State of Hawaii

PROGRESS REPORT TO THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF HAWAII

Pursuant to

SECTION 196-41, Hawaii Revised Statutes (HRS)

Submitted By
State of Hawaii Department of Business, Economic Development and Tourism

December 23, 2011

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I. Introduction

This report is submitted by the State of Hawaii Department of Business, Economic Development and Tourism (DBEDT) pursuant to Section (§) 196-41 of Hawaii Revised Statutes (HRS) Chapter 196, Part III, relating to State support for achieving renewable portfolio standards (RPS), to fulfill the reporting requirement specifically assigned to DBEDT. HRS §196-41 was added to the HRS by Act 95, SLH 2004. That Act also established the RPS within HRS Chapter 269. Act 155, SLH 2009, enhanced Hawaii's RPS law by amending HRS §269-92 to increase the RPS goals to 25% by 2020, and to establish a 40% RPS goal by 2030. The Act also sets a precedent for electrical utility clean energy portfolio standards by including a separate goal for energy efficiency, establishing an energy efficiency portfolio standard (EEPS) in HRS §269-96. The law calls for the statewide reduction in electricity use of four thousand three hundred gigawatt-hours (4300 GWH) via efficiency measures by 2030 and directs the Hawai'i Public Utilities Commission (PUC) establish interim goals for energy efficiency to be achieved by 2015, 2020, and 2025. The law also provides that beginning in 2015, only renewable energy-based generation will count towards the achieved RPS, while the energy efficiency savings will count towards the EEPS goals.

Hawaii's RPS and EEPS laws are significant elements of the Hawaii Clean Energy Initiative (HCEI), which aims to achieve energy independence and security, economic diversity, and environmental protection through reduced dependence and use of imported fossil fuel, and to provide 70% of Hawaii's energy needs through clean renewable energy by 2030. HRS §196-41(a) and (c) state DBEDT's specific role and reporting 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.

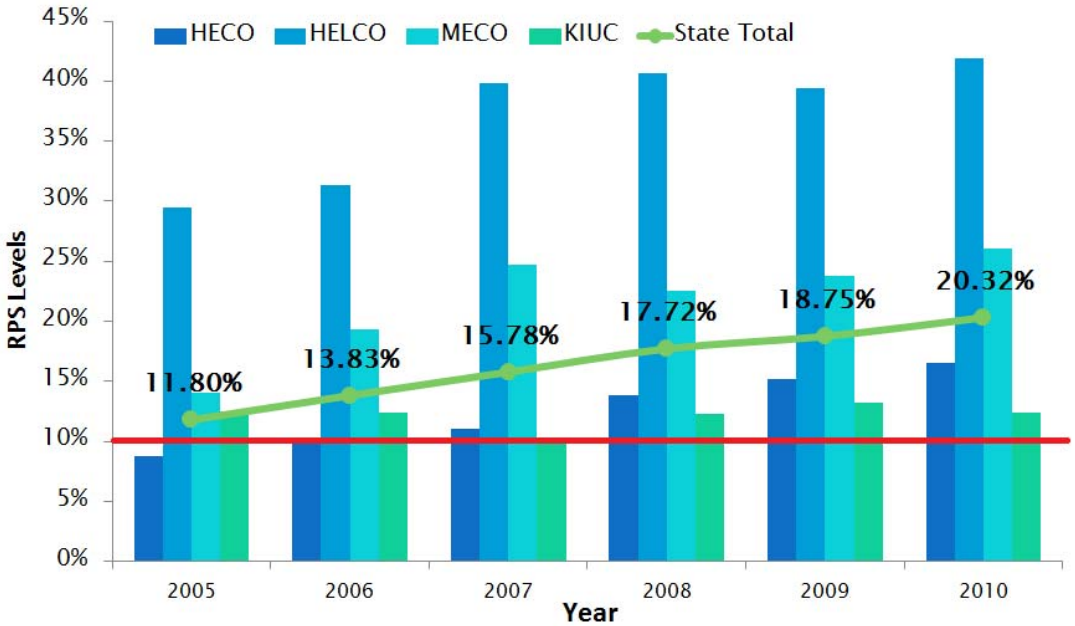
(c) The department of business, economic development, and tourism shall:

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.

II. Achievement of 2010 RPS Goals

- The State's total recorded RPS of 20.32% in 2010 far exceeded Hawaii's RPS goal of 10% in 2010, shown in Figure 1. The achieved RPS of 20.32% includes 9.5% of electricity generation from renewable energy resources (RPS) and 10.82% from energy efficiency savings. Several state initiatives and activities contributed to Hawaii's near 11% energy efficiency savings, including the State's high performance contracting expenditure per capita which ranked Hawaii first in the nation, and the high penetration of solar water heaters with 25% of Hawaii's households having solar water heaters installed, ranking Hawaii first in the nation in terms of installed solar water heaters per capita.

Fig. 1: Hawaii's Total Achieved RPS, 2005-2010



Standards Status Reports, 2005-2010 (Hawaii Public Utilities Commission)

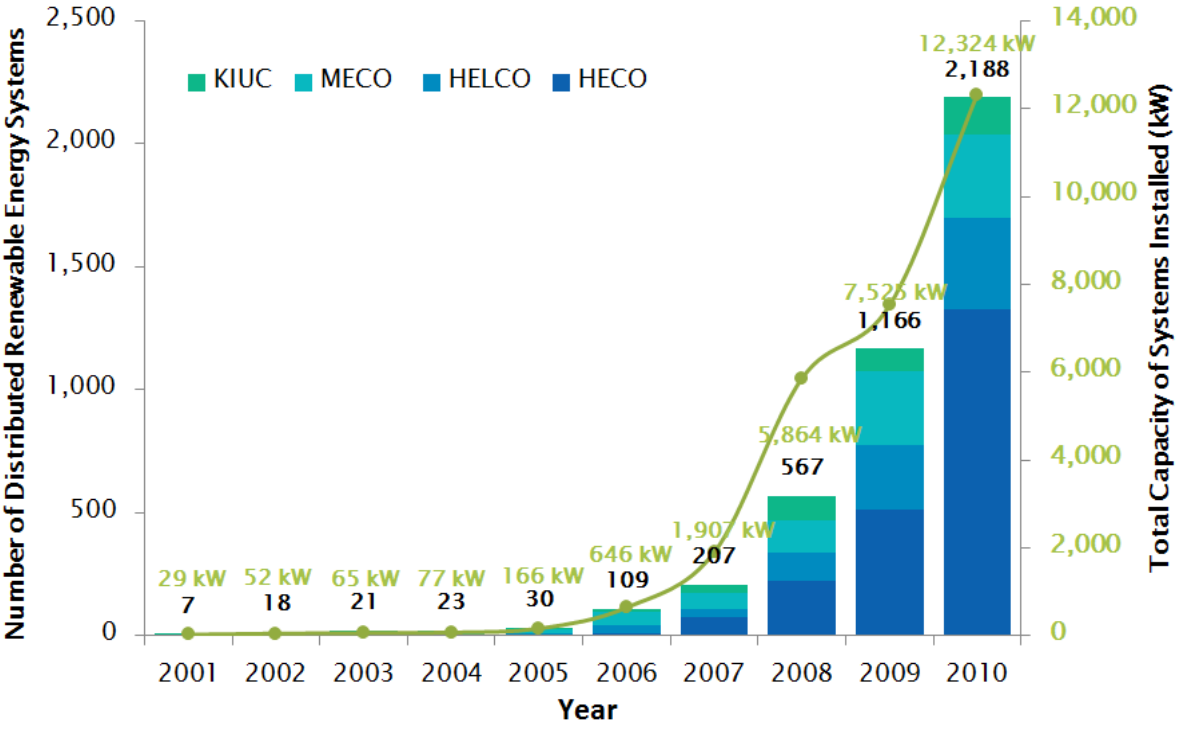
- The existing renewable energy systems that contributed towards the 9.5% renewable energy-based generation are listed in the following table. Statewide, these renewable projects have a total capacity of 275.5 MW

Existing Renewable Energy Projects Statewide

Commerical Projects	Location	Technology	MW Capacity
Puna Geothermal Venture	Hawaii	Geothermal	30.0
Tawhiri	Hawaii	Wind	20.5
Hawi Renewable Development	Hawaii	Wind	10.6
Pueo and Waiau Hydro	Hawaii	Hydro	4.4
Kapaa Solar	Kauai	PV	1.2
KIUC Waiahi	Kauai	Hydro	1.3
Kauai Hydro IPPs	Kauai	Hydro	7.2
Lanai Sustainability Research	Lanai	PV	1.2
Wailuku River Hydro	Maui	Hydro	12.1
Makila Hydro	Maui	Hydro	0.5
H-Power	Oahu	WTE	46.0
Keahole Solar Power	Oahu	CSP	0.5
Campbell Industrial Park Generation Station	Oahu	Biodiesel	110.0
Kahuku Wind Farm	Oahu	Wind	30.0
Total			275.5

- In addition to the commercial projects, there are 4,336 customer-sited distributed renewable energy systems installed through 2010 under the Net Energy Metering Program (NEM) with a cumulative capacity of 28.7 MW (see Figure 2). In 2010, Hawaii saw significant growth in the energy market, which contributed to the increase in NEM. As a result, Hawaii ranks second in the nation in terms of cumulative installed solar photovoltaic (PV) capacity per capita.

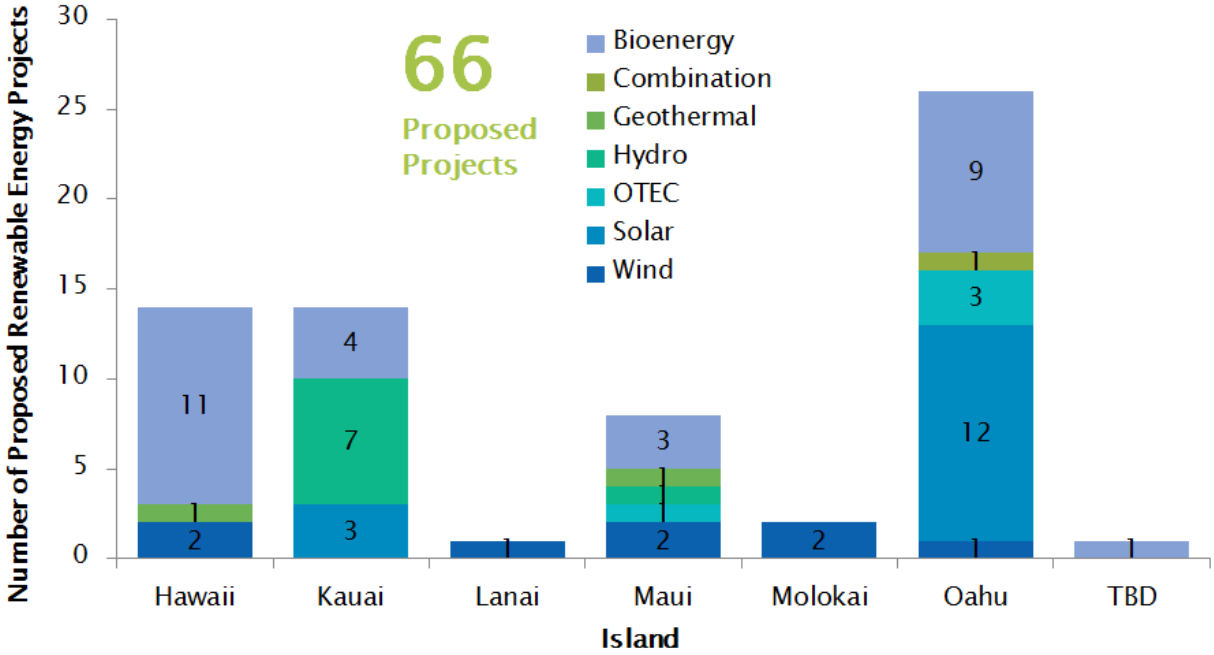
Fig. 2: Statewide Distributed Energy Systems 2001-2010



Net Energy Metering Status Report 2010 (Public Utilities Commission)

- Furthermore, DBEDT is tracking and facilitating over 60 proposed renewable energy projects in various stages of development in Hawaii, shown in Figure 3. Of these potential projects, DBEDT developed a list of the "Top 40 Proposed Renewable Energy Projects" in 2011 (available on DBEDT's website: http://energy.hawaii.gov/programs/renewable-energy-projects-in-hawaii). These 40 projects were selected as most commercially viable on the basis of size (in megawatts or millions of gallons per year), purchase agreement progress, and site control. When combined, the Top 40 projects have the potential to generate over 500MW of electricity and more than 85 MGPY of biofuel, which will assist Hawaii in reaching its RPS goals.

Fig. 3: Proposed Renewable Energy Projects Statewide

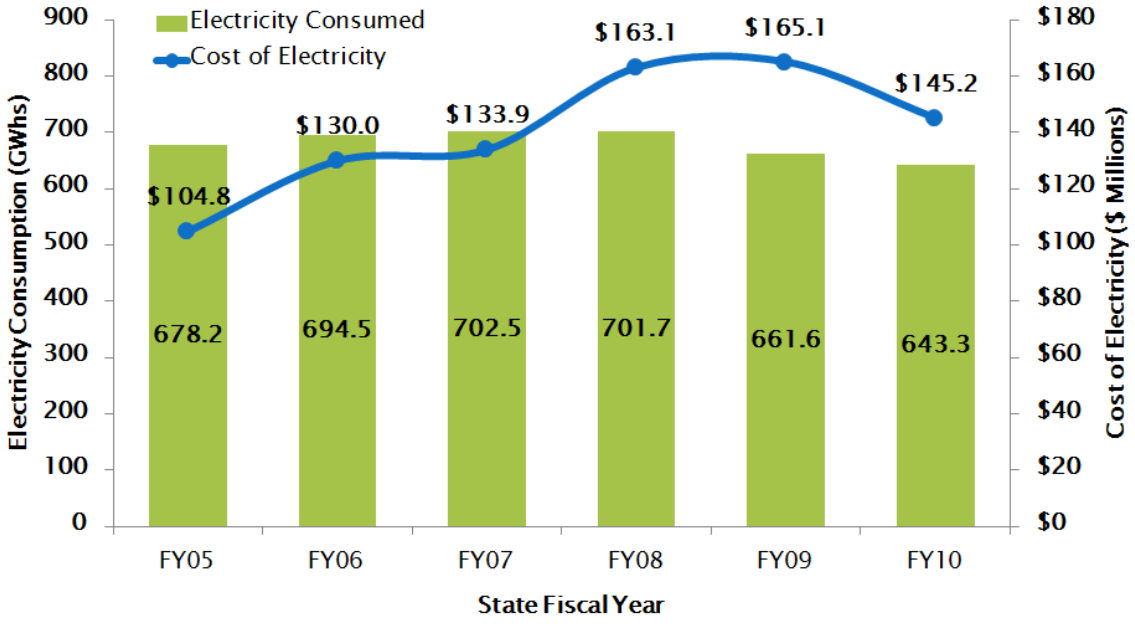


Source: Department of Business, Economic Development and Tourism, August 2011

- Another critical component of Hawaii RPS spearheaded by DBEDT is the Lead by Example (LBE) Initiative, which tracks state agencies' electricity consumption and expenditure for the purpose of achieving the newly adopted energy efficiency standard. Vehicle mileage and information on efficiency improvements and renewable energy projects are also collected, as directed by Acts 96 and 160, SLH 2006, as well as Administrative Directive 06-01.

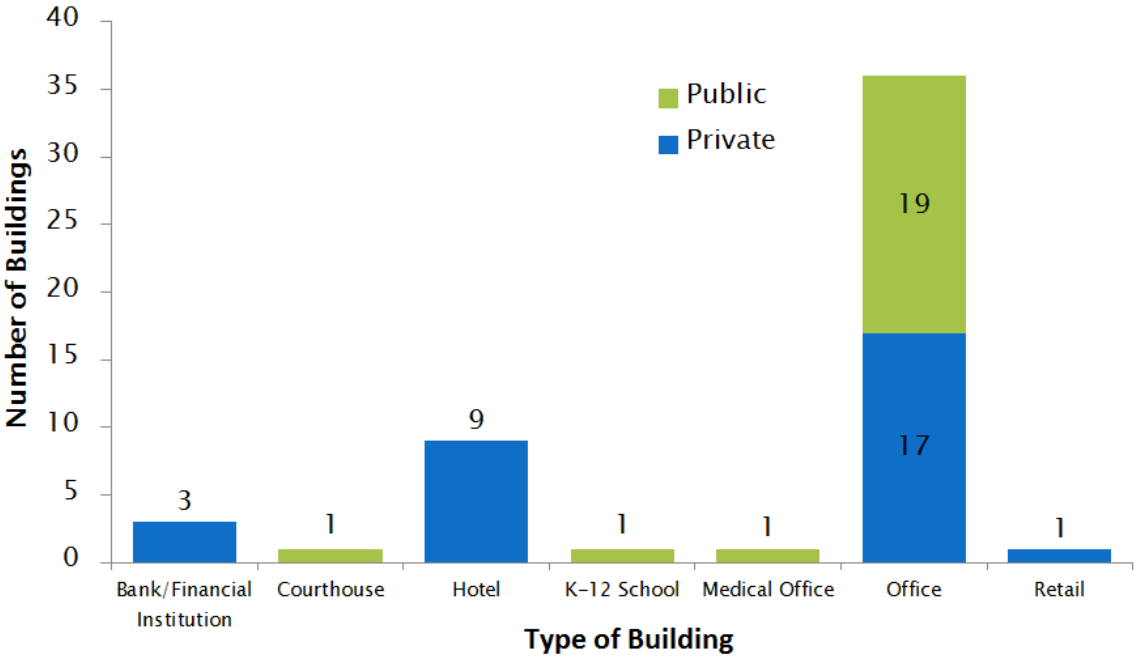
  The LBE initiative primarily focuses on the energy efficiency plans, performance, and achievements of the State of Hawaii's executive agencies, including improving data collection and analysis. The State's Lead by Example initiative has reduced the state' energy consumption in the last three years by approximately 59 million kilowatt-hours (59,000,000 kWh) – enough to power about 8200 households for a year. Last year alone, the state reduced its electricity bill by $20 million, a 12% savings to Hawaii's people (see Figure 4).

Fig. 4: Lead by Example Initiative



- DBEDT's Lead by Example Program also resulted in the increase in the number of Energy Star rated buildings in Hawaii. Only buildings that are among the top 25% of their classification in energy efficiency receive such distinction. Since 2003, 52 buildings totaling 4.7 million sq. ft. in floor space have received Energy Star certification (see Figure 5).

Fig. 5: Energy Star Rated Buildings in Hawaii

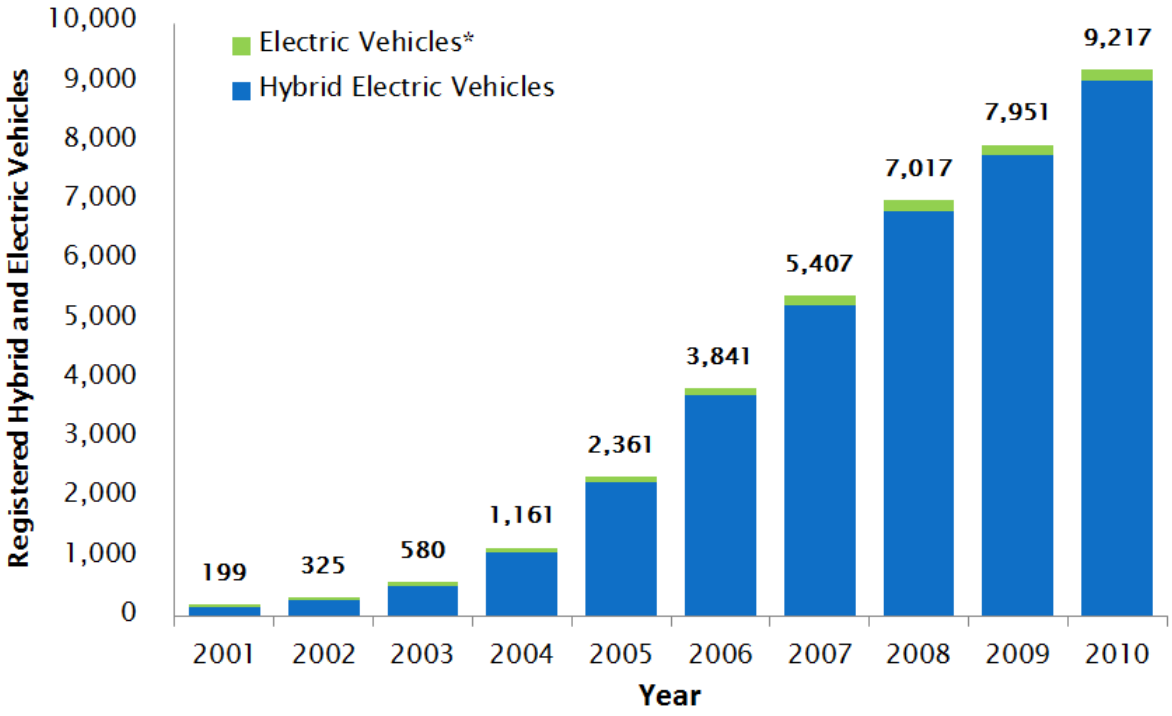


2011 (US Environmental Protection Agency & US Department of Energy)

- The HCEI goal of 70% clean energy transformation by 2030 also includes reducing the fossil fuel usage in the transportation sector by 70% in 2030 through the increased use of alternative fuel vehicles and by a reduction in total vehicle miles travelled, as well as an expected increase in overall vehicle fuel efficiency. In 2010, Act 175 set the goal of using alternative fuels to meet 30 percent of highway fuel demand by 2030.

- DBEDT's EV Ready grants and rebate programs and statewide EV charging network project, funded under the American Recovery and Reinvestment Act of 2009 (ARRA), have helped attract major auto manufacturers to Hawaii, including Toyota, Nissan, Mitsubishi, Ford and GM, despite our small market size. This has led to a 5-fold increase in electric vehicles in Hawaii, as shown in Figure 6.

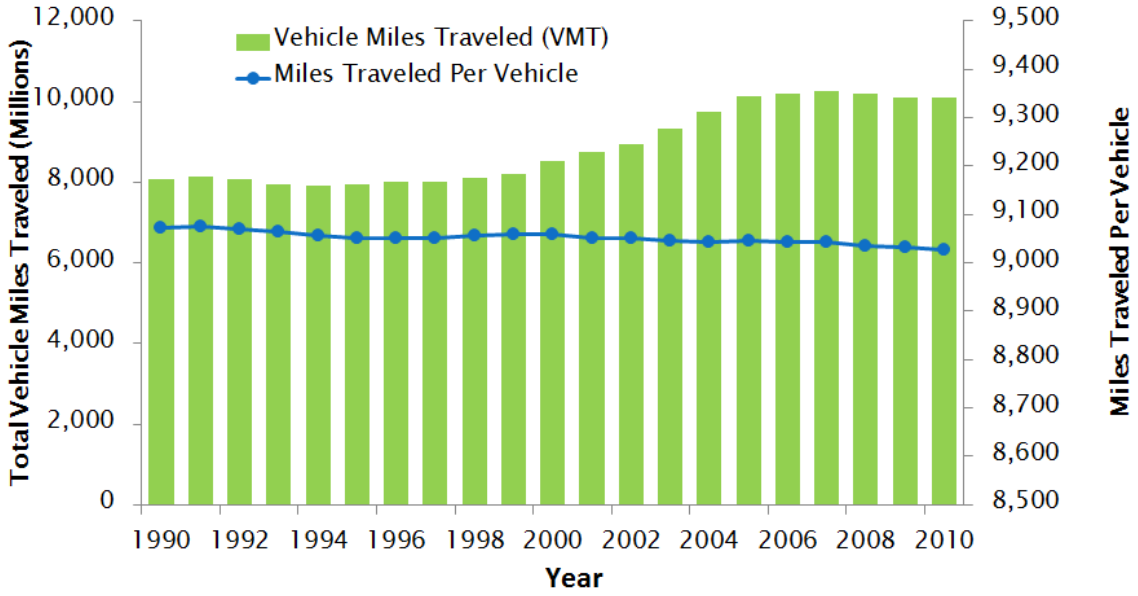
Fig. 6: Electric Vehicles Registered in Hawaii



*includes Neighborhood Electric Vehicles
Source: National Renewable Energy Laboratory, August 2011

- Hawaii is also making gains in transportation efficiency. Both vehicle miles traveled and miles traveled per vehicle have declined slightly in the past few years, as seen in figure 7. By the year 2030, the state expects to realize a 30% gain in transportation efficiency to reduce Hawaii's dependence on imported petroleum fuel and reach the RPS goals.

Fig. 7: Hawaii Vehicle Miles 1990-2010



Source: *Motor Vehicle Fuel Consumption and Vehicle Miles*, 1990–2010, State of Hawaii Data Book (DBEDT)

III. State Activities and Initiatives in Support of §196-41(c)(1) and (c)(2): Renewable Energy and Conservation Measures

DBEDT's efforts and activities during the last two years (2010-2011) to facilitate the development of renewable energy projects and maximize energy efficiency savings to achieve Hawaii's energy goals are focused on support for the HCEI partnership, implementing and managing the various ARRA-funded energy projects designed to help achieve Hawaii's 70% clean energy goal, participation in and support of legislative clean energy policies, and participation in energy policy-related regulatory proceedings before the Hawaii Public Utilities Commission aimed at transforming Hawaii's regulatory framework. A summary of these activities and initiatives include the following:

- In 2011, the HCEI Roadmap was developed and released providing milestones and strategies for achieving the HCEI goal of 70% clean renewable energy by 2030. (Full text: http://www1.eere.energy.gov/deployment/pdfs/52611.pdf)

- During the last legislative sessions, several energy policy-related laws were adopted and passed which were aimed at reducing of Hawaii's dependence on imported fossil fuels. The major energy bills passed include:

  - Act 73, SLH 2010, which increases the tax on imported oil by $1.00 per barrel and establishes initiatives to promote economic development for energy and local food businesses to support self-sufficiency and sustainability to the maximum extent feasible. Act 73 also provides funding for the Hawaii energy program.

- Act 198, SLH 2011, which establishes a working group to study the feasibility of requiring all new single-family residential construction to incorporate design elements and minimal equipment installation to make the structure photovoltaic ready.
- Act 199, SLH 2011, which expands the applicability of the renewable energy facility siting process to include small biofuel production facilities and distribution infrastructure.
- Act 204, SLH 2011, which directs the PUC to investigate on-bill financing programs that would allow electric utility customers to finance purchases of renewable energy systems or energy efficient devices through the energy savings provided by such systems or devices.

- DBEDT implemented and administered various energy projects funded under the American Recovery and Reinvestment Act (ARRA). These projects were aimed at promoting the increased use and development of renewable resources, and to increase energy efficiency and conservation, as well as the development of programs aimed at promoting the adoption of electric vehicles as a means to transform the transportation sector.

- DBEDT also received and implemented an Energy Assurance grant under ARRA aimed at ensuring and maintaining the state's energy security assurance planning and capability.

Regulatory Framework:

The State Energy Office continues to lead DBEDT's participation in the major energy policy related Public Utility Commission proceedings to ensure the regulatory transformation necessary to reduce Hawaii's dependence on imported fossil fuels. In 2011, several PUC Orders were issued in these dockets implementing major changes in Hawaii's regulatory framework including the following:

- One major transformative change to the Hawaii utility regulation is the implementation of a decoupling mechanism for the Hawaiian Electric Companies (HECO/MECO/HELCO). Decoupling is an alternative form of utility ratemaking which de-links the utility's revenues from its kilowatt-hour sales. The implementation of a decoupling mechanism, approved by the Hawaii Public Utilities Commission (PUC) on August 31, 2010 in Docket No. 2008-0274, is the first major and unprecedented change in Hawaii's regulatory framework that will have a significant and positive impact on the utilities financial security. The decoupling mechanism which went into effect on March 1, 2011 on Oahu, is a significant milestone aimed at helping align the utilities' financial interest with helping achieve the State's transformation to a clean energy economy by 2030.

- Another significant milestone in reducing Hawaii's dependence on imported fossil fuels and facilitating the achievement of the State's RPS goals is the

approval and implementation of the Feed-in Tariffs program for the HECO Companies' service territories. Feed-in Tariffs program (FITs) is a utility procurement mechanism for purchasing renewable energy from eligible renewable energy generators based on standardized purchased power rates with specified terms and conditions. The FITs program approved by the PUC is aimed at promoting and accelerating the addition of new renewable energy resources in the HECO Companies' generation portfolio to help achieve Hawaii's RPS goals by providing predictability and certainty in the purchase power rates as well as transparency in the procurement process. The FITs program was approved by the PUC by Orders issued on October 13, 2010 and November 22, 2011 to provide FITs rates by resource type and project size up to 5MW for Oahu and 2.72 MW for the islands of Maui and Hawaii (Big Island). To-date, the projects capacity in HECO's active queue total 33 MW, 3.5MW in HELCO's active queue, and 3.9MW in MECO's active queue.

- Promoting and accelerating the addition of renewable energy resources in the utilities' generation portfolio requires transparent and efficient interconnection requirements and process. In a Decision and Order issued November 29, 2011 in Docket No. 2010-0015, the PUC approved revisions to the HECO Companies' Rule 14H Tariffs, which govern the interconnection of distributed generating facilities operating in parallel with the HECO Companies' electrical distribution system. The revisions are intended to provide transparency and certainty to the interconnection requirements, procedure, and timeline. Another major revision is the addition of a supplemental screen that essentially eases the 15% of circuit peak load threshold for requiring interconnection requirements study (IRS) especially for smaller projects.

- On March 14, 2011, the PUC approved the clean energy scenario planning framework (CESP) to govern the electric and gas companies' energy resource planning. This revised planning framework which replaces the Integrated Resource Planning Framework established by the PUC in 1992 to govern the companies generation resource planning, aligns the companies' resource planning with the State's energy goals. The new CESP framework is intended to allow for more effective, inclusive, and comprehensive planning process that acknowledges the dynamic and constantly changing utility environment as Hawaii transitions to a clean energy future. The approval of the CESP framework is another regulatory change that will help reduce Hawaii's dependence on imported oil.

- On March 8, 2010, the PUC initiated a docket to evaluate establishing and implementing energy efficiency portfolio standards (EEPS) for the State of Hawaii pursuant to Act 155, Session Laws of Hawaii 2009 (SLH 2009). The Act established an EEPS goal of 4,300 GWH of electricity use reductions statewide by 2030, accounting for 30% of the HCEI goal, and mandated the PUC to establish the EEPS goals for the interim years 2015, 2020, and 2025. The docket's procedural schedules have been concluded and the PUC is expected to issue its Order in the docket early next year (2012).

- Pursuant to Act 204, SLH 2011, the PUC initiated a docket on October 3, 2011 to evaluate establishing and implementing an On-bill Financing program to help consumers with the upfront costs of installing energy efficiency measures and renewable energy systems. The docket is currently in-progress.