



September 15, 2016

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The Honorable Chair and Members  
of the Hawai'i Public Utilities Commission  
Kekuanaoa Building, 1st Floor  
465 South King Street  
Honolulu, Hawai'i 96813

PUBLIC UTILITIES  
COMMISSION

Dear Commissioners:

Subject: Docket No. 2011-0206  
Reliability Standards Working Group  
Monthly Report

Pursuant to Ordering Paragraph 3 of the Commission's Order No. 30371, filed on May 4, 2012, in the above subject proceeding, enclosed as Exhibit A is the Hawaiian Electric Companies'<sup>1</sup> monthly report for August 2016 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

In addition, an electronic copy of each report is also included with this filing. These files are voluminous, and therefore, the Companies are providing a compact disc ("CD") containing the electronic files to both the Commission and the Consumer Advocate. Copies of the CD will be available to any Party to this proceeding. Interested Parties should email Marisa Chun at [marisa.chun@heco.com](mailto:marisa.chun@heco.com) to request a copy.

If you have any questions on this matter, please contact Marisa Chun at (808) 543-4723.

Sincerely,

Daniel G. Brown  
Manager  
Regulatory Non-Rate Proceedings

Enclosure

c: Service List

<sup>1</sup> Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc., and Maui Electric Company, Limited are collectively referred to as the "Hawaiian Electric Companies" or "Companies".

SERVICE LIST  
(Docket No. 2011-0206)

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**The Commission's Order No. 30371 (Docket No 2011-0206 – Relating To Various Matters in RSWG Process), filed May 4, 2012, ordered the following information for each island grid:**

- (1) System frequency control performance during month:
  - a) Frequency duration plot based on the highest resolution SCADA data available for the month detailing how many seconds each power system operated at frequencies above 60 hertz and at frequencies below 60 Hz.
  - b) Tabulation of the number, magnitude and duration of frequency excursions (high and low) outside normal frequency control range (59.95 to 60.05 Hz).

The following provides information with respect to items 1a) through 1b) – (all statements are current as of the month ending August 31, 2016):

**1a) Frequency duration plot based on the highest resolution SCADA data available for the month detailing how many seconds each power system operated at frequencies above 60 hertz and at frequencies below 60 Hz:**

The frequency duration plots for Hawaiian Electric, Maui Electric (Maui Division) and Hawai'i Electric Light based on two-second data are provided in Attachment 1, and the enclosed Excel files. Refer to the electronic files for the individual data points because the information is voluminous and does not translate well to a hard copy.

**1b) Tabulation of the number, magnitude and duration of frequency excursions (high and low) outside normal frequency control range (59.95 to 60.05 Hz):**

Tabulation of the number, magnitude and duration of frequency excursions outside of the frequency range of 59.95 Hz to 60.05 Hz for Hawaiian Electric, Maui Electric (Maui Division) and Hawai'i Electric Light are provided in Attachment 2, and the enclosed Excel files. Refer to the electronic files for the individual data points because the information is voluminous and does not translate well to a hard copy.

- (2) Significant system events during month:
  - a) Tabulation of contingency reserve activations including date and time, MW magnitude, duration, and triggering event.
  - b) Tabulation of under frequency load shed activations including date and time, triggering frequency, MW magnitude, duration, and triggering event.
  - c) Tabulation of demand response activations for system events, including date and time, MW magnitude, duration, and triggering event, (excluding demand response utilization for unit commitment deferral or system operations economics.)

The following provides information with respect to items 2a) through 2c) – (all statements are current as of the month ending August 31, 2016):

**2a) Tabulation of contingency reserve activations including date and time, MW magnitude, duration, and triggering event:**

Hawaiian Electric's contingency reserve activations are provided in Attachment 3. Maui Electric and Hawai'i Electric Light do not operate with contingency reserve requirements.

**2b) Tabulation of under frequency load shed activations including date and time, triggering frequency, MW magnitude, duration, and triggering event:**

Hawai'i Electric Light's under frequency load shed activations are provided in Attachment 4. Hawaiian Electric and Maui Electric did not have any under frequency load shed activations for the month of August.

**2c) Tabulation of demand response activations for system events, including date and time, MW magnitude, duration, and triggering event, (excluding demand response utilization for unit commitment deferral or system operations economics.)**

Hawaiian Electric's demand response activations for system events is provided in Attachment 5. Hawai'i Electric Light currently does not have demand response program. Maui Electric has implemented the Fast Demand Response pilot program on a limited basis. Hawai'i Electric Light plans to use the findings of Maui Electric's pilot program to help in the evaluation and development of future demand response programs. Maui Electric executes a weekly testing protocol which measures customer participation. This program is not currently used in response to actual system events.

- (3) Curtailment of non-dispatchable renewable resources:
- (a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment.
  - (b) Total MWh of non-dispatchable renewable resources curtailed for the month.

The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending August 31, 2016):

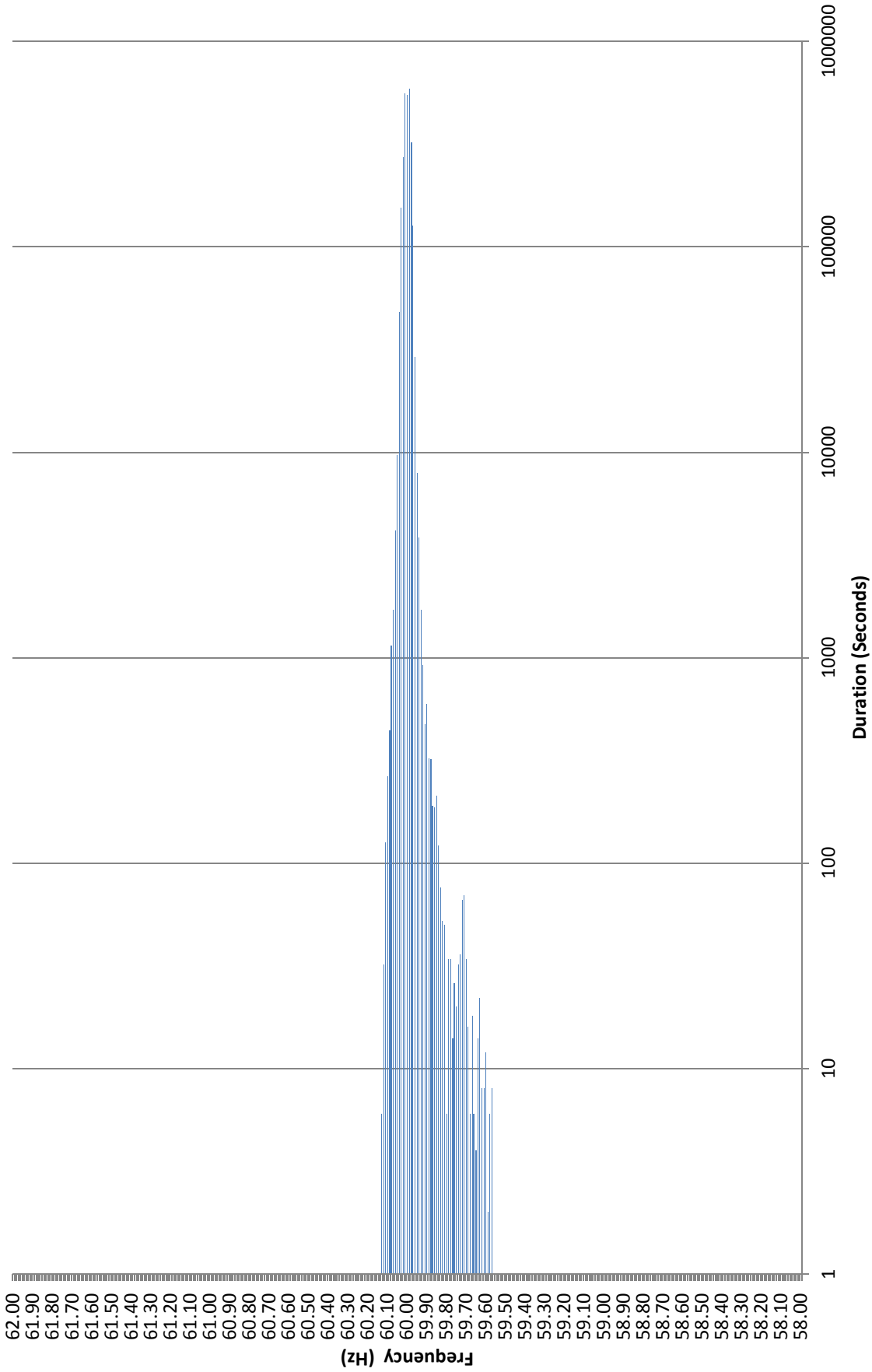
**3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:**

The tabulation of each curtailment event for each resource is provided in Attachment 6.

**3b) Total MWh of non-dispatchable renewable resources curtailed for the month:**

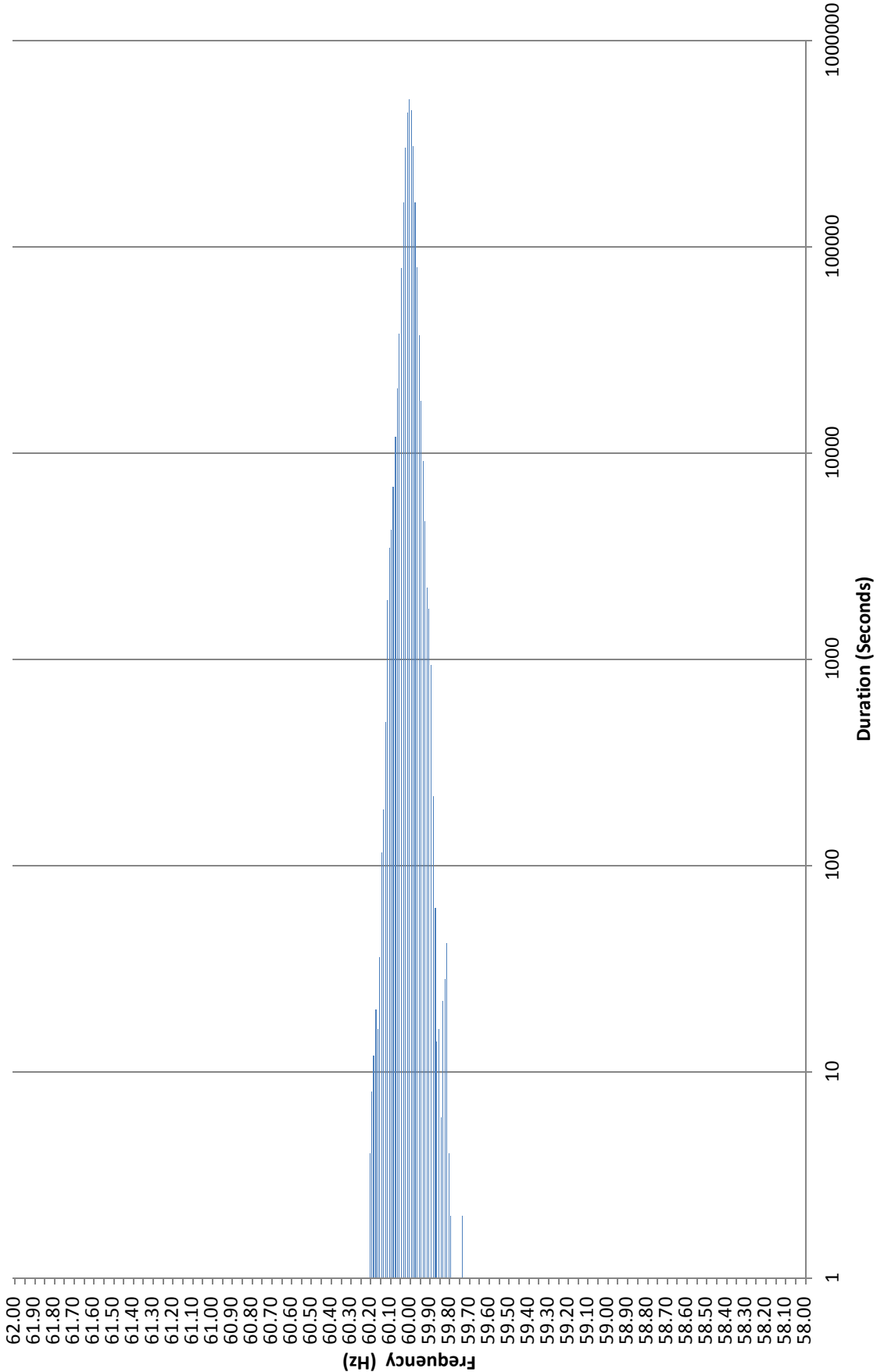
Curtailed MWh from non-dispatchable resources are difficult to determine due to the variability of the resource during curtailment periods. In some cases, the curtailed MWh estimates were provided by the IPPs under curtailment. The Hawaiian Electric Companies do not make any representations as to the accuracy of the curtailed MWh. The estimated MWh of non-dispatchable resources curtailed for the month are provided in Attachment 6, corresponding to each curtailment event.

# Frequency Distribution Plot - Hawaiian Electric August 2016

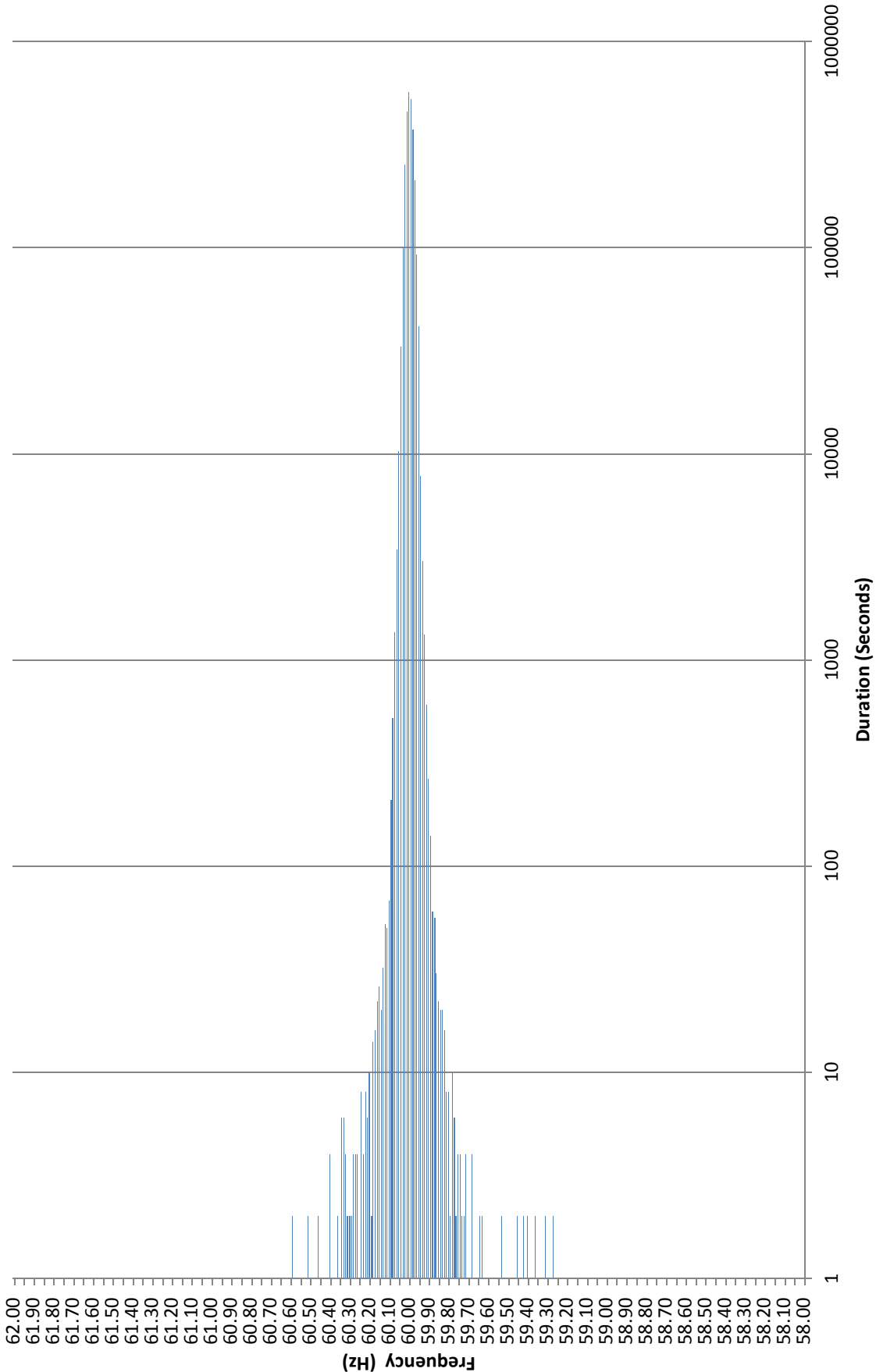




**Maui Electric Frequency Distribution Plot - Maui  
August 2016**



**Frequency Distribution Plot - Hawai'i Electric Light  
August 2016**



Hawaiian Electric Frequency Excursion Statistics August 2016		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	616	663
Maximum Duration (sec)	866	884
Maximum Deviation (Hz)	59.567	60.13
Total Duration of Excursions (sec)	12238	10826

Maui Electric Frequency Excursion Statistics August 2016		
	<59.95 Hz	>60.05 Hz
Number of Excursions	8895	8755
Maximum Duration (sec)	506	538
Maximum Deviation (Hz)	59.7344	60.197
Total Duration of Excursions (sec)	51940	65412

Hawai'i Electric Light Frequency Excursion Statistics August 2016		
	<59.95 Hz	>60.05 Hz
Number of Excursions	6852	2205
Maximum Duration (sec)	116	142
Maximum Deviation (Hz)	59.266	60.590
Total Duration of Excursions (sec)	33830	9734









Hawaiian Electric Curtailment Report August 2016

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
08/05/16 06:44	0.0	17.60	08/05/16 08:00	0	*	KWF	System constraints
08/05/16 06:48	0.0	3.20	08/05/16 08:02	0	*	Makai	System constraints
08/05/16 17:47	0.0	16.60	08/05/16 18:59	0	*	KWF	System constraints
08/05/16 17:51	0.0	2.00	08/05/16 19:00	0	*	Makai	System constraints
08/12/16 07:18	0.0	1.00	08/13/16 10:30	0	*	KREP	System constraints

KLS2 = Kalaeloa Solar 2 PV Farm  
KREP = Kalaeloa Renewable Energy Park  
KWF = Kahuku Wind Farm  
Makai = Kawaiiloa Makai Wind Farm  
Mauka = Kawaiiloa Mauka Wind Farm

(1) The estimated MWh of energy curtailed during the event is supplied by Kahuku Wind Farm and/or Kawaiiloa Wind Farm, and HECO does not make any representations as to its accuracy.

\* Data has not been provided by IPP.



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
8/1/2016 4:04	0:01	AWE	0.011	19.040	Oversupply
8/1/2016 4:09	0:02	AWE	0.005	19.220	Oversupply
8/1/2016 4:12	0:03	AWE	0.030	20.173	Oversupply
8/1/2016 4:22	0:07	AWE	0.042	21.000	Oversupply
8/1/2016 9:47	0:01	KWPII	0.015	6.103	Oversupply
8/1/2016 10:55	0:44	KWPII	5.638	14.073	Oversupply
8/1/2016 11:05	0:06	AWE	0.158	21.000	Oversupply
8/1/2016 11:14	0:01	AWE	0.000	20.993	Oversupply
8/1/2016 11:16	0:12	AWE	0.182	21.000	Oversupply
8/1/2016 11:29	0:04	AWE	0.014	21.000	Oversupply
8/1/2016 11:41	0:02	KWPII	0.070	7.232	Oversupply
8/1/2016 11:45	0:07	KWPII	0.799	13.442	Oversupply
8/1/2016 11:53	0:04	KWPII	0.267	11.652	Oversupply
8/1/2016 11:58	0:05	KWPII	0.209	11.106	Oversupply
8/1/2016 12:08	0:01	KWPII	0.015	11.713	Oversupply
8/1/2016 12:21	0:01	KWPII	0.006	10.820	Oversupply
8/1/2016 12:51	0:02	KWPII	0.036	11.773	Oversupply
8/1/2016 14:32	0:05	KWPII	0.231	7.054	Oversupply
8/1/2016 14:33	0:01	AWE	0.015	17.790	Oversupply
8/1/2016 14:38	0:04	KWPII	0.202	9.338	Oversupply
8/1/2016 14:45	0:13	KWPII	0.495	12.213	Oversupply
8/1/2016 15:15	0:04	KWPII	0.245	13.804	Oversupply
8/1/2016 15:20	0:31	KWPII	4.508	19.074	Oversupply
8/1/2016 15:26	0:01	AWE	0.001	20.960	Oversupply
8/1/2016 15:52	0:22	KWPII	1.831	19.160	Oversupply
8/1/2016 22:23	0:03	KWPII	0.143	17.433	Oversupply
8/1/2016 22:28	0:10	KWPII	0.752	15.178	Oversupply
8/2/2016 3:38	0:03	AWE	0.067	17.300	Oversupply
8/2/2016 3:38	0:04	KWPII	0.014	1.291	Oversupply
8/2/2016 3:50	0:02	KWPII	0.014	0.886	Oversupply
8/2/2016 3:50	0:07	AWE	0.175	17.867	Oversupply
8/2/2016 3:53	0:04	KWPII	0.043	0.705	Oversupply
8/2/2016 3:58	0:23	AWE	0.952	20.880	Oversupply
8/2/2016 3:58	1:18	KWPII	11.017	17.903	Oversupply
8/2/2016 4:22	0:01	AWE	0.008	17.373	Oversupply
8/2/2016 4:26	0:04	AWE	0.074	20.397	Oversupply
8/2/2016 4:31	0:09	AWE	0.217	20.940	Oversupply
8/2/2016 4:41	0:22	AWE	1.303	20.813	Oversupply
8/2/2016 5:04	0:02	AWE	0.041	19.883	Oversupply
8/2/2016 5:19	0:14	KWPII	1.072	14.348	Oversupply
8/2/2016 5:47	0:01	KWPII	0.002	10.241	Oversupply
8/2/2016 6:26	0:05	KWPII	0.333	18.955	Oversupply
8/2/2016 6:42	1:34	KWPII	9.659	20.708	Oversupply
8/2/2016 8:27	0:03	KWPII	0.008	20.708	Oversupply
8/2/2016 8:34	0:11	KWPII	0.241	20.708	Oversupply
8/2/2016 8:48	0:35	KWPII	2.400	20.708	Oversupply
8/2/2016 9:24	1:59	KWPII	11.823	20.708	Oversupply
8/2/2016 11:24	0:01	KWPII	0.043	16.871	Oversupply
8/2/2016 12:28	0:01	KWPII	0.004	17.341	Oversupply
8/2/2016 12:33	0:04	KWPII	0.103	15.422	Oversupply
8/2/2016 12:55	0:01	KWPII	0.008	17.479	Oversupply
8/2/2016 13:04	0:04	KWPII	0.105	18.378	Oversupply
8/2/2016 13:10	0:40	KWPII	3.610	20.659	Oversupply
8/2/2016 14:03	0:02	KWPII	0.031	20.329	Oversupply
8/2/2016 14:21	0:05	KWPII	0.073	20.558	Oversupply
8/2/2016 14:28	0:03	KWPII	0.039	20.166	Oversupply
8/2/2016 14:47	0:01	KWPII	0.003	20.624	Oversupply
8/3/2016 2:18	1:10	KWPII	8.660	20.708	Oversupply
8/3/2016 3:41	1:46	KWPII	7.437	20.708	Oversupply
8/3/2016 5:28	0:04	KWPII	0.069	20.701	Oversupply
8/3/2016 5:51	0:01	KWPII	0.004	19.957	Oversupply
8/3/2016 7:42	0:04	KWPII	0.045	20.063	Oversupply
8/3/2016 7:50	0:01	KWPII	0.008	18.483	Oversupply
8/3/2016 8:07	0:20	KWPII	0.918	18.993	Oversupply
8/3/2016 10:54	0:01	KWPII	0.009	15.136	Oversupply
8/3/2016 10:57	0:01	KWPII	0.004	16.261	Oversupply
8/3/2016 13:05	0:02	KWPII	0.093	14.764	Oversupply
8/3/2016 13:10	1:10	KWPII	5.858	20.445	Oversupply
8/3/2016 22:22	0:03	KWPII	0.031	20.299	Oversupply
8/3/2016 22:48	0:02	KWPII	0.018	20.534	Oversupply
8/3/2016 23:44	0:02	KWPII	0.019	20.638	Oversupply
8/3/2016 23:49	3:00	KWPII	23.076	20.708	Oversupply
8/4/2016 4:51	0:10	KWPII	0.398	16.069	Oversupply
8/4/2016 5:04	1:15	KWPII	7.638	20.708	Oversupply
8/4/2016 7:52	0:08	KWPII	0.112	20.703	Oversupply
8/4/2016 8:07	0:01	KWPII	0.003	20.706	Oversupply
8/4/2016 10:26	0:02	KWPII	0.007	20.704	Oversupply
8/4/2016 10:33	0:02	KWPII	0.011	20.552	Oversupply
8/4/2016 10:36	0:01	KWPII	0.012	20.642	Oversupply
8/4/2016 10:43	0:20	KWPII	0.742	20.702	Oversupply
8/4/2016 11:05	0:01	KWPII	0.006	20.654	Oversupply
8/4/2016 14:16	0:01	KWPII	0.001	20.346	Oversupply
8/4/2016 15:51	0:10	KWPII	0.280	20.665	Oversupply
8/4/2016 16:13	0:01	KWPII	0.004	20.698	Oversupply
8/5/2016 0:21	0:04	KWPII	0.071	20.708	Oversupply
8/5/2016 0:45	0:10	KWPII	0.404	20.708	Oversupply
8/5/2016 1:50	0:34	KWPII	2.063	20.708	Oversupply
8/5/2016 3:06	0:03	KWPII	0.031	20.708	Oversupply
8/5/2016 8:44	0:01	AWE	0.000	0.013	Oversupply
8/5/2016 10:15	0:12	KWPII	0.428	20.708	Oversupply
8/5/2016 10:40	1:20	KWPII	9.782	20.707	Oversupply
8/5/2016 12:01	0:43	KWPII	2.785	20.708	Oversupply
8/5/2016 12:50	0:29	KWPII	1.237	20.706	Oversupply
8/5/2016 22:58	0:16	KWPII	0.458	20.661	Oversupply
8/6/2016 14:35	0:01	AWE	0.000	0.007	Oversupply
8/6/2016 14:37	0:01	AWE	0.000	0.003	Oversupply
8/7/2016 6:13	0:01	KWPII	0.000	0.000	Oversupply
8/8/2016 8:28	0:06	KWPII	0.284	15.859	Oversupply
8/8/2016 8:35	0:07	KWPII	0.224	17.629	Oversupply
8/8/2016 8:43	0:01	KWPII	0.039	18.142	Oversupply
8/9/2016 3:38	0:01	KWPII	0.004	17.974	Oversupply
8/9/2016 3:41	0:01	KWPII	0.002	19.580	Oversupply
8/9/2016 7:54	0:01	KWPII	0.025	18.611	Oversupply
8/9/2016 8:43	0:20	KWPII	0.508	19.157	Oversupply
8/9/2016 21:52	0:01	KWPII	0.005	20.283	Oversupply
8/9/2016 21:56	0:13	KWPII	0.422	20.586	Oversupply



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
8/9/2016 22:29	0:03	KWPPI	0.047	20.582	Oversupply
8/9/2016 22:44	0:10	KWPPI	0.293	20.501	Oversupply
8/9/2016 23:22	0:05	KWPPI	0.095	20.456	Oversupply
8/10/2016 0:19	0:19	KWPPI	0.855	20.461	Oversupply
8/10/2016 0:46	1:49	KWPPI	20.282	20.702	Oversupply
8/10/2016 1:48	0:01	AWE	0.001	21.000	Oversupply
8/10/2016 2:41	0:01	KWPPI	0.010	20.663	Oversupply
8/10/2016 2:43	0:09	KWPPI	0.206	20.691	Oversupply
8/10/2016 2:53	1:13	KWPPI	7.911	20.708	Oversupply
8/10/2016 4:47	0:22	KWPPI	1.865	20.575	Oversupply
8/10/2016 8:22	0:15	KWPPI	0.744	20.707	Oversupply
8/10/2016 8:52	0:04	KWPPI	0.034	20.691	Oversupply
8/10/2016 8:57	0:14	KWPPI	0.220	20.708	Oversupply
8/10/2016 9:12	0:01	KWPPI	0.002	20.680	Oversupply
8/10/2016 9:14	0:15	KWPPI	0.566	20.692	Oversupply
8/10/2016 9:31	0:02	KWPPI	0.015	20.641	Oversupply
8/10/2016 9:34	0:04	KWPPI	0.029	20.658	Oversupply
8/10/2016 9:39	0:06	KWPPI	0.069	20.625	Oversupply
8/10/2016 9:46	0:03	KWPPI	0.006	20.671	Oversupply
8/10/2016 9:50	1:56	KWPPI	17.963	20.708	Oversupply
8/10/2016 11:47	0:01	KWPPI	0.013	20.134	Oversupply
8/10/2016 11:51	0:01	KWPPI	0.044	20.312	Oversupply
8/10/2016 11:57	0:04	KWPPI	0.041	20.391	Oversupply
8/10/2016 12:09	0:36	KWPPI	3.887	20.708	Oversupply
8/10/2016 12:48	0:01	KWPPI	0.007	20.700	Oversupply
8/10/2016 12:58	0:01	KWPPI	0.003	20.696	Oversupply
8/10/2016 13:28	0:45	KWPPI	1.664	20.676	Oversupply
8/10/2016 22:22	0:05	KWPPI	0.153	20.708	Oversupply
8/10/2016 22:32	0:05	KWPPI	0.082	20.708	Oversupply
8/11/2016 2:43	0:02	KWPPI	0.006	20.708	Oversupply
8/11/2016 2:49	1:10	KWPPI	3.729	20.708	Oversupply
8/11/2016 4:00	0:29	KWPPI	0.885	20.708	Oversupply
8/11/2016 4:54	0:03	KWPPI	0.007	20.708	Oversupply
8/11/2016 8:04	0:04	KWPPI	0.039	20.708	Oversupply
8/11/2016 8:22	0:01	KWPPI	0.002	20.707	Oversupply
8/11/2016 8:25	0:05	KWPPI	0.081	20.708	Oversupply
8/11/2016 8:40	0:01	KWPPI	0.001	20.707	Oversupply
8/11/2016 8:43	2:08	KWPPI	14.580	20.708	Oversupply
8/11/2016 10:53	0:03	KWPPI	0.078	20.153	Oversupply
8/11/2016 10:58	0:01	KWPPI	0.004	19.972	Oversupply
8/11/2016 11:00	0:19	KWPPI	1.138	20.594	Oversupply
8/11/2016 11:25	0:01	KWPPI	0.001	19.090	Oversupply
8/11/2016 11:48	1:01	KWPPI	7.026	20.337	Oversupply
8/11/2016 14:03	0:32	KWPPI	1.250	20.605	Oversupply
8/11/2016 22:52	0:12	KWPPI	0.300	20.708	Oversupply
8/11/2016 23:26	0:25	KWPPI	0.842	20.708	Oversupply
8/11/2016 23:56	0:06	KWPPI	0.079	20.708	Oversupply
8/12/2016 0:14	0:20	KWPPI	1.146	20.708	Oversupply
8/12/2016 0:47	5:15	KWPPI	62.974	20.708	Oversupply
8/12/2016 3:34	0:05	AWE	0.099	19.007	Oversupply
8/12/2016 3:46	0:22	AWE	0.841	21.000	Oversupply
8/12/2016 4:16	0:01	AWE	0.000	19.090	Oversupply
8/12/2016 4:22	0:04	AWE	0.050	20.940	Oversupply
8/12/2016 4:29	0:01	AWE	0.004	20.480	Oversupply
8/12/2016 4:32	0:02	AWE	0.004	20.900	Oversupply
8/12/2016 4:36	0:09	AWE	0.019	21.000	Oversupply
8/12/2016 4:46	0:01	AWE	0.001	21.000	Oversupply
8/12/2016 6:03	0:01	KWPPI	0.001	19.974	Oversupply
8/12/2016 6:05	0:05	KWPPI	0.036	20.569	Oversupply
8/12/2016 6:11	0:02	KWPPI	0.008	20.626	Oversupply
8/12/2016 6:15	0:01	KWPPI	0.001	20.653	Oversupply
8/12/2016 6:18	0:16	KWPPI	0.352	20.702	Oversupply
8/12/2016 7:35	0:01	KWPPI	0.000	20.708	Oversupply
8/12/2016 7:38	6:45	KWPPI	90.754	20.708	Oversupply
8/12/2016 11:03	0:02	AWE	0.001	21.000	Oversupply
8/12/2016 11:07	0:02	AWE	0.005	21.000	Oversupply
8/12/2016 11:34	0:01	AWE	0.001	21.000	Oversupply
8/12/2016 11:38	0:10	AWE	0.014	21.000	Oversupply
8/12/2016 12:25	0:03	AWE	0.003	21.000	Oversupply
8/12/2016 12:41	0:02	AWE	0.004	21.000	Oversupply
8/12/2016 12:44	0:07	AWE	0.040	21.000	Oversupply
8/12/2016 13:18	0:02	AWE	0.007	21.000	Oversupply
8/12/2016 13:24	0:05	AWE	0.015	21.000	Oversupply
8/12/2016 13:47	0:02	AWE	0.002	21.000	Oversupply
8/12/2016 14:24	0:06	KWPPI	0.101	20.681	Oversupply
8/13/2016 2:33	0:02	KWPPI	0.006	20.591	Oversupply
8/13/2016 2:43	0:05	KWPPI	0.062	20.602	Oversupply
8/13/2016 4:15	1:23	KWPPI	10.222	20.632	Oversupply
8/13/2016 5:39	0:01	KWPPI	0.020	20.040	Oversupply
8/13/2016 7:44	0:02	KWPPI	0.011	20.665	Oversupply
8/13/2016 8:09	0:07	KWPPI	0.128	20.688	Oversupply
8/13/2016 8:36	0:53	KWPPI	3.087	20.698	Oversupply
8/13/2016 9:30	0:02	KWPPI	0.020	19.893	Oversupply
8/13/2016 14:00	0:01	KWPPI	0.005	20.327	Oversupply
8/13/2016 14:04	1:08	KWPPI	4.760	20.708	Oversupply
8/13/2016 15:14	0:03	KWPPI	0.027	19.955	Oversupply
8/13/2016 15:29	0:36	KWPPI	1.251	20.581	Oversupply
8/14/2016 0:28	0:01	KWPPI	0.001	20.468	Oversupply
8/14/2016 2:05	0:19	KWPPI	1.508	20.319	Oversupply
8/14/2016 2:37	0:39	KWPPI	2.244	20.527	Oversupply
8/14/2016 3:32	1:44	KWPPI	13.584	20.588	Oversupply
8/14/2016 7:51	0:01	KWPPI	0.008	19.547	Oversupply
8/14/2016 8:28	0:01	KWPPI	0.008	18.764	Oversupply
8/14/2016 8:31	2:53	KWPPI	25.002	20.282	Oversupply
8/14/2016 11:26	0:05	KWPPI	0.057	17.829	Oversupply
8/14/2016 12:15	0:12	KWPPI	0.502	17.405	Oversupply
8/14/2016 23:18	0:04	KWPPI	0.038	19.849	Oversupply
8/14/2016 23:39	0:26	KWPPI	1.808	20.682	Oversupply
8/15/2016 0:06	0:05	KWPPI	0.059	20.320	Oversupply
8/15/2016 0:12	3:59	KWPPI	53.197	20.683	Oversupply
8/15/2016 3:41	0:14	AWE	0.444	20.893	Oversupply
8/15/2016 4:12	1:12	KWPPI	14.509	20.655	Oversupply
8/15/2016 8:44	0:06	KWPPI	0.061	20.187	Oversupply
8/15/2016 9:48	0:01	KWPPI	0.003	19.900	Oversupply
8/15/2016 10:01	0:04	KWPPI	0.060	20.408	Oversupply
8/15/2016 10:19	0:31	KWPPI	1.197	20.680	Oversupply



**Maui Curtailment Report**

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
8/15/2016 10:51	0:25	KWPII	2.684	20.299	Oversupply
8/15/2016 11:33	0:01	KWPII	0.001	20.024	Oversupply
8/15/2016 11:43	0:03	KWPII	0.032	19.832	Oversupply
8/15/2016 11:53	0:36	KWPII	1.939	20.275	Oversupply
8/16/2016 1:05	2:55	KWPII	20.283	20.539	Oversupply
8/16/2016 4:58	0:03	KWPII	0.114	12.185	Oversupply
8/17/2016 11:04	0:01	KWPII	0.002	13.571	Oversupply
8/17/2016 21:58	0:11	KWPII	0.290	18.958	Oversupply
8/18/2016 0:58	0:08	KWPII	0.445	19.695	Oversupply
8/18/2016 1:29	0:04	KWPII	0.100	18.752	Oversupply
8/18/2016 1:38	0:10	KWPII	0.382	19.211	Oversupply
8/18/2016 2:29	1:29	KWPII	6.801	20.701	Oversupply
8/18/2016 8:43	0:01	KWPII	0.006	18.163	Oversupply
8/18/2016 8:45	0:02	KWPII	0.019	19.020	Oversupply
8/18/2016 9:01	0:09	KWPII	0.379	18.459	Oversupply
8/18/2016 9:11	0:01	KWPII	0.002	15.519	Oversupply
8/18/2016 11:41	2:09	KWPII	15.758	20.441	Oversupply
8/18/2016 23:18	0:01	KWPII	0.001	20.705	Oversupply
8/18/2016 23:21	0:15	KWPII	0.351	20.708	Oversupply
8/18/2016 23:40	0:01	KWPII	0.001	20.704	Oversupply
8/19/2016 0:38	0:03	KWPII	0.010	20.637	Oversupply
8/19/2016 1:02	0:15	KWPII	0.389	20.697	Oversupply
8/19/2016 4:03	0:02	KWPII	0.008	20.662	Oversupply
8/19/2016 8:25	0:04	KWPII	0.035	20.399	Oversupply
8/19/2016 9:06	0:25	KWPII	1.120	20.514	Oversupply
8/19/2016 9:39	3:57	KWPII	49.441	20.708	Oversupply
8/19/2016 13:40	0:02	KWPII	0.009	20.488	Oversupply
8/19/2016 13:46	0:57	KWPII	6.817	20.688	Oversupply
8/19/2016 14:54	0:15	KWPII	0.150	20.692	Oversupply
8/19/2016 22:35	0:03	KWPII	0.037	19.789	Oversupply
8/19/2016 22:48	0:14	KWPII	0.975	20.446	Oversupply
8/19/2016 23:07	0:08	KWPII	0.244	20.494	Oversupply
8/19/2016 23:16	0:04	KWPII	0.075	20.511	Oversupply
8/19/2016 23:30	0:05	KWPII	0.050	19.773	Oversupply
8/19/2016 23:37	0:11	KWPII	0.399	20.562	Oversupply
8/19/2016 23:49	0:06	KWPII	0.066	20.525	Oversupply
8/19/2016 23:59	5:36	KWPII	73.023	20.708	Oversupply
8/20/2016 5:39	0:05	KWPII	0.114	20.656	Oversupply
8/20/2016 6:01	0:20	KWPII	1.106	20.702	Oversupply
8/20/2016 6:38	0:03	KWPII	0.059	20.684	Oversupply
8/20/2016 6:43	0:23	KWPII	1.745	20.672	Oversupply
8/20/2016 7:11	0:01	KWPII	0.002	20.650	Oversupply
8/20/2016 7:16	0:02	KWPII	0.020	20.635	Oversupply
8/20/2016 7:19	6:30	KWPII	97.192	20.708	Oversupply
8/20/2016 11:09	0:02	AWE	0.027	18.493	Oversupply
8/20/2016 11:14	0:06	AWE	0.136	18.770	Oversupply
8/20/2016 11:23	0:02	AWE	0.028	17.673	Oversupply
8/20/2016 11:29	0:01	AWE	0.009	16.967	Oversupply
8/20/2016 11:36	0:07	AWE	0.179	18.663	Oversupply
8/20/2016 11:47	0:04	AWE	0.064	19.153	Oversupply
8/20/2016 11:52	0:11	AWE	0.284	20.627	Oversupply
8/20/2016 12:04	0:05	AWE	0.095	20.763	Oversupply
8/20/2016 12:32	0:02	AWE	0.017	19.423	Oversupply
8/20/2016 12:54	0:02	AWE	0.020	17.427	Oversupply
8/20/2016 12:58	0:03	AWE	0.039	15.320	Oversupply
8/20/2016 13:03	0:01	AWE	0.001	15.087	Oversupply
8/20/2016 13:06	0:01	AWE	0.010	16.080	Oversupply
8/20/2016 13:20	0:02	AWE	0.022	16.777	Oversupply
8/20/2016 13:38	0:03	AWE	0.026	18.990	Oversupply
8/20/2016 13:52	1:22	KWPII	12.287	20.708	Oversupply
8/20/2016 15:18	0:02	KWPII	0.012	20.708	Oversupply
8/21/2016 1:43	0:01	KWPII	0.007	19.028	Oversupply
8/21/2016 1:45	0:02	KWPII	0.030	19.870	Oversupply
8/21/2016 1:49	0:28	KWPII	2.140	20.100	Oversupply
8/21/2016 2:44	0:01	KWPII	0.004	16.574	Oversupply
8/21/2016 6:29	0:01	AWE	0.000	0.003	Oversupply
8/22/2016 12:15	0:01	KWPII	0.013	9.901	Oversupply
8/23/2016 4:11	0:02	KWPII	0.044	14.611	Oversupply
8/23/2016 4:18	0:01	KWPII	0.013	15.229	Oversupply
8/23/2016 4:21	0:01	KWPII	0.020	14.823	Oversupply
8/24/2016 5:18	0:01	KWP	0.000	0.002	Oversupply
8/25/2016 2:52	0:01	KWPII	0.037	12.061	Oversupply
8/25/2016 2:54	2:07	KWPII	19.906	20.708	Oversupply
8/25/2016 6:14	0:07	KWPII	0.219	20.698	Oversupply
8/25/2016 6:24	0:19	KWPII	0.484	20.702	Oversupply
8/25/2016 8:43	0:01	KWPII	0.000	20.708	Oversupply
8/25/2016 8:58	0:02	KWPII	0.009	20.705	Oversupply
8/25/2016 9:05	2:18	KWPII	26.224	20.708	Oversupply
8/25/2016 10:44	0:01	AWE	0.002	21.000	Oversupply
8/25/2016 12:34	0:01	KWPII	0.035	17.592	Oversupply
8/26/2016 0:48	0:13	KWPII	0.776	20.538	Oversupply
8/26/2016 1:31	0:06	KWPII	0.129	20.379	Oversupply
8/26/2016 1:42	0:01	KWPII	0.012	20.471	Oversupply
8/26/2016 1:49	0:01	KWPII	0.001	20.633	Oversupply
8/26/2016 1:53	2:13	KWPII	12.337	20.708	Oversupply
8/26/2016 4:27	0:09	KWPII	0.060	20.666	Oversupply
8/26/2016 4:41	0:04	KWPII	0.050	20.707	Oversupply
8/26/2016 4:46	0:15	KWPII	0.935	20.708	Oversupply
8/26/2016 5:04	0:23	KWPII	0.822	20.708	Oversupply
8/26/2016 6:22	0:02	KWPII	0.005	20.474	Oversupply
8/26/2016 6:25	0:01	KWPII	0.001	20.599	Oversupply
8/26/2016 6:47	0:10	KWPII	0.263	20.693	Oversupply
8/26/2016 7:19	2:04	KWPII	14.175	20.708	Oversupply
8/26/2016 10:05	4:32	KWPII	47.408	20.695	Oversupply
8/26/2016 14:44	0:02	KWPII	0.006	20.633	Oversupply
8/26/2016 19:03	0:02	KWPII	0.002	20.255	Oversupply
8/27/2016 3:27	0:01	KWPII	0.011	19.647	Oversupply
8/27/2016 3:32	0:54	KWPII	3.609	19.648	Oversupply
8/27/2016 4:58	0:15	KWPII	0.394	19.307	Oversupply
8/27/2016 13:08	0:01	KWPII	0.004	15.647	Oversupply
8/27/2016 13:16	0:01	KWPII	0.026	16.760	Oversupply
8/27/2016 15:12	0:03	KWPII	0.221	15.627	Oversupply
8/27/2016 15:19	0:11	KWPII	0.436	15.650	Oversupply
8/27/2016 17:51	0:18	KWPII	0.749	20.700	Oversupply
8/27/2016 18:25	0:05	KWPII	0.047	20.702	Oversupply
8/27/2016 19:58	0:02	KWPII	0.004	20.708	Oversupply



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
8/27/2016 20:09	0:05	KWP	0.135	20.708	Oversupply
8/27/2016 20:17	0:15	KWP	0.382	20.708	Oversupply
8/27/2016 20:33	0:05	KWP	0.038	20.708	Oversupply
8/27/2016 22:06	0:09	KWP	0.330	20.685	Oversupply
8/27/2016 22:17	0:19	KWP	0.580	20.706	Oversupply
8/27/2016 23:14	6:20	KWP	101.012	20.707	Oversupply
8/28/2016 1:39	0:26	AWE	1.154	20.603	Oversupply
8/28/2016 2:14	2:05	AWE	11.839	21.000	Oversupply
8/28/2016 4:20	0:01	AWE	0.003	16.203	Oversupply
8/28/2016 4:22	0:03	AWE	0.025	16.760	Oversupply
8/28/2016 4:29	1:00	AWE	4.109	21.000	Oversupply
8/28/2016 5:36	1:35	KWP	14.467	20.708	Oversupply
8/28/2016 7:15	3:17	KWP	36.044	20.690	Oversupply
8/28/2016 10:18	0:04	AWE	0.062	18.107	Oversupply
8/28/2016 10:34	1:10	KWP	22.599	20.689	Oversupply
8/28/2016 10:43	0:48	AWE	4.339	21.000	Oversupply
8/28/2016 11:45	3:03	KWP	41.445	20.708	Oversupply
8/28/2016 12:32	0:27	AWE	0.704	21.000	Oversupply
8/28/2016 13:15	0:04	AWE	0.004	21.000	Oversupply
8/28/2016 14:59	0:02	KWP	0.018	20.700	Oversupply
8/28/2016 15:03	0:01	KWP	0.005	20.704	Oversupply
8/28/2016 15:09	0:17	KWP	0.260	20.707	Oversupply
8/28/2016 15:43	0:01	KWP	0.004	20.708	Oversupply
8/28/2016 22:58	7:16	KWP	119.191	20.708	Oversupply
8/29/2016 0:24	0:01	AWE	0.000	21.000	Oversupply
8/29/2016 0:24	0:01	KWP	0.000	21.000	Oversupply
8/29/2016 0:26	0:01	AWE	0.001	21.000	Oversupply
8/29/2016 0:26	0:01	KWP	0.001	21.000	Oversupply
8/29/2016 0:28	0:07	AWE	0.050	21.000	Oversupply
8/29/2016 0:28	0:07	KWP	0.050	21.000	Oversupply
8/29/2016 0:36	0:07	AWE	0.027	21.000	Oversupply
8/29/2016 0:36	0:07	KWP	0.027	21.000	Oversupply
8/29/2016 0:44	0:01	AWE	0.001	21.000	Oversupply
8/29/2016 0:44	0:01	KWP	0.001	21.000	Oversupply
8/29/2016 0:47	0:04	AWE	0.010	21.000	Oversupply
8/29/2016 0:47	0:04	KWP	0.010	21.000	Oversupply
8/29/2016 0:52	2:48	AWE	18.869	21.000	Oversupply
8/29/2016 0:52	2:48	KWP	18.869	21.000	Oversupply
8/29/2016 3:41	0:26	AWE	0.973	18.693	Oversupply
8/29/2016 3:41	0:26	KWP	0.973	18.693	Oversupply
8/29/2016 4:09	0:01	AWE	0.011	17.220	Oversupply
8/29/2016 4:09	0:01	KWP	0.011	17.220	Oversupply
8/29/2016 4:11	0:20	AWE	0.604	19.917	Oversupply
8/29/2016 4:11	0:20	KWP	0.604	19.917	Oversupply
8/29/2016 4:33	0:10	AWE	0.415	20.510	Oversupply
8/29/2016 4:33	0:10	KWP	0.415	20.510	Oversupply
8/29/2016 4:44	0:03	AWE	0.040	20.940	Oversupply
8/29/2016 4:44	0:03	KWP	0.040	20.940	Oversupply
8/29/2016 4:55	0:01	AWE	0.001	21.000	Oversupply
8/29/2016 4:55	0:01	KWP	0.001	21.000	Oversupply
8/29/2016 4:58	0:01	AWE	0.000	21.000	Oversupply
8/29/2016 4:58	0:01	KWP	0.000	21.000	Oversupply
8/29/2016 7:09	0:11	KWP	0.460	20.684	Oversupply
8/29/2016 7:25	0:09	KWP	0.505	20.686	Oversupply
8/29/2016 7:37	0:08	KWP	0.213	20.705	Oversupply
8/29/2016 7:58	0:12	KWP	0.205	20.701	Oversupply
8/29/2016 8:22	0:11	KWP	0.262	20.708	Oversupply
8/29/2016 8:40	0:01	KWP	0.003	20.708	Oversupply
8/29/2016 8:42	0:11	KWP	0.454	20.708	Oversupply
8/29/2016 8:54	5:12	KWP	58.973	20.708	Oversupply
8/29/2016 14:09	1:24	KWP	5.423	20.696	Oversupply
8/29/2016 23:26	0:58	KWP	13.442	20.678	Oversupply
8/29/2016 23:37	0:02	AWE	0.025	21.000	Oversupply
8/29/2016 23:37	0:02	KWP	0.025	21.000	Oversupply
8/30/2016 0:04	0:05	AWE	0.094	17.150	Oversupply
8/30/2016 0:04	0:05	KWP	0.094	17.150	Oversupply
8/30/2016 0:11	0:06	AWE	0.194	17.973	Oversupply
8/30/2016 0:11	0:06	KWP	0.194	17.973	Oversupply
8/30/2016 0:18	0:02	AWE	0.017	17.743	Oversupply
8/30/2016 0:18	0:02	KWP	0.017	17.743	Oversupply
8/30/2016 0:26	0:57	KWP	12.729	20.503	Oversupply
8/30/2016 0:55	0:02	AWE	0.061	18.207	Oversupply
8/30/2016 0:55	0:02	KWP	0.061	18.207	Oversupply
8/30/2016 1:03	0:02	AWE	0.035	18.707	Oversupply
8/30/2016 1:03	0:02	KWP	0.035	18.707	Oversupply
8/30/2016 1:26	1:54	KWP	15.942	20.348	Oversupply
8/30/2016 2:15	0:01	AWE	0.009	13.727	Oversupply
8/30/2016 2:15	0:01	KWP	0.009	13.727	Oversupply
8/30/2016 3:21	0:54	KWP	4.800	20.144	Oversupply
8/30/2016 4:19	0:13	KWP	1.033	20.322	Oversupply
8/30/2016 5:26	0:02	KWP	0.081	18.587	Oversupply
8/30/2016 7:39	0:16	AWE	0.101	0.780	Oversupply
8/30/2016 7:39	0:16	KWP	0.101	0.780	Oversupply
8/30/2016 7:57	0:05	AWE	0.010	0.280	Oversupply
8/30/2016 7:57	0:05	KWP	0.010	0.280	Oversupply
8/30/2016 8:46	0:04	AWE	0.005	0.100	Oversupply
8/30/2016 8:46	0:04	KWP	0.005	0.100	Oversupply
8/30/2016 9:02	0:02	AWE	0.001	0.040	Oversupply
8/30/2016 9:02	0:02	KWP	0.001	0.040	Oversupply
8/30/2016 9:08	0:39	AWE	0.549	2.260	Oversupply
8/30/2016 9:08	0:39	KWP	0.549	2.260	Oversupply
8/30/2016 9:33	1:34	KWP	19.535	20.662	Oversupply
8/30/2016 11:08	1:05	KWP	9.401	20.253	Oversupply
8/30/2016 12:41	0:42	KWP	3.131	19.217	Oversupply
8/30/2016 13:42	0:04	KWP	0.157	18.169	Oversupply
8/30/2016 15:17	0:43	KWP	3.598	19.209	Oversupply
8/30/2016 23:59	0:01	KWP	0.000	19.193	Oversupply
8/31/2016 1:15	0:01	KWP	0.002	19.211	Oversupply
8/31/2016 1:18	0:01	KWP	0.003	19.211	Oversupply
8/31/2016 2:07	0:20	KWP	0.624	19.211	Oversupply
8/31/2016 2:28	1:58	KWP	6.953	19.211	Oversupply
8/31/2016 4:33	0:03	KWP	0.017	19.211	Oversupply
8/31/2016 8:34	0:01	KWP	0.006	19.211	Oversupply
8/31/2016 8:46	0:03	KWP	0.046	19.211	Oversupply
8/31/2016 9:00	0:02	KWP	0.029	19.211	Oversupply
8/31/2016 9:24	0:24	KWP	2.651	17.714	Oversupply



**Maui Curtailment Report**

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
8/31/2016 10:09	0:07	KWP	0.169	17.714	Oversupply
8/31/2016 10:17	0:30	KWP	2.751	17.714	Oversupply
8/31/2016 10:53	0:39	KWP	6.462	17.714	Oversupply
8/31/2016 11:07	0:04	AWE	0.041	20.700	Oversupply
8/31/2016 11:07	0:04	KWP	0.041	20.700	Oversupply
8/31/2016 11:12	0:01	AWE	0.001	20.930	Oversupply
8/31/2016 11:12	0:01	KWP	0.001	20.930	Oversupply
8/31/2016 11:43	0:03	KWP	0.094	17.714	Oversupply
8/31/2016 11:57	0:02	KWP	0.039	17.714	Oversupply
8/31/2016 12:09	0:01	KWP	0.020	17.714	Oversupply
8/31/2016 12:58	0:01	KWP	0.004	17.714	Oversupply
8/31/2016 13:07	0:01	KWP	0.000	16.217	Oversupply
8/31/2016 13:13	0:01	KWP	0.003	16.217	Oversupply

Notes:

- Curtailment for Kaheawa Wind Power ("KWP"), Makila Hydroelectric ("MH"), AAAAA Rent-A-Space Maui LTD ("5A"), Bioreal Solar, LLC ("BS"), Auwahi Wind Energy ("AWE"), Kaheawa Wind Power II ("KWPII") Bioreal Solar 250, LLC ("BS250") may now be controlled by Maui Electric's Automatic Generation Control System ("AGC") or a Maui Electric operator-entered curtailment limit. The AGC curtailment control automatically calculates the amount of Maximum Allowable Variable Generation ("MAVG") that Maui Electric can accept into the Maui system, based on the system current available variable generation ("CAVG"), regulating reserve down requirement ("RRDR"), and available regulating reserve down ("ARRD"). Thus, the AGC MAVG - calculated is equal to CAVG less (RRDR less ARRD). Additionally, the AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control will employ the lesser of the AGC MAVG - calculated and AGC MAVG - entered values in the control logic.
- The Estimated Curtailed MWH and Peak MW Curtailed are calculated with information provided by AWE, KWP, and KWPII. Maui Electric does not make any representation as to its accuracy.
- The data to calculate the Estimated Curtailed MWH and Peak MW Curtailed is not provided by 5A, BS, BS 250 or MH.
- Curtailment signals sent to 5A, BS, or BS250 during nighttime hours are not recorded as curtailment events because no energy generation is possible during that time.
- The curtailment reasons have been modified to oversupply, system constraints, and facility requested, to provide continuity with HPUC Docket No. 2013-0141 Decoupling for HECO companies metrics.
- The Bioreal Solar 250, LLC circuit breaker failed on May 5, 2016. Bioreal Solar 250, LLC plan to replace the circuit breaker and resume production.

















Lanai Curtailment Report

August 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
8/27/2016 12:13	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:01	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:08	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:22	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:47	0:02	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:53	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 13:56	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 14:06	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 14:22	0:01	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 16:38	0:31	LSR	Data is not available	Data is not available	Oversupply
8/27/2016 17:10	0:01	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 7:45	0:01	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 7:47	0:02	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 7:57	0:02	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 9:30	0:01	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 11:35	0:01	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 11:37	0:01	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 12:01	0:02	LSR	Data is not available	Data is not available	Oversupply
8/28/2016 16:11	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 7:39	0:02	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 7:45	0:02	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 7:52	0:22	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 8:34	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 8:57	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 8:59	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:03	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:12	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:27	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:29	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:56	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 9:59	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 11:17	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 11:21	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 11:43	0:02	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 11:46	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 11:55	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 12:58	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:10	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:15	0:02	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:18	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:42	0:05	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:48	0:02	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 13:51	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 14:01	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 14:04	0:01	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 16:37	0:06	LSR	Data is not available	Data is not available	Oversupply
8/29/2016 16:44	0:03	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 7:47	0:32	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 9:41	0:13	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 9:57	0:12	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 10:10	1:22	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 11:33	0:04	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 11:38	0:21	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 12:02	1:02	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 13:13	0:01	LSR	Data is not available	Data is not available	Oversupply
8/30/2016 17:08	0:18	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 6:40	0:02	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 6:57	0:04	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 7:53	0:02	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 15:02	0:03	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 15:09	0:01	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 15:13	0:05	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 15:24	0:01	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 15:39	0:01	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:02	0:01	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:04	0:09	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:22	0:01	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:31	0:03	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:46	0:02	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 16:55	0:14	LSR	Data is not available	Data is not available	Oversupply
8/31/2016 17:11	0:17	LSR	Data is not available	Data is not available	Oversupply

Notes:  
On June 27, 2012, Maui Electric notified LSR that although LSR has not operated in compliance with the revised ramp rate of 360 kW/minute, Maui Electric would conditionally allow LSR to operate at the allowed capacity of 1.2 MW while the Maui Electric-Lanai Diesel Operator was in the control room.  
LSR possible output data is not available. Therefore, Maui Electric assumes LSR is curtailed if the LSR curtailment set point is less than 1,200 kW and LSR's output is within 50 kW of the curtailment set point.  
The curtailment reasons have been modified to oversupply, system constraints, and facility requested, to provide continuity with HPUC Docket No. 2013-0141 Decoupling for HECO companies metrics.

Hawai'i Electric Light Company Curtailment Report August 2016

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released <sup>1</sup>	IPP	Reason for Curtailment
07/22/16 19:57	0.0 MW	08/20/16 14:53	6.4 MW	HRD	System constraint: Limited to 5 MVA spare transformer at Waimea (not-to-exceed 5 MW) until primary 10 MVA 69-34kV transformer is restored after it failed during Tropical Storm Darby.
08/04/16 15:22	19.9 MW	08/04/16 15:49	16.2 MW	Tawhiri	System constraint
08/26/16 08:35	0.3 MW	08/26/16 13:37	0.4 MW	TGUH11	Oversupply / annual generator emissions test
08/26/16 09:04	0.1 MW	08/26/16 13:22	0.0 MW	WHCC	
08/26/16 08:50	19.9 MW	08/26/16 13:18	19.9 MW	Tawhiri	Facility requested
08/31/16 12:13	18.7 MW	09/01/16 17:22	18.6 MW	Tawhiri	

<sup>1</sup> The MW output values are taken soon after curtailment is released by Hawai'i Electric Light and may not reflect their full output depending on ramp rate for the facility. The wind farms generally return immediately to full available levels, whereas PGV and Wailuku may take longer to return to scheduled or full available output levels.