

HAWAII STATE ENERGY OFFICE STATE OF HAWAII

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DAVID Y. IGE
GOVERNOR

SCOTT J. GLENN
CHIEF ENERGY OFFICER

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

before the
HOUSE COMMITTEE ON FINANCE
Monday, February 24, 2020
1:00 PM
State Capitol, Conference Room 308

In SUPPORT of **HB 2413, HD1** **RELATING TO ENERGY.**

Chair Luke, Vice Chair Cullen, and Members of the Committee, the Hawaii State Energy Office (HSEO) supports HB 2413, HD1, which requires HSEO, in consultation with the Department of Health (DOH), to conduct a comprehensive study of the disposal and recycling of solar panels and other discarded clean energy products in the state, and requires an interim report and a final report to the legislature.

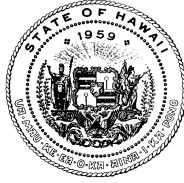
This bill is consistent with the Department of Business, Economic Development and Tourism's (DBEDT) Fiscal Year 2021 Supplemental Operating Budget request for an appropriation from the Energy Security Special Fund to HSEO to "conduct an initial analysis or assessment of recycling of clean energy waste."

HSEO recognizes the need to conduct this analysis at this time as earlier generation technologies are now passing their useful commercial lifetime and need to be disposed, including photovoltaic (PV) modules (commonly known as "PV panels"), solar thermal collectors (solar water heater panels), and batteries from electric vehicles. In addition, many new technologies are now being deployed that must be accounted for in the future when they are no longer useful, including batteries for PV systems.

HSEO appreciates the amendments made in HD1 to expand the scope of the study to include other clean energy materials per DBEDT's budget request.

HSEO believes it is important to collaborate with other stakeholders who have direct experience with this issue and could be involved in any implemented actions, including the solar industry and experts from the shipping, recycling, and waste management industries, and other pertinent stakeholders.

Thank you for the opportunity to testify.



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. Box 3378
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**Testimony in SUPPORT of HB2413 HD1
RELATING TO ENERGY**

REPRESENTATIVE SYLVIA LUKE, CHAIR
HOUSE COMMITTEE ON FINANCE

Hearing Date: 2/24/2020

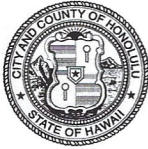
Room Number: 308

- 1 **Fiscal Implications:** This measure may impact the priorities identified in the Governor's
- 2 Executive Budget Request for the Department of Health's (Department) appropriations and
- 3 personnel priorities. Undetermined appropriation of general funds to conduct the study.

- 4 **Department Testimony:** The Department of Health supports this measure. We agree with the
- 5 legislature's finding that proper management of solar panel waste will be a rapidly growing
- 6 problem in the State as panels installed in the 1990s reach their end-of-life within the next
- 7 decade. The Department has already begun evaluating disposal options and looks forward to our
- 8 continued collaboration with the State Energy Office.

- 9 **Offered Amendments:** None.

- 10 Thank you for the opportunity to testify on this measure.



KAHALU'U NEIGHBORHOOD BOARD NO. 29

(He'eia Kea, 'Āhuimanu, Kahalu'u, Waihe'e, Ka'alaea, Waiāhole, Waikāne, Hakipu'u, Kualoa)

Neighborhood Commission Office • 925 Dillingham Boulevard, Suite 160 • Honolulu, Hawaii 96817
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February 23, 2020

LATE

RE: Comments on HB 2413 Relating to Energy

Aloha Chair and Committee members,

At its regularly scheduled Board meeting on February 12, 2020, the Kahaluu Neighborhood Board #29 unanimously passed a motion to SUPPORT the CONCEPTS articulated in HB 2413-HD1 related to conducting a study on best practices for disposal and recycling of photovoltaic panels, batteries and related materials.

For a number of years, our neighborhood board has become increasingly concerned about the lifecycle of photo voltaic panels due to concern for our environment. We know that there are heavy metals critical to the functioning of photo voltaic panels that will harm our environment if not recycled or disposed of properly.

We urge you to support a study to identify best practices so that we as a State can develop an action plan before there is a major problem due to aging panels and/or destruction by natural disaster.

Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Amy Luersen", is written over a white background.

Amy Luersen, FAICP

Chair, Kahaluu Neighborhood Board #29

LATE

HB-2413-HD-1

Submitted on: 2/23/2020 6:26:26 PM

Testimony for FIN on 2/24/2020 1:00:00 PM

Submitted By	Organization	Testifier Position	Present at Hearing
Andrea Quinn	Individual	Support	No

Comments:



LATE

Hawaii Solar Energy Association
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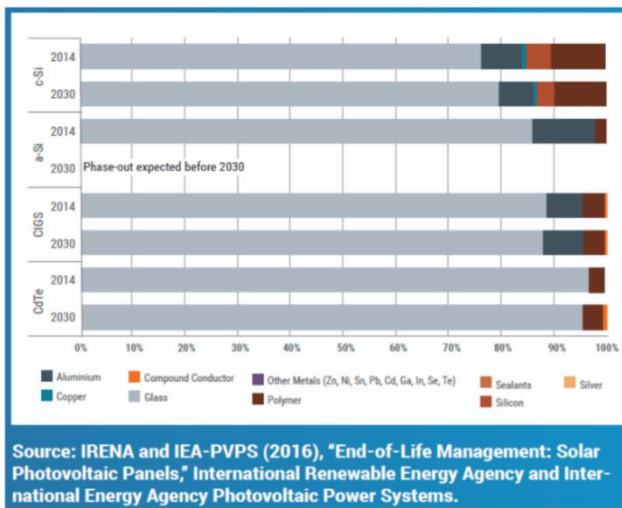
**TESTIMONY OF THE HAWAII SOLAR ENERGY ASSOCIATION
IN REGARD TO HB 2413, RELATING TO ENERGY
BEFORE THE
HOUSE COMMITTEE ON FINANCE
ON
MONDAY, FEBRUARY 24, 2020**

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

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

HSEA OFFERS COMMENTS on HB2413 HD1. This measure requires the Hawaii State Energy Office, in consultation with DOH, to conduct a comprehensive study of the disposal and recycling of solar panels. Requires an interim report and a final report to the legislature. Appropriates funds for study.

The HSEA appreciates the Hawaii State Legislature’s attempt in examining the issues of PV recycling, and more broadly e-waste recycling, in Hawaii. Currently, PV waste is approximately 1000X less than other comparable types of e-waste, such as smartphones and laptops. Additionally, PV modules themselves can typically last upwards of 25 years or more, with performance warranties for modules themselves regularly exceeding 20 years.



As far as end-of-life care for PV system components goes, photovoltaics has the benefit of being the energy source that has been given the longest amount of end-of-life consideration by national organizations, such as the National Renewable Energy Laboratory (NREL). Thankfully, PV systems contribute a comparatively small amount of waste over a much longer time period as previously mentioned. By weight, a single PV module is

80% or more glass and aluminum, material that is easily recycled and reused. End of life PV modules can also be reused, albeit at lower per-foot efficiencies, for a variety of other



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projects. Old or decommissioned PV modules and equipment has been used in Hawaii to power low voltage water pumps or electronics controllers, for example.

HSEA's national sister organization, the Solar Energy Industries Association (SEIA), maintains a national PV recycling program across 11 states with plans to expand 10 more in the next few years.¹ This program provides access to a network of PV module recycling companies and various other benefits. Many HSEA members not based in Hawaii are already part of this network. We support Hawaii being added to this network, and will continue to work with SEIA on this issue.

In the United States, there are at least 7 states that have examined or considered PV recycling measures in the last few years that the Hawaii State Legislature should carefully consider. They include California², New York³, New Jersey⁴, and North Carolina⁵. Outside of the United States, the European Union has enacted an expansive solar waste recycling program across all their member countries.⁶ We suggest that Hawaii examine these polices extensively in the course of their research should this report be commissioned.

If Hawaii were to adopt a PV recycling program subject to this study, we should do so collaboratively with other states as well as industry. Many solar module manufacturers sell modules in the EU, for instance, and imposing regulations or processes that are markedly different from those already present in other markets would likely cause negative impacts to the local Hawaii market. Being cognizant of these different initiatives and polices will contribute to a better PV recycling program in the long run.

As a general matter, we suggest that this study and any future program consider the following aspects and principles:

- Programs should encourage industry to work together with each other, recycling companies and stakeholders
- Incentives should be included to encourage innovation in reuse or recycling streams, equipment and processes to maximize material recovery and potential reuse
- Programs should not unnecessarily or unreasonably increase the cost of solar.
- Due to long, durable life of PV modules, program funds collected in the near term may exceed the actual cost of recycling in the future as products are more reused

¹ <https://www.seia.org/initiatives/seia-national-pv-recycling-program>

² <https://dtsc.ca.gov/photovoltaic-modules-pv-modules-universal-waste-management-regulations/>

³ <https://www.nysenate.gov/legislation/bills/2019/S942>

⁴ <https://www.njleg.state.nj.us/bills/BillView.asp?BillNumber=S601>

⁵ <https://www.ncleg.gov/Sessions/2019/Bills/House/PDF/H329v5.pdf>

⁶ <http://www.solarwaste.eu/faq/>



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vs. disposed. In addition, as waste volume grows, the value of recoverable material will increase.

Finally, we ask that a representative for the HSEA as well as the solar module manufacturing industry be included as stakeholders in consultation with the HSEA and the DOH. The HSEA is the only organization in Hawaii that represents national and international solar module manufacturers and has the expertise to contribute in a meaningful way to this study.

The HSEA **OFFERS COMMENTS on HB2413 HD1**, and suggests that the legislature consider the above points, as well as designating the HSEA and an industry representative in assisting with the completion of this study.

Thank you for the opportunity to testify.