

# State of Hawaii



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## REPORT TO THE LEGISLATURE

*Pursuant to*

**SECTION 196-41, ACT 95, SESSION LAWS OF HAWAII, 2004**

*Submitted to*

*The Twenty-Sixth State Legislature*

*Regular Session of 2011*

*By Governor Neil Abercrombie*

*January 7, 2011*

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**Progress Report to the Governor and the Legislature  
Pursuant to  
SECTION 196-41, Act 95, Session Laws of Hawaii (SLH) 2004**

*Submitted by  
the State of Hawaii Department of Business,  
Economic Development and Tourism  
January 7, 20 11*

A. Introduction

Chapter 196, Part III, Section 196-41, Hawaii Revised Statutes (HRS) was added to that law by Act 95, SLH 2004, signed by the Governor on June 2, 2004, which also established the renewable portfolio standards (RPS) within Chapter 269, HRS. Hawaii's RPS is a significant element to achieving energy independence and security, economic diversity, and environmental protection through reduced dependence and use of imported fossil fuel. Section 196-3, HRS, is the law that established the State Energy Resources Coordinator (ERC) role, which in essence, is the State's cabinet-level energy advisor to the Governor, Legislature, and people of Hawaii. The law assigns the role of the State ERC to the Director of the Department of Business, Economic Development, and Tourism (DBEDT).

As such, this report is submitted pursuant to §196-41 relating to State support for achieving renewable portfolio standards, to fulfill the reporting requirement specifically assigned to the DBEDT, and stated as follows:

**[§196-41] State support for achieving renewable portfolio standards.**

- (a) The department of land and natural resources and department of business, economic development, and tourism shall facilitate the private sector's development of renewable energy projects by supporting the private sector's attainment of the renewable portfolio standards in section 269-92. Both departments shall provide meaningful support in areas relevant to the mission and functions of each department as provided in this section, as well as in other areas the directors of each department may deem appropriate.
  
- (c) The department of business, economic development, and tourism shall:
  - 1) Develop a program to maximize the use of renewable energy and cost-effective conservation measures by state government agencies;
  - 2) Work with federal agencies to develop as much research, development and demonstration funding, and technical assistance as possible to support Hawaii in its efforts to achieve its renewable portfolio standards; and
  - 3) Biennially, beginning in January 2006, issue a progress report to the governor and legislature.

B. ACHIEVED RENEWABLE PORTFOLIO STANDARDS

In 2008, the State achieved RPS level was 17.8 percent, 9.4 percent comprising of renewable energy generation and 8.4 percent of energy efficiency. Presently, energy efficiency percentages are included in the RPS until December 31, 2014, when renewable generation will stand alone from energy efficiency. In 2009, the State achieved RPS level was 18.8 percent, an increase of one percent. The composition of renewable generation and energy efficiency were 9.5 and 9.3 percent, respectively. Recorded 2010 levels are currently unavailable.

Year	RPS Levels		
	HECO Cos.	KIUC	State Total
2005	11.7%	13.9%	11.8%
2006	13.8%	13.8%	13.8%
2007	16.1%	11.3%	15.8%
2008	18.0%	13.9%	17.8%
2009	19.0%	14.9%	18.8%

Source: HECO Cos. and KIUC RPS reports

Pursuant to §269-92(a)(1)-(4), 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 by December 31, 2020; and
- (4) Forty per cent of its net electricity sales by December 31, 2030.

C. DBEDT Activities and Initiatives in Support of §196-41(c)(1)

The following activities, programs, and initiatives were implemented by DBEDT to maximize the use of renewable energy and cost-effective conservation measures by state government agencies pursuant to §196-41(c)(1):

**1. Leadership in Energy and Environmental Design (LEED) Program**

DBEDT continues to serve as a member in the U.S. Green Building Council (USBGC) for 2010. USBGC administers the LEED rating system. During the last fiscal year, there are 20 state employees at five state agencies (DBEDT, DOE, DOT, DAGS and UH) that have passed the USBGC's LEED Accredited Professional exam -- an increase from one employee in 2007.

Several State buildings have been certified as, are being designed for, or are awaiting designation as LEED accredited facilities which generate an estimated energy savings of approximately 30% per facility. These facilities include the following:

- i. The State Capital, which encompass about 1.4 million gross square feet, to achieve LEED Silver ratings;
- ii. Thirty public buildings statewide through a DAGS Phase 2 project, with an estimated 1.2 million gross square feet of building space;
- iii. Eight state buildings, two buildings at the University of Hawaii at Hilo, and two buildings at the Halawa Correctional Facility;
- iv. The Department of Transportation's Airport Division (DOT-Air) completed its LEED Commercial Interior Lounge Project at Honolulu International Airport, which is the state's first LEED-CI Silver and DOT-Air project. DOT-Air also added photovoltaic installations as well as 16 small rooftop wind turbines on the airport building;
- v. Green Building Services (contractor) prepared a LEED operations and maintenance manual for existing buildings to help state agencies track progress toward achieving LEED Silver status;
- vi. Hawaii Public Housing Authority (HPHA) project covering 4,500 federally-funded units and with annual cost savings of \$3.1 million;
- vii. DHHL net zero energy homes for their 18-home Kaupuni village in Waianae;
- viii. Halau Hoolako, part of the Kanu o ka Aina New Century Public Charter School and located on DHHL land, is one of only three LEED Platinum certified projects in Hawaii and the first school building in the state to receive a Platinum rating.

## **2. Lead By Example (LBE)**

- a) DBEDT coordinated several LBE working groups to address buildings, transportation, and environmental practices and procurement. DBEDT also sponsored or facilitated 52 events during FY 2009-2010. This included training or technical assistance sessions, case studies, and meetings to gather data, to inventory state energy use, or provide information to state agencies on energy efficiency, building commissioning or recommissioning, energy performance contracting, and green purchasing. A total of 2,475 people participated in these LBE activities including a high percentage of state agencies' employees and representatives from the four county governments.
- b) With support from the National Governor's Association (NGA), representatives from DBEDT and the Department of Hawaiian Home Lands (DHHL) participated in the 2010 Energy Policy Academy on Building Efficiency Retrofit Programs. The State focused on the following strategies supported by NGA by promoting Energy Savings Performance Contracting and Power Purchase Agreements, establishing workforce training programs for energy audits and efficiency retrofits, and developing new financing models to support efficiency retrofits and renewable energy installations.

- c) Hawaii was named as one of the top five energy-saving states in the nation by the American Council for an Energy Efficient Economy (ACEEE), a Washington, D.C. based nonprofit. Among the notable accomplishments are achieving Energy Star designations for several state buildings, completion of energy audits and retrofitting on other buildings, and the construction of the Waipahu Intermediate School cafeteria to LEED standards.
- d) The Energy Services Coalition recognized the State of Hawaii as the second in the nation in Energy Savings Performance Contracts for State Building Efficiency.

### **3. Energy Star**

- a) To date, there are 13 state buildings certified as ENERGY STAR®. ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (USDOE) to protect the environment and reduce costs through energy efficient products and practices. ENERGY STAR® certified buildings rank in the top quartile of an EPA performance rating system calculated from actual energy use. ENERGY STAR certified buildings also must qualify for thermal comfort, while meeting lighting, ventilation, and indoor air quality requirements. Buildings that earn the Energy Star use about 35 percent less energy than average buildings.
- b) Among the most popular efficiency initiatives in 2010 was a rebate program for Energy Star refrigerators under the Hawaii Energy Efficiency Program using ARRA funds. Over 8,300 refrigerators were replaced, removed, and recycled, costing \$2 million, and generating an estimated average of 20 percent energy savings per refrigerator.
- c) Hawaii's efforts with the Energy Star program encompass procurement of Energy Star products well as certifying state buildings Energy Star compliant. Workshops, training and technical assistance are offered under DBEDT auspices. Assistance is provided to hotels and hospitality facilities seeking Energy Star status. The label has become a selling point for visitors interested in staying "green" facilities. Energy Star buildings are in the top 25% nationwide in energy efficiency performance. In addition, state agencies are complying with environmentally preferable purchasing guidelines.

### **4. Green Business Program**

- a) The Green Business Program is a partnership between the DOH, and DBEDT, and the Chamber of Commerce of Hawaii, with county agencies and professional associations, to assist and recognize

businesses that operate in an environmentally-responsible way. The Green Business program provides a voluntary questionnaire and checklist assessing a business's green attributes and followed by an audit by the Department of Health; and completion of these steps makes applicants eligible for recognition as a Hawaii Green Business. Over 40 businesses have enrolled and the Hawaii Green Business Program will have approximately a total of 50 certified in 2011.

## **5. Energy Savings Performance Contracts**

- a) DAGS, in cooperation with various State agencies, is planning a Phase II Energy Savings Performance Contract (ESPC) RFP for 28 buildings; an investment grade audit for two prisons and one jail; an RPP for ESPC for 15 airports, five harbors, and some highway facilities; as well as ESPCs for six community college campuses in the State. DBEDT serves in an advisory capacity while also providing technical assistance for energy savings performance contracting projects. Total investments in 2009 totaled \$99.1 million, generating an energy savings (kWh) of 172.56 GWh and total savings of \$271 million.

## **6. Solar**

- a) Four Oahu high schools – Kaimuki, Waianae, Aiea, and Kahuku – were approved to receive photovoltaic systems in 2010, with total capacity of 400 kW (100 kW per school). The PV systems are expected to be operational and delivering power to the schools in early 2011. The Department of Education expects to save a minimum of \$1 million over the life of the project. A later phase of the project will include other schools statewide.

## **7. Wind**

- a) Oahu's first modern wind farm, a 30-MW installation by First Wind, broke ground in July and the final turbine erected in October 2010. The power purchase agreement with HECO was approved by the PUC in early May. The project received a \$117 million loan guarantee from the USDOE. A 70-MW wind farm has also been proposed by First Wind at the former Kawailoa Plantation on Oahu's North Shore.
- b) First Wind is presently operating the 30-MW Kaheawa Wind Farm on Maui and is working towards an additional 22-MW facility in the same location on state land.

## **8. Wave**

- a) In September 2010, Ocean Power Technologies (OPT) announced the grid connection of its PowerBuoy off Kaneohe Marine Corps Base Hawaii, which the company cited as the first such connection in the nation. This is part of an ongoing project with the U.S. Navy to test and develop OPT's device.
- b) Oceanlinx has a 500-kW project off Pauwela Point, Maui, and they hold the sole preliminary permit, issued by the Federal Energy Regulatory Commission, for wave development in Hawaii and also a Memorandum of Understanding with HECO.

## **9. Permitting**

- a) DBEDT and DOH are drafting a Supplemental Memorandum of Agreement to complete the ePermitting Portal, which will go to the project contractor, Windsor Solutions. This follows \$375,000 of ARRA funding to initiate the project. Windsor is designing a dynamic online permitting tool that will allow DOH staff to electronically create and manage all permit applications and forms. The customized Portal will enable permit applicants to apply and pay online, create user accounts, exchange and store documents, track their processing status, communicate directly with DOH permit processors, and many more permit-related actions. Additional funding pending, Windsor hopes to complete the project by the third or fourth calendar quarter of 2011. This project serves as a model for other state and county agencies.
- b) Parsons Brinkerhoff Americas is continuing work done by Sentech – contracted by the National Renewable Energy Laboratory (NREL) – to identify and compile all county, state, and federal permits potentially required for any renewable energy facility in Hawaii in the creation of its Guidebook. The Guidebook also attempts to provide permit applicants guidance on the permitting process and what they can do to facilitate the process. PB is also developing an online tool linked to the HCEI website that will enable users to create a Permit Plan based on answers to a series of questions related to facility engineering and siting. PB hopes to have both the Guidebook and online tool complete by the first calendar quarter of 2011.

## **10. Biofuels**

- a) In 2009, the State completed its Bioenergy Master Plan, in response to Act 253, Session Laws of Hawaii 2007. Issues and outcomes were studied for feedstock production, conversion, distribution, and end use.

- b) The PUC has approved HECO's plan to test biofuels blends from palm oil in the 90-MW generating unit at Kahe Power Plant and palm-oil derived biodiesel for MECO's ongoing demonstration at its Maalaea power plant. A competitive two-year contract to supply up to seven million gallons of renewable biodiesel – used cooking oil and waste animal fat -- annually to HECO's new 110-MW combustion turbine at Campbell Industrial park. Kalaeloa Partners, an independent power producer, has also successfully tested biodiesel in its twin combustion turbines.
- c) UOP, LLC will build a demonstration plant at the Tesoro refinery to convert cellulosic materials, provided by six mainland companies, into transportation fuel using \$25 million from the USDOE. Algae feedstock from HR BioPetroleum is also being used by UOP.
- d) ClearFuels Technology won a USDOE grant for a biomass gasifier in Colorado. Their project integrates technologies for low-cost production of diesel and jet fuel and has plans for commercial plant development on Maui.
- e) Phycal is expected to break ground in April 2011 for its \$65 million algae pond pilot project in Wahiawa. They have received a \$24 million USDOE grant, private capital, and \$1 million in ARRA funds from DBEDT.
- f) In January 2010, the Navy (DON) and USDA signed an agreement to increase biofuels crops and other renewable energy sources for military use and chose Hawaii for the initial collaboration site between the two entities. The DON has goals to convert half its fuel needs to biofuels by 2020 and to power a "Great Green Fleet" on biofuels by 2016.

## **11. Cable**

- a) An ocean floor survey between Oahu and the islands of Maui county, prepared by the University of Hawaii, to illustrate possible routes for a proposed undersea power cable was completed in 2009.
- b) In June 2010, a \$2.9 million contract was awarded to AECOM to prepare a programmatic environmental impact statement (EIS) for the interisland wind project, which will be financed with ARRA money and is expected to be completed by April 2012.

## **12. Regulatory**

- a) DBEDT is an active intervenor in seven of over 30 energy-policy related dockets before the Public Utilities Commission that affect the achievement of the state energy goals. Notable PUC decision and orders made include:
  1. PUC Order issued on August 31, 2010 approved a decoupling mechanism for the HECO Companies which is aimed at



reducing or eliminating the barriers for the utilities to increase and promote energy efficiency and accelerate the adoption of renewable energy resources in electricity generation.

2. PUC Order issued on October 13, 2010 approved the implementation of the Feed-in Tariffs Tier 1 and Tier 2 program for the HECO Companies. The FIT Tiers 1 and 2 became effective on November 17, 2010 for Oahu, and on November 24, 2010 for Maui (MECO) and Hawaii (HELCO).

### **13. Energy Conferences and Workshops**

- a) DBEDT has participated or has been invited to speak at over 100 conferences, meetings, workshops, summits, and forum, in FY 2009-2010 -- 20 of which DBEDT was responsible for hosting or had co-sponsored. Fourteen news conferences were organized by DBEDT during the last fiscal year. Specific key conferences to note include but are not limited to the following:
  1. DBEDT coordinated and co-sponsored the Asia Pacific Clean Energy Summit and Expo held in August 2010 at the Hawaii Convention Center. There were nearly 1,000 attendees.
  2. DBEDT coordinated and co-sponsored Rebuild Hawaii at the Hawaii Convention center, a quarterly meeting focused on discussing electric vehicles, efficient lighting, smart grid, or opportunities for biofuels in the military. There were nearly 100 in attendance.
  3. DBEDT co-sponsored Hawaii Build & Buy Green Conference & Expo held in May 2010 at the Hawaii Convention Center. The event explored environmentally friendly advances in construction and city planning, including affordable housing, residential and commercial constructions, photovoltaic, and waste management and reuse. Participants included engineers, builders, developers, city and state officials, and members of the general public. There were 330 attendees, 50 exhibitors, 20 co-sponsors for this event.
  4. DBEDT co-sponsored the annual Hawaii Green Business Awards. The program is a partnership of DBEDT, the State Department of Health, and the Chamber of Commerce of Hawaii. The year's awardees included four hotels that have adopted innovative green practices to conserve energy, water, and other resources, and to reduce pollution and waste.

#### **D. DBEDT Activities and Initiatives in Support of §196-41(c)(2)**

The following activities, programs, and initiatives were implemented by DBEDT in partnership with federal agencies to develop the maximum possible research,

development and demonstration funding, as well as technical assistance, to support the State's efforts to achieve its renewable portfolio standards:

1. DBEDT has received four federal awards under ARRA totaling \$37 million for energy projects. To date, 33 companies are utilizing these energy-related federal stimulus funds.
2. DBEDT, through a \$5.5 million investment from the USDOE in the State's Annual Operating Plan, is receiving technical assistance and support from the National Renewable Energy Laboratory for HCEI.
3. Using ARRA funds, DBEDT provided DHHL funds to retrofit 400 homes with solar water heating systems; funds to the Office of Community Services to augment their Weatherization Assistance Program; funds to DAGS to install 1,005 photovoltaic panels on the Kalanimoku building; and funds to the Public Utility Commission to expand their rebate programs for appliances (refrigerators), solar water heating rebates and loans, and an education program.
4. Funding support also will focus on building efficiency to identify Energy Star buildings in the hospitality industry, provide technical assistance to state agencies on Leadership in Energy and Environmental Design, and to provide training and information to design professionals, including state personnel.
5. DBEDT participated in the Memorandum of Cooperation among the USDOE and the Ministry of Economy, Trade and Industry of Japan and the State of Hawaii and the Prefecture of Okinawa creating the Hawaii-Okinawa Partnership on Clean and Efficient Energy Development and Deployment.