and policy discussion ongoing in Hawaii in regard to transforming the grid and Hawaii's energy economy. By requiring solar on new homes, the legislature signals to the state that cost savings generated by a more democratized and distributed energy system are absolutely needed. Hawaiian Electric's Integrated Grid Planning process as well as the Power Supply Improvement Plan already envision most, if not all homes across Hawaii installing and using solar PV. This measure only solidifies an already moving policy.

SB1289 Will Not Negatively Impact the Housing Market

While it is true that new home buyers who are the first purchasers on a new home will pay a significantly reduced cost for their mandated solar system, each subsequent owner of that home will inherit all of the benefits without any of the cost. Furthermore, while the average cost of a solar and storage system retrofit can be between \$20,000-\$30,000, the cost for a new home installation will be much lower given contractor and bulk pricing discounts. Additionally, California's new solar homes mandate as well as overall price decreases across the market make this addition a relatively minor factor in overall home pricing trends in Oahu, before taking into account the enormous cost savings and positive environmental impacts generated from this measure.

California's 2019 Housing Compliance Manual had this to say regarding affordability and housing costs relative to its new solar mandate:¹

C1 Housing Affordability

Question

¹ https://ww2.energy.ca.gov/2018publications/CEC-400-2018-017/appendices/Appendix-C_FAQs_on_PV_and_BatteryStorage.pdf



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On the average, the new PV requirements will add about \$8,400 to the cost of a single-family home. Wouldn't that make homeownership less affordable at a time where California's home prices are already out of reach?

Answer

No. A home with solar costs less to own than one without. Put another way, the benefits of solar outweigh its costs, such that the new homeowner is saving money from day one in the home. That family will save thousands of dollars over the first decade of ownership.

Home affordability includes both the first cost and operating costs, which include utility bills. The PV requirement actually makes homeownership more affordable: the reduction in energy bills exceeds the corresponding increase in mortgage payment by around \$35 per month on average.

If first cost is a primary concern – as it is for many including young families and first time home buyers – the cost of PV need not be covered by the home price or mortgage principal. PV options are already today routinely leased instead of purchased outright. Leased PV systems have little or no upfront costs, and offer up to 20 percent electric bill savings; thus the same logic as above applies. In the future, community-shared solar options may also be available as an alternative to onsite PV systems, with little or no upfront costs.

In its current form, this measure requires further refinement. HSEA offers the following comments to help improve this measure:

- Subsection (a)(2) lists the “life cycle” of a solar system not to exceed 15 years. The average warranty term for most solar modules installed today is 20-25 years, and average warranty terms for other power electronics are similarly marked. We recommend a life cycle cost analysis consider the system for a 20 year life span.
- Subsection (a) notes the following: “A variance application shall only be accepted if submitted by an architect or mechanical engineer licensed under chapter 464, who attests that:”. HSEA suggests that this application be reviewed by an electrical engineer, rather than a mechanical one.
- We also suggest housing the definition of a rooftop PV system within this statute, as such:

(3) A rooftop photovoltaic energy generating system, as defined below, is substituted for use as the primary energy source for electricity.



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(b) A request for a variance shall be submitted to the coordinator on an application prescribed by the coordinator and shall include a description of the location of the property and justification for the approval of a variance using the criteria established in subsection (a). A variance shall be deemed approved if not denied within sixty working days after receipt of the variance application. The coordinator shall publicize:

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

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

"Rooftop photovoltaic energy generating system" is defined as any identifiable facility, equipment, apparatus, or the like that utilizes electricity-generating photovoltaic modules mounted on a rooftop or near the property in question that converts solar energy to useful electrical energy for heating, cooling, or reducing the use of other types of energy that are dependent upon fossil fuel for their generation. This facility shall not be less than 5 kilowatts of generating capacity and shall include an energy storage device, such as a battery.



Hawaii Solar Energy Association
Serving Hawaii Since 1977

Hawaii should be a leader in clean energy policy, and bills like this make us one.

The **HSEA SUPPORTS SB 1289 SD1** and urges this committee to pass this measure.
Thank you for supporting clean solar energy and giving us the opportunity to testify.

**HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
HOUSE COMMITTEE ON HOUSING**

March 12, 2020, 10:45 A.M.
Room 423
(Testimony is 2 pages long)

LATE

TESTIMONY IN SUPPORT OF SB 1289 SD2

Aloha Chair Lowen, Chair Brower, Vice Chair Wildberger, Vice Chair Matayoshi, and members of the Committees:

Blue Planet Foundation **supports** SB 1289 SD2, a measure that requires all new single-family homes to have rooftop solar. California—the world’s fifth largest economy—has already adopted a similar requirement. This bill will help lower Hawaii’s carbon footprint and can better align our planning efforts with our clean energy and climate goals. The measure can also lower the long-term energy costs for homeowners. Adding a rooftop solar system during the construction phase significantly reduces the installation cost for homeowners compared to adding solar photovoltaics post-construction.

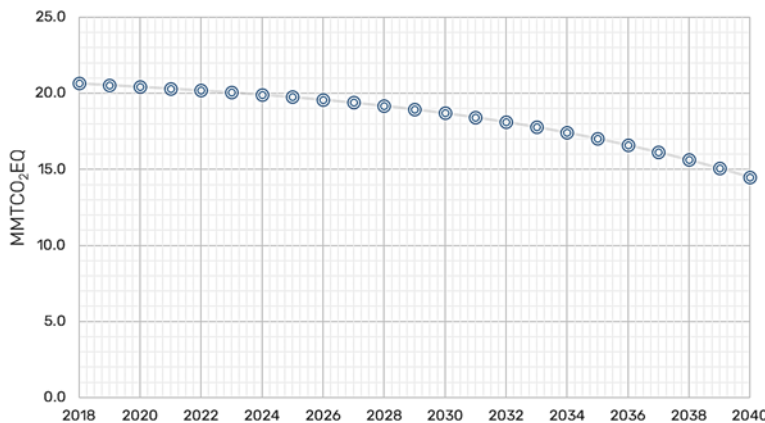


Figure 1. Best-case Hawaii greenhouse gas emissions trend with current state policies

Climate change will have devastating, long-term consequences on Hawaii’s environment, economy, and quality of life. For these reasons and others, the State of Hawaii has committed to a decisive and irreversible transition away from fossil fuels, and a swift transition to a clean energy economy powered by 100% renewable energy.

The legislature has passed aggressive carbon reduction goals, including the goal to be net carbon neutral by 2045 (Act 15 of 2018) and strive to achieve the objectives of the Paris Climate Agreement (Act 32 of 2017). Setting these bold targets is important, but alone it is insufficient. Despite a growing portfolio of standards, incentives, and targets, Hawaii’s current policies will not succeed in significantly reducing Hawaii’s current overall carbon emissions over the next few decades.

Rooftop solar will play a significant role in Hawaii's 100% clean energy future—especially as space becomes increasingly limited for larger utility scale projects. Hawaii needs decisive leadership and bold, implementation-focused policies like SB 1289 if we hope to achieve our clean energy and climate goals.

Thank you for the opportunity to testify. We respectfully request that the Committees forward SB 1289 SD2, amended to take effect upon approval.



183 Pinana St., Kailua, HI 96734 • 808-262-1285 • info@350Hawaii.org

To: The House Committees on Energy & Environmental Protection; and Housing
From: Brodie Lockard, Founder, 350Hawaii.org
Date: Thursday, March 12, 2020, 10:45 am

In strong support of SB 1289 SD2

LATE

Dear Chairs Lowen and Brower, and members:

350Hawaii's 6,000 members strongly support SB 1289 SD2.

Rooftop solar is one of the most potent tools Hawaii has for reducing our greenhouse gas emissions. It's one of the few ways individuals can contribute significantly to meeting our clean energy goals.

Rooftop PV pays for itself in a few years, and then saves a great deal of money in the long term.

In 2018, California passed the first law in the country requiring rooftop PV on every new home. Hawaii should do the same. Requiring PV on developments of 20 or more dwellings isn't as good as California, but it is a start. It would add only 2% or 3% to the cost of a new home here.

We need to be encouraging and supporting solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

Brodie Lockard
Founder, 350Hawaii.org

SB-1289-SD-2

Submitted on: 3/11/2020 9:48:53 PM

Testimony for EEP on 3/12/2020 10:45:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
John Nix	Individual	Support	No

Comments:

Dear Chairs Lowen and Brower, and members:

As one of 350Hawaii's 6,000 members, I strongly support SB 1289 SD2.

Rooftop solar is one of the most potent tools Hawaii has for reducing our greenhouse gas emissions. It's one of the few ways individuals can contribute significantly to meeting our clean energy goals.

Rooftop PV pays for itself in a few years, and then saves a great deal of money in the long term.

In 2018, California passed the first law in the country requiring rooftop PV on every new home. Hawaii should do the same. Requiring PV on developments of 20 or more dwellings isn't as good as California, but it is a start. It would add only 2% or 3% to the cost of a new home here.

We need to be encouraging and supporting solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

Dr. John and Debra NNix, Kihei

LATE

SB-1289-SD-2

Submitted on: 3/11/2020 10:41:10 PM

Testimony for EEP on 3/12/2020 10:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Harald Ebeling	Individual	Support	No

Comments:

Dear Chairs Lowen and Brower, dear committee members,

I am writing to express my strong support for SB 1289 SD2.

I installed rooftop solar on my home four years ago and have already amortized the cost of the installation through dramatically lower electricity bills. Rooftop PV is ideal for our state and a way for every one of us to do our part to reduce greenhouse emissions and help Hawai'i meet its clean-energy goals.

Hawaii should follow the example of California, which requires rooftop solar for new construction. SB1289 will at least be a first step in the right direction.

Mahalo!

Harald Ebeling

SB-1289-SD-2

Submitted on: 3/11/2020 10:56:42 PM

Testimony for EEP on 3/12/2020 10:45:00 AM

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

Comments:

To: The House Committees on Energy & Environmental Protection; and Housing

From: Tlaloc Tokuda

Date: Thursday, March 12, 2020, 10:45 am

In strong support of SB 1289 SD2

LATE

Dear Chairs Lowen and Brower, and members:

Dear Rep Lowen i am your constiuence and i'm happy you are pushing for this bill!

As one of 350Hawaii's 6,000 members, I strongly support SB 1289 SD2.

Rooftop solar is one of the most potent tools Hawaii has for reducing our greenhouse gas emissions. It's one of the few ways individuals can contribute significantly to meeting our clean energy goals.

Rooftop PV pays for itself in a few years, and then saves a great deal of money in the long term.

In 2018, California passed the first law in the country requiring rooftop PV on every new home. Hawaii should do the same. Requiring PV on developments of 20 or more dwellings isn't as good as California, but it is a start. It would add only 2% or 3% to the cost of a new home here.

We need to be encouraging and supporting solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

Mahalo for you assistance

Tlaloc Tokuda

Kailua Kona 96740

SB-1289-SD-2

Submitted on: 3/11/2020 10:59:41 PM

Testimony for EEP on 3/12/2020 10:45:00 AM



Submitted By	Organization	Testifier Position	Present at Hearing
Diane Ware	Individual	Support	No

Comments:

Dear Chairs Lowen and Brower, and members:

As one of 350Hawaii's 6,000 members, I strongly support SB 1289 SD2.

Rooftop solar is one of the most potent tools Hawaii has for reducing our greenhouse gas emissions. It's one of the few ways individuals can contribute significantly to meeting our clean energy goals.

Rooftop PV pays for itself in a few years, and then saves a great deal of money in the long term.

In 2018, California passed the first law in the country requiring rooftop PV on every new home. Hawaii should do the same. Requiring PV on developments of 20 or more dwellings isn't as good as California, but it is a start. It would add only 2% or 3% to the cost of a new home here.

We need to be encouraging and supporting solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

Sincerely,

Diane Ware, 99-7815 Kapoha, Volcano Hi 96785

SB-1289-SD-2

Submitted on: 3/12/2020 5:10:34 AM

Testimony for EEP on 3/12/2020 10:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
Mary Morioka	Individual	Support	No

Comments:

Encourage and support solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

SB-1289-SD-2

Submitted on: 3/11/2020 2:25:31 PM

Testimony for EEP on 3/12/2020 10:45:00 AM

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

Comments:

Dear Chairs Lowen and Bower, and members:

I'm in support of SB1289 SD2. This measure offers Hawaii homeowners with the opportunity to instantly avail of a clean energy system. The cost of said system, when incorporated into a mortgage will have a minimal impact to their monthly housing costs, considering the amortization of the cost AND the electricity bill offset. This enables the expansion of rooftop PV without the dependency on tax credits.

Since these systems might need to include storage in order to meet utility grid stabilization requirements.

Rooftop solar is just one of many tactics that we can employ to reduce our greenhouse gas emissions while enabling lower cost energy for our residents. Please lend your support of SB1289 SD2.

Thank you for this opportunity to testify.

Noel Morin - Hilo

LATE

SB-1289-SD-2

Submitted on: 3/12/2020 6:35:59 AM

Testimony for EEP on 3/12/2020 10:45:00 AM

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

Comments:

Dear Chairs Lowen and Brower, and members:

As one of 350Hawaii's 6,000 members, I strongly support SB 1289 SD2.

Hawaii is an ideal location for solar energy. We have sunshine throughout the year.

Rooftop solar is one of the most potent tools Hawaii has for reducing our greenhouse gas emissions. It's one of the few ways individuals can contribute significantly to meeting our clean energy goals.

Rooftop PV pays for itself in a few years, and then saves a great deal of money in the long term.

In 2018, California passed the first law in the country requiring rooftop PV on every new home. Hawaii should do the same. Requiring PV on developments of 20 or more dwellings isn't as good as California, but it is a start. It would add only 2% or 3% to the cost of a new home here.

We need to be encouraging and supporting solar energy systems of all types.

SB 1289 will allow more of us to help with the Climate Crisis, and to save significantly on long-term energy costs.

Mahalo,

Caroline Kunitake

SB-1289-SD-2

Submitted on: 3/10/2020 7:31:06 PM

Testimony for EEP on 3/12/2020 10:45:00 AM

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

Comments:

I suport this bill. I feel it is importanat to pass this legislation. Mahalo for your consideration.

SB-1289-SD-2

Submitted on: 3/12/2020 7:49:20 AM

Testimony for EEP on 3/12/2020 10:45:00 AM

Submitted By	Organization	Testifier Position	Present at Hearing
donald erway	Individual	Support	No

Comments:

LATE