SCR 123

EDT-ENE

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

NEIL ABERCROMBIE
GOVERNOR

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Statement of
RICHARD C. LIM
Director
Department of Business, Economic Development, and Tourism
before the
SENATE COMMITTEES ON
ENERGY AND ENVIRONMENT
and
ECONOMIC DEVELOPMENT AND TECHNOLOGY
Friday, March 30, 2012
1:30 p.m. State Capitol, Conference Room 016
in consideration of
SCR 123
REQUESTING THE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM TO CONVENE A SUSTAINABLE AND ALTERNATIVE ENERGY ASSESSMENT TASK FORCE.

Chairs Gabbard and Fukunaga, Vice Chairs English and Wakai, and Members of the Committees.

The Department of Business, Economic Development, and Tourism (DBEDT) is opposed to SCR 123, which would convene a task force to develop methodology for assessing sustainable and alternative technologies.

In March of 2012, the National Energy Renewable Laboratory released its "Hawaii Clean Energy Initiative Scenario Analysis: Quantitative Estimates Used to Facilitate Working Group Discussions (2008-2010)" This U.S. Department of Energy funded analysis by Booz Allen Hamilton explored eight renewable energy scenarios on how the State's 70% Hawaii Clean Energy Initiative (HCEI) goals could be achieved. The State Energy Office is now fully

engaged in updating these scenarios as a core part of fulfilling its mission to deploy clean energy infrastructure to meet HCEI goals and objectives.

Consequently, the provisions of SCR 123 are redundant to what is already underway, and would unnecessarily detract from the focused human and financial resources necessary to complete the updated scenario analysis by the end of 2012, according to the Energy Office's plan.

Thank you for the opportunity to offer these comments in opposition to SCR 123.

OFFICE OF HAWAIIAN AFFAIRS
Legislative Testimony

SCR123
REQUESTING THE DPEARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM TO CONVENE A SUSTAINABLE AND ALTERNATIVE ENERGY ASSESSMENT TASK FORCE

Senate Committee on Economic Development and Technology
Senate Committee on Energy and Environment

March 30, 2012 1:30 p.m. Room 016

The Office of Hawaiian Affairs (OHA) **SUPPORTS WITH AMENDMENTS** SCR123, requesting the Department of Business, Economic Development, and Tourism to convene a sustainable and alternative energy assessment task force.

Although OHA recognizes the importance of alternative energy exploration, development of these energy sources must be done responsibly, with proper regulation and coordination, public hearing, and full assessment of environmental impacts.

The assessment methodology contains a section G that requires consideration of environmental and social impacts. OHA suggests adding an additional requirement that "impact to Native Hawaiian traditional and customary practices and Native Hawaiian cultural sites" be considered.

Regarding the composition of the task force, OHA suggests that one selection by each of the selectors—i.e., the Governor, Senate President, and the Speaker of the House of Representatives—be required to have substantial experience in Native Hawaiian traditional and customary practices.

Mahalo for the opportunity to testify on this important measure.

Testimony before
The Senate Committees on Energy and Environment
And Economic Development and Technology

S.C.R. 123 – Requesting the Department of Business, Economic Development, and Tourism to Convene a Sustainable and Alternative Energy assessment Task Force

Friday, March 30, 2012
1:30 pm, Conference Room 016

By Jose Dizon
Manager, System Planning
Hawaiian Electric Company, Inc.

Chairs Gabbard and Fukunaga, Vice-Chairs English and Wakai, and Members of the Committees:

My name is Jose Dizon. I am the Manager of System Planning for Hawaiian Electric Company. I am testifying on behalf of Hawaiian Electric Company and its subsidiary utilities, Maui Electric Company and Hawaii Electric Light Company.

The Public Utilities Commission has initiated the Integrated Resource Planning process (IRP). The IRP process will do many of the things identified in this resolution: identifying issues from an environmental and economic perspective and taking into account most of the items on page 2 of the Resolution. The PUC will convene an advisory group, which will likely consist of members in academia, the state including DBEDT, the counties and businesses on a non-paid basis.

Hawaiian Electric Company encourages DBEDT to participate in the IRP process. Since this resolution is redundant with the IRP, we believe it is unnecessary and ask that you hold the measure.

Thank you for the opportunity to testify.

fukunaga2 - Ashley-Jane

From: Mailing List
Sent: Wednesday, March 28, 2012 10:50 PM
To: ENETestimony
Cc: maguinger@hawaii.rr.com
Subject: Testimony for SCR123 on 3/30/2012 1:30:00 PM

Testimony for ENE/EDT 3/30/2012 1:30:00 PM SCR123

Conference room: 016
Testifier position: Support
Testifier will be present: Yes
Submitted by: Mary A. Guinger
Organization: Environmemtal Caucus of the Democratic Party of Ha
E-mail: maguinger@hawaii.rr.com
Submitted on: 3/28/2012

Comments:
This Resolution will bring an objective and a verifiable assessment of alternative energy so that Hawaii can decide what combinations of alternative energies will be bring the most benefit economically and sustainability.

fukunaga2 - Ashley-Jane

From: Mailing List
Sent: Wednesday, March 28, 2012 2:48 PM
To: ENETestimony
Cc: friendsoflanai@gmail.com
Subject: Testimony for SCR123 on 3/30/2012 1:30:00 PM

Testimony for ENE/EDT 3/30/2012 1:30:00 PM SCR123

Conference room: 016
Testifier position: Support
Testifier will be present: No
Submitted by: Friends of Lana'i
Organization: Friends of Lana'i
E-mail: friendsoflanai@gmail.com
Submitted on: 3/28/2012

Comments:
It's important for our state to take back control of our state's energy policy from the shareholder-owned electric utility. Citizen participation in this issue is critical. This resolution really re-establishes -- and gives new meaning to -- the 60's drive for "Power to the People". Please vote yes for SCR123

fukunaga2 - Ashley-Jane

From: Mailing List
Sent: Wednesday, March 28, 2012 2:45 PM
To: ENETestimony
Cc: rkaye@mdi.net
Subject: Testimony for SCR123 on 3/30/2012 1:30:00 PM

Testimony for ENE/EDT 3/30/2012 1:30:00 PM SCR123

Conference room: 016
Testifier position: Support
Testifier will be present: No
Submitted by: Robin Kaye
Organization: Individual
E-mail: rkaye@mdi.net
Submitted on: 3/28/2012

Comments:

Testimony for ENE/EDT 3/30/2012 1:30:00 PM SCR123

Conference room: 016
Testifier position: Support
Testifier will be present: Yes
Submitted by: MIchael J DeWeert
Organization: Individual
E-mail: deweert@hawaii.rr.com
Submitted on: 3/29/2012

There has been great controversy over the merits of various competing alternative energy projects in the state of Hawaii, especially for projects which will require public-sector financial commitments, or have irreversible impacts on environmentally and culturally sensitive areas. Good stewardship of taxpayer dollars and the 'aina requires that every effort be made to assess the real costs and benefits of proposed projects, in a manner which is transparent and verifiable. The the assessment methodology needs to be consistent, rendering costs and benefits in the same terms regardless of which technology is being assessed. Finally, Gaining public support would be easier would be served if the methodology is developed by an objective board, and is published in a way that the public can verify the assumptions and results.

We envision a methodology which can be used to help individual households to make decisions, and which is also extensible to very large projects.

One example of an individual-household application is to help homeowners make decisions to invest in rooftop solar photovoltaic versus investing their money elsewhere, saving up to pay future electric bills. In this case, the cost of system installation, the availability of energy tax credits, the expected future costs of purchased electricity are prime factors. Figure 1. Shows the projected return on investment for a real system installed in Kailua Oahu in the year 2008 which cost $9500/KW. The return is computed with and without tax credits, for various possible rates of increase in the future price of purchased power. In the case shown in Figure 1, the return on investment is significant (> 3% per year) if tax credits are available, or if the purchased power inflation rate is over 4%.

The methodology needs to be flexible enough to allow inputs of new information. For example, the cost of photovoltaic systems is decreasing steadily as the technology improves. Recent quotes (Honolulu Star-Advertiser, March 2012) by some PV installers are as low as $4800/Watt. In this case, the same household illustrated in Figure 1 would see return-on-investment curves more like **Figure 2**, in which the rates of return are about 2%/year higher. This case shows the value of using data acquired from real systems– the system illustrated has had an average capacity factor of 18% for two years. Since the capacity factor of intermittent energy sources like wind and solar is very dependent on local site conditions, real-world data provide valuable decision-making inputs for other households in the same neighborhood.

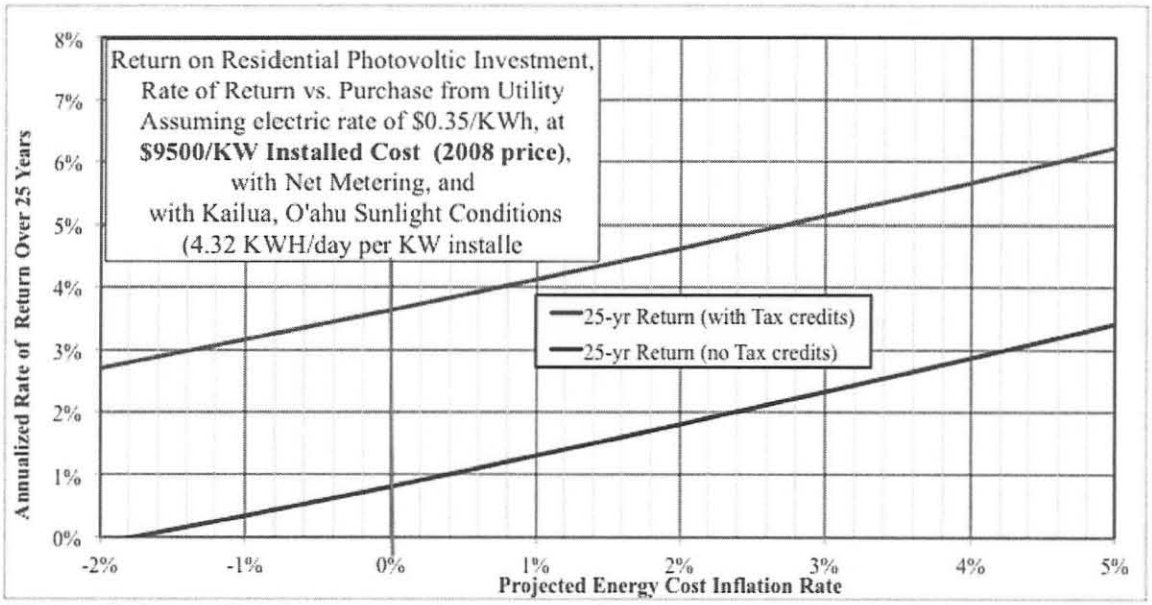

Figure 1. Annualized return on investment for an existing photovoltaic system in Kailua, Oahu. The output of 4.32 KWH/day per KW of installed capacity is the 2-year average for this installation. The total tax credits (State plus federal) were 60% of the purchase price. The calculation projects that the net-metering monthly fee will remain constant.

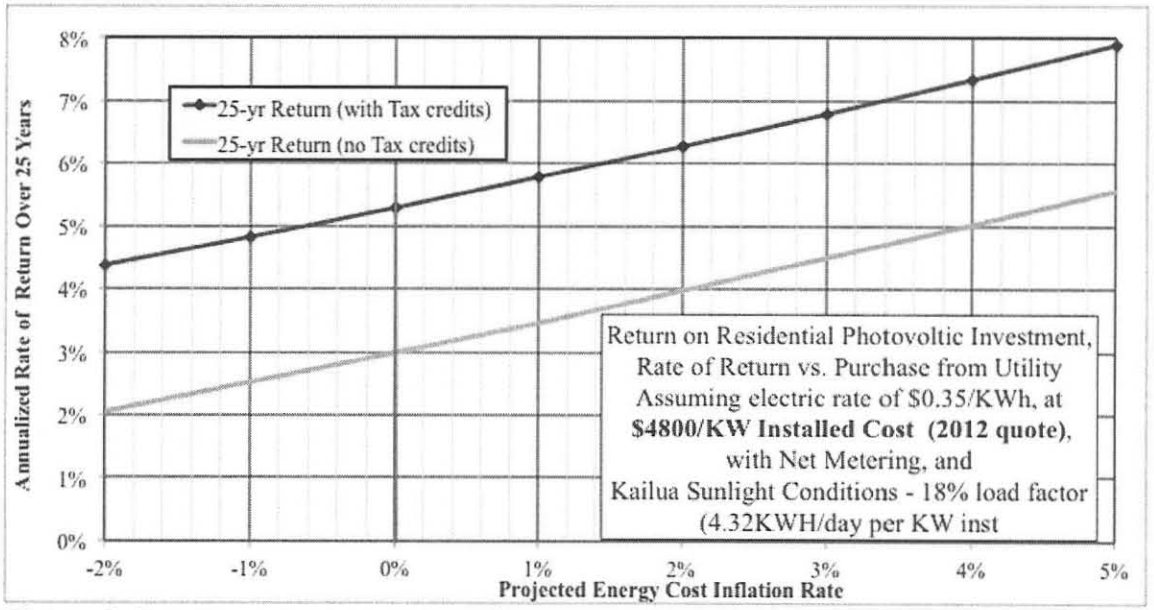

Figure 2. Return on investment on the system shown in **Figure 1**, reflecting the cost reduction from $9500 to $4800 per installed KW, recently quoted (Honolulu Star Advertiser March 2012). With tax credits and a steady price of $0.35/KWh, the rate of return over the 25-year life of the solar panels is 3% without tax credits, and 5.3% with credits.

At the very large-system end, of the scale, the alternative-energy assessment can help make the investment decisions for huge systems. For example, Figure 1 gives a example of siting a 400-MW (installed capacity) wind farm either on the same island where the power will be used, or at a location requiring an undersea cable. In this case, both locations were assumed to provide the same wind-capacity factor, no cost of land, and similar local infrastructure requirements, so that the primary difference was in the $800M cost of an undersea cable. For this decision, the return is about 1.5%/year higher without the cable.

The energy assessment methodology will also need to include financial factors that are usually left out of the calculations. For example, the time required to build or install a large system can entail significant costs to continue to provide power with purchased fossil fuel, or to pay interest on borrowed money. In Figure 4, the impact on the investment returns is shown for the wind farm + cable system of Figure 3 for no delay (i.e. all of the power come on line in the first year), as well as for 3-year and 5-year permitting and construction horizons. With the current $0.35/KWh cost of fossil-fuel-generated power, the construction time may significantly affect the investment return, even to the point of making alternate technologies with shorter delays more attractive. The example from Figure 2 of solar PV (***without*** tax credits) is included in Figure 4 to illustrate this point

Conclusions

A consistent, transparent, and scalable methodology for comparing all of the costs of various alternative energy systems would serve the public good – giving decision makers better information, allowing better stewardship of funds and natural resources, and providing the public confidence in the fairness and integrity of our energy-supply systems.

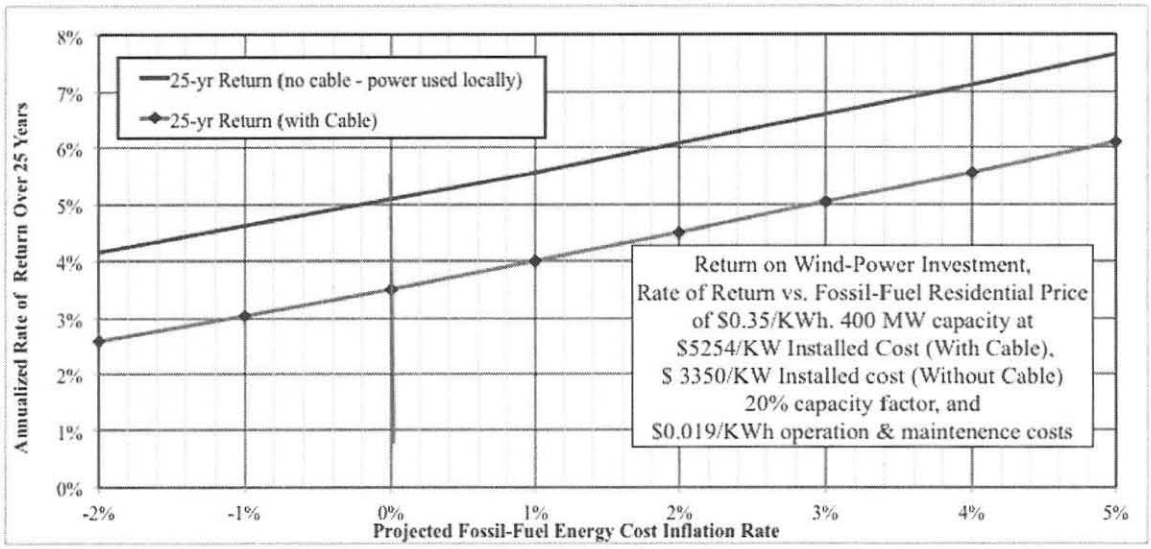

Figure 3. Return on investment for 400 MW of wind power, using comparable calculations to Solar-PV calculations in **Figure 1** and **Figure 2**. Returns with and without the inter-island cable ($800M cost) are shown. The cost of land and environmental impacts are **not** included here, though they would be included in the envisioned assessment methodology.

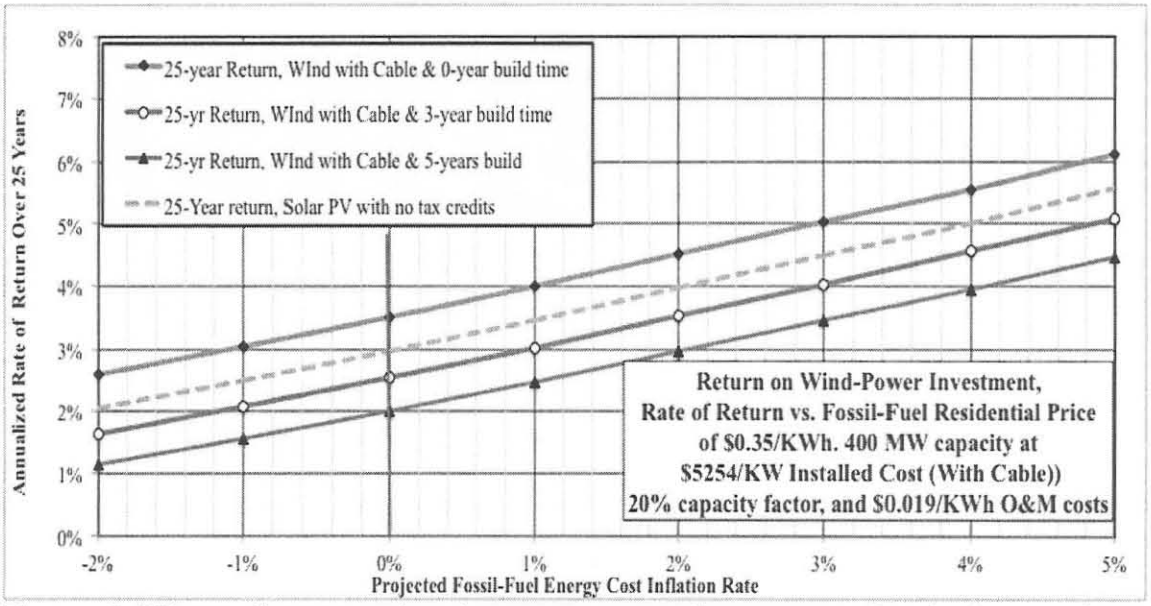

Figure 4. Effects of construction time on return on investment. Continuing to rely on fossil fuels during an extended construction phase significantly could reduce the attractiveness of investing in inter-island power transmission.

fukunaga2 - Ashley-Jane

From: surfinggrandpa@hawaii.rr.com
Sent: Thursday, March 29, 2012 6:15 AM
To: ENETestimony
Subject: Resolution SCR123

Senators Gabbard and English,

I support the intent of this resolution. It's long overdue. Let me offer some additional thoughts.

A. Expand consideration to fossil fuels and nuclear technologies. The eventual analysis would then serve broader energy policy needs. It would serve as a baseline of current technology.

B. The parameters listed on page 2 should include environmental costs to country's where components for extraction of sustainable energy are produced.

C. Add actual technologists to the task force. Perhaps replacing one of the senate/house members.

D. A methodology is needed sooner rather than later. Two months should be plenty of time.

Respectfully submitted,
Robert Hoffman
Kaneohe, Hawaii
808_239_6736
Cell 808_381_5076

I am currently visiting family in CO until 10 April