

# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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

### before the **SENATE COMMITTEES ON WAYS AND MEANS AND JUDICIARY**

Wednesday, February 26, 2020

1:10 PM

State Capitol, Conference Room 211

### Comments in consideration of **SB 1289, SD1 RELATING TO ROOFTOP SOLAR INSTALLATION.**

Chairs Dela Cruz and Rhoads, Vice Chairs Keith-Agaran and Keohokalole, and Members of the Committees, the Hawaii State Energy Office (HSEO) offers comments on SB 1289, SD1, which would assign to HSEO 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.<sup>1</sup> 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.<sup>2</sup>

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

<sup>2</sup> 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.<sup>3</sup>

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.

We look forward to a continuing discussion on this topic.

Thank you for the opportunity to testify.

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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.

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



# SIERRA CLUB OF HAWAI'I

SENATE COMMITTEE ON WAYS AND MEANS

SENATE COMMITTEE ON JUDICIARY

February 26, 2020 1:10 PM Room 211

In **SUPPORT** of **SB1289 SD1**: Relating to Rooftop Solar Installation

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Aloha Chair Dela Cruz, Chair Rhoads, and members of the committees,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i **strongly supports SB1289 SD1**, which requires single-family homes that are a part of a development of twenty or more dwellings to be constructed with rooftop solar if they are not granted a variance beginning on 1/1/2022.

Requiring all new single-family homes to come equipped with rooftop solar advances Hawai'i's clean energy goals. This bill would increase the use of renewable energy and promote energy efficient construction while decreasing the use of imported, polluting fossil fuels. Hawai'i has been a leader in clean energy and climate change policy. Encouraging the adoption of solar photovoltaic for all new home construction helps transform Hawai'i's energy economy and makes progress towards our 100% renewable portfolio standards and 100% carbon neutrality by 2045 goals.

SB1289 encourages solar on new home construction to also provide long-term cost savings to buyers, but would still allow a variance process for when rooftop solar is impractical or cost-prohibitive. If the architect or engineer who signs the variance attests that the home has poor solar resources or solar is cost-prohibitive over a life cycle analysis, and the energy coordinator agrees, then the new home will not need to install rooftop solar. We also appreciate the amendment made in the SD1, which increased the life-cycle analysis language to consider the costs of the system over a twenty year period, as the average warranty for most rooftop solar energy generation systems installed today is 20-25 years long.

Thank you very much for this opportunity to provide testimony in **support of SB1289 SD1**.

Mahalo,

Jodi Malinoski, Policy Advocate

**SB-1289-SD-1**

Submitted on: 2/24/2020 2:31:16 PM

Testimony for JDC on 2/26/2020 1:10:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Climate Protector	Testifying for Climate Protectors Coalition	Support	No

Comments:



**Hawaii Solar Energy Association**  
*Serving Hawaii Since 1977*

**LATE**

**TESTIMONY  
OF THE  
HAWAII SOLAR ENERGY ASSOCIATION  
IN REGARD TO  
SB1289, RELATING TO ROOFTOP SOLAR INSTALLATION  
BEFORE THE  
SENATE COMMITTEE ON WAYS AND MEANS  
AND THE  
SENATE COMMITTEE ON JUDICIARY  
FEBRUARY 26, 2020**

Aloha Chair Dela Cruz, Chair Rhoads, 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 HD1.** 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:



**Hawaii Solar Energy Association**  
*Serving Hawaii Since 1977*

**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.

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.



## **Hawaii Solar Energy Association**

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- 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.

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

The **HSEA SUPPORTS SB 1289 HD1** and urges this committee to pass this measure. Thank you for supporting clean solar energy and giving me the opportunity to testify.



**SENATE COMMITTEE ON JUDICIARY  
SENATE COMMITTEE ON WAYS AND MEANS**

February 26, 2020, 1:10 P.M.

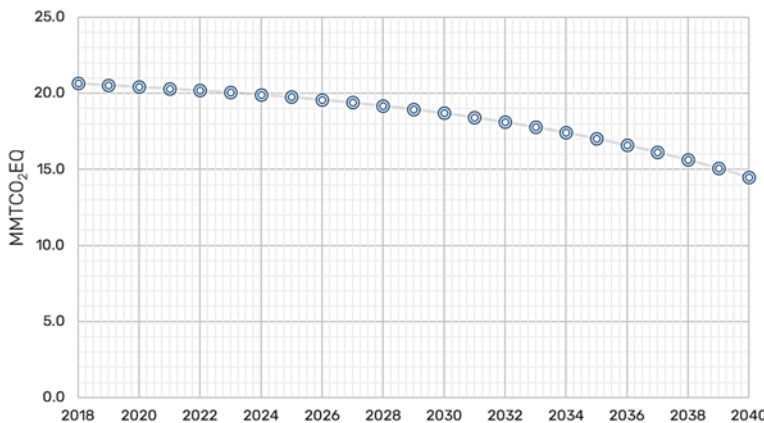
Room 211

(Testimony is 2 pages long)

**TESTIMONY IN SUPPORT OF SB 1289**

Aloha Chair Rhoads, Chair Dela Cruz, Vice Chair Keohokalole, Vice Chair Keith-Agaran, and members of the Committees:

Blue Planet Foundation **supports** SB 1289, 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.

**SB-1289-SD-1**

Submitted on: 2/25/2020 8:50:11 AM

Testimony for JDC on 2/26/2020 1:10:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Sunny Xing	Testifying for Sunpin Solar	Support	No

Comments:



TESTIMONY TO THE SENATE COMMITTEES ON WAYS AND MEANS AND JUDICIARY  
State Capitol, Conference Room 211  
415 South Beretania Street  
1:10 PM

February 26, 2019

RE: SENATE BILL NO. 1289 SD 1, RELATING TO ROOFTOP SOLAR INSTALLATION

Chairs Dela Cruz and Rhoads, Vice Chairs Keith-Agaran and Keohokalole, 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 1, which proposes to MANDATE a rooftop solar energy generation system (i.e. photovoltaic) 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 year, 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 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 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, letting consumers make their own choices.

We strongly oppose S.B. 1289 SD 1 and appreciate the opportunity to express our views on the matter.

**SB-1289-SD-1**

Submitted on: 2/24/2020 6:30:05 PM

Testimony for JDC on 2/26/2020 1:10:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Andrea Quinn	Individual	Support	No

Comments:

Dear Honorable Committee Members:

Please support SB1289. Solar energy will help Hawaii to become more independent from extraneous sources and consequently makes us safer.

We also stand to lose valuable coastline due to climate change, which is already occurring. We need to be a leader in energy efficiency by promoting the use of solar panels.

Thank you for the opportunity to present my testimony.

Sincerely,

Andrea

Kihei, Maui



Hawaiian  
Electric

**LATE**

**TESTIMONY BEFORE THE JOINT  
SENATE COMMITTEES ON JUDICIARY  
&  
WAYS AND MEANS**

**Decision Making Only**

**S.B. 1289, SD1**

**Relating to Rooftop Solar Installation**

Wednesday, February 26, 2020  
1:10 PM, Agenda Item #22  
State Capitol, Conference Room 211

Kaiulani Shinsato  
Director, Distributed Energy Resources  
Hawaiian Electric Company, Inc.

Dear Chair Rhoads and Chair Dela Cruz, Vice Chair Keohokalole and Vice Chair Keith-Agaran, and Members of the Committees,

My name is Kaiulani Shinsato and I am testifying on behalf of Hawaiian Electric Company, Inc. (Hawaiian Electric Company). The Hawaiian Electric Company provide the following **comments regarding S.B. 1289, SD1**, Relating to Rooftop Solar Installation.

Hawaiian Electric supports the intent of S.B. 1289, SD1, 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 (e.g., on the West side of Oahu), thus possibly resulting in costly upgrades and/or interconnection studies 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 Hawaii Public Utilities Commission. The IGP planning process is centered on identifying grid needs and services first, 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 benefit all customers and do not have unintended adverse consequences.

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. Customer resources are an important part of our strategy to 100% clean energy by 2045, 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 impede our State's path to 100% clean energy.

Thank you for this opportunity to testify.



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

To: The Senate Committees on Ways and Means, and Judiciary  
From: Brodie Lockard, Founder, 350Hawaii.org  
Date: Wednesday, February 26, 2020, 1:10 pm

**In strong support of SB 1289 SD1**

Dear Chairs Dela Cruz and Rhoads, and members:

350Hawaii's 6,000 members strongly support SB 1289 SD1.

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



**Testimony to the Senate Committees on Ways and Means and Judiciary  
Wednesday, February 26, 2020 at 1:10 P.M.  
Conference Room 211, State Capitol**

**RE: SB 1289 SD1, RELATING TO ROOFTOP SOLAR INSTALLATION**

Chairs Dela Cruz and Rhoads, Vice Chairs Keith-Agaran and Keohokalole and Members of the Committees:

The Chamber of Commerce Hawaii ("The Chamber") **opposes** SB 1289 SD1, 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 SD1.