



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

NEIL ABERCROMBIE
GOVERNOR

RICHARD C. LIM
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

Statement of
RICHARD C. LIM
Director
Department of Business, Economic Development, and Tourism
before the
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

Tuesday, February 11, 2014
8:15 a.m.
State Capitol, Conference Room 325
in consideration of
HB 1939
RELATING TO CLEAN ENERGY.

Chair Lee, Vice Chair Thielen, and Members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) respectfully offers comments on HB 1939, which extends the Hawaii Clean Energy Initiative and establishes a Renewable Portfolio Standard (RPS) of 100% by 2050.

DBEDT supports the intent of this bill and reiterates the Abercrombie Administration's commitment of going beyond our current RPS of 40% by 2030. We also support the Legislature in continuing the discussion of how far and fast Hawaii can "go beyond." DBEDT advises that any increase to the RPS should reflect the State's energy policy of balancing technical, economic, environmental and cultural considerations, and not be approached strictly on a "renewable energy at any cost" basis. Therefore, DBEDT recommends that before new RPS targets and dates are codified into law, renewable resource estimates and scenarios should be updated with the aforementioned policy in mind. Please note that such an analysis has been budgeted as a FY15 DBEDT priority.

Thank you for the opportunity to comment on HB 1939.

TESTIMONY OF HERMINA MORITA
CHAIR, PUBLIC UTILITIES COMMISSION
DEPARTMENT OF BUDGET AND FINANCE
STATE OF HAWAII
TO THE
HOUSE COMMITTEE ON
ENERGY & ENVIRONMENTAL PROTECTION

FEBRUARY 11, 2014
8:15 a.m.

MEASURE: H.B. No. 1939
TITLE: Relating to Clean Energy

Chair Lee and Members of the Committee:

DESCRIPTION:

H.B. No. 1939 amends Hawaii's Renewable Portfolio Standards ("RPS") set out in Section 269-92, Hawaii Revised Standards ("HRS"), by inserting an additional RPS requirement of 100% to be achieved by December 31, 2050. This measure also expands out the end of the clean energy economy planning period for the Hawaii Clean Energy Initiative Program to include all years between 2011 and 2050.

POSITION:

The Commission would like to offer the following comments for the Committee's consideration.

COMMENTS:

The Commission supports the State's clean energy policy goals through the development of an increasing and diverse portfolio of cost-effective renewable energy resources. These policy goals include the aggressive RPS requirements established under HRS § 269-92 and associated sections.

In the Commission's mandated five-year report to the 2014 Legislature on Hawaii's RPS ("2014 RPS Report"), the existing RPS requirements of 15% by the end of 2015, 25% by the end of 2020, and 40% by the end of 2030 are each found to be effective and

achievable. The 2014 RPS Report also notes, however, a number of significant technical and economic challenges that must be addressed as the State increases its usage of renewable energy and moves towards the 2030 RPS requirement of 40%. These challenges include:

- Securing adequate siting and permitting for the required renewable resources;
- Addressing technical, operational, and economic issues associated with the integration of variable or intermittent renewable energy resources at both the utility scale and distribution levels;
- Determining and achieving the optimal resource mix which maximizes the cost-effectiveness of the wide variety of renewable energy resources available; and
- Dealing with inevitable changes in renewable energy technology, storage technology, and associated costs.

Additional study of Hawaii's RPS requirements is currently being performed by General Electric in coordination with the Hawaii Natural Energy Institute of the University of Hawaii. This study, which is anticipated to conclude before the end of this calendar year, examines many of the issues associated with achieving Hawaii's current RPS requirements under HRS § 269-92. The findings of this examination will provide critical analysis of some of the specific issues and challenges the Commission notes in its 2014 RPS Report and should provide a more firm basis upon which to consider increases and/or extensions of the current RPS.

Again, while the Commission continues to support the State's clean energy mandates, any determinations regarding an increase and/or extension of RPS going forward should take into account the challenges associated with such amendments and should only be done with proper information and analysis.

Thus, the Commission would ask the Committee to consider an alternative proposal that directs the Commission to recommend, as part of its quinquennial RPS review responsibilities under HRS § 269-95, the effectiveness and achievability of an added RPS target five or ten years beyond the last RPS target (i.e., recommending a 2035 or 2040 RPS target), rather than setting additional RPS requirements at this time.

Thank you for the opportunity to testify on this measure.



NEIL ABERCROMBIE
GOVERNOR

SHAN S. TSUTSUI
LT. GOVERNOR

STATE OF HAWAII
OFFICE OF THE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

335 MERCHANT STREET, ROOM 310
P.O. Box 541
HONOLULU, HAWAII 96809
Phone Number: 586-2850
Fax Number: 586-2856
www.hawaii.gov/dcca

KEALI`I S. LOPEZ
DIRECTOR

JO ANN UCHIDA TAKEUCHI
DEPUTY DIRECTOR

TO THE HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

THE TWENTY-SEVENTH LEGISLATURE
REGULAR SESSION OF 2014

TUESDAY, FEBRUARY 11, 2014
8:15 A. M.

TESTIMONY OF JEFFREY T. ONO, EXECUTIVE DIRECTOR, DIVISION OF
CONSUMER ADVOCACY, DEPARTMENT OF COMMERCE AND CONSUMER
AFFAIRS, TO THE HONORABLE CHRIS LEE, CHAIR,
AND MEMBERS OF THE COMMITTEE

HOUSE BILL NO. 1939 - RELATING TO CLEAN ENERGY

DESCRIPTION:

This measure proposes to extend the clean energy initiative program goals to 2050 and the renewable portfolio standards to 100% clean energy by 2050.

POSITION:

The Division of Consumer Advocacy supports the intent of this bill with comments.

COMMENTS:

The Division of Consumer Advocacy supports the integration of increasing levels of renewable energy and acknowledges the benefits of “stretch” goals in order to encourage action. The Consumer Advocate offers, however, that it is more reasonable to establish goals with a time frame that can be better supported with relevant analysis. Creating meaningful plans to meet goals that are almost 40 years out is difficult, if not impossible, and may result in imprudent resource allocations that ratepayers may be required to bear.

Hawaii Revised Statutes § 269-95 requires the Public Utilities Commission (Commission) to provide a report to the Legislature every five years on the Commission’s evaluation of the renewable portfolio standards (RPS) and whether the standards remain effective and achievable. The Commission will produce studies, such as the one recently conducted by General Electric (GE), which suggest that it is *possible* that Hawaii will be able to meet its 40% RPS goal if certain challenges and uncertainties are addressed. The GE study also suggests that greater levels of renewable energy may be possible, but these higher levels of renewable energy are associated with measures that need to be further evaluated (e.g., interisland electric transmission cable, renewable energy projects in areas that have already expressed concerns).

These studies are integral to the evaluation of the RPS, but these studies focus on a time frame that does not extend beyond 20 years. The data and analysis provided in other venues, such as the integrated resources planning (IRP) process will also contribute to the reassessment of Hawaii’s progress and capability to integrate more renewables. The IRP process is supposed to produce a five-year action plan and a 20-year long range planning horizon.

Thus, utilizing the analyses that will be reflected in the Commission’s recurring legislative report required by HRS § 269-95 and the IRP process and establishing goals that reflect a 20 year horizon will allow better insight into what may be likely, probable, and possible. Using that information, the legislature could evaluate what stretch goals it would set for the next 20 years.

Thank you for this opportunity to testify.



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

February 11, 2014, 8:15 A.M.
(*Testimony is 1 page long*)

TESTIMONY IN SUPPORT OF HB 1939

Aloha Chair Lee and Members of the Committees:

The Sierra Club, Hawaii Chapter, with over 12,000 dues paying members and supporters statewide, **supports** HB 1939. This measure maps a pathway to 100% clean energy in Hawai'i by 2050.

The amount of accessible energy from the sun and wind is far greater than what the entire world is projected to need in coming decades. The key word there is accessible. We already know how to reap that energy bounty -- worldwide -- with technology that already exists (and will only get even better).

Renewable energy is now cheaper than any other source of power in most parts of the United States. For example, Excel Energy in Colorado — the largest utility, which serves 2/3 of the population — just rejected a LNG plant because solar power is less expensive. The cost of wind is down 50 percent since 2009, and solar panels are down 80 percent since 2008. This trend will only gain momentum. That's why we're seeing places like Spain and Denmark now get more power from wind than any other source.

This isn't speculation. Scientists and engineers have crunched the numbers and shown that it's doable: a 100 percent clean-energy economy. Mark Z. Jacobson and Mark A. Delucchi, professors at Stanford and U.C. Davis, respectively, published an article in *Scientific American* five years ago that showed how the world could be powered by clean energy within decades. Last year, they published an even more detailed plan, in *Energy Journal*, for how the state of New York could switch to 100 percent clean energy by 2050. They've since produced draft plans for California and Washington, as well.

Read these plans, and you'll know right away that they aren't fanciful. Resources, technology, and economics are all taken into account: We can do this. If we know we can achieve 100 percent clean energy, why would we settle for less? Is there a single good reason to rely on coal, oil, or natural gas if we don't have to?

Mahalo for the opportunity to testify.

**TESTIMONY BEFORE THE HOUSE COMMITTEE ON
ENERGY & ENVIRONMENTAL PROTECTION**

H.B. No. 1939

Relating to Clean Energy

Tuesday, February 11, 2014

8:15 am

State Capitol, House Conference Room 325

Ross H. Sakuda
Manager, System Planning Department
Hawaiian Electric Company, Inc.

Written Testimony Only

Chair Lee, Vice Chair Thielen, and Members of the Committee:

My name is Ross Sakuda and I represent Hawaiian Electric Company and its subsidiary utilities Maui Electric Company and Hawaii Electric Light Company. The bill establishes long-term planning goals in the interest of reducing the State's fossil fuel dependence and attaining energy security and energy independence for Hawai'i.

The Hawaiian Electric Companies are on track to exceed the 2015 RPS goal of 15% with achieving about 18% renewable energy in 2013. The current RPS goals of 25% in 2020 and 40% in 2030 continue to be appropriate. We are testifying in general support of setting higher renewable goals beyond 2030, provided that we are able to do so with renewable energy resources that can be integrated on to the electric grids reliably and reduce costs to all our customers. We defer comment on the specific RPS levels and timing of achieving those levels proposed in this bill, given that local and global energy environments are dynamic and changing rapidly and unpredictably, which makes energy planning over the long-term more difficult due to the various uncertainties of the future. Having longer-term energy goals, however, could allow for more innovative thinking for meeting those challenges for providing lower cost, safe, and reliable electric service to our customers.

Thank you for this opportunity to testify.



HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

February 11, 2014, 8:15 A.M.

Room 325

(Testimony is 4 pages long)

TESTIMONY IN STRONG SUPPORT OF HB 1939, SUGGESTED AMENDMENT

Chair Lee and members of the Energy & Environmental Protection Committee:

The Blue Planet Foundation strongly supports HB 1939, establishing the next logical step in Hawai'i's long-term energy goals by setting forth a target of 100% renewable electricity by 2050. We believe this measure will help in long-term energy planning and investment decisions while sending a message to the globe that Hawai'i is committed to a sustainable energy future.

The State of Hawai'i has established energy goals reflected in its Renewable Portfolio Standards ("RPS"). Those goals, set forth by the legislature in 2009 with Act 155, include generating 40% of our power from renewable energy by 2030. As a result, we could potentially still be left with a scenario of producing **60% of our energy from fossil fuels in 2030**. Although this may be a step in the right direction, it does not achieve energy independence for Hawai'i. Indeed, Act 155 expressly acknowledged that it provided only a "**first step**" in aligning Hawai'i's energy policy laws with the State's energy goals." House Bill 1939 is the "**next step**."

2030—a mere 16 years from now—is not the end of our energy road, and so we must ensure that today's energy decisions are being made with appropriate long-term policy guidance. We must also ensure that today's decisions do not lock us into an energy paradigm that will persist long after 2030 passes. Indeed, that is exactly the situation Hawai'i faces today, heavily reliant on an aging fossil-based energy system because of decisions made long ago¹. Luckily, technology is accelerating ever faster, providing more and more clean energy options. Already, renewable energy technologies such as solar and wind power can generate electricity for less money than we currently pay for fuel alone. The future is bright... if we avoid repeating history.

Significant progress has been made toward the 2030 target, and the Public Utilities Commission has reported that the "RPS remains effective in helping the State achieve its policies and

¹ In fact, Oahu is still partially powered by a 66-year-old 50 MW fuel oil-powered generating unit at the Waiiau power plant (built in 1947).

objectives with respect to developing renewable energy resources in Hawaii through the 2030 timeframe.” For 2012, Hawaii Electric Light Company reported that renewable generation accounted for 46.7% of electricity sales. Maui Electric Company reported 20.8%. Hawaiian Electric Company reported 7.6%. Kauai Island Utility Cooperative reported 9.4%. A recent analysis by the Hawaiian Electric Companies concluded that under the Companies’ preferred resource plans, “an RPS greater than 40% can be realized well before 2030.”

The chart on the final page of this testimony shows Hawaii’s current renewable energy progress, the current state renewable energy requirements, and the targets proposed in HB 1939. You will note that the trend fits naturally through the achieved renewable energy percentages through the existing law to the targets proposed. We believe this acceleration of progress reflects the rapid technological advancement we are currently witnessing and should expect in the coming decades given technology learning curves, innovation, and economies of scale.

To provide this long-term guidance and guard against post-2030 stagnation, HB 1939 establishes a new renewable standard target of 100% clean electricity by 2050. That target is consistent with steps already being taken elsewhere. Thirty U.S. states have implemented mandatory RPS targets. Renewable energy targets are also common around the world. The German government’s target looks beyond 2030 (50% by 2030 and 80% by 2050). Denmark’s government has similarly targeted independence from fossil fuels (100% by 2050). Scotland’s accelerated targets are also ahead of Hawaii’s current. After initially targeting 50% by 2020, Scotland’s has progressed so rapidly that the new target is 50% by 2015. Some island nations have already utilized their indigenous renewable resources to supply 100% of electricity, such as Iceland (geothermal) and the Pacific island of Tokelau (solar and biofuel). Such efforts are proving that aggressive energy innovation is achievable and affordable.

These targets are also consistent with the latest in engineering analysis. Engineers from Stanford University and U.C. Davis recently reported that “there are no technological or economic barriers to converting the entire world to clean, renewable energy sources. ... It is a question of whether we have the societal and political will.”² Their work was premised on a goal that by 2030 all new energy generation would come from renewable sources, and that by 2050 all pre-existing energy production would be converted. The analysis also found that costs would be comparable to today’s energy costs. Critically, this means that strong energy policy can hedge against rising fossil fuel prices.

² See Jacobsen & Delucchi, *Providing all global energy with wind, water, and solar power*, 39 ENERGY POLICY 1154 (2011); see also <http://news.stanford.edu/news/2011/january/jacobson-world-energy-012611.html>.

Hawai'i must not be left behind, lest we find ourselves in 2040 asking—again—how to reduce fossil fuel dependence. We respectfully urge the committee to forward HB 1939, in the interest of strengthening our economy, making Hawai'i an energy leader, and protecting our keiki from indefinite fossil fuel dependence.

SUGGESTED AMENDMENT

Blue Planet respectfully requests that HB 1939 be amended to include an additional target of 70% renewable energy by the year 2040. This interim target will provide an additional checkpoint for the utilities to plan on the way to energy independence.

We recommend replacing page 4, lines 3 – 6, with the following:

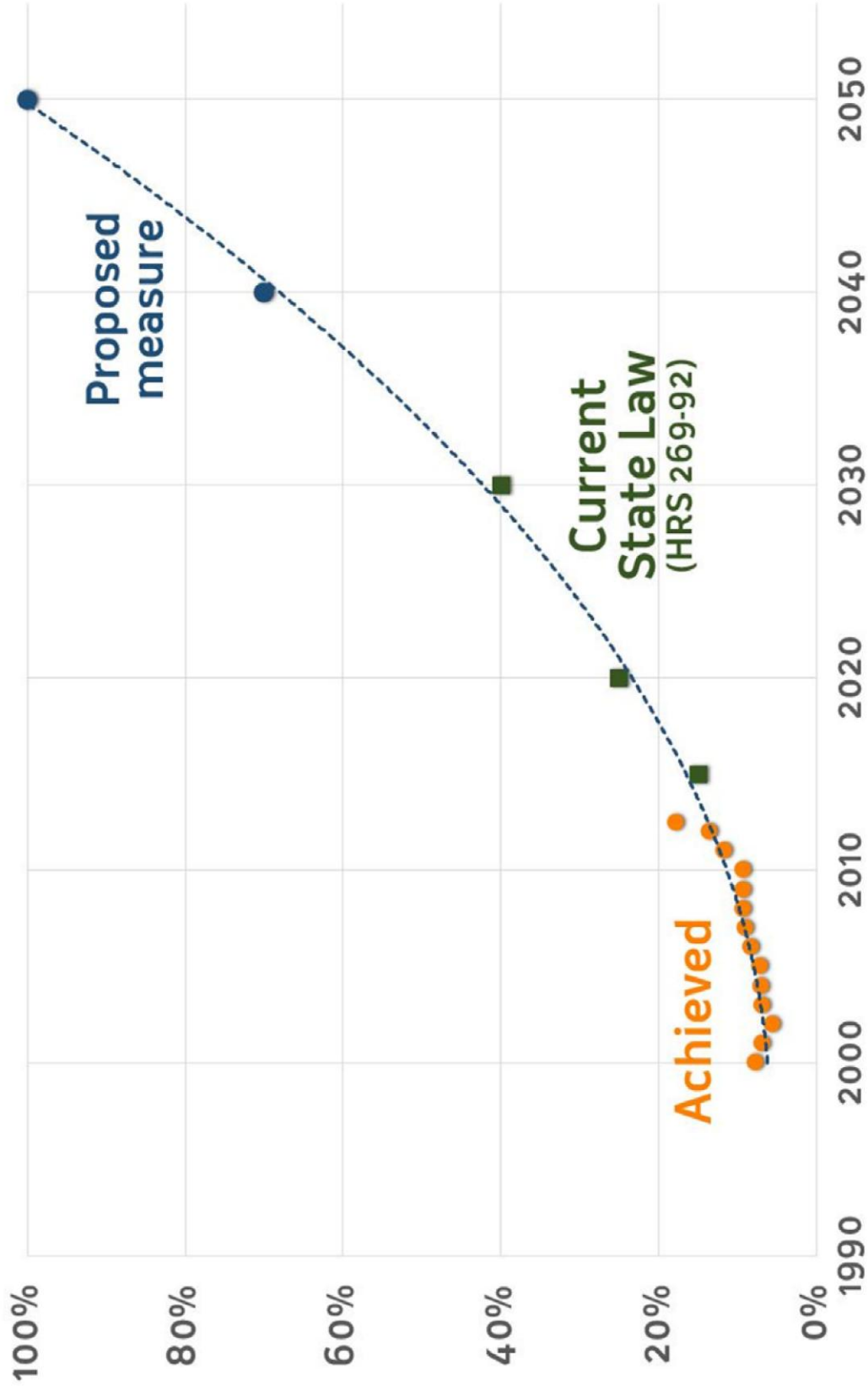
(4) Forty per cent of its net electricity sales by December 31, 2030~~[-]~~;

(5) Seventy per cent of its net electricity sales by December 31, 2040; and

(6) One hundred per cent of its net electricity sales by December 31, 2050.

Thank you for the opportunity to testify.

Hawaii's Renewable Future





Directors

Jody Allione
Silver Ridge

Joe Boivin
Hawaii Gas

Kelly King
Pacific Biodiesel

Warren S. Bollmeier II
WSB-Hawaii

TESTIMONY OF WARREN BOLLMEIER ON BEHALF OF THE
HAWAII RENEWABLE ENERGY ALLIANCE BEFORE THE
HOUSE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION

HB 1939, RELATING TO CLEAN ENERGY

February 11, 2014

Chair Lee, Vice-Chair Thielen and members of the Committee, I am Warren Bollmeier, testifying on behalf of the Hawaii Renewable Energy Alliance (HREA). HREA is an industry-based, nonprofit corporation in Hawaii established in 1995. Our mission is to support, through education and advocacy, the use of renewables for a sustainable, energy-efficient, environmentally-friendly, economically- sound future for Hawaii. One of our goals is to support appropriate policy changes in state and local government, the Public Utilities Commission and the electric utilities to encourage increased use of renewables in Hawaii.

The purpose of SB 1939 is to increase the renewable portfolio standards to seventy per cent by 2040 and one hundred per cent by 2050.

HREA **strongly supports** this measure with the following comments and recommendations.

- 1) Comments. Finally, we have arrived at the point where we can say we will be “fossil-free” by “date certain.” We note that:
 - a) We would prefer to be fossil-free by 2023, 2033, or 2043, but we can live with 2050.
 - b) With passage of this measure into law, we will finally be able to say “this is who we are and what we do.”
 - c) Perhaps we don’t know exactly how we will get there...sort of like when President Kennedy said we will go to the moon and return before the end of the decade.
 - d) So, let’s roll up our sleeves and take the next big step for Hawaii.
- 2) Recommendations: We recommend the committee pass this measure out “as is”.

Mahalo for this opportunity to testify.