



November 21, 2017

FILED

2017 NOV 21 P 3:41

PUBLIC UTILITIES
COMMISSION

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

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'¹ monthly report for October 2017 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@hawaiianelectric.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

¹ 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".

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 October 31, 2017):

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 October 31, 2017):

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

Hawaiian Electric's did not have any contingency reserve activations for the month of October. Maui Electric and Hawai'i Electric Light do not operate with contingency reserve requirements. Therefore, Attachment 3 is not being provided for this reporting period.

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

Hawaiian Electric, Hawai'i Electric Light, and Maui Electric did not have any under frequency load shed activations for the month of September. Therefore, Attachment 4 is not being provided for this reporting period.

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 did not have any demand response activations for system events for the month of October. Hawai'i Electric Light currently does not have a 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. Therefore, Attachment 5 is not being provided for this reporting period.

- (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 October 31, 2017):

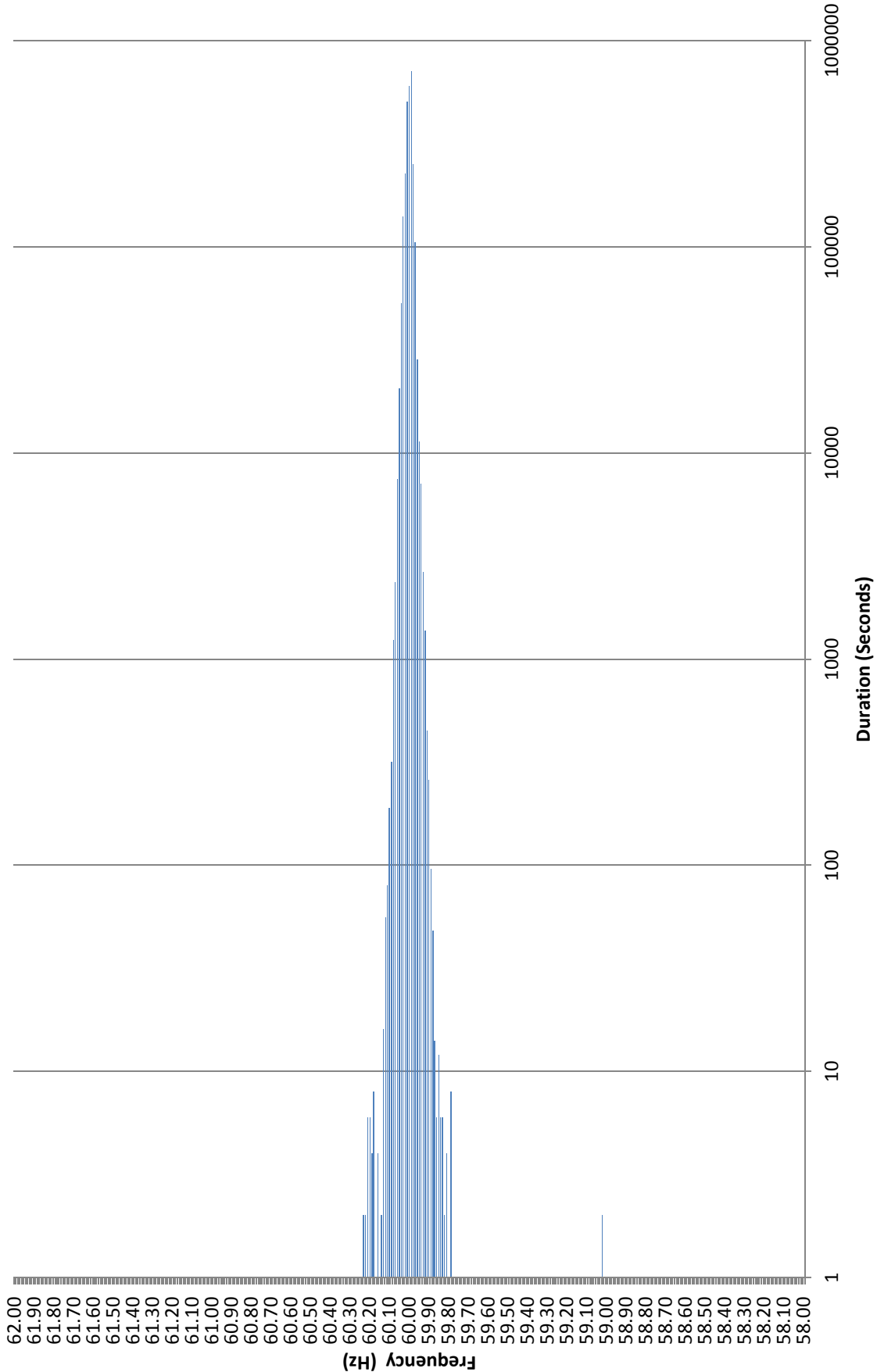
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

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

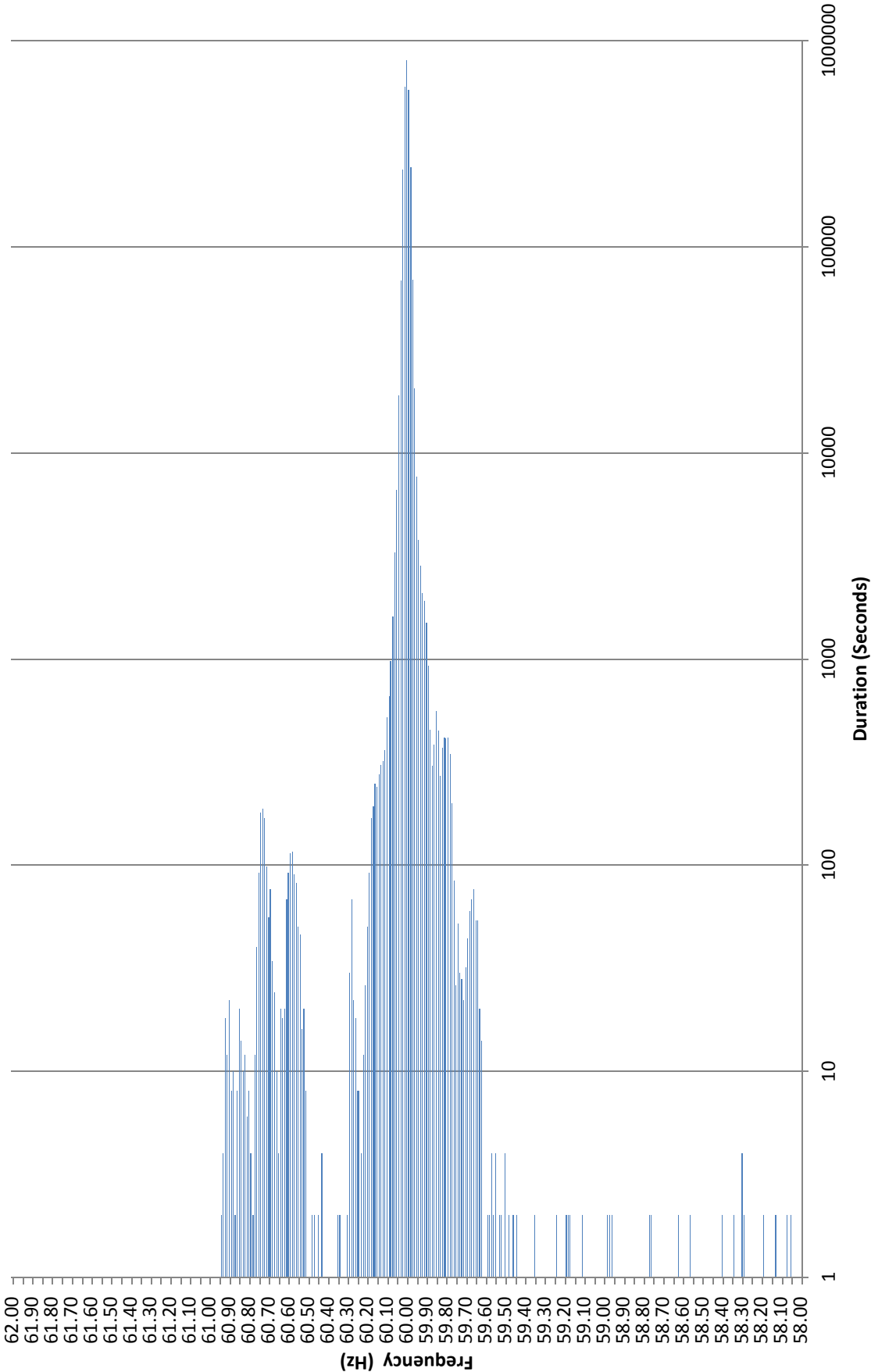
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

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.

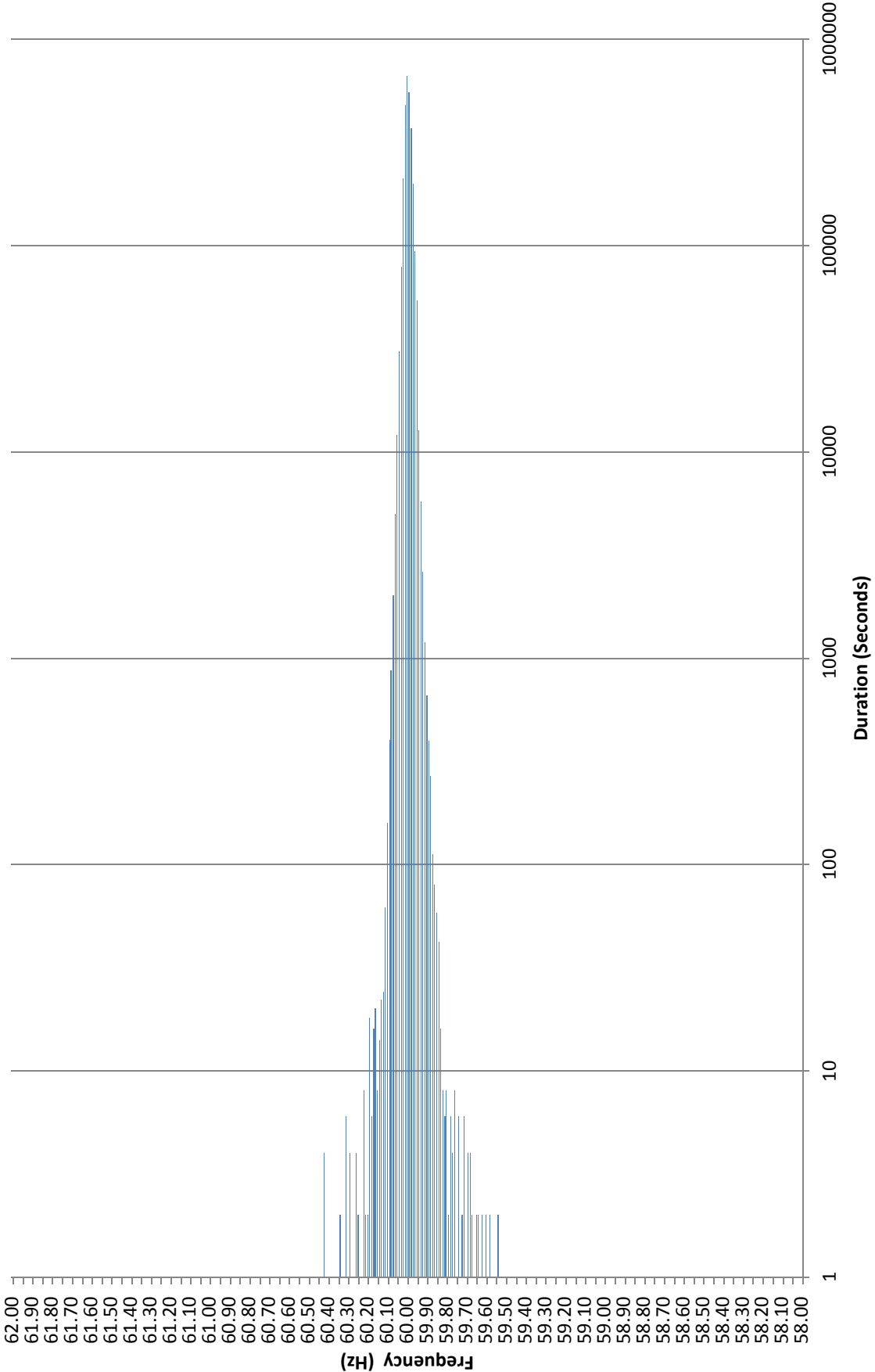
Frequency Distribution Plot - Hawaiian Electric October 2017



**Frequency Distribution Plot - Maui Electric
October 2017**



**Frequency Distribution Plot - Hawai'i Electric Light
October 2017**



Hawaiian Electric Frequency Excursion Statistics October 2017		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	1110	2173
Maximum Duration (sec)	336	234
Maximum Deviation (Hz)	57.967	60.232
Total Duration of Excursions (sec)	16308	18860

Maui Electric Frequency Excursion Statistics October 2017		
	<59.95 Hz	>60.05 Hz
Number of Excursions	1609	1179
Maximum Duration (sec)	7864	2268
Maximum Deviation (Hz)	0.000	60.941
Total Duration of Excursions (sec)	29244	14040

Hawai'i Electric Light Frequency Excursion Statistics October 2017		
	<59.95 Hz	>60.05 Hz
Number of Excursions	7706	2334
Maximum Duration (sec)	132	94
Maximum Deviation (Hz)	59.540	60.419
Total Duration of Excursions (sec)	52334	13364

This page intentionally left blank.

This page intentionally left blank.

Hawaiian Electric Curtailment Report October 2017

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
10/01/17 05:33	0.0	0.00	10/01/17 06:05	0	*	KLS2	System constraints
10/01/17 17:26	0.0	1.60	10/01/17 17:53	0	*	KLS2	System constraints
10/03/17 11:44	0.0	16.00	10/03/17 12:26	0	*	Mauka	System constraints
10/03/17 11:44	0.0	0.00	10/03/17 12:26	0	*	Makai	System constraints
10/03/17 11:53	0.0	0.00	10/03/17 12:29	0	*	KWF	System constraints
10/07/17 05:50	0.0	0.00	10/07/17 06:11	0	*	KLS2	System constraints
10/07/17 16:17	0.0	0.20	10/07/17 16:33	0	*	KLS2	System constraints
10/08/17 05:30	0.0	0.00	10/08/17 06:05	0	*	KLS2	System constraints
10/08/17 15:02	0.0	0.70	10/08/17 15:24	0	*	KLS2	System constraints
10/11/17 06:15	0.0	0.00	10/11/17 08:06	0	*	KREP	System constraints
10/11/17 06:18	0.0	0.00	10/11/17 20:54	0	*	KLS2	System constraints
10/11/17 19:49	0.0	0.00	10/11/17 20:56	0	*	KREP	System constraints
10/12/17 05:41	0.0	0.00	10/12/17 07:27	0	*	KREP	System constraints
10/12/17 05:53	0.0	0.00	10/13/17 20:22	0	*	KLS2	System constraints
10/12/17 07:01	0.0	0.00	10/12/17 07:20	0	*	KWF	System constraints
10/12/17 07:03	0.0	0.00	10/12/17 07:21	0	*	Makai	System constraints
10/12/17 16:18	0.0	13.00	10/12/17 16:45	0	*	KWF	System constraints
10/12/17 16:20	0.0	0.00	10/12/17 16:37	0	*	Makai	System constraints
10/12/17 19:37	0.0	0.00	10/12/17 20:42	0	*	KREP	System constraints
10/13/17 06:03	0.0	0.00	10/13/17 07:44	0	*	KREP	System constraints
10/13/17 18:55	0.0	0.00	10/13/17 20:30	0	*	KREP	System constraints
10/14/17 06:04	0.0	0.00	10/14/17 08:25	0	*	KREP	System constraints
10/14/17 06:28	0.0	0.00	10/14/17 17:26	0	*	KLS2	System constraints
10/14/17 16:13	0.0	2.00	10/14/17 18:04	0	*	KREP	System constraints
10/17/17 05:55	0.0	0.00	10/17/17 08:50	0	*	KREP	System constraints
10/17/17 05:58	0.0	0.00	10/17/17 18:18	0	*	KLS2	System constraints
10/17/17 08:40	0.0	15.00	10/17/17 09:44	0	*	Waianae	System constraints
10/17/17 08:42	0.0	1.00	10/17/17 09:45	0	*	Aloha1	System constraints
10/17/17 14:11	0.0	6.80	10/17/17 15:33	0	*	Waianae	System constraints
10/17/17 14:12	0.0	2.30	10/17/17 15:34	0	*	Aloha1	System constraints
10/17/17 17:33	0.0	0.50	10/17/17 18:16	0	*	KREP	System constraints
10/18/17 05:48	0.0	0.00	10/18/17 07:13	0	*	KREP	System constraints
10/18/17 05:50	0.0	0.00	10/18/17 19:48	0	*	KLS2	System constraints
10/18/17 09:50	0.0	25.00	10/18/17 09:51	0	*	KWF	System constraints
10/18/17 07:53	0.0	10.00	10/18/17 09:39	0	*	Makai	System constraints
10/18/17 18:14	0.0	24.96	10/18/17 18:42	0	*	KWF	System constraints
10/18/17 18:16	0.0	3.30	10/18/17 18:43	0	*	Makai	System constraints
10/18/17 18:49	0.0	0.00	10/18/17 19:49	0	*	KREP	System constraints
10/19/17 06:02	0.0	0.00	10/20/17 14:58	0	*	KREP	System constraints
10/19/17 06:05	0.0	0.00	10/19/17 18:12	0	*	KLS2	System constraints
10/20/17 20:24	0.0	0.00	10/20/17 21:07	0	*	KLS2	System constraints
10/21/17 05:36	0.0	0.00	10/21/17 07:22	0	*	KLS2	System constraints
10/21/17 18:12	0.0	0.00	10/21/17 18:47	0	*	Waianae	System constraints
10/21/17 18:14	0.0	0.00	10/21/17 18:48	0	*	Aloha1	System constraints
10/21/17 18:51	0.0	0.00	10/21/17 20:18	0	*	KLS2	System constraints
10/22/17 05:30	0.0	0.00	10/22/17 05:56	0	*	KLS2	System constraints
10/22/17 16:45	0.0	13.80	10/22/17 17:32	0	*	Waianae	System constraints
10/22/17 16:46	0.0	1.60	10/22/17 17:33	0	*	Aloha1	System constraints
10/22/17 17:41	0.0	0.00	10/22/17 18:13	0	*	KLS2	System constraints
10/27/17 00:01	0.0	0.00	10/27/17 00:55	0	*	Makai	System constraints
10/27/17 00:02	0.0	0.00	10/27/17 00:55	0	*	Mauka	System constraints
10/27/17 06:12	0.0	0.00	10/27/17 16:09	0	*	KLS2	System constraints
10/29/17 05:33	0.0	0.00	10/29/17 16:58	0	*	KLS2	System constraints
10/29/17 06:48	0.0	0.00	10/29/17 17:10	0	*	KREP	System constraints
10/30/17 06:29	0.0	0.00	10/30/17 16:04	0	*	KLS2	System constraints
10/30/17 14:57	0.0	3.30	10/30/17 16:04	0	*	KREP	System constraints
10/31/17 07:47	0.0	5.10	10/31/17 08:45	0	*	Waianae	System constraints
10/31/17 07:49	0.0	0.50	10/31/17 08:47	0	*	Aloha1	System constraints
10/31/17 14:44	0.0	12.00	10/31/17 15:41	0	*	Waianae	System constraints
10/31/17 14:42	0.0	0.00	10/31/17 15:45	0	*	Aloha1	System constraints

Hawaiian Electric Curtailment Report October 2017

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

Aloha1 = Aloha Solar 1 PV Farm
KLS2 = Kalaeloa Solar 2 PV Farm
KREP = Kalaeloa Renewable Energy Park
KWF = Kahuku Wind Farm
Makai = Kawaioloa Makai Wind Farm
Mauka = Kawaioloa Mauka Wind Farm
North = Waihonu North PV Farm
South = Waihonu South PV Farm
Waianae = Waianae Solar PV Farm

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

* Data has not been provided by IPP.



Maui Curtailment Report

October 2017

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
10/1/2017 10:46	0:01	KWPPI	0.000	0.030	System constraint
10/2/2017 10:43	0:01	KWPPI	0.000	0.016	System constraint
10/3/2017 10:45	0:01	KWPPI	0.000	0.024	System constraint
10/3/2017 20:27	0:01	KWPPI	0.002	0.105	System constraint
10/4/2017 8:46	0:01	BS250	Data is not available	Data is not available	System constraint
10/4/2017 8:46	0:02	ESA	Data is not available	Data is not available	System constraint
10/4/2017 8:46	0:02	ESB	Data is not available	Data is not available	System constraint
10/4/2017 8:49	0:01	BS250	Data is not available	Data is not available	System constraint
10/4/2017 8:49	0:12	ESA	Data is not available	Data is not available	System constraint
10/4/2017 8:49	0:12	ESB	Data is not available	Data is not available	System constraint
10/4/2017 8:51	0:10	BS250	Data is not available	Data is not available	System constraint
10/4/2017 8:53	0:01	KWPPI	0.007	19.211	System constraint
10/4/2017 8:55	0:07	KWPPI	0.096	19.211	System constraint
10/4/2017 9:06	0:29	BS250	Data is not available	Data is not available	System constraint
10/4/2017 9:06	0:29	ESA	Data is not available	Data is not available	System constraint
10/4/2017 9:06	0:29	ESB	Data is not available	Data is not available	System constraint
10/4/2017 9:08	0:28	KWPPI	1.944	19.211	System constraint
10/4/2017 9:38	0:04	BS250	Data is not available	Data is not available	System constraint
10/4/2017 9:38	0:04	ESA	Data is not available	Data is not available	System constraint
10/4/2017 9:38	0:04	ESB	Data is not available	Data is not available	System constraint
10/4/2017 9:41	0:01	KWPPI	0.003	19.211	System constraint
10/4/2017 9:48	0:03	BS250	Data is not available	Data is not available	System constraint
10/4/2017 9:48	0:03	ESA	Data is not available	Data is not available	System constraint
10/4/2017 9:48	0:03	ESB	Data is not available	Data is not available	System constraint
10/4/2017 10:04	0:02	BS250	Data is not available	Data is not available	System constraint
10/4/2017 10:04	0:02	ESA	Data is not available	Data is not available	System constraint
10/4/2017 10:04	0:02	ESB	Data is not available	Data is not available	System constraint
10/4/2017 10:16	0:03	BS250	Data is not available	Data is not available	System constraint
10/4/2017 10:16	0:03	ESA	Data is not available	Data is not available	System constraint
10/4/2017 10:16	0:03	ESB	Data is not available	Data is not available	System constraint
10/4/2017 10:28	0:10	BS250	Data is not available	Data is not available	System constraint
10/4/2017 10:28	0:10	ESA	Data is not available	Data is not available	System constraint
10/4/2017 10:28	0:10	ESB	Data is not available	Data is not available	System constraint
10/4/2017 10:32	0:06	KWPPI	0.063	19.211	System constraint
10/4/2017 12:02	0:04	BS250	Data is not available	Data is not available	System constraint
10/4/2017 12:02	0:04	ESA	Data is not available	Data is not available	System constraint
10/4/2017 12:02	0:04	ESB	Data is not available	Data is not available	System constraint
10/4/2017 12:02	0:04	KWPPI	0.042	18.572	System constraint
10/4/2017 12:29	0:10	BS250	Data is not available	Data is not available	System constraint
10/4/2017 12:29	0:10	ESA	Data is not available	Data is not available	System constraint
10/4/2017 12:29	0:10	ESB	Data is not available	Data is not available	System constraint
10/4/2017 12:30	0:09	KWPPI	0.266	18.717	System constraint
10/4/2017 12:46	0:01	BS250	Data is not available	Data is not available	System constraint
10/4/2017 12:46	0:01	ESA	Data is not available	Data is not available	System constraint
10/4/2017 12:46	0:01	ESB	Data is not available	Data is not available	System constraint
10/4/2017 13:10	0:01	KWPPI	0.001	19.025	System constraint
10/5/2017 9:26	0:01	BS250	Data is not available	Data is not available	System constraint
10/5/2017 9:26	0:01	ESA	Data is not available	Data is not available	System constraint
10/5/2017 9:26	0:01	ESB	Data is not available	Data is not available	System constraint
10/5/2017 9:27	0:01	KWPPI	0.001	19.211	System constraint
10/5/2017 13:32	12:46	KWP	89.296	19.672	System constraint
10/6/2017 3:36	0:01	AWE	0.005	0.300	System constraint
10/7/2017 8:02	0:02	AWE	0.003	0.100	System constraint
10/7/2017 12:23	0:01	KWPPI	0.000	0.014	System constraint
10/8/2017 2:42	0:01	AWE	0.002	0.100	System constraint
10/8/2017 16:20	0:01	AWE	0.000	0.100	System constraint
10/10/2017 9:06	0:13	BS250	Data is not available	Data is not available	System constraint
10/10/2017 9:06	0:13	ESA	Data is not available	Data is not available	System constraint
10/10/2017 9:06	0:13	ESB	Data is not available	Data is not available	System constraint
10/10/2017 9:07	0:11	KWPPI	0.457	14.803	System constraint
10/11/2017 10:56	0:01	KWPPI	0.001	0.070	System constraint
10/11/2017 13:20	0:01	KWPPI	0.000	0.012	System constraint
10/11/2017 21:15	0:01	AWE	0.002	0.100	System constraint
10/11/2017 21:18	0:01	AWE	0.002	0.100	System constraint
10/11/2017 21:20	0:02	AWE	0.003	0.100	System constraint
10/11/2017 21:27	0:01	AWE	0.002	0.100	System constraint
10/11/2017 21:36	0:01	AWE	0.002	0.100	System constraint
10/12/2017 12:22	0:01	KWPPI	0.001	0.067	System constraint
10/12/2017 12:43	0:01	BS250	Data is not available	Data is not available	System constraint
10/12/2017 12:43	0:01	ESA	Data is not available	Data is not available	System constraint
10/12/2017 12:43	0:01	ESB	Data is not available	Data is not available	System constraint
10/12/2017 12:43	0:01	AWE	0.001	20.300	System constraint
10/12/2017 19:29	0:01	KWPPI	0.004	0.238	System constraint
10/13/2017 7:03	0:02	BS250	Data is not available	Data is not available	System constraint
10/13/2017 7:03	0:02	ESA	Data is not available	Data is not available	System constraint
10/13/2017 7:03	0:02	ESB	Data is not available	Data is not available	System constraint
10/13/2017 7:03	0:02	KWPPI	0.012	18.070	System constraint
10/13/2017 10:02	0:09	BS250	Data is not available	Data is not available	System constraint
10/13/2017 10:02	0:09	ESA	Data is not available	Data is not available	System constraint
10/13/2017 10:02	0:09	ESB	Data is not available	Data is not available	System constraint
10/13/2017 10:03	0:11	AWE	0.143	20.400	System constraint
10/13/2017 12:41	0:01	KWPPI	0.001	3.152	System constraint



Maui Curtailment Report

October 2017

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
10/13/2017 13:07	0:03	BS250	Data is not available	Data is not available	System constraint
10/13/2017 13:07	0:03	ESA	Data is not available	Data is not available	System constraint
10/13/2017 13:07	0:03	ESB	Data is not available	Data is not available	System constraint
10/13/2017 13:08	0:03	KWPPI	0.069	5.160	System constraint
10/13/2017 13:13	0:06	BS250	Data is not available	Data is not available	System constraint
10/13/2017 13:13	0:06	ESA	Data is not available	Data is not available	System constraint
10/13/2017 13:13	0:06	ESB	Data is not available	Data is not available	System constraint
10/13/2017 13:14	0:05	KWPPI	0.069	5.589	System constraint
10/14/2017 3:48	1:14	KWPPI	8.113	18.425	System constraint
10/14/2017 5:04	0:55	KWPPI	2.573	18.890	System constraint
10/14/2017 6:01	0:02	KWPPI	0.009	19.014	System constraint
10/14/2017 8:07	0:02	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:07	0:02	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:07	0:02	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:08	0:01	KWPPI	0.008	18.391	System constraint
10/14/2017 8:13	0:01	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:13	0:01	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:13	0:01	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:13	0:02	KWPPI	0.015	18.918	System constraint
10/14/2017 8:19	0:05	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:19	0:05	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:19	0:05	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:20	0:04	KWPPI	0.120	18.814	System constraint
10/14/2017 8:29	0:01	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:29	0:01	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:29	0:01	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:31	0:01	KWPPI	0.004	16.940	System constraint
10/14/2017 8:38	0:02	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:38	0:02	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:38	0:02	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:40	0:01	KWPPI	0.002	17.782	System constraint
10/14/2017 8:49	0:09	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:49	0:09	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:49	0:09	ESB	Data is not available	Data is not available	System constraint
10/14/2017 8:49	0:11	KWPPI	0.301	18.820	System constraint
10/14/2017 8:59	0:01	BS250	Data is not available	Data is not available	System constraint
10/14/2017 8:59	0:01	ESA	Data is not available	Data is not available	System constraint
10/14/2017 8:59	0:01	ESB	Data is not available	Data is not available	System constraint
10/14/2017 9:03	0:19	BS250	Data is not available	Data is not available	System constraint
10/14/2017 9:03	0:19	ESA	Data is not available	Data is not available	System constraint
10/14/2017 9:03	0:19	ESB	Data is not available	Data is not available	System constraint
10/14/2017 9:04	0:18	KWPPI	0.697	17.301	System constraint
10/14/2017 9:28	0:01	BS250	Data is not available	Data is not available	System constraint
10/14/2017 9:28	0:01	ESA	Data is not available	Data is not available	System constraint
10/14/2017 9:28	0:01	ESB	Data is not available	Data is not available	System constraint
10/14/2017 9:28	0:02	KWPPI	0.024	17.030	System constraint
10/14/2017 9:34	0:01	ESA	Data is not available	Data is not available	System constraint
10/14/2017 9:34	0:01	ESB	Data is not available	Data is not available	System constraint
10/14/2017 13:58	0:02	BS250	Data is not available	Data is not available	System constraint
10/14/2017 13:58	0:02	ESA	Data is not available	Data is not available	System constraint
10/14/2017 13:58	0:02	ESB	Data is not available	Data is not available	System constraint
10/14/2017 13:58	0:02	KWPPI	0.032	18.019	System constraint
10/14/2017 23:43	0:01	KWPPI	0.001	19.196	System constraint
10/14/2017 23:46	4:56	KWPPI	29.346	19.211	System constraint
10/15/2017 4:43	0:09	KWPPI	0.268	19.211	Oversupply
10/15/2017 4:53	0:07	KWPPI	0.322	19.211	Oversupply
10/15/2017 5:01	0:02	KWPPI	0.082	19.211	Oversupply
10/15/2017 5:09	0:04	KWPPI	0.077	19.211	Oversupply
10/15/2017 5:14	0:14	KWPPI	0.128	19.211	Oversupply
10/15/2017 8:00	6:12	ESA	Data is not available	Data is not available	Oversupply
10/15/2017 8:00	6:12	ESB	Data is not available	Data is not available	Oversupply
10/15/2017 8:03	6:10	KWPPI	75.811	19.211	Oversupply
10/15/2017 11:10	0:01	AWE	0.003	17.500	Oversupply
10/15/2017 11:17	0:25	AWE	0.595	17.700	Oversupply
10/15/2017 11:43	0:25	AWE	0.828	17.900	Oversupply
10/15/2017 12:10	0:01	AWE	0.000	17.800	Oversupply
10/15/2017 12:15	0:03	AWE	0.023	17.700	Oversupply
10/15/2017 12:19	0:05	AWE	0.064	17.600	Oversupply
10/15/2017 12:27	0:02	AWE	0.008	17.700	Oversupply
10/15/2017 12:53	0:01	AWE	0.002	17.600	Oversupply
10/15/2017 14:14	0:09	ESA	Data is not available	Data is not available	Oversupply
10/15/2017 14:14	0:09	ESB	Data is not available	Data is not available	Oversupply
10/15/2017 14:15	0:08	KWPPI	0.145	19.211	Oversupply
10/16/2017 1:29	1:43	KWPPI	4.627	19.211	Oversupply
10/16/2017 3:15	0:01	KWPPI	0.008	19.211	Oversupply
10/16/2017 3:17	0:36	KWPPI	2.133	19.211	Oversupply
10/16/2017 3:57	0:17	KWPPI	0.370	19.211	Oversupply
10/16/2017 4:15	0:14	KWPPI	0.131	19.211	Oversupply



Maui Curtailment Report

October 2017

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
10/17/2017 7:58	0:01	KWP	0.066	19.672	Oversupply
10/19/2017 12:51	0:02	ESA	Data is not available	Data is not available	System constraint
10/19/2017 12:51	0:02	ESB	Data is not available	Data is not available	System constraint
10/19/2017 12:52	0:02	KWP	0.016	8.732	System constraint
10/19/2017 13:07	0:54	ESA	Data is not available	Data is not available	System constraint
10/19/2017 13:07	0:54	ESB	Data is not available	Data is not available	System constraint
10/19/2017 13:09	0:50	KWP	3.508	10.229	System constraint
10/19/2017 14:00	0:02	KWP	0.018	10.229	System constraint
10/20/2017 6:17	0:01	BS250	Data is not available	Data is not available	System constraint
10/20/2017 6:17	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 6:17	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 9:40	0:05	ESA	Data is not available	Data is not available	System constraint
10/20/2017 9:40	0:05	ESB	Data is not available	Data is not available	System constraint
10/20/2017 9:41	0:04	KWP	0.079	10.229	System constraint
10/20/2017 9:46	0:04	ESA	Data is not available	Data is not available	System constraint
10/20/2017 9:46	0:04	ESB	Data is not available	Data is not available	System constraint
10/20/2017 9:47	0:04	KWP	0.063	10.229	System constraint
10/20/2017 9:52	0:01	KWP	0.004	10.229	System constraint
10/20/2017 9:53	0:03	ESA	Data is not available	Data is not available	System constraint
10/20/2017 9:53	0:03	ESB	Data is not available	Data is not available	System constraint
10/20/2017 9:56	0:22	KWP	0.903	10.229	System constraint
10/20/2017 9:57	0:18	ESA	Data is not available	Data is not available	System constraint
10/20/2017 9:57	0:18	ESB	Data is not available	Data is not available	System constraint
10/20/2017 10:16	0:02	ESA	Data is not available	Data is not available	System constraint
10/20/2017 10:16	0:02	ESB	Data is not available	Data is not available	System constraint
10/20/2017 10:20	0:03	ESA	Data is not available	Data is not available	System constraint
10/20/2017 10:20	0:03	ESB	Data is not available	Data is not available	System constraint
10/20/2017 10:25	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 10:25	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 10:32	0:42	ESA	Data is not available	Data is not available	System constraint
10/20/2017 10:32	0:42	ESB	Data is not available	Data is not available	System constraint
10/20/2017 10:33	0:41	KWP	4.350	10.229	System constraint
10/20/2017 11:03	0:01	AWE	0.009	20.700	System constraint
10/20/2017 11:06	0:01	AWE	0.010	20.400	System constraint
10/20/2017 11:08	0:01	AWE	0.006	20.300	System constraint
10/20/2017 11:15	0:06	ESA	Data is not available	Data is not available	System constraint
10/20/2017 11:15	0:06	ESB	Data is not available	Data is not available	System constraint
10/20/2017 11:15	0:06	KWP	0.297	10.229	System constraint
10/20/2017 11:22	0:01	KWP	0.007	10.229	System constraint
10/20/2017 11:33	0:04	ESA	Data is not available	Data is not available	System constraint
10/20/2017 11:33	0:04	ESB	Data is not available	Data is not available	System constraint
10/20/2017 11:35	0:02	KWP	0.028	10.229	System constraint
10/20/2017 11:47	0:14	ESA	Data is not available	Data is not available	System constraint
10/20/2017 11:47	0:14	ESB	Data is not available	Data is not available	System constraint
10/20/2017 11:49	0:16	KWP	0.294	10.229	System constraint
10/20/2017 12:02	0:02	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:02	0:02	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:06	0:02	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:06	0:02	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:11	0:03	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:11	0:03	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:15	0:08	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:15	0:08	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:15	0:09	KWP	0.190	10.229	System constraint
10/20/2017 12:24	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:24	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:25	0:01	KWP	0.002	10.229	System constraint
10/20/2017 12:38	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:38	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:41	0:15	ESA	Data is not available	Data is not available	System constraint
10/20/2017 12:41	0:15	ESB	Data is not available	Data is not available	System constraint
10/20/2017 12:46	0:11	KWP	0.326	10.229	System constraint
10/20/2017 13:22	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 13:22	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 13:23	0:01	KWP	0.002	10.229	System constraint
10/20/2017 13:29	0:03	ESA	Data is not available	Data is not available	System constraint
10/20/2017 13:29	0:03	ESB	Data is not available	Data is not available	System constraint
10/20/2017 13:36	0:02	ESA	Data is not available	Data is not available	System constraint
10/20/2017 13:36	0:02	ESB	Data is not available	Data is not available	System constraint
10/20/2017 13:41	0:01	ESA	Data is not available	Data is not available	System constraint
10/20/2017 13:41	0:01	ESB	Data is not available	Data is not available	System constraint
10/20/2017 13:47	0:02	ESA	Data is not available	Data is not available	System constraint
10/20/2017 13:47	0:02	ESB	Data is not available	Data is not available	System constraint
10/20/2017 13:48	0:02	KWP	0.013	10.229	System constraint
10/21/2017 0:59	0:33	KWP	1.511	8.732	System constraint
10/21/2017 1:34	0:36	KWP	1.460	8.732	System constraint



Maui Curtailment Report

October 2017

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
10/21/2017 2:18	0:02	KWP	0.016	8.732	System constraint
10/21/2017 2:27	0:43	KWP	3.470	8.732	System constraint
10/21/2017 3:19	1:25	KWP	5.973	8.732	System constraint
10/21/2017 4:50	0:06	KWP	0.069	8.732	System constraint
10/21/2017 5:00	0:01	KWP	0.001	8.732	System constraint
10/21/2017 5:02	0:11	KWP	0.101	8.732	System constraint
10/21/2017 5:15	0:01	KWP	0.000	8.732	System constraint
10/21/2017 9:11	0:04	ESA	Data is not available	Data is not available	System constraint
10/21/2017 9:11	0:04	ESB	Data is not available	Data is not available	System constraint
10/21/2017 9:13	0:03	KWP	0.024	10.229	System constraint
10/21/2017 9:49	0:12	ESA	Data is not available	Data is not available	System constraint
10/21/2017 9:49	0:12	ESB	Data is not available	Data is not available	System constraint
10/21/2017 9:51	0:03	KWP	0.040	10.189	System constraint
10/21/2017 9:55	0:07	KWP	0.142	10.216	System constraint
10/21/2017 10:19	0:02	ESA	Data is not available	Data is not available	System constraint
10/21/2017 10:19	0:02	ESB	Data is not available	Data is not available	System constraint
10/21/2017 10:19	0:02	KWP	0.012	8.718	System constraint
10/21/2017 10:26	0:05	ESA	Data is not available	Data is not available	System constraint
10/21/2017 10:26	0:05	ESB	Data is not available	Data is not available	System constraint
10/21/2017 10:27	0:04	KWP	0.053	8.500	System constraint
10/21/2017 12:38	0:05	ESA	Data is not available	Data is not available	System constraint
10/21/2017 12:38	0:05	ESB	Data is not available	Data is not available	System constraint
10/21/2017 12:39	0:05	KWP	0.084	8.322	System constraint
10/21/2017 12:47	0:19	ESA	Data is not available	Data is not available	System constraint
10/21/2017 12:47	0:19	ESB	Data is not available	Data is not available	System constraint
10/21/2017 12:48	0:14	KWP	0.399	8.969	System constraint
10/21/2017 13:03	0:02	KWP	0.032	8.779	System constraint
10/21/2017 13:31	0:09	ESA	Data is not available	Data is not available	System constraint
10/21/2017 13:31	0:09	ESB	Data is not available	Data is not available	System constraint
10/21/2017 13:33	0:08	KWP	0.117	10.065	System constraint
10/21/2017 13:42	0:03	ESA	Data is not available	Data is not available	System constraint
10/21/2017 13:42	0:03	ESB	Data is not available	Data is not available	System constraint
10/21/2017 13:42	0:01	KWP	0.003	9.847	System constraint
10/21/2017 13:44	0:02	KWP	0.013	9.955	System constraint
10/21/2017 13:47	0:01	ESA	Data is not available	Data is not available	System constraint
10/21/2017 13:47	0:01	ESB	Data is not available	Data is not available	System constraint
10/23/2017 11:06	0:01	KWP	0.000	0.005	System constraint
10/23/2017 11:44	0:01	KWP	0.000	0.004	System constraint
10/23/2017 15:02	0:01	AWE	0.002	0.100	System constraint
10/23/2017 15:07	0:01	AWE	0.002	0.100	System constraint
10/23/2017 15:12	0:01	AWE	0.002	0.100	System constraint
10/23/2017 15:22	0:01	AWE	0.003	0.200	System constraint
10/24/2017 2:37	0:01	AWE	0.003	0.200	System constraint
10/24/2017 2:54	3:37	AWE	Data is not available	Data is not available	System constraint
10/24/2017 2:54	2:39	KWP	Data is not available	Data is not available	System constraint
10/24/2017 2:54	4:18	KWP	Data is not available	Data is not available	System constraint
10/24/2017 6:17	3:38	BS250	Data is not available	Data is not available	System constraint
10/24/2017 6:17	2:00	ESA	Data is not available	Data is not available	System constraint
10/24/2017 6:17	2:00	ESB	Data is not available	Data is not available	System constraint
10/24/2017 6:18	4:49	5A	Data is not available	Data is not available	System constraint
10/24/2017 6:17	3:38	BS	Data is not available	Data is not available	System constraint
10/24/2017 14:37	4:27	KWP	87.533	19.672	System constraint
10/25/2017 5:14	0:01	KWP	0.000	0.007	System constraint
10/27/2017 8:47	0:01	KWP	0.327	19.672	System constraint
10/27/2017 10:21	0:01	KWP	0.001	0.090	System constraint
10/28/2017 19:20	0:01	AWE	0.002	0.100	System constraint
10/29/2017 10:14	0:01	AWE	0.002	0.100	System constraint
Total Estimated Curtailed MWH			330.960		

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"), Extra Spaces A ("ESA"), and Extra Spaces B ("ESB") 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, ESA, ESB, or MH.
- Curtailment signals sent to 5A, BS, BS250, ESA, or ESB 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.



Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
10/1/2017 7:30	0:22	LSR	Data is not available	Data is not available	Oversupply
10/1/2017 9:58	1:14	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 7:14	0:39	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 7:55	0:01	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 7:57	0:11	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 8:09	0:32	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 8:42	0:02	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 8:46	0:06	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 8:55	1:21	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 10:17	0:37	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 10:57	0:01	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 11:00	0:02	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 11:05	0:23	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 11:29	1:13	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 13:53	0:18	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 14:12	0:59	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 15:24	0:02	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 15:31	0:19	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 16:00	0:01	LSR	Data is not available	Data is not available	Oversupply
10/5/2017 16:29	0:05	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 7:06	0:04	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 7:12	0:04	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 7:18	2:14	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 9:33	0:01	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 9:35	0:23	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 10:00	0:05	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 10:11	0:05	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 10:23	0:01	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 10:25	0:02	LSR	Data is not available	Data is not available	Oversupply
10/6/2017 10:28	0:01	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 9:35	0:09	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 10:08	0:24	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 11:20	1:32	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 12:54	1:08	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 14:12	0:05	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 14:21	0:03	LSR	Data is not available	Data is not available	Oversupply
10/7/2017 15:11	0:04	LSR	Data is not available	Data is not available	Oversupply
10/9/2017 14:11	3:07	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 7:04	1:07	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 8:12	0:37	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 8:56	0:16	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 9:18	0:23	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 9:43	0:03	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 9:47	0:07	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 9:58	1:47	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 11:55	0:02	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 12:23	0:02	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 12:26	0:01	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 12:30	0:02	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 12:57	0:01	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 13:00	0:13	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 13:26	0:03	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 14:01	0:02	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 14:06	0:07	LSR	Data is not available	Data is not available	Oversupply
10/10/2017 14:41	0:24	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 14:51	0:11	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 15:03	0:02	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 15:06	0:07	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 15:15	0:01	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 15:18	0:29	LSR	Data is not available	Data is not available	Oversupply
10/16/2017 16:11	0:34	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 6:54	0:03	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 7:05	0:37	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 7:43	0:04	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 7:48	5:22	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 13:12	0:01	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 13:14	1:06	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 14:23	0:01	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 14:27	0:37	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 15:07	0:09	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 15:17	0:12	LSR	Data is not available	Data is not available	Oversupply
10/17/2017 15:30	0:23	LSR	Data is not available	Data is not available	Oversupply



Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
10/17/2017 15:55	0:32	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 6:51	0:19	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 7:23	0:04	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 7:29	0:05	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 7:35	0:19	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 7:56	0:59	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 8:56	0:02	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 9:00	0:02	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 9:05	0:03	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 9:09	0:01	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 9:11	0:05	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 9:17	3:59	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 13:23	1:29	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 14:55	1:21	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 16:17	0:44	LSR	Data is not available	Data is not available	Oversupply
10/18/2017 17:33	0:11	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:07	0:01	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:10	0:04	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:16	0:11	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:31	0:01	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:35	0:01	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:37	0:11	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 7:49	0:37	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 8:27	0:03	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 8:32	0:13	LSR	Data is not available	Data is not available	Oversupply
10/19/2017 8:46	8:16	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 7:14	1:00	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 8:15	0:07	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 8:28	1:53	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 10:25	1:31	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 11:58	2:50	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 14:49	1:53	LSR	Data is not available	Data is not available	Oversupply
10/20/2017 16:43	0:06	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 6:44	0:21	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 7:13	0:01	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 7:16	0:06	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 7:41	0:04	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 7:46	0:04	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 7:53	0:08	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 8:04	0:01	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 8:07	0:38	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 10:35	2:44	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 13:28	0:29	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 13:58	0:09	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 14:09	0:27	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 14:38	0:02	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 14:42	0:11	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 15:45	0:01	LSR	Data is not available	Data is not available	Oversupply
10/21/2017 15:49	1:13	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 7:33	5:21	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 12:55	1:00	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 14:04	0:04	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 14:29	0:12	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 14:43	1:10	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 15:55	0:05	LSR	Data is not available	Data is not available	Oversupply
10/22/2017 16:25	0:29	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 7:25	0:03	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 9:06	0:01	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 9:15	0:04	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 9:20	0:12	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 9:40	0:03	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 9:47	0:19	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 10:15	0:03	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 10:43	0:03	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 10:49	0:18	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 11:10	0:03	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 11:16	0:02	LSR	Data is not available	Data is not available	Oversupply
10/23/2017 11:34	0:01	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 8:08	0:25	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 8:39	1:40	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 10:34	1:43	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 12:19	0:47	LSR	Data is not available	Data is not available	Oversupply



Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
10/24/2017 13:07	0:45	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 14:41	0:20	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 15:10	0:01	LSR	Data is not available	Data is not available	Oversupply
10/24/2017 15:32	0:02	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 9:14	0:01	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 11:34	0:22	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 12:08	0:14	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 13:00	0:27	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 13:41	0:12	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 14:01	0:11	LSR	Data is not available	Data is not available	Oversupply
10/25/2017 14:28	0:08	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 7:29	0:02	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 7:46	0:05	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 7:55	0:01	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 7:58	0:01	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 8:03	1:22	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 9:30	0:01	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 9:38	0:04	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 10:02	0:09	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 10:33	0:20	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 10:57	0:08	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 11:06	0:15	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 13:39	0:29	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 14:37	0:03	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 15:11	0:06	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 15:19	0:26	LSR	Data is not available	Data is not available	Oversupply
10/26/2017 15:47	1:47	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 7:39	0:07	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 7:50	3:25	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 11:16	1:29	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 12:49	1:12	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 14:06	0:11	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 14:30	0:02	LSR	Data is not available	Data is not available	Oversupply
10/27/2017 16:09	0:41	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 7:05	2:26	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 9:35	0:07	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 9:54	0:04	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:20	0:01	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:27	0:01	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:33	0:05	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:39	0:01	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:43	0:02	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 10:50	0:13	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 11:09	0:03	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 11:16	0:05	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 11:26	0:02	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 11:32	0:01	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 11:44	0:17	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 12:03	0:05	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 12:13	0:01	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 13:44	0:03	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 13:50	0:29	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 15:30	0:13	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 15:53	0:03	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 16:16	0:04	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 16:29	0:07	LSR	Data is not available	Data is not available	Oversupply
10/28/2017 16:50	0:40	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 7:22	0:01	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 7:37	0:58	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 8:36	0:07	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 9:03	0:10	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 9:14	0:10	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 9:33	0:05	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 9:42	0:05	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 9:51	0:01	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 10:00	0:53	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 10:57	2:43	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 13:43	0:01	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 13:46	0:29	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 14:17	0:02	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 14:20	0:01	LSR	Data is not available	Data is not available	Oversupply
10/29/2017 14:37	0:42	LSR	Data is not available	Data is not available	Oversupply



Lanai Curtailment Report

October 2017

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
10/29/2017 15:22	0:47	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 7:21	0:44	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 8:08	0:07	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 8:18	0:10	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 8:30	0:15	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 8:49	0:01	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 8:51	0:07	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 9:00	0:18	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 9:20	3:44	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 13:05	0:10	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 13:17	2:21	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 15:42	0:01	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 15:52	0:02	LSR	Data is not available	Data is not available	Oversupply
10/30/2017 15:59	0:46	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 8:20	0:03	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 8:40	0:02	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 8:47	0:02	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 8:50	0:03	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 8:57	0:08	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 9:09	0:05	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 9:16	0:07	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 10:13	0:02	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 10:30	0:40	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 11:11	1:14	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 12:28	0:01	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 12:31	0:36	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 13:08	0:02	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 13:12	0:03	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 13:21	0:26	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:00	0:01	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:02	0:07	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:12	0:05	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:19	0:10	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:44	0:01	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 14:50	0:06	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 15:20	0:01	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 15:30	0:38	LSR	Data is not available	Data is not available	Oversupply
10/31/2017 16:12	0:33	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 October 2017

Start Date/Time	MW Output Prior to Start of Curtailment	End Date/Time	MW Output After Curtailment Released ¹	IPP	Reason for Curtailment
09/13/17 12:54	0.0 MW	10/11/17 14:50	14.3 MW	Tawhiri	Facility requested
10/02/17 12:03	5.2 MW	10/02/17 12:42	5.9 MW	HRD	System constraint
10/03/17 16:47	6.4 MW	10/03/17 20:57	2.9 MW	HRD	System constraint
10/03/17 21:25	5.0 MW	10/05/17 15:33	8.6 MW	HRD	System constraint
10/05/17 22:14	0.0 MW	10/06/17 05:00	4.6 MW	HRD	Facility requested
10/14/17 20:09	9.3 MW	10/14/17 21:18	9.6 MW	HRD	System constraint
10/15/17 13:36	18.7 MW	10/16/17 05:58	19.8 MW	Tawhiri	Facility requested
10/16/17 09:06	18.7 MW	10/16/17 19:44	17.7 MW	Tawhiri	Facility requested
10/18/17 03:49	10.4 MW	10/18/17 05:23	12.1 MW	Tawhiri	Oversupply
10/18/17 03:57	6.9 MW	10/18/17 04:49	7.6 MW	HRD	Oversupply
10/18/17 09:11	18.7 MW	10/18/17 14:59	18.5 MW	Tawhiri	Facility requested

¹ 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.

SERVICE LIST
(Docket No. 2011-0206)

DEAN NISHINA EXECUTIVE DIRECTOR DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS DIVISION OF CONSUMER ADVOCACY P.O. Box 541 Honolulu, HI 96809	2 Copies Via Hand Delivery
GREGG J. KINKLEY, ESQ. DEPARTMENT OF THE ATTORNEY GENERAL 425 Queen Street Honolulu, Hawaii 96813 Counsel for DBEDT	1 Copy Electronically Transmitted
DANIEL W.S. LAWRENCE, ESQ. DEPARTMENT OF THE CORPORATION COUNSEL CITY AND COUNTY OF HONOLULU 530 S. King Street, Room 110 Honolulu, HI 96813 Counsel for the CITY AND COUNTY OF HONOLULU	1 Copy Electronically Transmitted
JOSEPH K. KAMELAMELA ANGELIC M. HO DEPARTMENT OF THE CORPORATION COUNSEL COUNTY OF HAWAII 101 Aupuni Street, Suite 325 Hilo, HI 96720 Counsel for the COUNTY OF HAWAII	1 Copy Electronically Transmitted
HENRY Q CURTIS VICE PRESIDENT FOR CONSUMER ISSUES LIFE OF THE LAND P.O. Box 37158 Honolulu, HI 96837-0158	1 Copy Electronically Transmitted
MELISSA MIYASHIRO (9360) CHIEF OF STAFF BLUE PLANET FOUNDATION 55 Merchant Street, 17th Floor Honolulu, HI 96813	1 Copy Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

ISAAC MORIWAKE, ESQ.
DAVID HENKIN, ESQ.
EARTHJUSTICE
850 Richards Street, Suite 400
Honolulu, HI 96813-4501
Counsel for HAWAII SOLAR ENERGY ASSOCIATION

1 Copy
Electronically Transmitted

RICK REED
DIRECTOR
HAWAII SOLAR ENERGY ASSOCIATION
761 Ahua Street
Honolulu, HI 96819

1 Copy
Electronically Transmitted

KENT D. MORIHARA, ESQ.
KRIS N. NAKAGAWA, ESQ.
LAUREN M. IMADA-LEE, ESQ.
TANYA M. FERNANDES, ESQ.
Moriyama Lau & Fong LLP
841 Bishop Street, Suite 400
Honolulu, Hawaii 96813
Counsel for KAUAI ISLAND UTILITY COOPERATIVE

1 Copy
Electronically Transmitted

ERIK W. KVAM
CHIEF EXECUTIVE OFFICER
ZERO EMISSIONS LEASING LLC
4188-4 Keanu Street
Honolulu, HI 96816

1 Copy
Electronically Transmitted

SANDRA-ANN Y.H. WONG, ESQ.
ATTORNEY AT LAW, A LAW CORPORATION
1050 Bishop Street, #514
Honolulu, HI 96813
Counsel for TAWHIRI POWER LLC

1 Copy
Electronically Transmitted

RILEY SAITO
73-1294 Awakea Street
Kailua-Kona, HI 96740
For SOLAR ENERGY INDUSTRIES ASSOCIATION

1 Copy
Electronically Transmitted

DEAN T. YAMAMOTO, ESQ.
YAMAMOTO & SETTLE
700 Bishop Street, Suite 200
Honolulu, HI 96813
Counsel for CASTLE & COOKE HOMES HAWAII, INC.,
CASTLE & COOKE RESORTS, LLC and
LANAI SUSTAINABILITY RESEARCH, LLC

1 Copy
Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

MICHAEL J. HOPPER, ESQ. DEPUTY CORPORATION COUNSEL DEPARTMENT OF THE CORPORATION COUNSEL COUNTY OF MAUI 200 S. High Street Wailuku, HI 96793 Counsel for the COUNTY OF MAUI	1 Copy Electronically Transmitted
CURTIS SEYMOUR SENIOR MANAGER, GOVERNMENT AFFAIRS SUN EDISON LLC 600 Clipper Drive Belmont, CA 94002	1 Copy Electronically Transmitted
MONA W. CLARK, ESQ. OFFICE OF THE COUNTY ATTORNEY COUNTY OF KAUAI 4444 Rice Street, Suite 200 Lihue, HI 96766-1300	1 Copy Electronically Transmitted
BRADLEY ALBERT PRESIDENT HAWAII PV COALITION P.O. Box 81501 Haiku, HI 96708	1 Copy Electronically Transmitted
HILTON H. UNEMORI ECM, INC. 130 N. Market Street Wailuku, HI 96793-1716 For SOUTH MAUI RENEWABLE RESOURCES, LLC	1 Copy Electronically Transmitted
SKY STANFIELD SHUTE, MIHALY & WEINBERGER LLP 396 Hayes Street San Francisco, CA 94102 For the INTERSTATE RENEWABLE ENERGY COUNCIL	1 Copy Electronically Transmitted
PETE COOPER SOLARCITY CORPORATION REGIONAL DIRECTOR, HAWAII 599 Kahelu Street Mililani, HI 96789	1 Copy Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

ALISON SILVERSTEIN
19213 Luedtke Lane
Pflugerville, TX 78660

1 Copy
Electronically Transmitted

BRENDAN KIRBY
12011 SW Pineapple Court
Palm City, FL 34990

1 Copy
Electronically Transmitted