August 24, 2016

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 July 2016 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

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

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(Docket No. 2011-0206)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

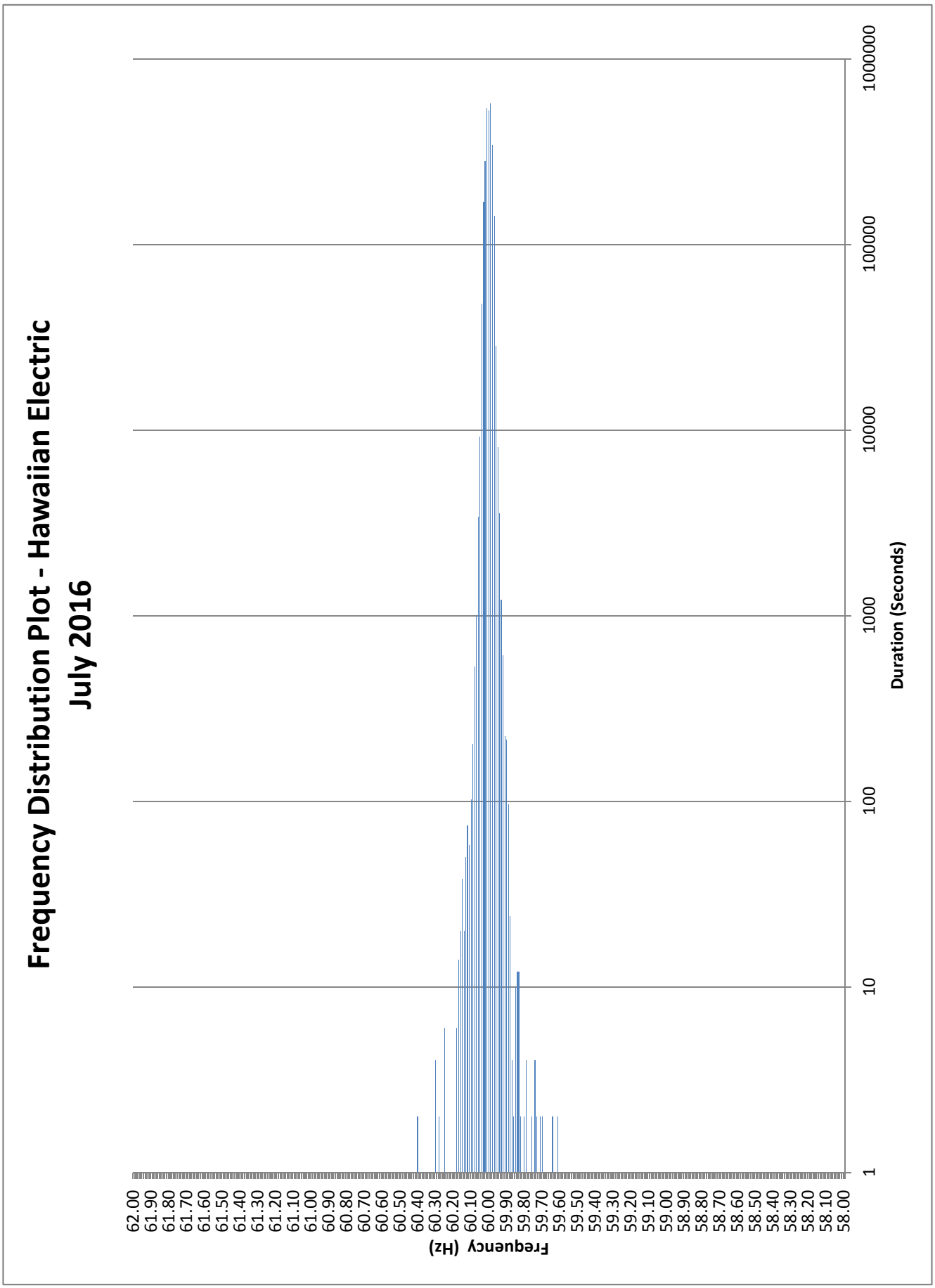
The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending July 31, 2016):

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

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

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

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


Frequency Distribution Plot - Hawaiian Electric
July 2016
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
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60.50
60.40
60.30
60.20
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60.00
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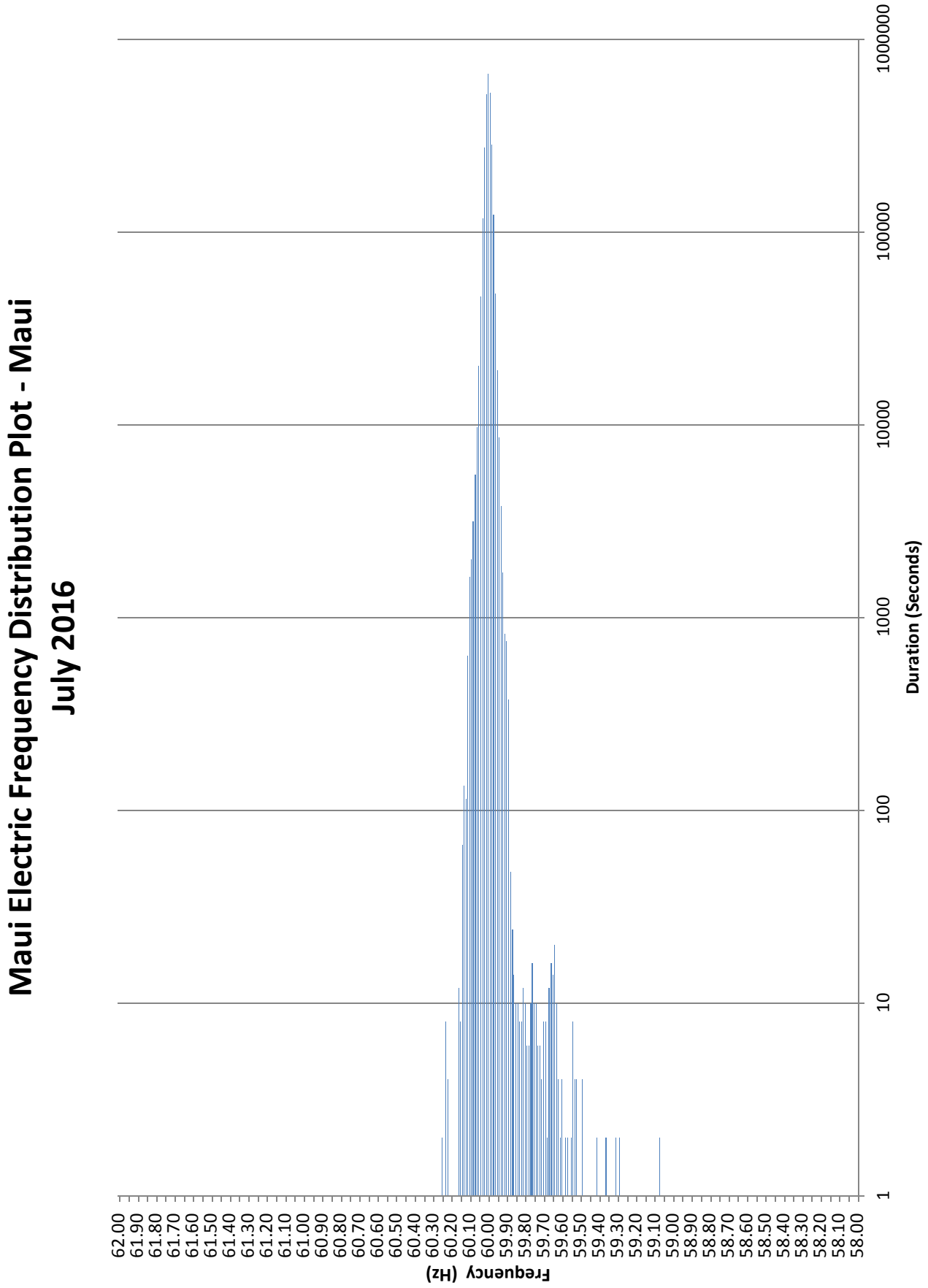
Maui Electric Frequency Distribution Plot - Maui
July 2016
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
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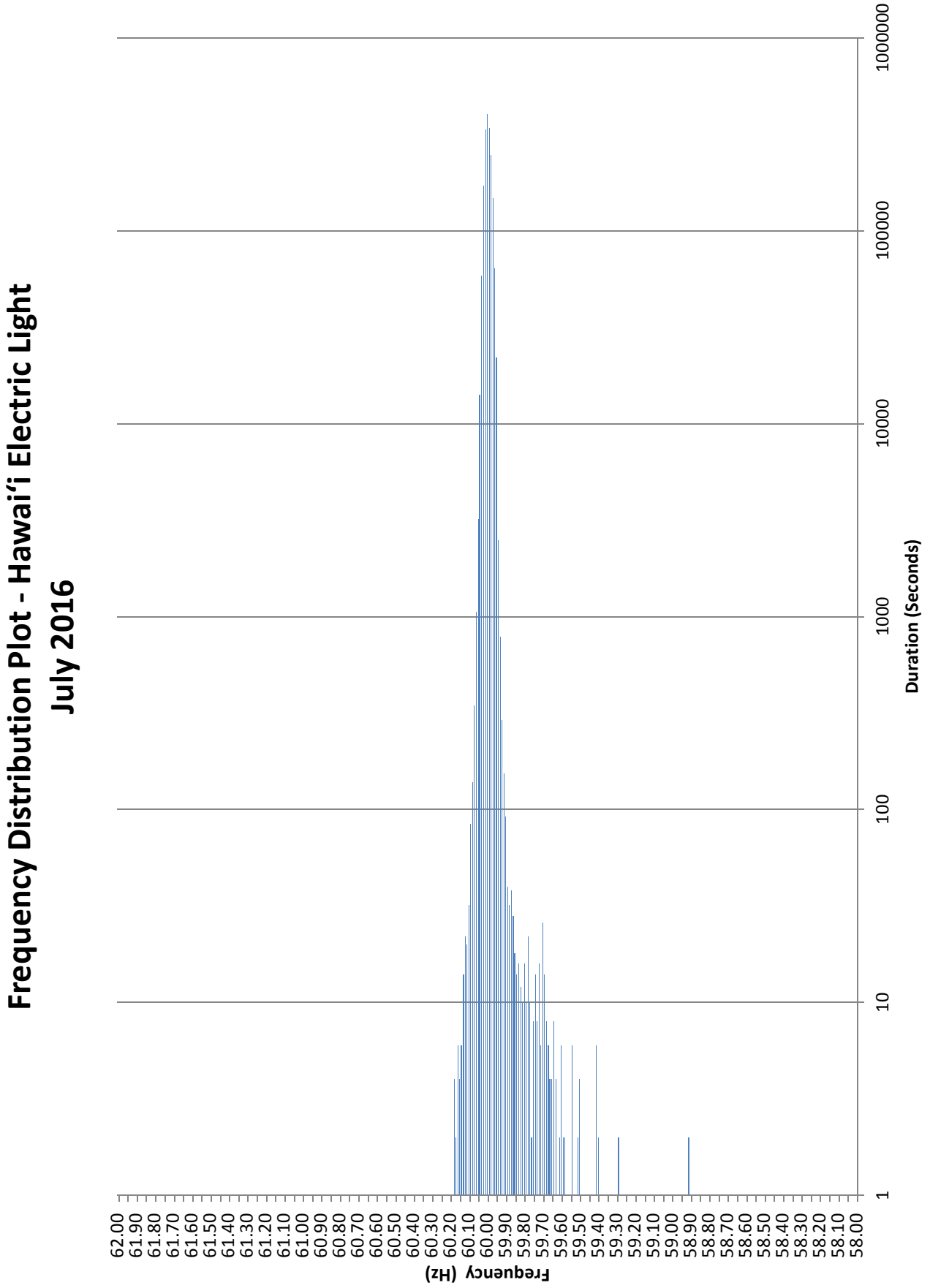
58.10
58.00


Frequency Distribution Plot - Hawai'i Electric Light
July 2016
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
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58.50
58.40
58.30
58.20
58.10
58.00

Hawaiian Electric Frequency Excursion Statistics July 2016		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	630	750
Maximum Duration (sec)	330	620
Maximum Deviation (Hz)	59.61	60.395
Total Duration of Excursions (sec)	8608	8392

Maui Electric Frequency Excursion Statistics July 2016		
	<59.95 Hz	>60.05 Hz
Number of Excursions	4484	4035
Maximum Duration (sec)	618	644
Maximum Deviation (Hz)	59.0703	60.2547
Total Duration of Excursions (sec)	23880	31014

Hawai'i Electric Light Frequency Excursion Statistics July 2016		
	<59.95 Hz	>60.05 Hz
Number of Excursions	4208	874
Maximum Duration (sec)	192	118
Maximum Deviation (Hz)	58.910	60.287
Total Duration of Excursions (sec)	20952	4350

HAWAIIAN ELECTRIC COMPANY, INC.
CONTINGENCY RESERVE ACTIVATION EVENTS
JULY 2016

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	07/05/16 18:50	60.00	59.97	NA	-11.00	0:01	HPOWER TG2 decreased output from ~26 MW and tripped offline.
2	07/24/16 18:22	59.97	59.97	NA	0.00	0:01	HPOWER TG2 tripped offline while generating ~17 MW.
3	07/26/16 17:06	60.00	59.93	NA	-33.00	0:03	W10 tripped offline while generating ~8 MW.
4	07/31/16 18:26	59.99	59.71	NA	-31.00	0:03	HPOWER TG1 tripped offline while generating ~36 MW. W9 called online for spinning reserve.
5	07/31/16 22:05	60.01	59.61	NA	-40.00	0:06	K4 tripped offline while generating ~46 MW.

MAUI ELECTRIC COMPANY, LIMITED
UNDERFREQUENCY LOADSHEDDING EVENTS
July 2016

Event #	IR #	Island	Date & Time	Frequency (Hz) Prior to Event	Frequency (Hz) Nadir	Frequency (Hz) Levels UFLS Occurred	Load Shed (MW)	Duration (HH:MM)	Description
1	414	Molokaʻi	7/4/2016 4:01 PM	59.97	38.76	57.5, 57.25, 56.0	2.03	1:39	A frequency depression of 38.76 Hz occurred when Generator #8 tripped off line due to high jacket water temperature at Palaau Power Plant.
2	474	Lānaʻi	7/26/2016 2:59 PM	60.01	58.11	58.65, 58.5	0.22	1:10	A frequency depression of 58.11 Hz occurred when tie breaker 1211 at Miki Basin Power Plant relayed open due to vibration.
3	481	Lānaʻi	7/29/2016 12:46 AM	59.98	54.85	58.65, 58.5, 57.5, 57	1.79	1:21	A frequency depression of 54.85 Hz occurred when Generator LL7 tripped off line at Miki Basin Power Plant due to a failed high lube oil temperature transmitter

HAWAI'I ELECTRIC LIGHT COMPANY, INC.
UNDERFREQUENCY LOAD SHEDDING EVENTS
JULY 2016

			Frequency (Hz)					
Event #	Date	Time	Prior to Event	Nadir	Level UFLS Occurred	Load Shed (MW)	Duration (HH:MM)	Description
1	7/1/2016	9:30 AM	60.02	58.75	58.80	17.80	00:07	Keahole CT-5 tripped offline

HAWAIIAN ELECTRIC COMPANY, INC.
DEMAND RESPONSE EVENTS
JULY 2016

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	07/31/16 18:27	59.99	59.71	59.7	NA	0:01	HPOWER TG1 tripped offline while generating ~36 MW. RDLC activated.
2	07/31/16 22:06	60.01	59.61	59.7	NA	0:01	K4 tripped offline while generating ~46 MW. RDLC activated.

Hawaiian Electric Curtailment Report July 2016

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
06/17/16 08:35	0.0	14.60	06/17/16 08:42	0	*	Makai	Facility Requested
06/17/16 08:50	0.0	35.40	06/17/16 08:51	0	*	Mauka	Facility Requested
06/17/16 08:55	32.0	6.50	06/17/16 08:56	12.1	*	Mauka	Facility Requested
07/01/16 08:09	0.0	3.50	07/01/16 19:54	0	*	KLS2	System constraints
07/12/16 07:43	0.0	0.00	07/12/16 17:59	0	*	Mauka	System constraints
07/12/16 17:05	0.0	9.00	07/12/16 17:54	0	*	Makai	System constraints
07/15/16 05:55	0.0	0.00	07/15/16 06:58	0	*	KREP	System constraints
07/18/16 05:46	0.0	0.00	07/18/16 06:33	0	*	KWF	System constraints
07/18/16 05:50	0.0	1.50	07/18/16 06:37	0	*	Makai	System constraints
07/18/16 07:59	0.0	3.70	07/18/16 09:03	0	*	KLS2	System constraints
07/18/16 15:53	0.0	2.90	07/18/16 16:39	0	*	KWF	System constraints
07/18/16 15:57	0.0	2.00	07/18/16 16:41	0	*	Makai	System constraints
07/18/16 18:29	0.0	1.50	07/18/16 19:33	0	*	KLS2	System constraints
07/27/16 18:37	0.0	0.00	07/27/16 18:50	0	*	KREP	System constraints

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
(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 Electric

Maui Curtailment Report **July 2016**

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
7/1/2016 0:00	0:32	KWPII	5.244	20.708	Oversupply
7/1/2016 0:33	2:26	KWPII	19.872	20.708	Oversupply
7/1/2016 4:12	0:55	KWPII	5.872	20.708	Oversupply
7/1/2016 5:11	0:12	KWPII	0.512	20.708	Oversupply
7/1/2016 13:44	0:06	KWPII	0.082	20.708	Oversupply
7/1/2016 13:59	0:01	KWPII	0.004	20.708	Oversupply
7/1/2016 14:05	0:01	KWPII	0.002	20.708	Oversupply
7/2/2016 0:49	1:47	KWPII	7.448	20.708	Oversupply
7/2/2016 2:38	1:13	KWPII	2.349	20.708	Oversupply
7/2/2016 4:01	0:03	KWPII	0.030	20.708	Oversupply
7/2/2016 4:14	0:01	KWPII	0.002	20.708	Oversupply
7/2/2016 4:31	0:01	KWPII	0.003	20.708	Oversupply
7/2/2016 4:35	0:07	KWPII	0.101	20.708	Oversupply
7/2/2016 4:53	0:03	KWPII	0.030	20.708	Oversupply
7/2/2016 4:58	0:01	KWPII	0.000	20.708	Oversupply
7/2/2016 5:41	0:05	KWPII	0.105	20.708	Oversupply
7/2/2016 5:50	0:03	KWPII	0.011	20.708	Oversupply
7/2/2016 7:52	0:01	KWPII	0.000	20.708	Oversupply
7/2/2016 10:59	0:39	KWPII	2.829	20.708	Oversupply
7/2/2016 11:40	0:03	KWPII	0.079	19.211	Oversupply
7/2/2016 11:50	1:18	KWPII	10.461	20.708	Oversupply
7/2/2016 13:09	0:12	KWPII	0.543	20.708	Oversupply
7/2/2016 13:27	0:13	KWPII	0.494	20.708	Oversupply
7/2/2016 13:54	0:10	KWPII	0.573	20.708	Oversupply
7/2/2016 14:14	0:16	AWE	2.233	17.023	System constraint
7/2/2016 14:37	0:07	AWE	0.456	18.710	System constraint
7/3/2016 11:32	0:11	AWE	0.130	21.000	Oversupply
7/3/2016 12:09	0:01	AWE	0.000	21.000	Oversupply
7/3/2016 18:46	0:01	KWP	0.001	0.090	Oversupply
7/4/2016 0:08	0:01	KWPII	0.014	9.482	Oversupply
7/5/2016 2:23	0:02	KWPII	0.024	17.289	Oversupply
7/5/2016 2:27	0:01	KWPII	0.006	16.907	Oversupply
7/5/2016 6:59	0:01	KWPII	0.009	14.283	Oversupply
7/5/2016 9:50	0:04	KWPII	0.032	18.486	Oversupply
7/5/2016 9:58	0:02	KWPII	0.016	19.028	Oversupply
7/5/2016 10:02	0:02	KWPII	0.000	19.120	Oversupply
7/5/2016 11:30	0:01	KWPII	0.001	20.655	Oversupply
7/5/2016 11:32	0:01	KWPII	0.001	20.695	Oversupply
7/5/2016 23:28	0:04	KWPII	0.051	20.504	Oversupply
7/6/2016 0:52	0:07	KWPII	0.074	20.686	Oversupply
7/6/2016 7:32	0:01	KWPII	0.028	13.248	Oversupply
7/6/2016 21:47	0:01	AWE	0.000	0.003	Oversupply
7/6/2016 23:05	1:10	KWPII	4.412	20.702	Oversupply
7/7/2016 0:28	0:11	KWPII	0.495	20.682	Oversupply
7/7/2016 0:44	0:18	KWPII	1.155	20.675	Oversupply
7/7/2016 1:10	1:20	KWPII	10.154	20.705	Oversupply
7/7/2016 2:34	1:02	KWPII	5.242	20.708	Oversupply
7/7/2016 4:01	0:05	KWPII	0.101	20.707	Oversupply
7/7/2016 9:42	0:11	KWPII	0.319	20.707	Oversupply
7/7/2016 9:56	0:17	KWPII	0.882	20.706	Oversupply
7/7/2016 10:14	0:01	KWPII	0.007	20.628	Oversupply
7/7/2016 10:20	0:02	KWPII	0.025	20.670	Oversupply
7/7/2016 10:25	0:16	KWPII	0.574	20.580	Oversupply
7/7/2016 10:42	0:02	KWPII	0.006	20.456	Oversupply
7/7/2016 10:45	0:25	KWPII	1.226	20.517	Oversupply
7/7/2016 11:11	0:01	KWPII	0.000	20.387	Oversupply
7/7/2016 12:37	0:01	KWPII	0.019	20.214	Oversupply
7/7/2016 13:11	0:02	KWPII	0.005	19.862	Oversupply
7/7/2016 13:15	0:05	KWPII	0.069	20.363	Oversupply
7/7/2016 13:21	0:03	KWPII	0.033	20.520	Oversupply
7/7/2016 13:29	0:01	KWPII	0.011	20.613	Oversupply
7/7/2016 13:40	0:01	KWPII	0.001	20.482	Oversupply
7/7/2016 13:42	0:08	KWPII	0.107	20.681	Oversupply
7/7/2016 13:51	0:01	KWPII	0.009	20.693	Oversupply
7/7/2016 13:54	0:06	KWPII	0.054	20.697	Oversupply
7/7/2016 14:05	0:01	KWPII	0.001	20.644	Oversupply
7/7/2016 14:07	0:01	KWPII	0.008	20.385	Oversupply
7/8/2016 0:43	0:09	KWPII	0.106	20.708	Oversupply
7/8/2016 10:23	0:03	KWPII	0.026	20.708	Oversupply
7/8/2016 10:34	0:42	KWPII	3.755	20.708	Oversupply
7/8/2016 11:25	0:13	KWPII	0.524	20.708	Oversupply
7/8/2016 11:43	0:07	KWPII	0.139	20.708	Oversupply
7/8/2016 11:55	0:04	KWPII	0.068	20.708	Oversupply
7/8/2016 12:12	0:53	KWPII	2.953	20.708	Oversupply
7/8/2016 14:54	0:27	KWPII	1.450	20.708	Oversupply
7/9/2016 8:50	0:01	AWE	0.000	0.013	Oversupply
7/9/2016 9:39	0:01	KWPII	0.001	20.569	Oversupply
7/9/2016 9:46	0:03	KWPII	0.038	19.621	Oversupply
7/9/2016 9:58	1:38	KWPII	15.583	20.677	Oversupply
7/9/2016 11:14	0:01	AWE	0.008	16.177	Oversupply
7/9/2016 11:40	0:21	KWPII	1.639	20.625	Oversupply
7/9/2016 12:19	0:01	KWPII	0.001	20.602	Oversupply
7/9/2016 12:21	2:03	KWPII	24.485	20.702	System constraint
7/9/2016 14:30	0:10	KWPII	0.274	20.652	System constraint
7/9/2016 14:44	0:30	KWPII	2.462	20.666	System constraint
7/9/2016 15:49	0:32	KWPII	1.366	20.708	System constraint
7/9/2016 16:45	0:55	KWPII	5.002	20.706	System constraint
7/9/2016 22:16	0:37	KWPII	1.503	20.708	Oversupply
7/9/2016 23:05	0:11	KWPII	0.248	20.708	Oversupply
7/9/2016 23:50	0:02	KWPII	0.020	20.704	Oversupply
7/9/2016 23:56	0:05	KWPII	0.035	20.606	Oversupply
7/10/2016 0:03	0:36	KWPII	4.321	20.708	System constraint and oversupply
7/10/2016 0:43	3:05	KWPII	38.226	20.708	Oversupply, system constraint, and oversupply
7/10/2016 3:28	0:10	AWE	0.209	19.380	Oversupply
7/10/2016 3:50	0:46	KWPII	5.220	20.685	Oversupply
7/10/2016 4:38	0:03	KWPII	0.051	20.668	Oversupply and system constraint
7/10/2016 4:59	0:04	KWPII	0.026	20.708	Oversupply
7/10/2016 5:05	0:01	KWPII	0.003	20.706	Oversupply
7/10/2016 8:14	0:01	KWPII	0.003	20.509	Oversupply
7/10/2016 8:26	0:01	KWPII	0.006	20.019	Oversupply
7/10/2016 8:55	0:03	KWPII	0.013	20.518	Oversupply
7/10/2016 9:34	0:56	KWPII	1.442	20.070	Oversupply, system constraint, oversupply, and system constraint
7/10/2016 11:15	0:02	KWPII	0.008	17.334	System constraint
7/11/2016 19:14	0:01	KWPII	0.016	17.517	Oversupply
7/11/2016 19:16	0:02	KWPII	0.024	18.235	Oversupply
7/12/2016 1:05	0:01	KWPII	0.018	11.175	Oversupply

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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
7/12/2016 1:21	0:06	KWPII	0.188	10.111	Oversupply
7/12/2016 2:47	0:37	KWPII	1.630	19.682	Oversupply
7/12/2016 3:27	0:17	KWPII	0.815	20.271	Oversupply
7/12/2016 3:46	0:07	KWPII	0.123	20.363	Oversupply
7/12/2016 4:30	0:02	KWPII	0.012	19.431	Oversupply
7/12/2016 4:37	0:02	KWPII	0.005	20.348	Oversupply
7/12/2016 4:42	0:24	KWPII	0.790	20.495	Oversupply
7/12/2016 12:10	0:01	KWPII	0.002	15.763	Oversupply
7/12/2016 12:12	0:01	KWPII	0.015	15.990	Oversupply
7/12/2016 12:19	0:01	KWPII	0.006	15.747	Oversupply
7/13/2016 3:47	0:01	AWE	0.000	0.003	Oversupply
7/14/2016 19:55	0:01	AWE	0.000	0.007	Oversupply
7/14/2016 23:50	0:27	KWPII	1.884	9.868	Oversupply
7/15/2016 0:09	0:07	AWE	0.305	13.170	Oversupply
7/15/2016 0:23	0:02	KWPII	0.113	14.264	Oversupply
7/15/2016 0:30	0:08	KWPII	0.667	14.511	Oversupply
7/15/2016 0:39	0:01	KWPII	0.008	12.643	Oversupply
7/15/2016 1:06	0:41	KWPII	4.946	15.426	Oversupply
7/15/2016 1:48	0:05	KWPII	0.210	17.187	Oversupply
7/15/2016 1:54	0:09	KWPII	0.299	16.481	Oversupply
7/15/2016 2:13	0:04	KWPII	0.116	11.862	Oversupply
7/15/2016 2:19	0:01	KWPII	0.009	9.880	Oversupply
7/15/2016 2:24	0:40	KWPII	2.576	10.603	Oversupply
7/15/2016 2:56	0:02	AWE	0.021	19.187	Oversupply
7/15/2016 3:05	0:55	KWPII	11.689	18.777	Oversupply
7/15/2016 3:09	0:03	AWE	0.021	19.587	Oversupply
7/15/2016 3:30	0:02	AWE	0.013	19.693	Oversupply
7/15/2016 3:33	0:02	AWE	0.015	17.967	Oversupply
7/15/2016 3:36	0:01	AWE	0.003	18.093	Oversupply
7/15/2016 3:38	0:11	AWE	0.223	19.223	Oversupply
7/15/2016 3:50	0:03	AWE	0.027	17.700	Oversupply
7/15/2016 4:01	1:14	KWPII	16.761	19.197	Oversupply
7/15/2016 5:16	0:16	KWPII	1.941	19.206	Oversupply
7/15/2016 5:33	0:08	KWPII	0.235	19.144	Oversupply
7/15/2016 5:43	0:01	KWPII	0.002	19.189	Oversupply
7/15/2016 5:47	0:01	KWPII	0.000	19.201	Oversupply
7/15/2016 5:52	0:13	KWPII	1.385	19.208	Oversupply
7/15/2016 6:06	0:02	KWPII	0.316	19.209	Oversupply
7/15/2016 6:09	0:09	KWPII	1.096	19.209	Oversupply
7/15/2016 6:19	0:07	KWPII	0.691	19.211	Oversupply
7/15/2016 6:27	2:10	KWPII	10.791	20.697	Oversupply
7/15/2016 9:25	0:03	KWPII	0.025	20.604	Oversupply
7/15/2016 9:36	1:25	KWPII	8.379	20.534	Oversupply
7/15/2016 11:02	0:04	KWPII	0.125	19.796	Oversupply
7/15/2016 11:08	0:08	KWPII	0.156	19.723	Oversupply
7/15/2016 11:31	0:17	KWPII	0.438	19.953	Oversupply
7/15/2016 11:51	0:01	KWPII	0.014	17.892	Oversupply
7/15/2016 11:55	0:08	KWPII	0.205	18.894	Oversupply
7/15/2016 12:04	0:02	KWPII	0.060	18.648	Oversupply
7/15/2016 12:13	0:03	KWPII	0.043	18.359	Oversupply
7/15/2016 12:17	0:11	KWPII	0.373	18.812	Oversupply
7/15/2016 12:29	0:01	KWPII	0.023	17.690	Oversupply
7/15/2016 12:31	0:04	KWPII	0.111	18.847	Oversupply
7/15/2016 13:28	0:01	KWPII	0.015	17.894	Oversupply
7/15/2016 13:31	0:01	KWPII	0.003	18.982	Oversupply
7/15/2016 22:11	0:45	KWPII	3.538	20.455	Oversupply
7/15/2016 23:14	0:02	KWPII	0.009	20.702	Oversupply
7/16/2016 1:30	0:13	KWPII	0.034	20.186	Oversupply
7/16/2016 1:49	1:02	KWPII	2.706	20.686	Oversupply
7/16/2016 3:56	0:39	KWPII	2.276	20.581	Oversupply
7/16/2016 4:52	0:06	KWPII	0.170	20.701	Oversupply
7/16/2016 5:12	0:02	KWPII	0.035	20.708	Oversupply
7/16/2016 5:45	0:01	KWPII	0.000	20.698	Oversupply
7/16/2016 9:58	0:28	KWPII	1.420	20.702	Oversupply
7/16/2016 10:30	0:02	KWPII	0.007	20.580	Oversupply
7/16/2016 10:33	0:05	KWPII	0.032	20.598	Oversupply
7/16/2016 10:42	0:18	KWPII	0.661	20.688	Oversupply
7/16/2016 11:02	0:10	KWPII	0.321	20.552	Oversupply
7/16/2016 11:36	0:02	KWPII	0.007	20.495	Oversupply
7/16/2016 11:40	0:01	KWPII	0.005	20.389	Oversupply
7/16/2016 13:45	0:01	KWPII	0.008	18.368	Oversupply
7/16/2016 13:47	1:45	KWPII	14.113	20.649	Oversupply
7/16/2016 23:14	0:05	KWPII	0.200	16.831	Oversupply
7/18/2016 15:54	0:01	AWE	0.000	0.007	Oversupply
7/18/2016 16:14	0:01	AWE	0.000	0.007	Oversupply
7/18/2016 18:54	0:01	KWP	0.000	0.001	Oversupply
7/19/2016 23:03	0:23	KWPII	2.600	13.666	Oversupply
7/19/2016 23:14	0:07	AWE	0.202	20.993	Oversupply
7/19/2016 23:28	0:01	KWPII	0.046	8.171	Oversupply
7/20/2016 5:23	0:02	KWPII	0.010	4.383	Oversupply
7/20/2016 5:41	0:03	KWPII	0.029	9.330	Oversupply
7/20/2016 5:54	0:01	KWPII	0.004	3.331	Oversupply
7/20/2016 22:55	0:01	KWPII	0.002	20.708	Oversupply
7/20/2016 22:57	0:01	KWPII	0.001	20.708	Oversupply
7/20/2016 22:59	0:13	KWPII	0.501	20.708	Oversupply
7/20/2016 23:13	0:01	KWPII	0.002	20.708	Oversupply
7/20/2016 23:15	0:02	KWPII	0.004	20.708	Oversupply
7/21/2016 0:52	0:05	KWPII	0.034	20.708	Oversupply
7/21/2016 2:45	0:01	AWE	0.000	0.007	Oversupply
7/21/2016 2:48	3:21	KWPII	48.659	20.708	Oversupply
7/21/2016 3:22	0:25	AWE	0.345	21.000	Oversupply
7/21/2016 3:55	0:12	AWE	0.114	21.000	Oversupply
7/21/2016 4:08	0:02	AWE	0.001	21.000	Oversupply
7/21/2016 4:15	0:01	AWE	0.000	21.000	Oversupply
7/21/2016 6:10	0:40	KWPII	1.376	20.708	Oversupply
7/21/2016 6:57	0:04	KWPII	0.042	20.708	Oversupply
7/21/2016 7:07	0:08	KWPII	0.178	20.708	Oversupply
7/21/2016 7:18	0:12	KWPII	0.143	20.708	Oversupply
7/21/2016 7:49	0:02	KWPII	0.007	20.708	Oversupply
7/21/2016 8:05	0:07	KWPII	0.210	20.708	Oversupply
7/21/2016 10:58	3:24	KWPII	31.085	20.708	Oversupply
7/21/2016 14:38	0:05	KWPII	0.021	20.706	Oversupply
7/21/2016 14:52	0:04	KWPII	0.037	20.708	Oversupply
7/21/2016 22:40	0:05	KWPII	0.037	20.708	Facility requested
7/21/2016 23:16	0:24	KWPII	1.215	20.708	Facility requested
7/22/2016 0:49	0:58	KWPII	3.670	20.708	Oversupply

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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
7/22/2016 2:12	2:49	KWPII	11.236	20.708	Oversupply
7/22/2016 5:12	0:02	KWPII	0.004	20.708	Oversupply
7/22/2016 6:21	0:06	KWPII	0.021	20.708	Oversupply
7/22/2016 8:58	0:01	AWE	0.000	0.007	Oversupply
7/22/2016 9:02	0:01	AWE	0.000	0.007	Oversupply
7/22/2016 10:39	1:28	KWPII	5.455	20.708	Oversupply
7/22/2016 12:08	0:01	KWPII	0.012	20.593	Oversupply
7/22/2016 12:16	0:01	KWPII	0.004	20.708	Oversupply
7/22/2016 12:43	0:19	KWPII	0.636	20.708	Oversupply
7/22/2016 14:43	0:06	KWPII	0.087	20.707	Oversupply
7/23/2016 1:34	3:53	KWPII	17.764	20.708	Oversupply
7/23/2016 10:52	0:07	KWPII	0.343	20.708	Oversupply
7/23/2016 11:16	0:04	KWPII	0.061	20.708	Oversupply
7/23/2016 12:11	0:01	KWPII	0.004	19.211	Oversupply
7/23/2016 12:19	0:12	KWPII	0.997	19.211	Oversupply
7/23/2016 12:46	0:17	KWPII	0.664	19.211	Oversupply
7/23/2016 13:08	0:09	KWPII	0.371	20.708	Oversupply
7/23/2016 13:56	1:21	KWPII	7.743	20.708	Oversupply
7/23/2016 17:19	0:02	KWPII	0.039	16.217	Oversupply
7/23/2016 17:41	0:01	KWPII	0.011	16.217	Oversupply
7/23/2016 20:05	0:01	KWPII	0.003	17.714	Oversupply
7/23/2016 21:18	0:03	KWPII	0.036	20.708	Oversupply
7/23/2016 21:24	0:07	KWPII	0.061	20.708	Oversupply
7/23/2016 21:47	0:07	KWPII	0.165	20.708	Oversupply
7/23/2016 21:55	0:01	KWPII	0.001	20.408	Oversupply
7/23/2016 21:57	0:01	KWPII	0.017	20.708	Oversupply
7/23/2016 21:59	0:01	KWP	0.023	27.361	Oversupply
7/23/2016 21:59	0:01	KWPII	0.004	19.610	Oversupply
7/23/2016 22:01	0:17	KWPII	0.833	20.704	Oversupply
7/23/2016 22:25	0:04	KWPII	0.078	20.660	Oversupply
7/23/2016 22:30	0:02	KWPII	0.034	20.313	Oversupply
7/23/2016 22:34	0:05	KWPII	0.092	20.558	Oversupply
7/23/2016 22:49	0:01	KWPII	0.001	19.922	Oversupply
7/26/2016 11:02	0:01	KWP	0.000	0.001	Oversupply
7/26/2016 23:05	0:02	KWPII	0.019	18.163	Oversupply
7/26/2016 23:08	0:02	KWPII	0.031	19.053	Oversupply
7/26/2016 23:47	0:02	KWPII	0.013	18.599	Oversupply
7/27/2016 0:00	0:01	KWPII	0.006	18.478	Oversupply
7/27/2016 0:27	0:02	KWPII	0.017	18.334	Oversupply
7/27/2016 0:49	0:13	KWPII	1.120	19.167	Oversupply
7/27/2016 1:03	5:08	KWPII	59.097	19.211	Oversupply
7/27/2016 6:13	0:08	KWPII	0.139	19.211	Oversupply
7/27/2016 6:26	0:02	KWPII	0.010	19.211	Oversupply
7/27/2016 6:32	0:06	KWPII	0.071	19.211	Oversupply
7/27/2016 6:43	0:19	KWPII	1.013	19.211	Oversupply
7/27/2016 7:03	0:06	KWPII	0.064	19.211	Oversupply
7/27/2016 7:12	0:01	KWPII	0.011	19.211	Oversupply
7/27/2016 7:30	0:06	KWPII	0.053	19.211	Oversupply
7/27/2016 7:45	0:02	KWPII	0.012	19.211	Oversupply
7/27/2016 7:54	0:17	KWPII	0.261	20.708	Oversupply
7/27/2016 8:23	0:01	KWPII	0.002	20.704	Oversupply
7/27/2016 8:29	0:03	KWPII	0.068	20.704	Oversupply
7/27/2016 8:33	1:27	KWPII	5.158	20.708	Oversupply
7/27/2016 10:01	0:12	KWPII	0.403	20.596	Oversupply
7/27/2016 10:15	0:04	KWPII	0.071	20.169	Oversupply
7/27/2016 10:21	3:43	KWPII	16.615	20.708	Oversupply
7/27/2016 14:54	0:02	KWPII	0.016	20.705	Oversupply
7/27/2016 22:18	6:38	KWPII	90.759	20.708	Oversupply
7/28/2016 3:35	0:07	AWE	0.115	20.060	Oversupply
7/28/2016 3:47	0:01	AWE	0.004	18.990	Oversupply
7/28/2016 3:52	0:08	AWE	0.084	19.493	Oversupply
7/28/2016 4:01	0:01	AWE	0.014	19.773	Oversupply
7/28/2016 4:03	0:03	AWE	0.010	19.053	Oversupply
7/28/2016 4:07	0:01	AWE	0.000	19.323	Oversupply
7/28/2016 4:09	0:01	AWE	0.007	19.977	Oversupply
7/28/2016 4:15	0:01	AWE	0.001	19.880	Oversupply
7/28/2016 4:19	0:15	AWE	0.099	20.753	Oversupply
7/28/2016 4:36	0:03	AWE	0.004	20.817	Oversupply
7/28/2016 4:58	0:43	KWPII	8.277	19.211	Oversupply
7/28/2016 5:43	0:09	KWPII	0.628	19.211	Oversupply
7/28/2016 5:56	0:01	KWPII	0.021	19.211	Oversupply
7/28/2016 5:59	0:02	KWPII	0.015	19.211	Oversupply
7/28/2016 6:16	0:01	KWPII	0.004	19.211	Oversupply
7/28/2016 6:18	0:04	KWPII	0.065	19.211	Oversupply
7/28/2016 6:27	0:15	KWPII	0.675	19.211	Oversupply
7/28/2016 6:48	0:39	KWPII	1.815	19.211	Oversupply
7/28/2016 7:31	0:16	KWPII	0.377	19.211	Oversupply
7/28/2016 7:49	0:06	KWPII	0.115	19.211	Oversupply
7/28/2016 8:15	0:01	KWPII	0.002	19.211	Oversupply
7/28/2016 8:19	0:02	KWPII	0.027	19.211	Oversupply
7/28/2016 8:22	5:45	KWPII	56.221	20.708	Oversupply
7/28/2016 14:10	0:32	KWPII	1.667	20.708	Oversupply
7/28/2016 14:43	1:17	KWPII	5.171	20.708	Oversupply
7/28/2016 16:03	0:01	KWPII	0.003	20.696	Oversupply
7/28/2016 23:09	0:01	KWPII	0.001	20.708	Oversupply
7/28/2016 23:18	0:06	KWPII	0.037	20.708	Oversupply
7/29/2016 0:25	3:26	KWPII	28.889	20.708	Oversupply
7/29/2016 3:57	0:07	KWPII	0.180	20.708	Oversupply
7/29/2016 4:14	0:06	KWPII	0.034	20.708	Oversupply
7/29/2016 4:28	0:01	KWPII	0.000	20.708	Oversupply
7/29/2016 4:41	0:25	KWPII	0.812	20.708	Oversupply
7/29/2016 5:36	0:13	KWPII	0.564	20.708	Oversupply
7/29/2016 6:57	0:10	KWPII	0.455	20.708	Oversupply
7/29/2016 7:11	0:01	KWPII	0.000	20.708	Oversupply
7/29/2016 10:17	0:59	KWPII	3.034	20.708	Oversupply
7/29/2016 11:23	1:53	KWPII	11.529	20.708	Oversupply
7/29/2016 13:50	0:01	KWPII	0.000	20.675	Oversupply
7/29/2016 13:52	0:02	KWPII	0.002	20.707	Oversupply
7/29/2016 14:06	0:08	KWPII	0.315	20.646	Oversupply
7/29/2016 14:22	2:42	KWPII	22.654	20.708	Oversupply
7/29/2016 15:06	0:02	AWE	0.012	19.490	System constraint
7/29/2016 17:11	0:02	KWPII	0.005	20.708	Oversupply
7/30/2016 2:02	0:06	KWPII	0.047	20.708	Oversupply
7/30/2016 2:10	0:06	KWPII	0.088	20.704	Oversupply
7/30/2016 2:19	0:03	KWPII	0.038	20.702	Oversupply
7/30/2016 2:24	0:05	KWPII	0.062	20.679	Oversupply

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Maui Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
7/30/2016 2:30	0:27	KWPII	0.723	20.703	Oversupply
7/30/2016 3:02	0:17	KWPII	0.900	20.675	Oversupply
7/30/2016 3:22	0:19	KWPII	0.442	20.708	Oversupply
7/30/2016 3:42	0:03	KWPII	0.081	20.686	Oversupply
7/30/2016 3:46	0:06	KWPII	0.217	20.672	Oversupply
7/30/2016 3:53	0:10	KWPII	0.404	20.625	Oversupply
7/30/2016 4:04	0:12	KWPII	0.415	20.558	Oversupply
7/30/2016 4:17	0:04	KWPII	0.043	19.978	Oversupply
7/30/2016 4:30	0:20	KWPII	1.227	20.629	Oversupply
7/30/2016 4:51	0:02	KWPII	0.015	18.946	Oversupply
7/30/2016 4:54	0:03	KWPII	0.033	20.244	Oversupply
7/30/2016 4:58	0:01	KWPII	0.008	19.945	Oversupply
7/30/2016 5:00	0:07	KWPII	0.092	20.617	Oversupply
7/30/2016 5:09	0:04	KWPII	0.015	20.680	Oversupply
7/30/2016 5:17	0:02	KWPII	0.000	20.705	Oversupply
7/30/2016 5:35	0:03	KWPII	0.023	20.617	Oversupply
7/30/2016 5:46	0:03	KWPII	0.012	20.676	Oversupply
7/30/2016 5:50	0:07	KWPII	0.051	20.686	Oversupply
7/30/2016 6:34	0:17	KWPII	0.218	20.702	Oversupply
7/30/2016 6:55	0:10	KWPII	0.073	20.702	Oversupply
7/30/2016 7:54	0:01	KWPII	0.004	20.706	Oversupply
7/30/2016 8:04	2:42	KWPII	26.012	20.706	Oversupply
7/30/2016 10:00	0:01	AWE	0.003	20.910	Oversupply
7/30/2016 10:40	0:01	AWE	0.001	20.947	Oversupply
7/30/2016 10:42	0:01	AWE	0.005	21.000	Oversupply
7/30/2016 10:44	0:02	AWE	0.007	21.000	Oversupply
7/30/2016 10:47	0:04	AWE	0.050	21.000	Oversupply
7/30/2016 10:47	2:12	KWPII	33.582	20.502	Oversupply
7/30/2016 10:56	0:02	AWE	0.009	20.973	Oversupply
7/30/2016 11:02	0:01	AWE	0.000	21.000	Oversupply
7/30/2016 11:07	0:01	AWE	0.002	20.723	Oversupply
7/30/2016 11:10	0:01	AWE	0.006	20.613	Oversupply
7/30/2016 11:58	0:01	AWE	0.006	19.487	Oversupply
7/30/2016 12:00	0:08	AWE	0.114	19.817	Oversupply
7/30/2016 12:09	0:11	AWE	0.324	20.960	Oversupply
7/30/2016 12:21	0:38	AWE	1.810	21.000	Oversupply
7/30/2016 13:00	0:06	AWE	0.160	20.167	Oversupply
7/30/2016 13:00	0:39	KWPII	12.409	20.210	Oversupply
7/30/2016 13:10	0:12	AWE	0.407	20.673	Oversupply
7/30/2016 13:23	0:12	AWE	0.364	21.000	Oversupply
7/30/2016 13:41	1:29	KWPII	15.879	20.232	Oversupply
7/30/2016 13:42	0:01	AWE	0.000	21.000	Oversupply
7/30/2016 14:17	0:01	AWE	0.001	21.000	Oversupply
7/30/2016 14:19	0:01	AWE	0.005	20.740	Oversupply
7/30/2016 15:11	0:38	KWPII	3.229	19.721	Oversupply
7/30/2016 15:51	0:01	KWPII	0.017	19.980	Oversupply
7/30/2016 15:53	0:04	KWPII	0.071	19.170	Oversupply
7/30/2016 16:15	0:02	KWPII	0.017	20.094	Oversupply
7/30/2016 23:13	0:02	KWPII	0.030	16.190	Oversupply
7/30/2016 23:16	0:02	KWPII	0.027	16.151	Oversupply
7/30/2016 23:23	0:05	KWPII	0.229	18.772	Oversupply
7/30/2016 23:30	0:04	KWPII	0.131	19.201	Oversupply
7/30/2016 23:57	0:01	KWPII	0.015	17.010	Oversupply
7/31/2016 0:01	0:08	KWPII	0.674	18.817	Oversupply
7/31/2016 0:15	0:05	KWPII	0.201	13.976	Oversupply
7/31/2016 0:26	0:11	KWPII	0.604	17.603	Oversupply
7/31/2016 0:39	0:05	KWPII	0.359	15.361	Oversupply
7/31/2016 1:04	0:10	KWPII	0.361	14.339	Oversupply
7/31/2016 1:16	0:05	KWPII	0.287	15.336	Oversupply
7/31/2016 1:25	0:11	KWPII	0.441	16.957	Oversupply
7/31/2016 1:37	0:05	KWPII	0.188	13.154	Oversupply
7/31/2016 1:44	0:06	KWPII	0.188	9.699	Oversupply
7/31/2016 1:51	0:21	KWPII	0.999	7.427	Oversupply
7/31/2016 2:17	0:01	KWPII	0.004	7.234	Oversupply
7/31/2016 2:38	0:25	KWPII	2.826	18.669	Oversupply
7/31/2016 3:23	1:46	KWPII	21.978	20.253	Oversupply
7/31/2016 3:43	0:03	AWE	0.053	7.100	Oversupply
7/31/2016 4:46	0:16	AWE	0.744	15.647	Oversupply
7/31/2016 5:12	0:09	KWPII	0.667	18.380	Oversupply
7/31/2016 5:23	0:08	KWPII	0.203	18.797	Oversupply
7/31/2016 5:46	0:01	KWPII	0.023	17.273	Oversupply
7/31/2016 5:48	0:04	KWPII	0.123	17.359	Oversupply
7/31/2016 6:51	0:01	KWPII	0.011	14.943	Oversupply
7/31/2016 7:03	0:32	KWPII	4.013	16.955	Oversupply
7/31/2016 7:27	0:03	AWE	0.054	20.807	Oversupply
7/31/2016 7:40	0:04	KWPII	0.218	14.211	Oversupply
7/31/2016 13:34	0:01	KWPII	0.007	1.619	Oversupply

Notes:

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

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/2/2016 6:48	0:24	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 8:28	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 8:40	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 8:47	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 8:52	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 9:14	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 9:19	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 9:22	0:17	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 9:41	0:20	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:03	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:05	0:13	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:19	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:25	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:29	0:04	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:37	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:44	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 10:48	0:12	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:02	0:06	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:10	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:14	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:17	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:22	0:06	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:32	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:37	0:10	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 11:50	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:00	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:04	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:07	0:05	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:14	0:08	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:30	0:10	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:41	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:44	0:12	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 12:57	0:05	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 13:04	0:13	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 13:18	0:20	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 13:39	0:18	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 13:58	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:02	0:10	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:14	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:16	0:08	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:26	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:29	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:35	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:41	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:45	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:48	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:50	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:52	0:06	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 14:59	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:02	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:06	0:12	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:19	0:03	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:23	0:22	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:49	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:51	0:05	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 15:59	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 16:02	0:16	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 16:19	0:02	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 16:22	0:19	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 16:43	0:01	LSR	Data is not available	Data is not available	Oversupply
7/2/2016 16:47	0:01	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 8:22	0:01	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 8:25	0:02	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 8:28	0:07	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 8:49	0:05	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 10:02	0:04	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 10:09	0:01	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 10:13	0:01	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 11:03	0:02	LSR	Data is not available	Data is not available	Oversupply
7/3/2016 11:51	0:01	LSR	Data is not available	Data is not available	Oversupply
7/5/2016 17:50	0:01	LSR	Data is not available	Data is not available	Oversupply
7/5/2016 18:01	0:01	LSR	Data is not available	Data is not available	Oversupply
7/6/2016 16:04	0:10	LSR	Data is not available	Data is not available	Oversupply
7/6/2016 16:53	1:41	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 12:32	1:10	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 13:49	0:01	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 13:54	0:02	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 14:01	0:29	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 14:47	0:47	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 16:02	0:01	LSR	Data is not available	Data is not available	Oversupply
7/10/2016 16:38	1:19	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 6:16	0:04	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 6:54	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 7:00	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 7:08	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 7:17	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 7:26	0:33	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 8:00	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 8:29	0:04	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 8:37	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 8:52	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 8:56	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:16	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:25	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:28	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:37	0:10	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:48	0:08	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 9:57	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 10:01	0:05	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 10:14	0:01	LSR	Data is not available	Data is not available	Oversupply

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/12/2016 10:28	0:02	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 10:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 10:34	0:07	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 10:53	0:05	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:01	0:04	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:06	0:04	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:12	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:16	0:04	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:23	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:29	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 11:35	0:57	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 12:37	0:06	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 12:45	0:02	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 12:53	0:09	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:05	0:03	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:09	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:33	0:02	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:36	0:02	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:39	0:02	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:49	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 13:52	0:17	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 14:11	0:14	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 14:33	0:01	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 14:36	1:11	LSR	Data is not available	Data is not available	Oversupply
7/12/2016 15:49	2:47	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 6:26	1:49	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 8:16	0:10	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 8:27	0:16	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 8:53	0:06	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 9:01	0:16	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 9:20	0:47	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 10:10	0:24	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 10:35	0:12	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 10:51	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 11:42	0:06	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 12:27	0:02	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 12:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 12:37	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 12:39	0:05	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 12:47	0:07	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 13:20	0:04	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 14:08	0:07	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 14:25	0:26	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 14:53	0:04	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 15:00	0:22	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 15:23	0:07	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 15:33	0:09	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 15:54	0:06	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:01	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:04	0:09	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:16	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:22	0:02	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:25	0:14	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:40	0:04	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:47	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 16:53	0:12	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 17:08	0:01	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 17:14	0:09	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 17:24	0:53	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 18:19	0:02	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 18:22	0:02	LSR	Data is not available	Data is not available	Oversupply
7/13/2016 18:25	0:04	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 7:05	0:08	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 7:15	0:17	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 7:43	0:18	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 8:02	0:16	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 8:55	0:15	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 9:31	1:11	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 11:24	0:10	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 11:44	0:02	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 11:49	0:02	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 11:55	0:10	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 12:07	0:08	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 12:17	0:06	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 12:24	0:14	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 12:41	0:14	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 12:58	0:04	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 13:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 13:44	0:07	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 14:30	0:01	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 15:19	0:01	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 15:22	0:01	LSR	Data is not available	Data is not available	Oversupply
7/14/2016 16:55	0:59	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 7:43	0:17	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 8:03	0:15	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 8:21	0:02	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 8:32	0:45	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 9:29	0:12	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 9:42	0:46	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 10:31	0:03	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 10:36	0:03	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 10:40	0:05	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 10:51	0:02	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 11:29	0:07	LSR	Data is not available	Data is not available	Oversupply
7/15/2016 11:56	6:29	LSR	Data is not available	Data is not available	Oversupply
7/16/2016 6:27	10:07	LSR	Data is not available	Data is not available	Oversupply
7/16/2016 16:39	0:07	LSR	Data is not available	Data is not available	Oversupply
7/16/2016 16:50	0:13	LSR	Data is not available	Data is not available	Oversupply
7/16/2016 17:06	0:05	LSR	Data is not available	Data is not available	Oversupply
7/16/2016 17:17	0:01	LSR	Data is not available	Data is not available	Oversupply

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/17/2016 6:50	1:16	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 8:07	0:26	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 8:35	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 8:40	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 8:43	0:07	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 9:02	0:05	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 9:11	0:04	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 10:19	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 10:59	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 11:10	0:07	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 11:21	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 11:28	0:02	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 12:56	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 13:00	0:02	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 13:11	0:03	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 13:55	0:09	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 14:36	0:02	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 14:43	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 14:47	0:03	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 14:52	0:18	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 15:12	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 15:19	0:08	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 15:31	0:19	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 16:00	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 16:37	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 16:42	0:01	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 16:49	0:02	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 17:00	0:31	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 17:33	0:05	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 17:48	0:03	LSR	Data is not available	Data is not available	Oversupply
7/17/2016 17:55	0:33	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 6:41	0:12	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 7:02	0:12	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 7:20	1:37	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 9:05	0:09	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 9:15	5:27	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 14:43	1:10	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 15:55	0:09	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 16:16	0:01	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 16:20	0:01	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 16:22	0:01	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 16:41	0:27	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 17:10	0:31	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 17:42	0:14	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 17:58	0:02	LSR	Data is not available	Data is not available	Oversupply
7/18/2016 18:02	0:15	LSR	Data is not available	Data is not available	Oversupply
7/19/2016 7:09	9:17	LSR	Data is not available	Data is not available	Oversupply
7/19/2016 16:29	0:18	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 7:07	1:04	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 8:13	0:03	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 8:26	0:15	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 9:29	0:18	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 9:48	0:37	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 10:26	0:16	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 10:44	0:01	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 10:48	0:05	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 10:58	0:08	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 11:13	0:07	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 11:27	0:04	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 11:34	0:02	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 11:58	0:03	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 12:07	0:23	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 13:01	0:01	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 13:45	0:08	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 14:00	0:08	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 14:14	0:17	LSR	Data is not available	Data is not available	Oversupply
7/20/2016 14:33	3:36	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 6:52	0:01	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 6:54	0:06	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 7:04	0:02	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 7:19	0:20	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 8:07	0:07	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 8:15	0:05	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 8:21	0:02	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 8:28	0:06	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 8:47	0:12	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 9:14	0:01	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 9:22	2:09	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 11:33	0:23	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 11:59	0:35	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 12:37	0:03	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 12:42	0:35	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 13:27	0:08	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 13:44	0:20	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 14:22	0:11	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 14:45	0:10	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 14:56	1:36	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 16:35	0:02	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 16:41	0:20	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 17:03	0:27	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 17:32	0:07	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 17:43	0:01	LSR	Data is not available	Data is not available	Oversupply
7/21/2016 17:47	0:02	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 7:00	0:01	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 7:09	0:05	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 7:15	0:06	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 7:22	0:58	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 8:22	0:57	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 9:21	0:21	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 9:43	0:24	LSR	Data is not available	Data is not available	Oversupply

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/22/2016 10:08	0:03	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 10:12	0:26	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 10:39	0:04	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 10:44	3:16	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 14:01	1:22	LSR	Data is not available	Data is not available	Oversupply
7/22/2016 15:24	2:36	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 7:19	0:04	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 7:35	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 9:08	0:30	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 9:39	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:00	0:07	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:08	0:06	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:15	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:23	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:26	0:07	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 10:34	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 11:12	0:03	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 11:19	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 11:22	0:14	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 11:50	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 12:01	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 12:05	0:36	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 12:47	0:45	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 13:34	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 13:38	0:04	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 13:45	0:11	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:27	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:30	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:32	0:04	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:37	0:04	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:42	0:03	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:51	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 14:53	0:27	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 15:29	0:03	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 15:41	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 15:49	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 15:55	0:11	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:07	0:15	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:26	0:03	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:30	0:06	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:40	0:04	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:50	0:05	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 16:57	0:01	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 17:03	0:02	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 17:09	0:03	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 17:14	0:05	LSR	Data is not available	Data is not available	Oversupply
7/23/2016 17:29	0:05	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:09	0:03	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:13	0:10	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:26	0:02	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:29	0:01	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:32	0:19	LSR	Data is not available	Data is not available	Oversupply
7/24/2016 13:57	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 8:05	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 8:38	0:04	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 8:45	0:07	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 9:11	0:20	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 10:06	0:09	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 10:30	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 10:38	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 10:58	0:13	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 11:17	0:03	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 11:50	0:07	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 11:59	0:09	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 12:33	0:04	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 12:39	0:02	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 12:43	0:16	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 13:00	0:52	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 13:53	0:03	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:04	0:05	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:11	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:18	0:03	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:27	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:30	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:34	0:06	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:41	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:44	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 14:51	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:10	0:02	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:14	0:03	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:21	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:26	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:30	0:02	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:33	0:02	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 15:36	0:07	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 16:28	0:17	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 16:47	0:01	LSR	Data is not available	Data is not available	Oversupply
7/25/2016 16:50	0:03	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 6:58	1:23	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 8:28	0:01	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 8:45	0:01	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 8:50	4:19	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 13:10	0:13	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 13:32	2:45	LSR	Data is not available	Data is not available	Oversupply
7/26/2016 16:25	0:25	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 6:31	2:19	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 8:52	0:08	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 9:04	0:01	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 9:07	0:11	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 9:42	0:06	LSR	Data is not available	Data is not available	Oversupply

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/27/2016 9:50	0:02	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 10:11	0:03	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 12:36	0:01	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 12:48	0:04	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 12:53	0:03	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 13:05	0:06	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 13:16	0:06	LSR	Data is not available	Data is not available	Oversupply
7/27/2016 13:35	5:14	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 6:19	1:17	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 8:25	0:02	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 8:29	0:04	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 10:13	0:09	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 10:24	0:08	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 10:34	0:04	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:06	0:04	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:11	0:01	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:31	0:01	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:33	0:02	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:43	0:03	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:48	0:04	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 11:54	0:06	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 12:10	0:02	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 12:15	0:06	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 12:22	0:03	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 12:34	0:01	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 12:36	0:09	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 13:16	0:51	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 14:10	0:04	LSR	Data is not available	Data is not available	Oversupply
7/28/2016 14:28	4:11	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 7:08	0:17	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 7:35	0:01	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:15	0:01	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:17	0:13	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:31	0:02	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:34	0:01	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:36	0:10	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 9:48	0:05	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 10:08	0:01	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 10:11	2:12	LSR	Data is not available	Data is not available	Oversupply
7/29/2016 12:30	5:54	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 7:21	0:03	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 7:25	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 7:28	0:04	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 7:48	0:16	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:05	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:11	0:04	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:18	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:21	0:09	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:32	0:06	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:39	0:06	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 8:52	0:06	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 9:07	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:01	0:05	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:09	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:11	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:27	0:03	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:36	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:38	0:03	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:46	0:03	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 10:56	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 11:01	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 11:04	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 12:13	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 12:27	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 12:45	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 12:48	0:04	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 12:53	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 13:17	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 13:21	0:03	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 13:26	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 13:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 16:54	0:02	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 16:59	0:05	LSR	Data is not available	Data is not available	Oversupply
7/30/2016 17:09	0:21	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 7:55	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 7:58	0:05	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:08	0:03	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:14	0:06	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:21	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:25	0:04	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:33	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 8:35	0:08	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 9:41	0:09	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 10:10	0:05	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 10:16	0:08	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 11:39	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 11:42	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 12:38	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 12:40	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 13:30	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 13:32	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 13:37	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 13:54	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 14:03	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 14:06	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 15:03	0:02	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 15:11	0:03	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 15:42	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:02	0:03	LSR	Data is not available	Data is not available	Oversupply

Maui Electric

Lanai Curtailment Report

July 2016

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
7/31/2016 16:07	0:03	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:11	0:03	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:20	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:24	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:27	0:03	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:32	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 16:48	0:01	LSR	Data is not available	Data is not available	Oversupply
7/31/2016 17:34	0:08	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 July 2016

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released[1]	IPP	Reason for Curtailment
07/04/16 02:57	18.6 MW	07/04/16 04:14	16.9 MW	Tawhiri	Oversupply
07/12/16 08:27	13.8 MW	07/12/16 08:46	11.2 MW	Tawhiri	System constraint
07/12/16 14:33	14.7 MW	07/12/16 14:48	12.9 MW	Tawhiri	System constraint
07/21/16 15:12	14.2 MW	07/21/16 15:27	13.9 MW	Tawhiri	System constraint
07/22/16 09:11	0.0 MW	07/22/16 09:47	0.0 MW	Tawhiri	Facility requested
07/22/16 19:57	0.0 MW	--	--	HRD	System constraint: Limited to 5 MVA spare transformer at Waimea (not-to-exceed 5 MW) until primary 10 MVA 69-34kV transformer is restored after it failed during Tropical Storm Darby.

[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.