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Jay M. Ignacio, P.E.
President

January 28, 2010

PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

Subject: Adequacy of Supply
Hawaii Electric Light Company, Inc. ("HELCO")

The following information is respectfully submitted in accordance with paragraph 5.3a of General Order No. 7, which states:

The generation capacity of the utility's plant, supplemented by electric power regularly available from other sources, must be sufficiently large to meet all reasonably expectable demands for service and provide a reasonable reserve for emergencies. A Statement shall be filed annually with the Commission within 30 days after the close of the year indicating the adequacy of such capacity and the method used to determine the required reserve capacity which forms the basis for future requirements in generation, transmission, and distribution plant expansion programs required under Rule 2.3h.1.

HELCO's 2009 total system capability was 277,500 kW net (283,750 kW gross) and included firm capacity power purchases of 22,000 kW¹ from Puna Geothermal Venture ("PGV") and 60,000 kW from Hamakua Energy Partners, L.P. ("HEP"). HELCO's system peak of 194,600 kW net (198,684 kW gross) occurred on December 29, 2009², at approximately 6:34 p.m. The 2009 reserve margin was approximately 42.6% over the system peak.

¹ PGV's normal rating is 30 MW. In April 2009, PGV notified HELCO that it was experiencing problems with two of its production wells, and PGV's output was reduced to 14 MW. Rehabilitating the wells was only partially successful. PGV's output reached 20 MW by September 2009. PGV's capacity was approximately 22 MW at the time of the system peak. PGV has indicated that it intends to drill a new production well beginning in January 2010, and expects to be restored to 30 MW by June 2010.

² HELCO's system peak has occurred in the month of December from 1997 to 2007, and again in 2009. For the purposes of this report, it is assumed that HELCO's system peak will continue to occur in December.

Load Management/DSM

At the time of the system peak, HELCO had in place 30 load management contracts totaling 7,945 kW under Rider M and Schedule U, which reduced the evening peak by approximately 6,941 kW. In addition, HELCO has had residential and commercial & industrial demand side management (“DSM”) programs in place since 1996 through June 2009, which reduced the system peak by an estimated 9,334 net kW (net of free riders).

On February 13, 2007, the Commission issued Decision and Order No. 23258 in the Energy Efficiency proceeding (Docket No. 05-0069). The Commission ordered that the energy efficiency programs transition to a non-utility administrator by January 2009. Effective July 1, 2009, the administration of the Company’s energy efficiency DSM programs was transferred to the Hawaii Energy Efficiency Programs (“HEEP”) Administrator. Therefore, energy efficiency program impacts for customers who participated in the programs prior to July 1, 2009 are based on HELCO records. Projected long-term energy efficiency DSM impacts reflected in the adequacy of supply analyses are based on the utility’s estimates developed prior to July 1, 2009. Adjustments to the long-term projection will be made as further information becomes available from the third party administrator.

Reserve Margins

Attachment 1 shows the expected reserve margin over the next three years, based on HELCO’s 2009-2014 Sales and Peak Forecast, dated March 24, 2009, and HELCO’s latest estimate of forecasted DSM impacts. (Attachment 1 also shows the estimated reserve margins without future DSM.) Attachment 2 details the gross and net ratings of HELCO units and Independent Power Producer (“IPP”) units.

HELCO has entered into a Power Purchase Agreement (“PPA”) with Tradewinds Forest Products, LLC (“Tradewinds”) in which HELCO will purchase from Tradewinds approximately 13,220 MWh per year on a scheduled basis.³ The Tradewinds facility is estimated to be in service by mid-2012. An application for Commission approval of the Tradewinds PPA is expected to be filed later this year, after PPA Amendment No. 1 is completed, which will incorporate items from the Tradewinds Interconnection Requirements Study. In 2009, HELCO negotiated and reached agreements in principle to purchase additional firm, dispatchable energy from Hu Honua Bioenergy, LLC, (“Hu Honua”) and PGV. In accordance with the term sheet signed on March 13, 2009, Hu Honua is anticipated to produce and deliver approximately 21.5 MW of firm, dispatchable energy to HELCO. Per the Memorandum of Understanding dated July 31, 2009, between HELCO and PGV, PGV is anticipated to produce and deliver an additional 8

³ Under the terms of the PPA, Tradewinds will have the opportunity to increase the amount of energy supplied to HELCO to 14,000 MWh per year.



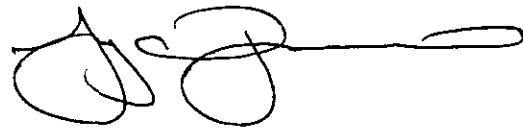
MW of firm, dispatchable energy to HELCO. The dates of commercial operation for Hu Honua and PGV are predicated on the execution of final PPAs and Commission approvals of the PPAs. Therefore, the in-service dates for the projects are uncertain at this time and their capacities are not included in the reserve margin calculations.

The following capacity planning criterion is used to determine the need for additional generation:

The sum of the reserve ratings of all available units, minus the reserve rating of the largest available unit, minus the reserve ratings of any units on maintenance, must be equal to or greater than the system peak load to be supplied.

HELCO's generation capacity for the Big Island for the next three years is sufficiently large to meet all reasonably expected demands for service and provide reasonable reserves for emergencies.

Very truly yours,

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

Attachments

c: Division of Consumer Advocacy (with Attachments)



Table 1
Adequacy of Supply

Year	System Capability at Annual Peak Load (net kW) [A] ⁽ⁱⁱⁱ⁾	Notes	Without Future DSM (Includes Acquired DSM) ⁽ⁱ⁾		With Future DSM (Includes Acquired DSM) ⁽ⁱⁱ⁾	
			System Peak (net kW) [B] ^(iv)	Reserve Margin (%) [[A-B]/B] ^(ix)	System Peak (net kW) [C] ^(iv)	Reserve Margin (%) [[A-C]/C] ^(ix)
<i>Recorded</i>						
2009	277,500	(v)	194,600	42.6%	N/A	N/A
<i>Future</i>						
2010	285,500	(vi)	193,700	47.4%	192,500	48.3%
2011	285,500	(vii)	196,100	45.6%	194,000	47.2%
2012	285,500	(viii)	199,000	43.5%	196,000	45.7%

Notes:

(I) System Peaks (Without Future Peak Reduction Benefits of DSM Programs):

- Implementation of full-scale DSM programs began in the first quarter of 1996 following Commission approval of the programs. On February 13, 2007, the Commission issued Decision and Order No. 23258 in the Energy Efficiency proceeding (Docket No. 05-0069). The Commission ordered that the energy efficiency programs transition to a non-utility administrator by January 2009. Effective July 1, 2009, the administration of the company's energy efficiency DSM programs was transferred to the Hawaii Energy Efficiency Programs ("HEEP") Administrator.
- The forecasted system peak values for the years 2010-2012 include the actual peak reduction benefits acquired in 1996-2008 and the estimated peak reduction benefits acquired in 2009, as well as the benefits of the Rider M and Schedule U contracts.

(II) System Peaks (With Future Peak Reduction Benefits of DSM Programs):

- The forecasted system peaks for 2010-2012 include the peak reduction benefits of the DSM programs (acquired and future) and the Rider M and Schedule U contracts.

- (III) On October 20, 2008, the Governor of the State of Hawaii, the State Department of Business, Economic Development & Tourism, the State Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies executed the Hawaii Clean Energy Initiative Agreement (“Energy Agreement”), which documents a course of action to move the State away from its dependence on imported fossil fuels for electricity and ground transportation, and toward “indigenously produced renewable energy and an ethic of energy efficiency.” A product of the Hawaii Clean Energy Initiative, the Energy Agreement is a commitment on the part of the State of Hawaii and the Hawaiian Electric Companies to accelerate the addition of new, clean resources on all islands. The impact of these potential resources on the HELCO system is not reflected in this Adequacy of Supply as the extent and timing of these impacts are uncertain at this time.
- (IV) The 2010-2012 annual forecasted system peaks are based on:
- HELCO’s 2009-2014 Sales and Peak Forecast, dated March 24, 2009. The HELCO annual forecasted system peak is expected to occur in the month of December.
- (V) System Capability for 2009 includes:
- HELCO units at a total of 195,500 kW net (201,800 kW gross). This includes the addition of Keahole ST-7, a nominal 14,500 kW (net) steam turbine generator (Phase III of a nominal 56,250 kW (net) dual train combined-cycle unit). Keahole ST-7 became available for commercial operation on June 22, 2009.
 - Firm power purchase contracts with a combined net total of 82,000 kW from PGV (22,000 kW) and HEP (60,000 kW).
- (VI) System Capability for 2010 includes:
- HELCO units at a total of 195,500 kW net (201,800 kW gross).
 - Firm power purchase contracts with a combined net total of 90,000 kW from PGV (30,000 kW) and HEP (60,000 kW).
- (VII) System Capability for 2011 includes:
- HELCO units at a total of 195,500 kW net (201,800 kW gross).
 - Firm power purchase contracts with a combined net total of 90,000 kW from PGV (30,000 kW) and HEP (60,000 kW).

(VIII) System Capability for 2012 includes:

- HELCO units at a total of 195,500 kW net (201,800 kW gross).
- Firm power purchase contracts with a combined net total of 90,000 kW from PGV (30,000 kW) and HEP (60,000 kW).

(IX) Reserve Margin

- The reserve margins shown for 2010-2012 assume that HEP and PGV are at full ratings.

**HELCO Adequacy of Supply
 2009 Unit Ratings (Firm Capacity at Actual System Peak in December 2009)**

Unit	(Gross MW)		(Net MW)	
	Reserve Rating (MW)	NTL Rating (MW)	Reserve Rating (MW)	NTL Rating (MW)
Shipman 3	7.50	7.50	7.10	7.10
Shipman 4	7.70	7.70	7.30	7.30
Hill 5	14.10	14.10	13.50	13.50
Hill 6	21.40	21.40	20.20	20.20
Puna	15.50	15.50	14.10	14.10
Kanoelehua D11	2.00	2.00	2.00	2.00
Waimea D12	2.75	2.50	2.75	2.50
Waimea D13	2.75	2.50	2.75	2.50
Waimea D14	2.75	2.50	2.75	2.50
Kanoelehua D15	2.75	2.50	2.75	2.50
Kanoelehua D16	2.75	2.50	2.75	2.50
Kanoelehua D17	2.75	2.50	2.75	2.50
Keahole D21	2.75	2.50	2.75	2.50
Keahole D22	2.75	2.50	2.75	2.50
Keahole D23	2.75	2.50	2.75	2.50
Kanoelehua CT-1	11.50	11.50	11.50	11.50
Keahole CT-2	13.80 (I)	13.80 (I)	13.80 (I)	13.80 (I)
Puna CT-3	21.00 (II)	21.00 (II)	21.00 (II)	21.00 (II)
Keahole CT-4/CT-5/ST-7	58.50 (III)	58.50 (III)	56.25 (III)	56.25 (III)
Panaewa D24	1.00	1.00	1.00	1.00
Ouli D25	1.00	1.00	1.00	1.00
Punaluu D26	1.00	1.00	1.00	1.00
Kapua D27	1.00	1.00	1.00	1.00
HELCO Total	201.75	199.50	195.50	193.25
PGV	22.00 (IV)	22.00 (IV)	22.00 (IV)	22.00 (IV)
HEP	60.00	60.00	60.00	60.00
IPP Total	82.00	82.00	82.00	82.00
System Total	283.75	281.50	277.50	275.25

Notes:

- (I) Work performed on Keahole CT-2 has resulted in increased capability.
- (II) Work performed on Puna CT-3 has resulted in increased capability.
- (III) Keahole ST-7 was placed in-service on June 22, 2009. Keahole CT-4 and CT-5 were converted to dual train combined cycle (DTCC) with the addition of Keahole ST-7. Keahole DTCC capacity has been adjusted based on performance test results.
- (IV) PGV has been derated since March 2009 due to well problems. PGV has been working to restore its capacity and expects to have its capacity restored to 30 MW by June 2010. PGV's rating reflects approximate output during the system peak.

**HELCO Adequacy of Supply
 2010-2012 Unit Ratings (Firm Capacity at Forecasted System Peak in December
 2010-2012)**

Unit	(Gross MW)		(Net MW)	
	Reserve Rating (MW)	NTL Rating (MW)	Reserve Rating (MW)	NTL Rating (MW)
Shipman 3	7.50	7.50	7.10	7.10
Shipman 4	7.70	7.70	7.30	7.30
Hill 5	14.10	14.10	13.50	13.50
Hill 6	21.40	21.40	20.20	20.20
Puna	15.50	15.50	14.10	14.10
Kanoelehua D11	2.00	2.00	2.00	2.00
Waimea D12	2.75	2.50	2.75	2.50
Waimea D13	2.75	2.50	2.75	2.50
Waimea D14	2.75	2.50	2.75	2.50
Kanoelehua D15	2.75	2.50	2.75	2.50
Kanoelehua D16	2.75	2.50	2.75	2.50
Kanoelehua D17	2.75	2.50	2.75	2.50
Keahole D21	2.75	2.50	2.75	2.50
Keahole D22	2.75	2.50	2.75	2.50
Keahole D23	2.75	2.50	2.75	2.50
Kanoelehua CT-1	11.50	11.50	11.50	11.50
Keahole CT-2	13.80	13.80	13.80	13.80
Puna CT-3	21.00	21.00	21.00	21.00
Keahole CT-4/CT-5/ST-7	58.50	58.50	56.25	56.25
Panaewa D24	1.00	1.00	1.00	1.00
Ouli D25	1.00	1.00	1.00	1.00
Punaluu D26	1.00	1.00	1.00	1.00
Kapua D27	1.00	1.00	1.00	1.00
HELCO Total	201.75	199.50	195.50	193.25
PGV	30.00 (I)	30.00 (I)	30.00 (I)	30.00 (I)
HEP	60.00	60.00	60.00	60.00
IPP Total	90.00	90.00	90.00	90.00
System Total	291.75	289.50	285.50	283.25

Notes:

(I) PGV has been derated since March 2009 due to well problems. PGV has been working to restore its capacity and expects to have its capacity restored to 30 MW by June 2010.