

## **2007 Renewable Portfolio Standard Status Report**

**Hawaiian Electric Company, Inc.  
Hawaii Electric Light Company, Inc.  
Maui Electric Company, Limited**

**For the Year Ended December 31, 2007**

Hawaiian Electric Company and its subsidiaries, Hawaii Electric Light Company and Maui Electric Company (“the HECO utilities”), are pleased to have achieved a consolidated Renewable Portfolio Standard (RPS) of 16.1 percent in 2007. This is an increase from the 13.8 percent achieved in 2006 and is primarily the result of the new wind farms (Pakini Nui, Hawi Renewable Development and Kaheawa Wind Power) and additional demand-side management (DSM) implemented in 2007. This RPS status report shows that “traditional” renewable energy generation (as compared to electrical energy savings from renewable displacement or energy efficiency technologies) comprises the majority of the utilities’ RPS addition in 2007, as well as a majority of the total RPS percentage for 2007.

This report also shows that new DSM program participants in 2007 contributed approximately 122 gigawatt hours of additional electrical energy savings. Still, the majority of the energy savings in 2007 came from participants in the utility’s DSM programs from previous years that continue to save electricity. This highlights the importance of long-term support for utility DSM to achieve significant energy conservation benefits and increase the RPS percentage.

Major accomplishments in 2007 contributed to the reduction of Hawaii’s use of fossil fuel. Further, concerted efforts to increase renewable energy generation and energy conservation are continuing.

Barring unforeseen decreases in existing renewable energy projects or DSM implementation, or increases in electricity sales, the HECO utilities are hopeful that they will meet the RPS percentages required by Hawaii law. However, achieving higher RPS percentages in the future will have its challenges, even with aggressive utility DSM programs. Overall electricity use in the future is forecast to increase. Also, siting renewable facilities continues to be a challenge in many communities. And the need for federal and state tax credits and incentives continues to play a major role in the development of renewable projects. It will take a concerted effort by all stakeholders to meet the State’s RPS requirement of 20 percent by 2020. We look forward to working together to help Hawaii achieve these important objectives.



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**For the Year Ended December 31, 2007  
(In Gigawatt Hours)**

|   | HECO  | HELCO | MECO  | TOTAL         | Percent |
|---|-------|-------|-------|---------------|---------|
| <b>Electrical Energy Generated Using Renewable Energy Sources</b>                 |       |       |       |               |         |
| H-POWER   | 302   |       |       | 302           |         |
| Municipal Solid Waste - AES <sup>1</sup>  | 24    |       |       | 24            |         |
| Puna Geothermal Venture   |       | 230   |       | 230           |         |
| Hydro-Wailuku   |       | 27    |       | 27            |         |
| Hydro-HELCO owned   |       | 15    |       | 15            |         |
| Pakini Nui  |       | 82    |       | 82            |         |
| Hawi Renewable Development  |       | 34    |       | 34            |         |
| Lalamilo Wind Farm  |       | 0.4   |       | 0.4           |         |
| Small Hydro   |       | 0.3   |       | 0.3           |         |
| Biomass & Hydro-HC&S <sup>2</sup>   |       |       | 69    | 69            |         |
| Kaheawa Wind Power  |       |       | 126   | 126           |         |
| Biodiesel   |       |       | 1.4   | 1.4           |         |
| <b>Subtotal</b>   | 326   | 388.7 | 196.4 | <b>911.1</b>  | 56.1%   |
| <b>Electrical Energy Savings Using Renewable Displacement Technologies</b>        |       |       |       |               |         |
| Photovoltaic Systems  | 1.7   | 4.4   | 1.3   | 7.4           |         |
| Solar Water Heating <sup>3</sup>  | 66    | 13    | 30    | 109           |         |
| <b>Subtotal</b>   | 67.7  | 0     | 17.4  | 0             | 31.3    |
|   |       |       |       | <b>116.4</b>  | 7.2%    |
| <b>Electrical Energy Savings Using Energy Efficiency Technologies<sup>4</sup></b> |       |       |       |               |         |
| Pre-2007 Participants   | 340   | 54    | 82    | 476           |         |
| 2007 Participants   | 113   | 3     | 6     | 122           |         |
| <b>Subtotal</b>   | 453   | 57    | 88    | <b>598</b>    | 36.8%   |
| <b>TOTAL</b>  | 847   | 463   | 316   | <b>1626</b>   | 100.0%  |
| <b>TOTAL SALES (GWh)</b>  | 7,675 | 1,163 | 1,280 | <b>10,118</b> |         |
| <b>RPS PERCENTAGE<sup>5</sup></b>   | 11.0% | 39.8% | 24.7% | <b>16.1%</b>  |         |



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**For the Year Ended December 31, 2007**

Hawaii's Renewable Portfolio Standard legislation (codified as Sections 269-91 to 269-95 of the Hawaii Revised Statutes (HRS)) establishes requirements for electric utilities to incorporate renewable resources into their resource portfolios and to reduce the use of imported oil. It specifies that the renewable portfolio standard shall be 10 percent by December 31, 2010, 15 percent by December 31, 2015, and 20 percent by December 31, 2020. This report was prepared pursuant to the Framework for Renewable Portfolio Standards issued by the Hawaii PUC on December 20, 2007 (Decision and Order No. 23912, Docket No. 2007-0008).

#### Footnotes:

1. AES Municipal Solid Waste energy reflects the amount of energy derived from shredded tires, waste oil, and used activated carbon.
2. HC&S utilizes bagasse (i.e., sugar cane residue) and hydropower, which are sources of renewable energy, in addition to coal and oil to generate the electricity it sells to MECO. Renewable energy is estimated to provide 73.1 percent of the electricity sold to MECO based upon actual fuel consumption information for 2007 provided by HC&S.
3. HRS Section 269-91 specifies that renewable energy includes the electrical energy savings brought about by the use of renewable displacement technologies including solar water heating. The gigawatt hours (GWh) for solar water heating are based upon the annualized system level energy savings for all solar water heating participants in the utilities' demand-side management (DSM) programs. The energy savings from utility DSM programs are reported to the PUC and the Consumer Advocate and are verified by an independent consultant whose evaluation reports are also filed with the PUC and the Consumer Advocate.
4. HRS Section 269-91 specifies that renewable energy includes the electrical energy savings brought about by the use of energy efficiency technologies. The gigawatt hours (GWh) for energy efficiency technologies are based upon the annualized system level energy savings for all participants in the utility's demand-side management (DSM) programs excluding solar water heating, which is listed separately. The energy savings from utility DSM programs are reported to the Public Utilities Commission and the Consumer Advocate and are verified by an independent consultant whose evaluation reports are also filed with the PUC and the Consumer Advocate.
5. Renewable energy is defined in HRS Section 269-91 to include the electrical energy savings brought about by energy efficiency technologies. Since energy efficiency technologies are included with renewable energy and also reduce the amount of electricity sales, the renewable portfolio standard percentage might be viewed as double counting the benefits of energy efficiency technologies. If the energy savings of 598 GWh were added back into the electricity sales, then the renewable portfolio standard percentage would be 15.0 percent.



## SPECIFIC PROJECTS

The following information summarizes the status of existing and proposed renewable energy projects which could have an impact on future RPS percentages.

### Big Island:

#### Puna Geothermal Venture (PGV)

PGV is proposing to modify its existing Power Purchase Agreement (PPA) to provide an additional 8 MW by expanding its existing facility. PGV represents that the proposed modifications to and expansion of its existing facility would have operational features intended to enhance the overall stability of the HELCO system. On May 15, 2008, the PUC issued a decision and order declaring the 8 MW expansion of PGV to be exempt from competitive bidding enabling HELCO and PGV to pursue negotiations for a new or amended PPA.

#### Pakini Nui Wind Farm

Construction and testing activities of the wind farm are complete, and the Pakini Nui wind farm became operational in April 2007.

#### Tradewinds Biomass

HELCO and Tradewinds Forest Product, LLC (Tradewinds) reached agreement on a PPA on July 26, 2007 whereby HELCO will purchase renewable energy produced by a biomass-powered generation facility under development by Tradewinds. Scrap wood from a veneer operation will be used to power Tradewinds' cogeneration facility that is to be built in O`okala. HELCO will purchase between 2 MW and 3.6 MW of electricity from Tradewinds on a scheduled basis. The project will also generate additional electricity to power the veneer operation and the additional electricity could be made available to HELCO if needed to cover a generation shortfall. An interconnection requirements study has been completed and the conclusions will be incorporated into the PPA. HELCO and Tradewinds are in discussions on amending the PPA. An amendment is expected to be completed by mid-2008, followed by submittal of the amended PPA to the PUC for approval. Tradewinds' revised construction schedule contemplates selling energy to HELCO starting about Fall 2010.

#### Hamakua Biomass Energy

Hamakua Biomass Energy (HBE) has proposed a 30 MW biomass combustion plant to be located in Hamakua. HBE's proposed facility would not be exempt from competitive bidding under the PUC's Framework for Competitive Bidding. In order to continue PPA negotiations with HBE, HELCO needs an approved waiver from competitive bidding from the PUC. Currently, a request for waiver from competitive bidding for HBE is being reviewed by the PUC in Docket No. 2008-0091.



## Maui:

### HC&S

MECO and Hawaiian Commercial and Sugar Company (HC&S) agreed on July 2, 2007 that their existing PPA, which continues from year-to-year unless terminated, will continue through at least December 31, 2014, thus continuing the export of bagasse-generated and hydroelectric energy to Maui's grid.

### Oceanlinx

In February 2008, Oceanlinx Limited announced plans to provide up to 2.7 MW of electricity to MECO from two to three floating platforms located one-half to three-quarter mile due north of Pauwela Point on the northeast coast of Maui. The project could be operational by the end of 2010. MECO and Oceanlinx are in negotiations for a PPA.

### Pulehu Power

Bio Energy Systems of Hawaii has submitted a NUG for an approximately 5.5 MW firm capacity biomass project (i.e., Pulehu Power) on the island of Maui that involves the gasification of dead and downed timber, and wattle trees into a burnable gas in a downdraft gasifier. Currently, a request for waiver from competitive bidding for Pulehu Power is being reviewed by the PUC in Docket No. 2008-0061.

### Wind Farms on Maui

Kaheawa Wind Power (KWP) submitted a proposal in June 2006 reflecting its intent to pursue expansion of the existing 30 MW wind farm by 27 MW, which was subsequently resized to 21 MW. In late June 2006, Shell WindEnergy Inc. and Ulupalakua Ranch Inc. announced an agreement under which Shell WindEnergy intends to construct a 42 MW wind farm, which was subsequently resized to 22 MW on ranch land in East Maui. In July 2007, HECO indicated to both developers that due to concerns about the system impact from adding significantly more wind-generated energy to the MECO system, MECO intended to proceed with a structured negotiations format to select one company with which to first negotiate a PPA. After completing the structured negotiations, MECO indicated its intent to enter into PPA negotiations with Shell WindEnergy. In February 2008, UPC Hawaii Holdings, LLC and Kaheawa Wind Power II, LLC, the developers of the proposed expansion to the Kaheawa wind farm, filed a complaint with the PUC alleging MECO's refusal to execute a PPA for the purchase of energy from the proposed expansion project. In March 2008, the PUC opened a docket to review the complaint and granted Shell WindEnergy's request for intervenor status in the docket. A procedural schedule for this docket has been established, and on June 20, 2008 the parties filed testimonies and exhibits. An evidentiary hearing date has not yet been established.

### Makila Hydro

MECO entered into a PPA with Makila Hydro, LLC (Makila) for the purchase of as-available energy from a refurbished 500 kW hydro electric plant above Lahaina previously interconnected to Pioneer Mill. Makila Hydro's in-service date was September 2006; however, it has not been providing power as its generator was damaged during the October 15, 2006 earthquake and is undergoing repairs. Makila is expected to return to service in 2008.



## Biofuels

In February 2007, BlueEarth Biofuels LLC (BlueEarth) announced plans for a biodiesel transesterification plant to be built on the island of Maui. The plant is anticipated to be operational by early 2011. MECO intends to lease to the project a portion of the land owned by MECO for its future Waena generating station as the site for the biodiesel plant, with lease proceeds to be credited to MECO ratepayers. In addition, MECO is negotiating a fuel purchase contract with BlueEarth Maui for biodiesel to be used in existing diesel-fired units at MECO's Maalaea plant. Both the land lease agreement and the biodiesel fuel contract will require PUC approval. Although not required to do so, BlueEarth Maui has also announced plans to prepare an environmental impact study for the project. HECO, working closely with the Natural Resources Defense Council, developed an environmental policy, which focuses on sustainable palm oil and locally-grown feed stocks, to ensure that any HECO, HELCO or MECO project will procure biofuel and biofuel feed stocks only from sustainable sources. Also key to the project is the creation of a Biofuels Trust Fund to support the development of biofuel production in Hawaii.

## Oahu:

### H-POWER

In January 2008, the City and County of Honolulu announced plans to cancel the bidding process for a new waste-to-energy facility and instead expand the existing H-Power waste-to-energy facility by adding a third boiler. The City and County plans to negotiate with Covanta, the current operator of H-Power, to build a third boiler at the H-Power facility by 2011.

### Honolulu Sea Water Air Conditioning

Honolulu Seawater Air Conditioning, LLC is developing a 25,000 ton seawater air conditioning system for downtown Honolulu. It has indicated they have completed their equity financing, have customer commitments for over 70% of their system capacity, and has begun preparing an environmental impact statement. It estimates the system to be online in 2010.

### Renewable RFP

On September 24, 2007, HECO submitted a request for approval to proceed with a competitive bidding process to acquire up to approximately 100 MW of non-firm renewable energy for the Island of Oahu, as identified in HECO's IRP-3 2007 Evaluation Report filed on May 31, 2007 in Docket No. 03-0253. HECO also issued a Solicitation of Interest on September 28, 2007 to preliminarily determine the interest of suppliers in responding to the planned Request for Proposals ("RFP"), and to obtain background information from potential suppliers. By Order No. 23699, issued October 9, 2007, the PUC noted that its approval to proceed was not required at this juncture, and opened Docket No. 2007-0331 to receive filings, review approval requests, and serve as a forum to resolve disputes, if necessary, related to the proposed competitive bidding process. A draft RFP was issued on February 11, 2008 and a technical conference for interested parties was held on March 14, 2008. A proposed Final RFP was submitted to the PUC on May 19, 2008, and revised on June 12 and 17, 2008. On June 18, 2008, the PUC approved the proposed RFP, and on June 19, 2008 HECO issued the RFP and posted it on its website. HECO seeks to acquire these renewable energy resources which could commence commercial operation in the 2010-2014 timeframe, with a preference for resources that achieve commercial operation before 2013.



### Biofuels

On May 23, 2007, HECO received PUC approval to build a new 110 MW simple cycle combustion turbine (CT) generating unit at Campbell Industrial Park. Groundbreaking for the project construction was held in May 2008. Plans are for the biofueled combustion turbine to be run primarily as a "peaking" unit beginning in 2009. In August 2007 HECO entered into a supply contract with Imperium Renewables Hawaii for biodiesel to fuel the new CT. The contract was submitted to the Commission for approval in October 2007. Imperium intends to build a transesterification plant adjacent to Kalaeloa Harbor and produce biodiesel from sustainable imported and locally grown feedstock.

### Photovoltaic Systems

HECO is pursuing development of a utility-sited photovoltaic system in 2008 consistent with HECO's IRP-3 Evaluation Report filed with the PUC on May 31, 2007. On March 22, 2007, HECO issued a request for proposals to non-utility PV developers, seeking development of a photovoltaic system on the rooftop of Archer Substation, located at HECO's Ward Avenue facility. After reviewing and evaluating bids, HECO awarded the project to Hoku Solar on May 25, 2007. On November 16, 2007, HECO and Hoku Solar executed a Solar Energy Purchase Agreement ("SEPA") governing Hoku Solar's development of a PV system of up to 300 kW and HECO's purchase of energy from the system. On December 27, 2007, HECO submitted an application for PUC approval of the SEPA and on May 13, 2008, the PUC approved the SEPA. Hoku Solar estimates the size of the PV system will be 218 kWdc. The Archer PV system is expected to be placed in service in late 2008.

### Other PPA Proposals:

HECO, HELCO and MECO are in discussions with developers of a number of proposed renewable energy projects, some of which were submitted to the utilities prior to the adoption of the Framework for Competitive Bidding in Docket No. 03-0372, in addition to those identified above. Unless announced publicly by the project developer, details of these proposals generally are treated as confidential information. The companies provided some details of the proposals submitted prior to October 2007 to the PUC and the Consumer Advocate under protective order in the competitive bidding proceeding, Docket No. 03-0372. These additional projects for which proposals have been received include wind farm projects on Oahu and the Big Island, an ocean thermal energy conversion project on Oahu, a small waste-fired facility on Oahu, small hydroelectric and solar power projects on the Big Island, and wind farm projects on Molokai and Lanai. HELCO also has received a proposal for a County waste-to-energy facility on the Big Island, which may qualify for a waiver from the Framework for Competitive Bidding. By an Order issued April 30, 2008, the PUC set a deadline of September 2, 2008 for HECO to reach material agreement on the three above mentioned Oahu projects. Any resulting PPA would be subject to PUC approval.

### Renewable Hawaii, Inc.:

HECO's non-regulated subsidiary, Renewable Hawaii, Inc. (RHI), has promoted renewable energy projects for the islands of Oahu, Maui, Molokai, Lanai, and the Big Island of Hawaii. Between 2003 and 2005 RHI conducted periodic solicitations for new project proposals, offering limited passive investment, if needed, in qualified commercially viable and technically feasible projects upon attainment of all project development milestones. These solicitations attracted over thirty



proposals for potential renewable projects in Hawaii. Technologies requiring research and design, prototype development, or demonstration were not considered.

