# SB 2181

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|---|---|
| Measure Title: | RELATING TO RENEWABLE PORTFOLIO STANDARDS. |
| Report Title: | Renewable Portfolio Standards; Energy Independence |
| Description: | Increases renewable portfolio standards to seventy per cent by 2040 and one hundred per cent by 2050. |

NEIL ABERCROMBIE
GOVERNOR

SHAN S. TSUTSUI
LT. GOVERNOR

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KEALI'I S. LOPEZ
DIRECTOR

JO ANN M. UCHIDA TAKEUCHI
DEPUTY DIRECTOR

TO THE SENATE COMMITTEE ON ENERGY AND ENVIRONMENT
THE TWENTY-SEVENTH LEGISLATURE
REGULAR SESSION OF 2014

TUESDAY, FEBRUARY 4, 2014
3:15 P.M.

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

SENATE BILL NO. 2181 - RELATING TO RENEWABLE PORTFOLIO STANDARDS

DESCRIPTION:

This measure proposes to increase the renewable portfolio standards to seventy per cent by 2040 and one hundred per cent by 2050.

POSITION:

The Division of Consumer Advocacy supports the intent of this measure 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 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, 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.

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

FEBRUARY 4, 2014
3:15 p.m.

**MEASURE:** S.B. No. 2181
**TITLE:** Relating to Renewable Portfolio Standards

Chair Gabbard and Members of the Committee:

**DESCRIPTION:**

S.B. No. 2181 amends Hawaii's Renewable Portfolio Standards ("RPS") set out in Section 269-92, Hawaii Revised Standards ("HRS"), by requiring additional RPS requirements of 70% to be achieved by December 31, 2040 and 100% to be achieved by December 31, 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, policy goals which 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.

# DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

NEIL ABERCROMBIE
GOVERNOR

RICHARD C. LIM
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

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Statement of
**Richard C. Lim**
**Director**
Department of Business, Economic Development, and Tourism
before the
**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT**

Tuesday, February 4, 2014
3:15 p.m.
State Capitol, Conference Room 225

in consideration of
**SB 2181**
**RELATING TO RENEWABLE PORTFOLIO STANDARDS.**

Chair Gabbard, Vice Chair Ruderman, and Members of the Committee.

The Department of Business, Economic Development and Tourism (DBEDT) offers comments on SB 2181, which establishes Renewable Portfolio Standards (RPS) of 70% by 2040 and 100% by 2050.

DBEDT supports the intent of this bill and reiterates the Abercrombie Administration's commitment to going beyond our current RPS of 40% by 2030. We caution, however, 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 a new RPS target be deferred until renewable resource estimates and scenarios be updated with the aforementioned policy in mind, and notes that such an analysis has been budgeted as a FY15 DBEDT priority.

Thank you for the opportunity to offer these comments.

SIERRA CLUB OF HAWAI'I
MĀLAMA I KA HONUA. *Cherish the Earth.*

*MALAMA I KA HONUA*
*Cherish the Earth*

**SENATE COMMITTEE ON ENERGY & ENVIRONMENT**

February 4, 2014, 3:15 P.M.
*(Testimony is 1 page long)*

**TESTIMONY IN SUPPORT OF SB 2181**

Aloha Chair Gabbard and Members of the Committees:

The Sierra Club, Hawaii Chapter, with over 12,000 dues paying members and supporters statewide, ***supports*** SB 2181. 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 then 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 is cheaper. 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.

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COMMITTEE ON ENERGY AND ENVIRONMENT
Senator Mike Gabbard, Chair
Senator Russell E. Ruderman, Vice Chair

DATE: Tuesday, February 04, 2014
TIME: 3:15 p.m.
PLACE: Conference Room 225

Re: SB 2181 RELATING TO RENEWABLE PORTFOLIO STANDARDS SUPPORT

Aloha Chair Gabbard, Vice Chair Ruderman and Members of the Committee

Life of the Land is Hawai`i's own energy, environmental and community action group advocating for the people and `aina for four decades. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation.

**First Paragraph**

The first paragraph of the bill has a *non sequitur* and appears to be unrelated to the rest of the bill.

*"Hawaii pays the highest electricity prices in the United States ... Reducing ... price volatility [is] critical"*

Why isn't cost or price or volatility mentioned anywhere else in the bill?

Is it more important to reduce average price or volatility?

Perhaps the implied link is that adding renewables will decrease prices. If so, that has not happened yet. Price reduction isn't part of the HCEI Energy Agreement.

**What does 100% really mean ??**

A second problem is as follows. Assume that electricity is generated as follows

50% renewable customer-sited DG,
30% renewable grid-based centralized generation, and
20% fossil fuel grid-based centralized generation.

Most people would say that the system has a renewable energy penetration of: (50+30)/100 = 80/100 = 80%

Some might say that the utility has a renewable energy penetration of 30/(30+20) = 30/50 = 60%

Hawaii Revised Statutes defines it as renewables/utility sales = (50+30)/(30+20) = 80/50 = 160%

Under Hawaii law LNG could serve as a bridge fuel, Hawaii could have an RPS of 100% and LNG could still play a significant role in the generation of electricity.

**Proposed Modification**

Section 269-91, Hawaii Revised Statutes, is amended to read as follows:

*"Total Electricity" means the combined amount of energy produced by electricity generated from grid-connected centralized generation and grid-connected customer-sited distributed generation within the geographic region of a utility.*

Section 269-92, Hawaii Revised Statutes, is amended to read as follows:

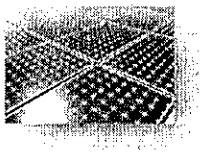
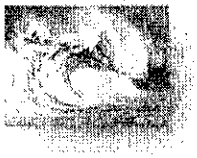
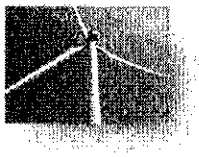
**§269-92 Renewable portfolio standards.** (a) Each electric utility company that sells electricity for consumption in the State shall establish a renewable portfolio standard of:

(1) Ten per cent of its net electricity sales by December 31, 2010;
(2) Fifteen per cent of its net electricity sales by December 31, 2015;
(3) Twenty-five per cent of its ~~net electricity sales~~ Total Energy by December 31, 2020; [~~and~~]
*(4) Forty per cent of its ~~net electricity sales~~ Total Energy by December 31, 2030[.];*
*(5) Seventy per cent of its ~~net electricity sales~~ Total Energy by December 31, 2040; and*
*(6) One hundred per cent of its ~~net electricity sales~~ Total Energy by December 31, 2050."*

Mahalo

Henry Curtis
Executive Director

blue planet FOUNDATION

**SENATE COMMITTEE ON ENERGY AND ENVIRONMENT**
February 4, 2014, 3:15 P.M.
Room 225
**(Testimony is 3 pages long)**

**TESTIMONY IN STRONG SUPPORT OF SB 2181**

Chair Gabbard and members of the Energy and Environment Committee:

The Blue Planet Foundation strongly supports SB 2181, establishing the next logical step in Hawai'i's long-term energy goals.

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." Senate Bill 2181 is the "**next step**."

2030 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 ago[1]. 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 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

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

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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 following page shows Hawaii's current renewable energy progress, the current state renewable energy requirements, and the targets proposed in SB 2181. 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, SB 2181 establishes energy targets for 2040 (70%) and 2050 (100%). Those targets are consistent with the 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 Hawai'i'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.

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 SB 2181, in the interest of strengthening our economy, making Hawai'i an energy leader, and protecting our keiki from indefinite fossil fuel dependence. Thank you for the opportunity to testify.

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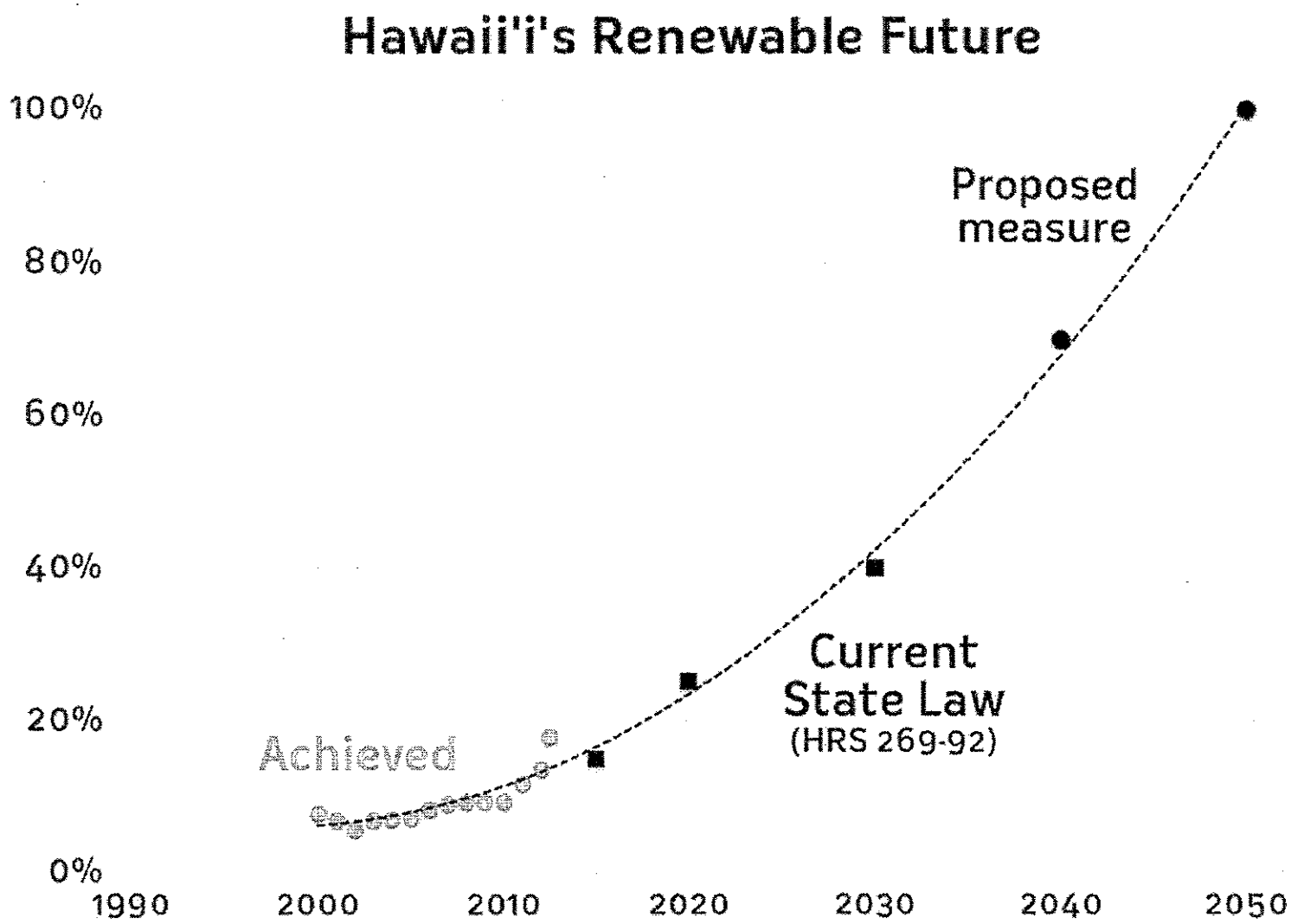
[2] *See* Jacobsen & Delucchi, *Providing all global energy with wind, water, and solar power*, 39 ENERGY POLICY 1154 (2011); *see also* http://news.stanford.edu/news/2011/january/jacobson-world-energy-012611.html.


Hawaii'i's Renewable Future
100%
80%
60%
40%
20%
0%
1990
2000
2010
2020
2030
2040
2050
Proposed measure
Current State Law
(HRS 269-92)
Achieved

**SB2181**
Submitted on: 2/3/2014
Testimony for ENE on Feb 4, 2014 15:15PM in Conference Room 225

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---|---|---|---|
| Leslie Cole-Brooks | Hawaii Solar Energy Association | Support | No |

***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
SENATE COMMITTEE ON ENERGY AND ENVIONMENTAL PROTECTION

SB 2181, RELATING TO RENEWABLE PORTFOLIO STANDARDS

February 4, 2014

Chair Gabbard, Vice-Chair Ruderman 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 2181 is t o 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 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. 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.

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**TESTIMONY BEFORE THE SENATE COMMITTEE ON ENERGY AND ENVIRONMENT**

**S.B. No. 2181**

**Relating to Renewable Portfolio Standards**

Tuesday, February 4, 2014
3:15 pm
State Capitol, Conference Room 225

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

Chair Gabbard, Vice Chair Ruderman, 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. S.B. 2181 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.

**SB2181**
Submitted on: 2/1/2014
Testimony for ENE on Feb 4, 2014 15:15PM in Conference Room 225

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

Comments: I oppose this bill. Setting a 100% goal will bring every money-sucking scheme/con artist to our state, and we'll wind up spending millions of dollars on unnecessary and/or redundant reports -- just like the first RPS pushed Big Wind on Lāna'i, only now to see that boondoggle coming off the state's plans. Please do not set that goal.

Senate Committee on Energy and Environment

RE: SB2181

February 4, 2014 3:15 p.m., Room 225

Chair Gabbard and Members of the Committee:

As a member of the rate-paying public, I **OPPOSE** this measure.

This bill "finds" that the 2030 renewable portfolio standards (RPS) target of 40% "remains achievable." Such a finding directly contradicts the Public Utilities Commission's (PUC) Report to the Legislature, filed pursuant to HRS §269-95(5), in which the Commission thoughtfully considered – and determined – that "achievability of the 2030 RPS requirement of 40% is not possible to determine with confidence at this time."

Yet this bill would increase the state's mandate to 70% by 2040, and 100% by 2050? Members of this Committee will likely not be around, and certainly not in office, to be held accountable for the negative impacts such an increase will ensure.

Even if an intent of this measure is to insure that LNG does not become more than a "bridge" fuel for Hawaii, the unintended consequence in the near term will be to open the state to more and more out-of-state developer frenzy.

Senator Gabbard recently announced at an Energy Forum that he would promote increasing the RPS requirements, much as he did at the Democratic Environmental Caucus in August, 2011, when he announced that "Energy technology is the mother of all markets."

He was correct in that assessment, as more and more out-of-state developers seek to cash in on Hawai`i's already existing mandates. Our rates have not gone down, many think utility operations are in a state of crisis, and this measure will only increase the disconnect between ratepayers' interests and corporate/investor interests in increasing profit margins – at ratepayer expense.

This is a developer-driven measure, not the "bottom-up," community-based planning envisioned by the 2013 Legislature. We should achieve these goals because it's the right thing to do, not because of an artificial mandate.

Sally Kaye
511 Ilima Ave.
Lāna'i City, HI 96763

**SB2181**
Submitted on: 2/3/2014
Testimony for ENE on Feb 4, 2014 15:15PM in Conference Room 225

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

Comments: Passing this law that would increase the Hawaii RPS is not necessarily in the best interest of the people of Hawaii. It is likely to increase electricity rates while not necessarily reducing CO2 emissions. Currently many states are abandoning RPS and the European Union has recently ruled that EU countries are no longer required to have RPSs. Please do not pass this law.

**SB2181**
Submitted on: 2/3/2014
Testimony for ENE on Feb 4, 2014 15:15PM in Conference Room 225

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

Comments: It is ridiculous to be attempting to raise RPS when it's just a back door to invite all the industrial wind corporate scammers back to ruin Hawaii. Industrial wind does not lower greenhouse gases or fossil fuel use, it destroys the environment, economy and social cohesion, but it makes billions for the corporate crooks that promote it and the politicians they pay to legalize it. Instead of taking payoffs from the wind industry, Senator Gabbard should start thinking about the future of Hawaii. The answer is solar on every roof, and a much smaller HECO.