



May 22, 2018

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2018 MAY 22 P 3:42

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 April 2018 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](mailto: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

<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".

**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 April 30, 2018):

**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 April 30, 2018):

**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:**

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

**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 are provided in Attachment 5. 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.

- (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 April 30, 2018):

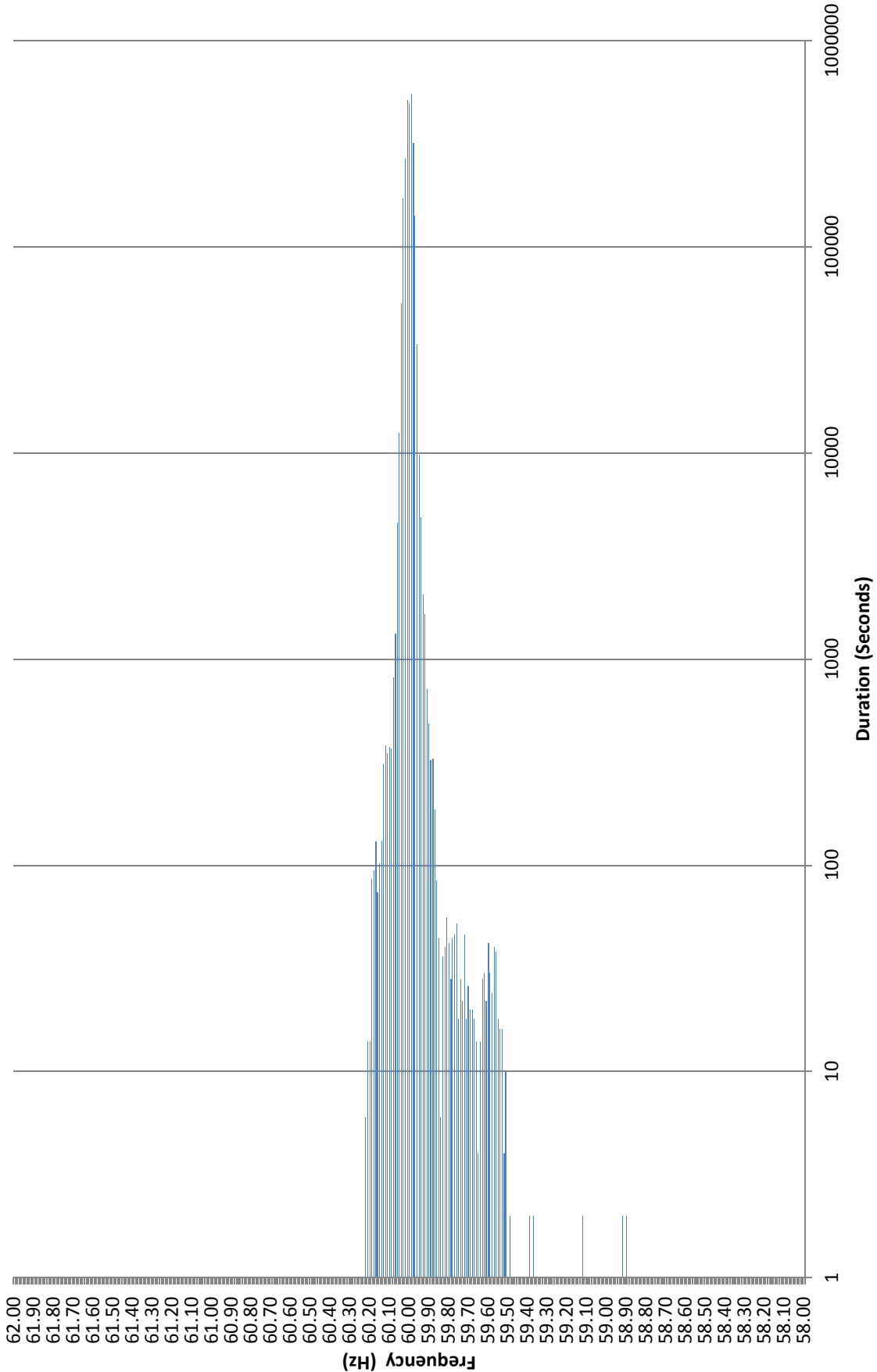
**3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:**

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

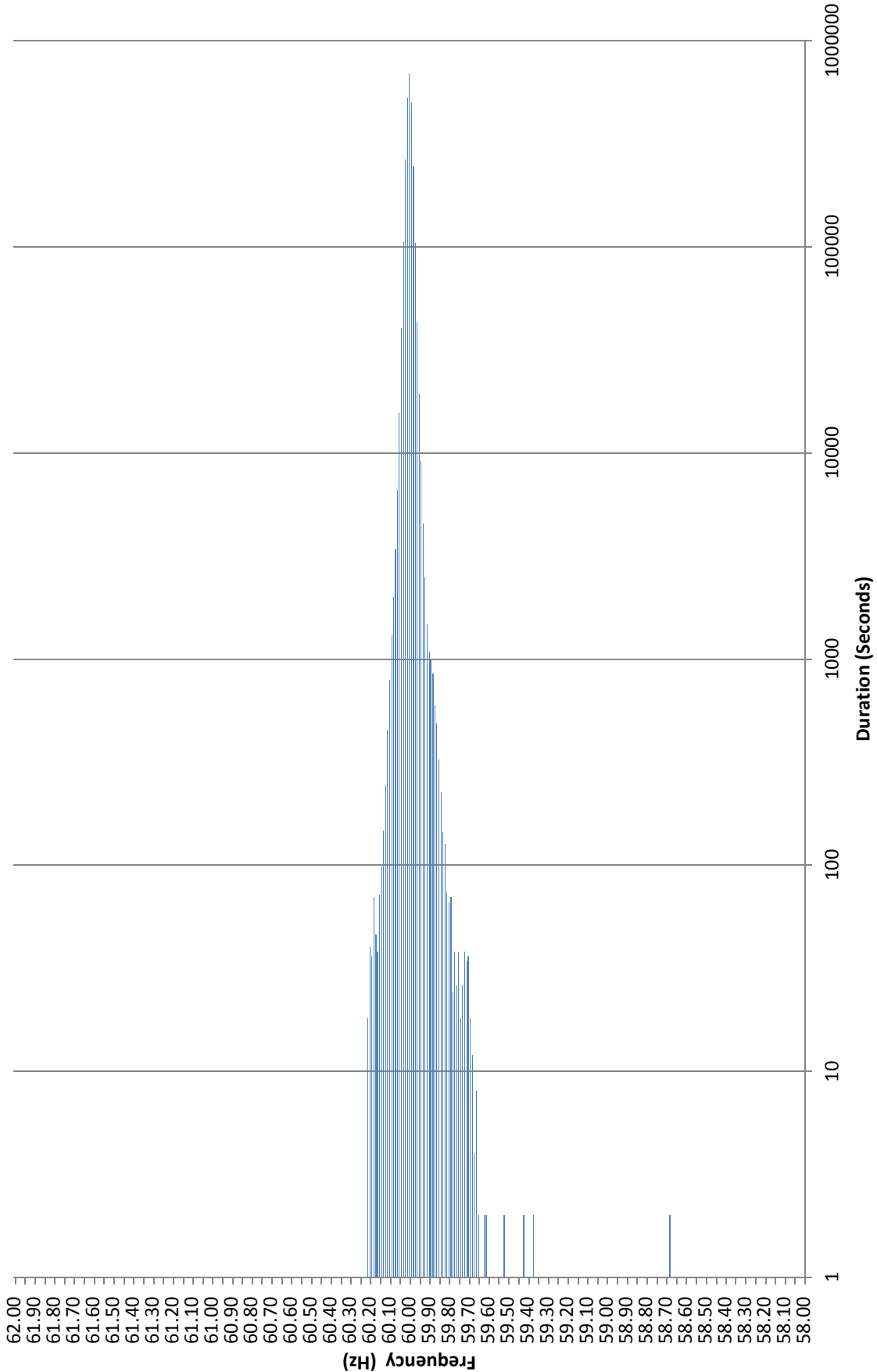
**3b) Total MWh of non-dispatchable renewable resources curtailed for the month:**

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.

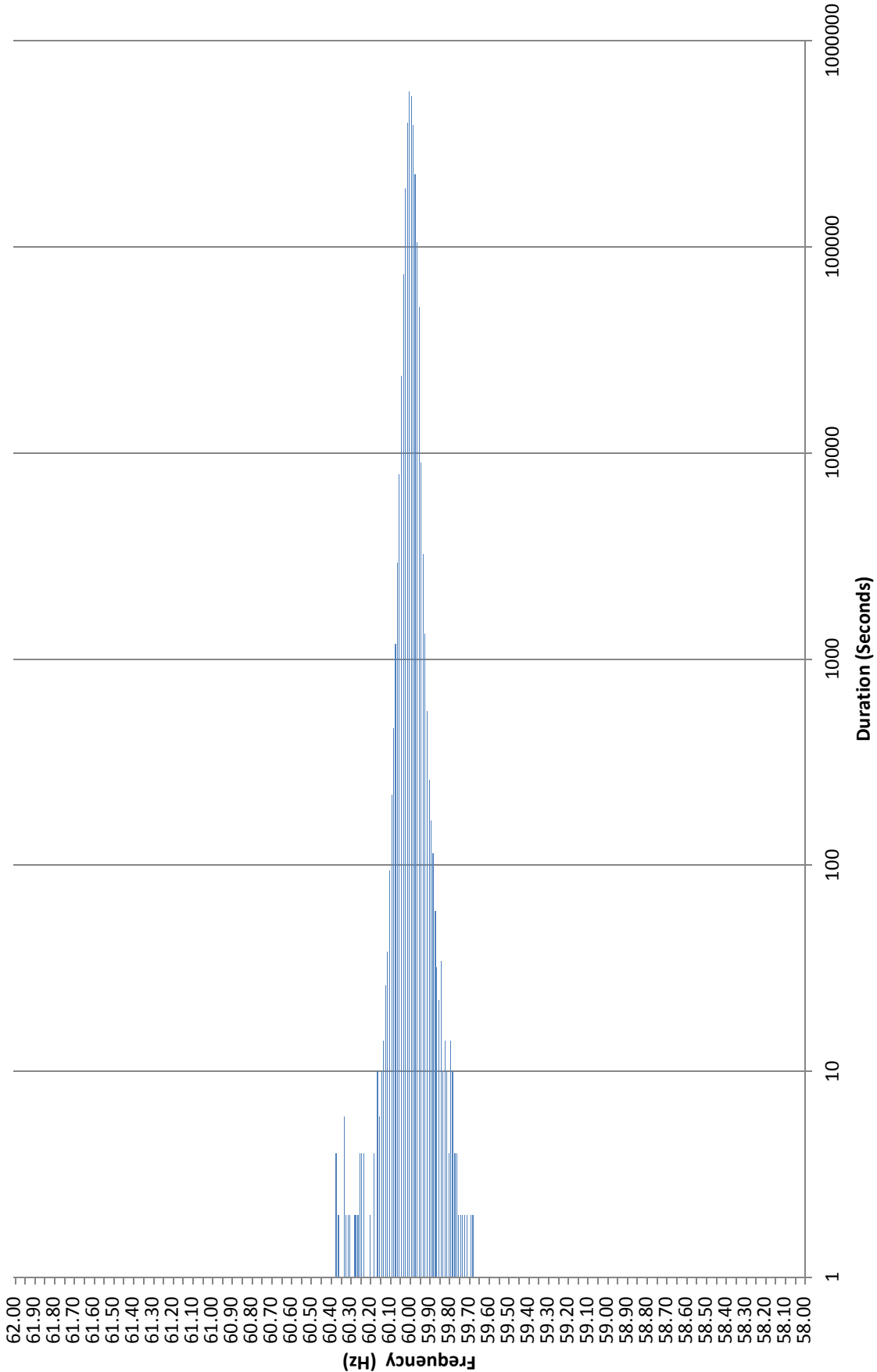
# Frequency Distribution Plot - Hawaiian Electric April 2018



**Frequency Distribution Plot - Maui Electric  
April 2018**



**Frequency Distribution Plot - Hawai'i Electric Light  
April 2018**



Hawaiian Electric Frequency Excursion Statistics April 2018		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	793	1028
Maximum Duration (sec)	952	1018
Maximum Deviation (Hz)	58.89801	60.225
Total Duration of Excursions (sec)	15038	12774

Maui Electric Frequency Excursion Statistics April 2018		
	<59.95 Hz	>60.05 Hz
Number of Excursions	5397	3711
Maximum Duration (sec)	2282	368
Maximum Deviation (Hz)	58.682	60.214
Total Duration of Excursions (sec)	30754	21304



Hawai'i Electric Light Frequency Excursion Statistics April 2018		
	<59.95 Hz	>60.05 Hz
Number of Excursions	7045	1463
Maximum Duration (sec)	194	86
Maximum Deviation (Hz)	59.681	60.375
Total Duration of Excursions (sec)	39806	8020

HAWAIIAN ELECTRIC COMPANY, INC.  
CONTINGENCY RESERVE ACTIVATION EVENTS  
April 2018

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	4/2/18 13:38	60.01	58.92	NA	0	0:00	AES tripped offline while generating ~181 MW.
2	4/10/18 0:05	60.03	59.37	NA	-40	1:31	KPLP CT2 tripped offline while generating ~79 MW.

HAWAIIAN ELECTRIC COMPANY, INC.  
 UNDERFREQUENCY LOAD SHEDDING EVENTS  
 April 2018

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	04/02/18 13:38	60.01	58.92	58.9	33.27	0:26	AES tripped offline while generating ~181 MW. Block 1 activated.



HAWAIIAN ELECTRIC COMPANY, INC.  
DEMAND RESPONSE EVENTS  
April 2018

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	4/2/18 13:38	60.01	58.92	59.70	NA	0:15	AES tripped offline while generating ~181 MW. RDLC/CIDLC activated.
2	4/10/18 0:05	60.03	59.37	59.70	NA	0:02	KPLP CT2 tripped offline while generating ~79 MW. RDLC/CIDLC activated.

Hawaiian Electric Curtailment Report April 2018

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
04/03/18 05:53	0.0	0.00	04/03/18 20:23	0	*	North	System Constraints
04/03/18 05:57	0.0	0.00	04/03/18 20:24	0	*	South	System Constraints
04/03/18 06:06	0.0	0.00	04/03/18 08:23	0	*	Makai	System Constraints
04/03/18 06:11	0.0	0.00	04/03/18 08:19	0	*	KWF	System Constraints
04/03/18 14:51	0.0	0.00	04/03/18 15:49	0	*	KWF	System Constraints
04/03/18 15:15	0.0	0.00	04/03/18 15:52	0	*	Makai	System Constraints
04/04/18 11:56	0.0	16.40	04/04/18 12:46	0	*	Waianae	System Constraints
04/04/18 15:31	4.0	4.00	04/04/18 15:42	0	*	Makai	Facility Requested Curtailment
04/04/18 15:31	25.0	24.00	04/04/18 15:42	0	*	Mauka	Facility Requested Curtailment
04/04/18 15:42	0.0	4.00	04/04/18 16:15	0	*	Makai	Facility Requested Curtailment
04/04/18 15:42	0.0	24.00	04/04/18 16:15	0	*	Mauka	Facility Requested Curtailment
04/06/18 06:38	0.0	0.00	04/06/18 19:07	0	*	Makai	System Constraints
04/06/18 06:41	0.0	0.00	04/06/18 09:14	0	*	Mauka	System Constraints
04/06/18 07:01	0.0	0.00	04/06/18 19:11	0	*	KWF	System Constraints
04/06/18 15:30	0.0	39.00	04/06/18 16:32	0	*	Mauka	System Constraints
04/21/18 06:27	0.0	14.00	04/21/18 07:24	0	*	Mauka	System Constraints
04/22/18 06:53	0.0	0.00	04/22/18 15:27	0	*	Aloha	System Constraints
04/22/18 06:57	0.0	2.10	04/22/18 07:27	0	*	Waianae	System Constraints
04/22/18 14:17	0.0	23.50	04/22/18 15:25	0	*	Waianae	System Constraints
04/23/18 05:44	0.0	9.00	04/23/18 16:22	0	*	KWF	System Constraints
04/23/18 05:46	0.0	3.00	04/23/18 16:19	0	*	Makai	System Constraints
04/23/18 14:57	0.0	23.50	04/23/18 16:19	0	*	Mauka	System Constraints
04/24/18 05:30	0.0	13.00	04/24/18 17:41	0	*	KWF	System Constraints
04/24/18 05:33	0.0	4.00	04/24/18 17:57	0	*	Makai	System Constraints
04/24/18 06:01	0.0	0.00	04/24/18 06:44	0	*	Aloha	System Constraints
04/24/18 06:03	0.0	0.00	04/24/18 06:46	0	*	Waianae	System Constraints
04/24/18 16:27	0.0	4.50	04/24/18 17:05	0	*	Waianae	System Constraints
04/24/18 16:30	0.0	0.50	04/24/18 17:03	0	*	Aloha	System Constraints
04/25/18 06:27	0.0	12.00	04/25/18 18:25	0	*	KWF	System Constraints
04/25/18 06:32	0.0	2.00	04/25/18 18:28	0	*	Makai	System Constraints
04/26/18 06:10	0.0	8.00	04/26/18 16:19	0	*	KWF	System Constraints
04/26/18 16:12	0.0	4.40	04/26/18 16:21	0	*	Makai	System Constraints
04/27/18 06:37	0.0	0.00	04/27/18 08:50	0	*	KWF	System Constraints
04/27/18 06:39	0.0	0.00	04/27/18 08:52	0	*	Makai	System Constraints
04/27/18 14:29	0.0	1.10	04/27/18 14:58	0	*	KWF	System Constraints
04/27/18 14:31	0.0	1.00	04/27/18 14:59	0	*	Makai	System Constraints

Aloha1 = Aloha Solar 1 PV Farm  
KLS2 = Kalaeloa Solar 2 PV Farm  
KREP = Kalaeloa Renewable Energy Park  
KWF = Kahuku Wind Farm  
Makai = Kawailoa Makai Wind Farm  
Mauka = Kawailoa 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 Kawailoa 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
4/1/2018 10:19	0:01	AWE	0.003	0.200	Oversupply
4/1/2018 16:11	0:01	AWE	0.002	0.100	Oversupply
4/4/2018 10:27	0:02	BS250	Data is not available	Data is not available	System constraint
4/4/2018 10:28	0:02	KWP/II	0.055	17.050	System constraint
4/4/2018 13:08	0:01	BS250	Data is not available	Data is not available	System constraint
4/4/2018 13:08	0:01	KWP/II	0.009	15.370	System constraint
4/4/2018 13:11	0:02	BS250	Data is not available	Data is not available	System constraint
4/4/2018 13:12	0:02	KWP/II	0.054	16.228	System constraint
4/5/2018 0:34	0:27	KWP/II	1.866	17.423	Oversupply
4/5/2018 1:06	0:01	AWE	0.003	0.200	Oversupply
4/6/2018 14:48	0:01	AWE	0.002	0.100	Oversupply
4/7/2018 1:53	0:01	KWP/II	0.026	19.823	Oversupply
4/7/2018 2:00	1:04	KWP/II	7.700	20.647	Oversupply
4/7/2018 3:13	0:02	KWP/II	0.005	19.613	Oversupply
4/7/2018 9:17	0:43	KWP/II	4.503	20.275	Oversupply
4/8/2018 10:29	0:01	KWP/II	0.000	0.025	Oversupply
4/8/2018 10:32	0:01	KWP/II	0.000	0.001	Oversupply
4/8/2018 14:47	0:20	KWP/II	1.018	17.622	Oversupply
4/8/2018 16:28	0:01	KWP/II	0.002	0.103	Oversupply
4/8/2018 16:57	0:01	KWP/II	0.000	0.013	Oversupply
4/8/2018 19:31	0:01	AWE	0.002	0.100	Oversupply
4/8/2018 23:50	0:01	KWP/II	0.055	17.970	Oversupply
4/9/2018 2:14	0:02	KWP/II	0.008	20.495	Oversupply
4/9/2018 2:20	0:02	KWP/II	0.014	20.592	Oversupply
4/9/2018 2:28	0:02	KWP/II	0.028	20.639	Oversupply
4/9/2018 2:31	0:02	KWP/II	0.009	20.643	Oversupply
4/9/2018 9:57	0:20	KWP/II	1.425	20.708	System constraint
4/9/2018 10:32	0:01	AWE	0.003	0.200	System constraint
4/9/2018 10:37	1:13	KWP/II	8.235	20.708	System constraint
4/9/2018 11:54	0:25	KWP/II	1.017	20.708	System constraint
4/10/2018 0:43	0:30	KWP/II	0.437	20.708	Oversupply
4/10/2018 1:14	0:02	KWP/II	0.022	20.708	Oversupply
4/10/2018 1:24	0:01	KWP/II	0.007	20.708	Oversupply
4/10/2018 1:27	0:03	KWP/II	0.041	20.708	Oversupply
4/10/2018 1:34	0:21	KWP/II	0.447	20.708	Oversupply
4/10/2018 1:56	0:02	KWP/II	0.059	20.706	Oversupply
4/10/2018 1:59	0:07	KWP/II	0.183	20.708	Oversupply
4/10/2018 2:08	0:06	KWP/II	0.126	20.707	Oversupply
4/10/2018 2:17	0:26	KWP/II	0.815	20.706	Oversupply
4/10/2018 2:54	0:02	KWP/II	0.038	20.618	Oversupply
4/10/2018 2:59	0:02	KWP/II	0.040	20.670	Oversupply
4/10/2018 3:08	0:02	KWP/II	0.009	20.658	Oversupply
4/10/2018 3:19	0:07	KWP/II	0.074	20.692	Oversupply
4/10/2018 3:27	0:05	KWP/II	0.067	20.696	Oversupply
4/10/2018 3:47	0:08	KWP/II	0.036	20.705	Oversupply
4/10/2018 7:29	0:01	BS250	Data is not available	Data is not available	Oversupply
4/10/2018 7:29	0:02	KWP/II	0.013	20.695	Oversupply
4/10/2018 9:30	2:32	BS250	Data is not available	Data is not available	Oversupply
4/10/2018 9:31	2:22	KWP/II	15.115	20.707	Oversupply
4/10/2018 11:54	0:09	KWP/II	0.231	20.661	Oversupply
4/10/2018 12:07	0:01	KWP/II	0.007	20.681	Oversupply
4/10/2018 12:10	2:18	BS250	Data is not available	Data is not available	Oversupply
4/10/2018 12:11	0:05	KWP/II	0.109	20.686	Oversupply
4/10/2018 12:18	2:11	KWP/II	11.279	20.699	Oversupply
4/11/2018 1:53	3:08	KWP/II	28.379	20.708	Oversupply
4/11/2018 8:00	0:01	BS250	Data is not available	Data is not available	Oversupply
4/11/2018 8:01	0:05	AWE	0.112	11.600	Oversupply
4/11/2018 8:46	6:24	BS250	Data is not available	Data is not available	Oversupply
4/11/2018 8:48	6:24	KWP/II	79.674	20.708	Oversupply
4/11/2018 11:56	0:03	AWE	0.012	19.800	Oversupply
4/11/2018 12:00	0:01	AWE	0.006	20.700	Oversupply
4/11/2018 12:07	0:01	AWE	0.002	20.300	Oversupply
4/11/2018 12:09	0:01	AWE	0.006	20.100	Oversupply
4/11/2018 12:11	0:05	AWE	0.032	19.700	Oversupply
4/11/2018 12:17	0:01	AWE	0.003	20.100	Oversupply
4/11/2018 12:28	0:03	AWE	0.019	20.800	Oversupply
4/11/2018 12:33	0:01	AWE	0.011	20.500	Oversupply
4/11/2018 13:31	0:07	AWE	0.138	20.100	Oversupply
4/11/2018 13:40	0:01	AWE	0.001	19.900	Oversupply
4/11/2018 13:42	0:01	AWE	0.006	20.000	Oversupply
4/11/2018 13:44	0:03	AWE	0.027	20.500	Oversupply
4/12/2018 1:47	0:08	KWP/II	0.126	12.247	Oversupply
4/12/2018 2:01	0:01	KWP/II	0.003	12.006	Oversupply
4/12/2018 2:12	0:01	KWP/II	0.001	16.680	Oversupply
4/13/2018 4:32	0:18	KWP/II	4.120	19.084	Oversupply
4/13/2018 4:51	0:47	KWP/II	12.248	20.158	Oversupply
4/13/2018 5:05	0:01	AWE	0.005	19.000	Oversupply
4/13/2018 5:24	0:01	AWE	0.009	20.700	System constraint
4/13/2018 5:30	0:03	AWE	0.021	21.000	System constraint
4/13/2018 5:39	0:08	KWP/II	0.855	18.226	System constraint
4/13/2018 6:56	0:18	KWP/II	1.935	17.334	System constraint
4/13/2018 8:32	0:01	KWP	0.003	0.000	System constraint
4/13/2018 15:41	0:02	BS250	Data is not available	Data is not available	System constraint
4/13/2018 15:50	0:01	BS250	Data is not available	Data is not available	System constraint
4/13/2018 15:50	0:01	KWP/II	0.004	5.964	System constraint



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/13/2018 16:06	0:10	BS250	Data is not available	Data is not available	System constraint
4/13/2018 16:07	0:16	KWP11		0.406	16.674 System constraint
4/13/2018 16:17	0:05	BS250	Data is not available	Data is not available	System constraint
4/13/2018 16:23	0:01	BS250	Data is not available	Data is not available	System constraint
4/13/2018 16:24	0:01	KWP11		0.005	16.525 System constraint
4/13/2018 16:26	0:01	BS250	Data is not available	Data is not available	System constraint
4/13/2018 16:26	0:01	KWP11		0.008	16.138 System constraint
4/13/2018 16:32	0:01	KWP11		0.009	18.070 System constraint
4/13/2018 23:55	6:17	KWP11		89.483	20.708 Oversupply
4/13/2018 23:59	0:03	AWE		0.047	20.400 Oversupply
4/14/2018 5:56	0:17	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 1:31	0:04	AWE		0.040	20.900 Oversupply
4/14/2018 1:37	0:01	AWE		0.006	21.000 Oversupply
4/14/2018 1:40	0:01	AWE		0.002	20.900 Oversupply
4/14/2018 1:45	0:01	AWE		0.010	20.500 Oversupply
4/14/2018 1:49	0:22	AWE		0.410	21.000 Oversupply
4/14/2018 2:12	0:01	AWE		0.004	21.000 Oversupply
4/14/2018 2:14	0:10	AWE		0.217	21.000 Oversupply
4/14/2018 2:25	0:06	AWE		0.053	21.000 Oversupply
4/14/2018 6:16	0:01	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 6:42	0:52	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 6:45	0:49	KWP11		4.036	19.211 Oversupply
4/14/2018 7:43	2:40	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 7:43	2:41	KWP11		25.226	20.708 Oversupply
4/14/2018 10:26	0:06	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 10:26	0:01	KWP11		0.010	20.695 Oversupply
4/14/2018 10:28	0:04	KWP11		0.031	20.708 Oversupply
4/14/2018 10:42	0:01	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 10:42	0:08	KWP11		0.089	20.708 Oversupply
4/14/2018 10:44	0:05	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 10:58	2:19	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 10:59	2:12	KWP11		24.829	20.708 Oversupply
4/14/2018 13:13	0:05	KWP11		0.123	20.702 Oversupply
4/14/2018 13:23	0:01	KWP11		0.004	20.701 Oversupply
4/14/2018 13:25	0:03	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 13:26	0:02	KWP11		0.013	20.647 Oversupply
4/14/2018 13:30	0:06	BS250	Data is not available	Data is not available	Oversupply
4/14/2018 13:31	0:03	KWP11		0.027	20.692 Oversupply
4/14/2018 13:35	0:01	KWP11		0.008	20.703 Oversupply
4/15/2018 13:25	0:57	BS250	Data is not available	Data is not available	System constraint
4/15/2018 13:25	0:57	KWP11		5.726	18.009 System constraint
4/15/2018 14:25	0:19	BS250	Data is not available	Data is not available	System constraint
4/15/2018 14:25	0:19	KWP11		1.037	18.410 System constraint
4/15/2018 16:43	0:01	KWP11		0.016	20.200 System constraint
4/15/2018 16:45	0:01	BS250	Data is not available	Data is not available	System constraint
4/15/2018 17:25	0:01	BS250	Data is not available	Data is not available	System constraint
4/15/2018 17:25	0:02	KWP11		0.029	20.570 System constraint
4/15/2018 17:41	0:02	KWP11		0.019	20.659 System constraint
4/15/2018 21:47	8:23	KWP11		127.591	20.708 System constraint
4/16/2018 0:39	0:06	AWE		0.067	21.000 Oversupply
4/16/2018 0:58	4:06	AWE		31.416	21.000 Oversupply
4/16/2018 5:56	0:14	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 6:13	0:03	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 6:14	0:05	KWP11		0.068	20.708 Oversupply
4/16/2018 6:17	0:04	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 6:20	0:02	KWP11		0.009	20.708 Oversupply
4/16/2018 6:23	0:02	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 6:24	0:02	KWP11		0.013	20.708 Oversupply
4/16/2018 6:26	0:02	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 6:27	0:02	KWP11		0.021	20.708 Oversupply
4/16/2018 7:30	2:21	KWP11		26.286	20.708 Oversupply
4/16/2018 7:31	2:19	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 9:05	0:22	AWE		0.634	21.000 Oversupply
4/16/2018 9:30	0:17	AWE		0.858	20.500 Oversupply
4/16/2018 9:52	1:09	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 9:53	1:08	KWP11		11.284	20.708 Oversupply
4/16/2018 9:59	0:01	AWE		0.001	20.400 Oversupply
4/16/2018 10:01	0:01	AWE		0.006	20.600 Oversupply
4/16/2018 11:18	0:01	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 11:20	0:03	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 11:20	0:03	KWP11		0.016	20.708 Oversupply
4/16/2018 11:24	0:38	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 11:24	0:38	KWP11		1.909	20.707 Oversupply
4/16/2018 12:04	0:01	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 12:09	0:05	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 12:09	0:10	KWP11		0.214	20.630 Oversupply
4/16/2018 12:15	0:05	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 12:24	0:01	KWP11		0.003	20.438 Oversupply
4/16/2018 12:33	0:04	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 12:34	0:03	KWP11		0.060	20.645 Oversupply
4/16/2018 13:12	0:14	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 13:12	0:01	KWP11		0.007	20.684 Oversupply
4/16/2018 13:14	0:12	KWP11		0.883	20.702 Oversupply
4/16/2018 13:29	0:08	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 13:30	0:08	KWP11		0.252	20.699 Oversupply





Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/16/2018 13:39	0:01	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 13:40	0:01	KWP/II		19.694	Oversupply
4/16/2018 13:41	0:02	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 13:42	0:02	KWP/II	0.033	20.547	Oversupply
4/16/2018 13:45	0:14	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 13:45	0:14	KWP/II	0.556	20.708	Oversupply
4/16/2018 14:13	0:01	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 14:15	0:01	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 14:59	1:52	BS250	Data is not available	Data is not available	Oversupply
4/16/2018 14:59	1:52	KWP/II	15.108	20.708	Oversupply
4/16/2018 21:53	7:58	KWP/II	127.174	20.708	Oversupply
4/16/2018 23:39	0:07	AWE	0.190	21.000	Oversupply
4/17/2018 0:13	0:01	AWE	0.001	21.000	Oversupply
4/17/2018 1:00	3:41	AWE	12.927	21.000	Oversupply
4/17/2018 5:53	0:02	KWP/II	0.013	20.708	Oversupply
4/17/2018 9:25	0:01	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 9:28	4:02	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 9:29	4:02	KWP/II	39.377	20.708	Oversupply
4/17/2018 13:31	1:02	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 13:32	1:02	KWP/II	14.264	20.697	Oversupply
4/17/2018 14:13	0:01	AWE	0.010	20.200	Oversupply
4/17/2018 14:16	0:09	AWE	0.256	20.400	Oversupply
4/17/2018 14:27	0:01	AWE	0.005	20.600	Oversupply
4/17/2018 14:35	0:05	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 14:36	0:02	KWP/II	0.273	19.012	Oversupply
4/17/2018 14:39	0:05	KWP/II	0.409	20.394	Oversupply
4/17/2018 14:41	0:02	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 14:45	0:05	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 14:46	0:04	KWP/II	0.492	20.570	Oversupply
4/17/2018 14:51	0:01	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 14:51	0:02	KWP/II	0.057	18.759	Oversupply
4/17/2018 15:28	0:01	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 15:30	0:01	KWP/II	0.003	20.151	Oversupply
4/17/2018 15:40	0:02	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 15:44	0:02	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 15:45	0:01	KWP/II	0.014	20.660	Oversupply
4/17/2018 15:54	0:12	KWP/II	0.704	20.688	Oversupply
4/17/2018 15:55	0:01	BS250	Data is not available	Data is not available	Oversupply
4/17/2018 21:51	0:01	KWP/II	0.001	20.640	Oversupply
4/17/2018 22:04	6:38	KWP/II	104.545	20.708	Oversupply
4/18/2018 0:09	0:45	AWE	1.658	20.500	Oversupply
4/18/2018 0:56	0:02	AWE	0.003	18.200	Oversupply
4/18/2018 0:59	0:38	AWE	1.466	21.000	Oversupply
4/18/2018 1:46	0:01	AWE	0.004	15.400	Oversupply
4/18/2018 1:48	0:03	AWE	0.054	18.000	Oversupply
4/18/2018 1:52	0:05	AWE	0.044	16.800	Oversupply
4/18/2018 2:34	0:03	AWE	0.004	15.300	Oversupply
4/18/2018 2:38	1:48	AWE	8.091	21.000	Oversupply
4/18/2018 4:28	0:05	AWE	0.043	21.000	Oversupply
4/18/2018 4:34	0:02	AWE	0.001	21.000	Oversupply
4/18/2018 5:56	0:02	BS250	Data is not available	Data is not available	Oversupply
4/18/2018 4:44	1:12	KWP/II	10.462	19.211	Oversupply
4/18/2018 5:57	0:01	KWP/II	0.004	19.208	Oversupply
4/18/2018 7:52	0:01	KWP/II	0.000	16.786	Oversupply
4/18/2018 7:56	0:08	BS250	Data is not available	Data is not available	Oversupply
4/18/2018 7:56	0:08	KWP/II	0.514	19.972	Oversupply
4/18/2018 11:50	0:01	KWP/II	0.000	0.020	Oversupply
4/18/2018 14:09	0:01	KWP/II	0.002	0.149	Oversupply
4/18/2018 22:02	0:10	KWP/II	0.122	20.708	Oversupply
4/18/2018 22:17	0:34	KWP/II	0.992	20.705	Oversupply
4/18/2018 22:55	0:18	KWP/II	1.641	20.537	Oversupply
4/19/2018 0:13	0:44	KWP/II	11.088	20.591	Oversupply
4/19/2018 0:22	0:27	AWE	1.639	21.000	Oversupply
4/19/2018 0:51	0:01	AWE	0.007	20.000	Oversupply
4/19/2018 0:59	3:27	KWP/II	67.457	20.708	Oversupply
4/19/2018 1:02	3:02	AWE	14.832	21.000	Oversupply
4/19/2018 4:05	0:12	AWE	0.190	21.000	Oversupply
4/19/2018 4:19	0:01	AWE	0.000	21.000	Oversupply
4/19/2018 4:27	1:00	KWP/II	9.958	20.699	Oversupply
4/19/2018 5:35	0:03	KWP/II	0.007	20.708	Oversupply
4/19/2018 5:46	0:06	KWP/II	0.133	20.708	Oversupply
4/19/2018 9:44	0:01	BS250	Data is not available	Data is not available	Oversupply
4/19/2018 13:34	0:01	KWP/II	0.001	16.965	Oversupply
4/19/2018 23:24	0:01	KWP/II	0.019	10.022	Oversupply
4/19/2018 23:38	0:03	AWE	0.016	21.000	Oversupply
4/19/2018 23:38	0:08	KWP/II	1.066	13.919	Oversupply
4/19/2018 23:48	0:15	KWP/II	1.331	16.638	Oversupply
4/20/2018 2:17	0:10	AWE	0.454	21.000	Oversupply
4/20/2018 2:17	2:35	KWP/II	44.575	20.460	Oversupply
4/20/2018 2:28	0:27	AWE	1.555	21.000	Oversupply
4/20/2018 2:58	0:06	AWE	0.089	21.000	Oversupply
4/20/2018 3:05	0:09	AWE	0.280	21.000	Oversupply
4/20/2018 3:17	1:23	AWE	4.996	21.000	Oversupply
4/20/2018 4:41	0:03	AWE	0.005	21.000	Oversupply
4/20/2018 4:53	1:08	BS250	Data is not available	Data is not available	Oversupply



**Maui Curtailment Report**

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/20/2018 4:53	1:10	KWP/II	10.173	20.418	Oversupply
4/20/2018 11:04	0:17	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 11:04	1:46	KWP/II	15.169	20.697	Oversupply
4/20/2018 11:22	1:27	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:04	0:21	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:05	0:20	KWP/II	1.030	20.200	Oversupply
4/20/2018 13:35	0:01	KWP/II	0.008	19.550	Oversupply
4/20/2018 13:44	0:04	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:45	0:01	KWP/II	0.004	20.115	Oversupply
4/20/2018 13:52	0:02	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:53	0:04	KWP/II	0.018	20.037	Oversupply
4/20/2018 13:55	0:02	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:58	0:08	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 13:59	0:03	KWP/II	0.049	20.494	Oversupply
4/20/2018 14:03	0:04	KWP/II	0.053	20.620	Oversupply
4/20/2018 14:30	0:01	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 14:30	0:01	KWP/II	0.002	20.059	Oversupply
4/20/2018 14:35	0:02	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 14:37	0:02	KWP/II	0.011	19.543	Oversupply
4/20/2018 14:44	0:02	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 14:44	0:01	KWP/II	0.005	19.250	Oversupply
4/20/2018 15:42	0:01	KWP/II	0.001	18.020	Oversupply
4/20/2018 15:43	0:01	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 15:44	0:01	KWP/II	0.001	18.297	Oversupply
4/20/2018 15:47	0:02	KWP/II	0.009	20.347	Oversupply
4/20/2018 15:56	0:32	KWP/II	2.303	20.570	Oversupply
4/20/2018 16:36	0:12	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 16:38	0:10	KWP/II	0.361	20.690	Oversupply
4/20/2018 17:02	0:24	BS250	Data is not available	Data is not available	Oversupply
4/20/2018 17:03	0:23	KWP/II	1.270	20.708	Oversupply
4/21/2018 1:44	0:01	AWE	0.002	0.100	Oversupply
4/21/2018 1:47	0:01	AWE	0.003	0.200	Oversupply
4/21/2018 1:54	0:05	KWP/II	0.083	20.705	Oversupply
4/21/2018 2:31	1:37	KWP/II	8.247	20.708	Oversupply
4/21/2018 4:46	0:40	KWP/II	2.756	20.662	Oversupply
4/21/2018 5:56	0:05	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 5:56	0:04	KWP/II	0.074	20.706	Oversupply
4/21/2018 6:07	0:05	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 6:08	0:02	KWP/II	0.006	20.626	Oversupply
4/21/2018 6:49	0:18	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 6:51	0:17	KWP/II	0.335	20.708	Oversupply
4/21/2018 7:21	0:01	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 7:24	0:01	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 7:24	0:01	KWP/II	0.006	20.435	Oversupply
4/21/2018 7:28	0:05	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 7:29	0:04	KWP/II	0.034	20.385	Oversupply
4/21/2018 7:35	0:02	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 7:37	0:02	KWP/II	0.009	20.513	Oversupply
4/21/2018 7:42	0:17	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 7:43	0:17	KWP/II	0.502	20.660	Oversupply
4/21/2018 9:35	0:02	KWP/II	0.062	5.884	Oversupply
4/21/2018 10:22	0:01	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 10:23	0:02	KWP/II	0.110	13.657	Oversupply
4/21/2018 10:25	0:03	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 10:26	0:25	KWP/II	3.301	16.979	Oversupply
4/21/2018 10:44	0:02	AWE	0.037	21.000	Oversupply
4/21/2018 10:46	0:05	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 10:54	0:06	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 10:54	0:06	KWP/II	0.191	18.334	Oversupply
4/21/2018 11:01	0:56	KWP/II	6.629	19.279	Oversupply
4/21/2018 11:03	0:53	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 11:57	0:01	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 12:17	0:29	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 12:18	0:29	KWP/II	1.723	19.694	Oversupply
4/21/2018 12:52	0:05	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 12:52	0:06	KWP/II	0.223	14.592	Oversupply
4/21/2018 13:01	0:01	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 13:01	0:02	KWP/II	0.021	14.874	Oversupply
4/21/2018 13:40	0:01	KWP/II	0.011	16.587	Oversupply
4/21/2018 14:01	0:10	BS250	Data is not available	Data is not available	Oversupply
4/21/2018 14:01	0:10	KWP/II	0.372	18.473	Oversupply
4/21/2018 23:12	0:18	KWP/II	1.548	17.829	Oversupply
4/22/2018 0:54	0:02	KWP/II	0.067	4.660	Oversupply
4/22/2018 1:15	0:17	KWP/II	2.156	17.278	Oversupply
4/22/2018 2:49	3:38	KWP/II	42.697	20.708	Oversupply
4/22/2018 3:45	0:01	AWE	0.003	21.000	Oversupply
4/22/2018 3:52	0:02	AWE	0.006	21.000	Oversupply
4/22/2018 3:56	0:02	AWE	0.003	21.000	Oversupply
4/22/2018 4:00	0:01	AWE	0.000	21.000	Oversupply
4/22/2018 5:56	0:31	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 6:48	0:05	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 6:48	0:05	KWP/II	0.103	18.195	Oversupply
4/22/2018 6:55	0:01	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 6:56	0:01	KWP/II	0.002	18.280	Oversupply
4/22/2018 9:34	0:04	KWP/II	0.076	4.217	Oversupply



**Maui Curtailment Report**

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/22/2018 10:35	0:01	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 10:36	0:54	KWPIL		10.707	20.652 Oversupply
4/22/2018 10:41	4:01	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 11:09	0:13	AWE	0.670		21.000 Oversupply
4/22/2018 11:31	3:12	KWPIL	50.350		20.708 Oversupply
4/22/2018 12:49	0:58	AWE	8.045		21.000 Oversupply
4/22/2018 13:53	0:35	AWE	2.366		21.000 Oversupply
4/22/2018 14:29	0:09	AWE	0.534		21.000 Oversupply
4/22/2018 14:44	1:02	BS250	Data is not available	Data is not available	Oversupply
4/22/2018 14:45	1:02	KWPIL	11.967		20.708 Oversupply
4/22/2018 22:04	2:19	KWPIL	25.716		20.708 Oversupply
4/23/2018 0:30	4:14	KWPIL	26.254		20.708 Oversupply
4/23/2018 1:56	0:04	AWE	0.050		14.700 Oversupply
4/23/2018 7:25	0:01	AWE	0.003		0.200 Oversupply
4/23/2018 8:16	0:01	AWE	0.017		3.000 Oversupply
4/23/2018 8:24	0:02	AWE	0.045		7.900 Oversupply
4/23/2018 8:30	0:02	AWE	0.022		11.100 Oversupply
4/23/2018 8:33	0:01	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 8:34	0:08	KWPIL	0.206		20.708 Oversupply
4/23/2018 8:36	0:05	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 8:53	3:49	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 8:54	3:48	KWPIL	56.894		20.708 Oversupply
4/23/2018 10:03	0:11	AWE	0.265		21.000 Oversupply
4/23/2018 10:16	0:01	AWE	0.006		20.400 Oversupply
4/23/2018 10:21	0:01	AWE	0.005		21.000 Oversupply
4/23/2018 10:23	0:01	AWE	0.005		21.000 Oversupply
4/23/2018 10:37	0:01	AWE	0.009		21.000 Oversupply
4/23/2018 12:05	0:17	AWE	0.732		21.000 Oversupply
4/23/2018 12:27	0:11	AWE	0.222		21.000 Oversupply
4/23/2018 12:43	0:12	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 12:44	1:46	KWPIL	27.573		20.708 Oversupply
4/23/2018 12:56	1:10	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 13:47	0:06	AWE	0.213		21.000 Oversupply
4/23/2018 13:55	0:01	AWE	0.014		20.400 Oversupply
4/23/2018 14:02	0:23	AWE	1.587		21.000 Oversupply
4/23/2018 14:07	0:22	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 14:31	0:40	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 14:32	0:37	KWPIL	6.637		20.708 Oversupply
4/23/2018 15:10	0:01	KWPIL	0.021		20.617 Oversupply
4/23/2018 15:13	0:02	KWPIL	0.006		20.672 Oversupply
4/23/2018 15:15	0:40	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 15:16	0:40	KWPIL	1.592		20.708 Oversupply
4/23/2018 15:57	0:04	BS250	Data is not available	Data is not available	Oversupply
4/23/2018 15:57	0:04	KWPIL	0.064		20.708 Oversupply
4/23/2018 22:46	0:15	KWPIL	0.621		20.708 Oversupply
4/23/2018 23:19	4:46	KWPIL	40.147		20.708 Oversupply
4/24/2018 6:40	0:01	AWE	0.036		15.700 Oversupply
4/24/2018 6:45	0:05	AWE	0.268		21.000 Oversupply
4/24/2018 6:53	0:06	AWE	0.144		21.000 Oversupply
4/24/2018 8:11	0:01	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 8:23	0:02	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 8:31	0:14	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 8:34	0:12	KWPIL	0.470		19.211 Oversupply
4/24/2018 9:27	0:01	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 9:29	3:24	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 9:31	0:07	KWPIL	0.086		20.708 Oversupply
4/24/2018 9:40	3:14	KWPIL	24.093		20.708 Oversupply
4/24/2018 12:54	0:01	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 13:10	0:17	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 13:11	0:16	KWPIL	0.721		20.708 Oversupply
4/24/2018 13:37	0:06	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 13:38	0:07	KWPIL	0.133		20.708 Oversupply
4/24/2018 13:47	0:04	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 13:49	0:03	KWPIL	0.049		20.708 Oversupply
4/24/2018 13:53	0:01	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 13:53	0:02	KWPIL	0.007		20.708 Oversupply
4/24/2018 14:04	0:14	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 14:05	0:14	KWPIL	0.514		20.708 Oversupply
4/24/2018 14:22	0:05	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 14:24	0:03	KWPIL	0.014		20.708 Oversupply
4/24/2018 14:30	0:13	BS250	Data is not available	Data is not available	Oversupply
4/24/2018 14:31	0:12	KWPIL	0.420		20.708 Oversupply
4/24/2018 22:30	0:01	AWE	0.003		0.200 Oversupply
4/25/2018 0:26	0:06	KWPIL	0.080		20.708 Oversupply
4/25/2018 0:38	0:13	KWPIL	0.371		20.708 Oversupply
4/25/2018 1:39	0:03	KWPIL	0.032		20.708 Oversupply
4/25/2018 2:20	0:09	KWPIL	0.088		20.708 Oversupply
4/25/2018 2:48	0:05	KWPIL	0.059		20.708 Oversupply
4/25/2018 2:54	0:01	KWPIL	0.003		20.708 Oversupply
4/25/2018 4:28	1:00	KWPIL	6.144		20.708 Oversupply
4/25/2018 6:37	0:01	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 6:38	0:01	KWPIL	0.005		20.708 Oversupply
4/25/2018 8:26	0:03	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 8:27	0:02	AWE	0.027		8.400 Oversupply
4/25/2018 8:27	0:06	KWPIL	0.056		20.708 Oversupply



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/25/2018 8:30	0:03	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 8:57	0:28	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 8:58	0:27	KWP/II	2.849	20.708	Oversupply
4/25/2018 9:06	0:03	AWE	0.128	20.000	Oversupply
4/25/2018 9:27	0:45	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 9:28	0:44	KWP/II	11.501	20.708	Oversupply
4/25/2018 9:33	0:16	AWE	0.727	17.600	Oversupply
4/25/2018 9:51	0:03	AWE	0.040	17.400	Oversupply
4/25/2018 9:55	0:13	AWE	0.538	18.800	Oversupply
4/25/2018 10:13	1:18	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 10:14	2:59	KWP/II	53.804	20.708	Oversupply
4/25/2018 10:20	1:03	AWE	5.405	21.000	Oversupply
4/25/2018 11:32	1:41	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 12:08	0:27	AWE	1.597	21.000	Oversupply
4/25/2018 12:37	0:12	AWE	0.199	19.900	Oversupply
4/25/2018 12:50	0:04	AWE	0.133	18.300	Oversupply
4/25/2018 12:56	0:03	AWE	0.014	19.900	Oversupply
4/25/2018 13:00	0:01	AWE	0.006	18.800	Oversupply
4/25/2018 13:05	0:03	AWE	0.017	19.700	Oversupply
4/25/2018 13:15	2:06	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 13:15	2:06	KWP/II	23.180	20.632	Oversupply
4/25/2018 15:25	0:01	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 15:25	0:04	KWP/II	0.017	19.690	Oversupply
4/25/2018 15:29	0:02	BS250	Data is not available	Data is not available	Oversupply
4/25/2018 15:30	0:02	KWP/II	0.014	20.096	Oversupply
4/25/2018 23:17	0:03	KWP/II	0.067	19.209	Oversupply
4/26/2018 0:46	0:22	KWP/II	1.282	19.120	Oversupply
4/26/2018 1:10	0:02	KWP/II	0.010	17.554	Oversupply
4/26/2018 1:17	0:02	KWP/II	0.021	18.827	Oversupply
4/26/2018 1:21	0:02	KWP/II	0.008	19.014	Oversupply
4/26/2018 1:24	0:05	KWP/II	0.183	19.108	Oversupply
4/26/2018 1:35	0:14	KWP/II	0.522	19.075	Oversupply
4/26/2018 1:51	0:36	KWP/II	3.282	19.197	Oversupply
4/26/2018 2:28	0:01	KWP/II	0.032	17.493	Oversupply
4/26/2018 2:30	0:01	KWP/II	0.006	17.821	Oversupply
4/26/2018 2:33	0:06	KWP/II	0.131	18.254	Oversupply
4/26/2018 3:07	0:03	KWP/II	0.018	18.791	Oversupply
4/26/2018 3:15	0:01	KWP/II	0.003	18.064	Oversupply
4/26/2018 3:18	1:27	KWP/II	7.028	19.205	Oversupply
4/26/2018 4:54	0:01	KWP/II	0.010	17.584	Oversupply
4/26/2018 5:01	0:03	KWP/II	0.020	17.544	Oversupply
4/29/2018 1:33	0:01	AWE	0.002	0.100	Oversupply
4/29/2018 3:24	0:01	KWP/II	0.003	0.198	Oversupply
4/29/2018 15:04	0:01	AWE	0.002	0.100	Oversupply
4/30/2018 9:33	0:01	KWP/II	0.000	0.006	Oversupply
4/30/2018 11:20	0:02	BS250	Data is not available	Data is not available	Oversupply
4/30/2018 11:21	0:02	AWE	0.027	2.700	Oversupply
4/30/2018 11:44	0:01	BS250	Data is not available	Data is not available	Oversupply
4/30/2018 11:44	0:01	AWE	0.006	4.500	Oversupply
4/30/2018 11:44	0:01	KWP/II	0.000	0.006	Oversupply
4/30/2018 12:27	0:02	BS250	Data is not available	Data is not available	Oversupply
4/30/2018 12:28	0:01	AWE	0.008	6.500	Oversupply
4/30/2018 12:29	0:01	KWP/II	0.013	1.606	Oversupply
4/30/2018 12:43	0:01	BS250	Data is not available	Data is not available	Oversupply
4/30/2018 13:49	0:02	AWE	0.010	8.900	Oversupply
4/30/2018 15:32	0:01	AWE	0.002	0.100	Oversupply
<b>Total Estimated Curtailed MWH</b>			<b>1,559.822</b>		

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
4/1/2018 7:47	0:02	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 7:54	0:58	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 8:53	0:02	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 8:56	0:57	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 9:56	0:29	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 10:27	0:18	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 10:52	0:04	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 10:58	0:29	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 12:09	0:02	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 12:12	0:15	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 12:37	2:56	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 15:47	0:11	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 16:00	0:04	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 16:05	0:01	LSR	Data is not available	Data is not available	Oversupply
4/1/2018 16:51	0:02	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 9:34	0:07	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 10:16	0:17	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 10:34	0:45	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 11:23	0:02	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 11:34	0:06	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 11:41	0:01	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 11:57	0:03	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 16:58	0:02	LSR	Data is not available	Data is not available	Oversupply
4/2/2018 17:01	0:04	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 6:51	0:01	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 6:53	0:01	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 7:14	0:21	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 7:50	0:15	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 8:10	0:03	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 8:37	0:04	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 8:42	0:10	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 8:54	0:09	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 9:58	0:02	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 10:23	0:21	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 10:48	2:06	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 12:56	0:13	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 13:12	0:42	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 13:55	0:29	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 14:27	0:02	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 14:30	0:24	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 14:59	0:02	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 15:04	0:02	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 15:08	0:07	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 15:21	0:02	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 15:27	0:03	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 15:43	0:09	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 16:04	0:15	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 16:25	0:12	LSR	Data is not available	Data is not available	Oversupply
4/3/2018 17:02	1:00	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 9:05	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 9:08	2:36	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 11:53	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 12:01	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 12:05	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 12:11	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 12:36	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 12:53	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 13:02	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 13:05	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 13:09	0:02	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 13:19	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 16:17	0:22	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 16:40	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 16:43	0:15	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 17:02	0:01	LSR	Data is not available	Data is not available	Oversupply
4/4/2018 17:05	0:01	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 7:37	0:01	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 7:46	2:02	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 9:49	0:02	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 9:53	0:11	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 10:12	0:19	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 10:33	0:01	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 10:35	0:07	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 10:44	0:10	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 10:57	0:09	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 11:09	0:07	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 11:18	0:18	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 11:40	0:15	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 11:56	0:03	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 12:00	0:26	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 12:27	0:16	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 12:44	0:38	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 13:24	0:23	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 13:48	0:02	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 13:53	0:06	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 14:04	0:01	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 15:09	0:06	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 15:24	0:05	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 15:31	0:06	LSR	Data is not available	Data is not available	Oversupply
4/5/2018 15:49	0:02	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 6:40	0:07	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 6:50	0:35	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 7:28	0:33	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 8:02	0:19	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 9:00	5:15	LSR	Data is not available	Data is not available	Oversupply
4/6/2018 14:18	0:49	LSR	Data is not available	Data is not available	Oversupply
4/7/2018 9:12	0:22	LSR	Data is not available	Data is not available	Oversupply
4/7/2018 12:15	0:02	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
4/7/2018 12:18	0:13	LSR	Data is not available	Data is not available	Oversupply
4/7/2018 12:37	0:01	LSR	Data is not available	Data is not available	Oversupply
4/8/2018 8:26	3:03	LSR	Data is not available	Data is not available	Oversupply
4/8/2018 12:08	0:23	LSR	Data is not available	Data is not available	Oversupply
4/8/2018 12:32	0:06	LSR	Data is not available	Data is not available	Oversupply
4/8/2018 14:33	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 8:51	0:06	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 8:58	0:04	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 9:04	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 9:12	0:07	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 9:21	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 9:25	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 9:32	2:07	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 11:42	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 11:46	0:45	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 12:33	0:05	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 12:40	0:08	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 12:49	0:03	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 12:53	0:07	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:03	0:03	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:09	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:16	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:20	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:25	0:07	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:40	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:45	0:03	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:50	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 13:52	0:17	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 14:11	0:08	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 14:20	0:09	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 14:30	0:14	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 14:46	0:03	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 14:52	0:15	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 15:08	0:02	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 15:12	0:11	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 15:24	0:08	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 15:33	0:09	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 15:43	0:54	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 16:44	0:19	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 17:05	0:05	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 17:11	0:01	LSR	Data is not available	Data is not available	Oversupply
4/9/2018 17:22	0:02	LSR	Data is not available	Data is not available	Oversupply
4/13/2018 7:20	10:44	LSR	Data is not available	Data is not available	Oversupply
4/14/2018 7:00	0:51	LSR	Data is not available	Data is not available	Oversupply
4/14/2018 8:27	2:23	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 9:06	0:45	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 10:01	0:05	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 10:14	0:16	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 10:40	0:17	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 11:14	0:11	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 11:30	0:01	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 11:32	0:05	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 15:13	0:47	LSR	Data is not available	Data is not available	Oversupply
4/16/2018 16:33	1:05	LSR	Data is not available	Data is not available	Oversupply
4/17/2018 8:37	2:27	LSR	Data is not available	Data is not available	Oversupply
4/17/2018 13:18	0:25	LSR	Data is not available	Data is not available	Oversupply
4/18/2018 15:12	0:26	LSR	Data is not available	Data is not available	Oversupply
4/18/2018 16:20	0:26	LSR	Data is not available	Data is not available	Oversupply
4/18/2018 16:47	0:04	LSR	Data is not available	Data is not available	Oversupply
4/18/2018 17:11	0:19	LSR	Data is not available	Data is not available	Oversupply
4/19/2018 14:08	0:07	LSR	Data is not available	Data is not available	Oversupply
4/19/2018 15:05	0:07	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 8:02	0:08	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 8:12	0:21	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 8:34	0:02	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 8:37	0:36	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 9:15	0:25	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 10:07	0:18	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 10:28	0:14	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 11:35	1:43	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 13:21	0:15	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 13:38	0:03	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 13:44	0:04	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 13:51	0:03	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 13:59	0:03	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 14:07	0:08	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 14:16	0:10	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 14:30	0:13	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 14:50	0:02	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 14:56	0:02	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 15:15	0:04	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 15:21	1:54	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 17:19	0:01	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 17:21	0:15	LSR	Data is not available	Data is not available	Oversupply
4/22/2018 17:37	0:03	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 7:06	1:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:14	0:16	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:33	0:08	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:42	0:05	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:49	0:03	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:56	0:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 8:58	1:02	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
4/23/2018 10:33	0:02	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 10:37	0:04	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 10:55	0:07	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:07	0:02	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:13	0:03	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:17	0:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:26	0:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:30	0:02	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:34	0:06	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 11:42	1:15	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 13:00	0:10	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 13:11	0:33	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 13:45	0:06	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 13:53	0:03	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 13:58	0:21	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:20	0:03	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:24	0:09	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:34	0:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:38	0:01	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:44	0:07	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:54	0:02	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 14:58	0:24	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 15:23	0:04	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 15:36	0:07	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 15:44	0:19	LSR	Data is not available	Data is not available	Oversupply
4/23/2018 16:06	1:35	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:00	0:18	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:20	0:04	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:28	0:01	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:31	0:02	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:38	0:02	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:43	0:03	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 7:49	0:08	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:01	0:02	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:08	0:01	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:10	0:04	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:16	0:22	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:40	0:04	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:48	0:02	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 8:54	0:25	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 9:21	0:01	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 9:25	0:03	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 9:31	0:08	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 9:41	0:08	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 9:50	0:11	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 10:03	0:09	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 10:13	0:36	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 11:07	0:04	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 12:32	0:05	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 12:54	0:29	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 13:33	0:06	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 13:50	0:14	LSR	Data is not available	Data is not available	Oversupply
4/24/2018 17:08	0:04	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 6:49	0:09	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 7:00	0:16	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 7:20	0:08	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 7:58	0:05	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 8:04	0:32	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 8:43	0:04	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 9:36	1:11	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 10:49	4:32	LSR	Data is not available	Data is not available	Oversupply
4/25/2018 17:34	0:07	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:07	0:01	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:10	0:05	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:19	0:15	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:40	0:02	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:43	0:09	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 7:54	0:16	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 8:24	0:01	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 8:26	0:01	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 8:28	0:07	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 8:36	0:44	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 9:22	0:02	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 9:37	0:08	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 9:46	0:24	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 10:11	0:12	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 10:24	0:37	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 11:02	0:30	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 11:35	0:31	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 12:43	0:37	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 13:23	0:08	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 14:20	0:12	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 14:35	0:15	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 14:52	0:02	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 14:56	0:03	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 15:06	0:02	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 16:57	0:03	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 17:15	0:02	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 17:21	0:13	LSR	Data is not available	Data is not available	Oversupply
4/26/2018 17:35	0:07	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
4/27/2018 10:07	0:03	LSR	Data is not available	Data is not available	Oversupply
4/27/2018 11:35	0:15	LSR	Data is not available	Data is not available	Oversupply
4/27/2018 12:03	0:04	LSR	Data is not available	Data is not available	Oversupply
4/27/2018 13:00	0:18	LSR	Data is not available	Data is not available	Oversupply
4/27/2018 13:51	0:02	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 7:47	0:08	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 8:01	0:16	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 8:22	0:39	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 9:11	0:09	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 9:31	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 11:53	0:02	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 11:56	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 12:02	0:15	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 12:51	0:11	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 13:03	0:02	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 13:41	0:03	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 14:05	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 14:08	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 14:28	0:02	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 14:57	0:19	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 15:25	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 15:38	0:01	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 15:45	0:02	LSR	Data is not available	Data is not available	Oversupply
4/28/2018 15:53	0:02	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:15	0:04	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:23	0:09	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:38	0:05	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:48	0:03	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:55	0:01	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 7:58	0:02	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 8:03	0:12	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 8:17	0:01	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 9:12	0:08	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 9:35	0:21	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 10:19	0:06	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 10:26	0:05	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 10:59	4:11	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 15:14	0:20	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 15:37	0:02	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 15:42	0:01	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 15:45	0:03	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 15:52	0:07	LSR	Data is not available	Data is not available	Oversupply
4/29/2018 16:21	0:02	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 9:51	0:03	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 9:59	0:11	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 10:12	0:57	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 11:12	1:59	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 13:13	0:05	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 13:21	0:29	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 13:58	0:12	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 14:38	1:31	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 16:13	0:08	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 16:32	0:13	LSR	Data is not available	Data is not available	Oversupply
4/30/2018 16:54	0:05	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 April 2018

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
04/06/18 11:58	0.6 MW	04/06/18 12:45	0.3 MW	TGUHI 1	System constraint
04/10/18 01:33	19.3 MW	04/10/18 05:13	17.7 MW	Pakini Nui Windfarm	Oversupply
04/11/18 02:05	19.8 MW	04/11/18 04:14	18.2 MW	Pakini Nui Windfarm	Oversupply
04/14/18 17:16	7.6 MW	04/15/18 02:03	0.0 MW	Hawi Renewable Development	System constraint
04/15/18 13:48	0.6 MW	04/15/17 14:47	0.0 MW	TGUHI 1	Oversupply
04/17/18 02:45	19.8 MW	04/17/18 04:13	18.5 MW	Pakini Nui Windfarm	Oversupply
04/18/18 01:40	19.8 MW	04/18/18 04:51	19.7 MW	Pakini Nui Windfarm	Oversupply
04/20/18 02:38	19.4 MW	04/20/18 04:53	11.4 MW	Pakini Nui Windfarm	Oversupply
04/22/18 02:02	19.8 MW	04/22/18 04:28	7.9 MW	Pakini Nui Windfarm	Oversupply
04/22/18 08:57	19.8 MW	04/22/18 13:13	14.1 MW	Pakini Nui Windfarm	Facility requested
04/22/18 10:27	1.1 MW	04/22/18 14:46	0.0 MW	TGUHI 1	Oversupply
04/22/18 10:29	0.2 MW	04/22/18 14:40	0.0 MW	West Hawaii Civic Center	
04/22/18 10:33	17.8 MW	04/22/18 14:37	18.2 MW	Pakini Nui Windfarm	
04/25/18 02:48	19.8 MW	04/25/18 04:45	19.2 MW	Pakini Nui Windfarm	Oversupply

<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.

SERVICE LIST  
(Docket No. 2011-0206)

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