

O: BRR/G. File  
C: 3c's  
SHds



Robert A. Alm  
Senior Vice President  
Public Affairs

June 27, 2005

The Honorable Chairman and Members of the  
Hawaii Public Utilities Commission  
465 South King Street  
Kekuanaoa Building, 1<sup>st</sup> Floor  
Honolulu, HI 96813

Dear Commissioners:

Subject: HECO, HELCO and MECO  
Renewable Portfolio Standard Status Report

Attached for your information is the Renewable Portfolio Standard Status Report for the year ended December 31, 2004 for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc. and Maui Electric Company, Ltd.

If you have any questions or would like to discuss this further, feel free to call me at 543-5660 or Darcy Endo-Omoto at 543-7333.

Sincerely,

Attachment

cc: Division of Consumer Advocacy

FILED  
2005 JUN 27 P 4:13  
PUBLIC UTILITIES  
COMMISSION



# **2004 Renewable Portfolio Standard Status Report**

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

**For the Year Ended December 31, 2004**

Act 95 of the 2004 Hawaii State Legislature modified the State Renewable Portfolio Standard (RPS) law to include, among other things, quantifiable energy conservation in the definition of renewable energy. The inclusion of quantifiable energy conservation promotes demand-side management (DSM) and furthers the purpose of RPS to reduce the import of oil to Hawaii. With this change to the law, the RPS percentage for the Hawaiian Electric utilities for 2004 was 11.4%.

This RPS status report shows that, even with the inclusion of quantifiable energy conservation, non-fossil fuel energy still comprises the majority of the RPS percentage for 2004. In addition, there are several wind farm projects with PUC-approved power purchase agreements that are either under construction or about to start construction.

This RPS status report also shows that, while the overall electrical savings from utility's DSM programs were significant, the new DSM participants in 2004 contributed a small portion of the overall DSM savings. The majority of the savings in 2004 came from participants in the utility's DSM program 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.

Major accomplishments were achieved in 2004 to further reduce Hawaii's use of fossil fuel and concerted efforts to increase non-fossil fuel energy and energy conservation are continuing. However, achieving higher RPS percentages in the future will be very challenging. Even with aggressive utility DSM programs, the future use of electricity is forecasted to increase as Hawaii's economy continues to grow. Problems experienced by existing renewable energy providers in recent years demonstrate the difficulty in harnessing the power of nature and delays in proposed projects illustrate the challenges in developing new projects. It will take a concerted effort of all stakeholders to achieve the State's RPS law. We look forward to working together with them to help Hawaii achieve these important objectives.



# 2004 Renewable Portfolio Standard Status Report

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

For the Year Ended December 31, 2004  
(In Gigawatt Hours)

	HECO	HELCO	MECO	TOTAL
<b>Non-Fossil Fuel Energy</b>				
H-POWER	326			326
Municipal Solid Waste - AES <sup>1</sup>	43			43
PGV		211		211
Hydro-Wailuku		26		26
Hydro-HELCO owned		10		10
Wind-Lalamilo Wells		1		1
Small Hydro		1		1
Other Wind including Kamaoa		6		6
Biomass & Hydro-HC&S <sup>2</sup>			74	74
Photovoltaic Systems	0.4	1.5	0.2	2.1
Solar Water Heating <sup>3,4</sup>	47	9	19	75
<b>Subtotal Non-Fossil Fuel Energy</b>	<b>416</b>	<b>265</b>	<b>93</b>	<b>775</b>

## Quantifiable Energy Conservation (QEC) without Solar Water Heating (SWH)<sup>5</sup>

Pre-2004 Participants	258	36	52	346
2004 Participants	23	2	5	30
<b>Subtotal QEC without SWH</b>	<b>281</b>	<b>38</b>	<b>57</b>	<b>376</b>
<b>Total</b>	<b>697</b>	<b>303</b>	<b>150</b>	<b>1,151</b>
<b>TOTAL Sales (GWh)</b>	<b>7,733</b>	<b>1,083</b>	<b>1,248</b>	<b>10,063</b>
<b>RPS Percentage<sup>6</sup></b>	<b>9.0%</b>	<b>28.0%</b>	<b>12.0%</b>	<b>11.4%</b>



# **2004 Renewable Portfolio Standard Status Report**

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

**For the Year Ended December 31, 2004**

Act 95 of the 2004 Hawaii Legislature (codified as Sections 269-91 to 269-95, of the Hawaii Revised Statutes (HRS)) revised the renewable portfolio standard setting requirements for electric utilities to guide them in incorporating renewable resources into their resource portfolios and to reduce the use of imported oil. Act 95 states that the renewable portfolio standard is the percentage of electricity sales that is represented by renewable energy. It further specifies that the renewable portfolio standard goals shall be 7% of electricity sales by December 31, 2003, 8% by December 31, 2005, 10% by December 31, 2010, and 20% by December 31, 2020. An electric utility company and its electric utility affiliates may aggregate their renewable portfolios in order to achieve the renewable portfolio standard.

#### **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 78.0% of the electricity sold to MECO based upon actual fuel consumption information for 2004 provided by the Department of Business, Economic Development and Tourism.
3. HRS Section 269-91 specifies that renewable energy includes the electrical energy savings brought about by the use of 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 utility's demand-side management (DSM) programs. The energy savings from utility demand-side management 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 Public Utilities Commission and the Consumer Advocate.
4. Given that Act 95 changed the RPS percentages from a goal to a requirement, energy savings from pre-DSM program solar water heating systems are not included in this report as they are statistical estimates from survey information and would be difficult to verify.
5. Act 95 modified HRS Section 269-91 to specify that renewable energy includes the electrical energy savings brought about by the use of quantifiable energy conservation. The gigawatt hours (GWh) for quantifiable energy conservation 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 under non-fossil fuel energy. The energy savings from utility demand-side management 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 Public Utilities Commission and the Consumer Advocate.
6. Renewable energy is defined in Act 95 to include the electrical energy savings brought about by quantifiable energy conservation. Since quantifiable energy conservation is included with renewable energy and also reduces the amount of electricity sales, the renewable portfolio standard percentage might be viewed as double counting the benefits of quantifiable energy conservation. If the energy savings of 451 GWh were added back into the electricity sales, then the renewable portfolio standard percentage would be 10.9%.



## SPECIFIC PROJECTS

The following provides information regarding the status of some of the existing and proposed renewable energy projects, which could have an impact on future RPS percentages<sup>7</sup>.

### Big Island:

#### Puna Geothermal Venture (PGV)

Due to well problems, PGV has been able to export approximately 27 MW to HELCO on a consistent basis, which is below its normal capacity of 30 MW. By letter dated December 13, 2004, PGV agreed to voluntarily de-rate its facility to 25.5 MW until a new production well is scheduled to be put in service around June 30, 2005. At a meeting with HELCO on March 29, 2005, PGV stated that it will instead repair an existing well and that following the repair, anticipated to be completed at the end of June 2005, PGV expects that the facility will be restored to the 30 MW production level. PGV has stated its intention to eventually expand its capacity by 30 MW to a total of 60 MW.

#### Puueo Hydro

The existing 1.5 MW HELCO-owned run-of-river Puueo hydroelectric plant is being rehabilitated. The PUC approved HELCO's plans to rehabilitate the damaged generator by installing a modern, more efficient turbine generator with a capacity of roughly 2.28 to 2.4 MW. The project is expected to be in service in July 2005.

#### Hawi Renewable Development (HRD) Wind Farm

Hawi Renewable Development LLC (HRD) and HELCO signed a power purchase agreement (PPA) on December 30, 2003 for as-available energy from a 10.56 MW wind farm at Hawi, Hawaii. The PPA was approved by the PUC on May 14, 2004. HRD has forwarded funds pursuant to the PPA to enable HELCO to proceed with construction of the necessary interconnection facilities. Construction of the wind farm has begun. The wind farm is anticipated to be operational by the end of 2005.

#### Apollo Kamaoa Wind Farm

Apollo Energy Corporation (Apollo) is repowering its existing 7 MW wind farm (Kamaoa Wind Farm) located at South Point, Hawaii. Under the plans, the repowered wind farm would increase in size to 20.5 MW. On October 13, 2004, HELCO and Apollo signed a PPA for as-available energy from the repowered wind farm. The PUC approved the PPA on March 10, 2005. The wind farm is anticipated to be operational by the end of 2006.

---

<sup>7</sup> HECO, HELCO and MECO are continuing discussions with a number of potential developers of renewable energy generation projects. In addition, HECO's renewable energy subsidiary, Renewable Hawaii, Inc. (RHI) has issued two rounds of Requests for Project Proposals (RFPPs) for renewable energy generation projects on the Islands of Oahu, Maui Molokai, Lanai and Hawaii. RHI's objective is to proactively stimulate the development of cost-effective and operationally positive renewable energy generation in the State of Hawaii through limited passive investment in qualified commercially viable and technically feasible projects. As a result of the RFPPs, RHI is in discussions with several potential developers of renewable energy generation projects. Whether or not these projects are viable will depend on numerous factors, such as cost of the projects, continued availability of tax credits, technical feasibility, and developers' abilities to obtain sites, permits, project financing and/or community support.



## Maui:

### HC&S

MECO and Hawaiian Commercial and Sugar Company (HC&S) have agreed to the continuation of its existing PPA through at least December 31, 2007, thus continuing the export of bagasse-generated and hydroelectric energy to the grid.

### Kaheawa Wind Farm

Kaheawa Wind Power (KWP) is developing a 30 MW wind farm at Kaheawa Pastures, Maui. On December 3, 2004, MECO and KWP executed a PPA for as-available energy from this wind farm. The PUC approved the PPA on March 18, 2005. KWP closed on its financing on March 29, 2005, and has started pre-construction activities at the site. The wind farm is anticipated to be operational in the second quarter of 2006.

### Hawaii Energy Group-Makila Hydro

Hawaii Energy Group, the consultant to the owner of Makila Hydro, requested an "as available" power purchase contract, for the proposed repowering of an existing 500 kW hydro generator located above Lahaina, (previously interconnected to Pioneer Mill). On May 10, 2005, MECO and Makila Hydro, LLC signed the PPA. An application for PUC approval of the PPA is expected to be filed in June 2005.

## Oahu:

### H-POWER

By letter dated October 21, 2004, the City and County of Honolulu expressed its desire to extend the current power purchase contract for an additional 20 years to provide for the possible addition of a third boiler, however plans for the third boiler are on hold as the new administration reviews the plans. Although an additional boiler would not be expected to increase the MW capacity of H-Power, it would allow the plant to process an additional 120,000 tons of municipal solid waste (MSW) a year, increase the reliability of H-POWER and the amount of electricity sold to HECO.

### Wind Farm

HECO is in discussions with the Leeward Community on plans to pursue the acquisition of a wind resource in accordance with its draft preferred Integrated Resource Plan. The potential site is on the ridge above the Kahe Generating Station. Preliminary evaluation of partial wind speed data indicates there is a potential for commercial development of a wind farm in the 25 to 50 MW range. The size of the wind farm is subject to verification of the wind resource and siting considerations. Community meetings are scheduled for July 19, 20 and 21 to evaluate sentiments on whether or how such a project might proceed. If the project proceeds, the target in-service date for the wind farm would be in 2007.

