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2016 OCT 25 A 11: 24

FUBLIC UTILITIES

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' monthly report for September 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

<sup>&</sup>lt;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 September 30, 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 September 30, 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:

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

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

Hawaiian Electric'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.

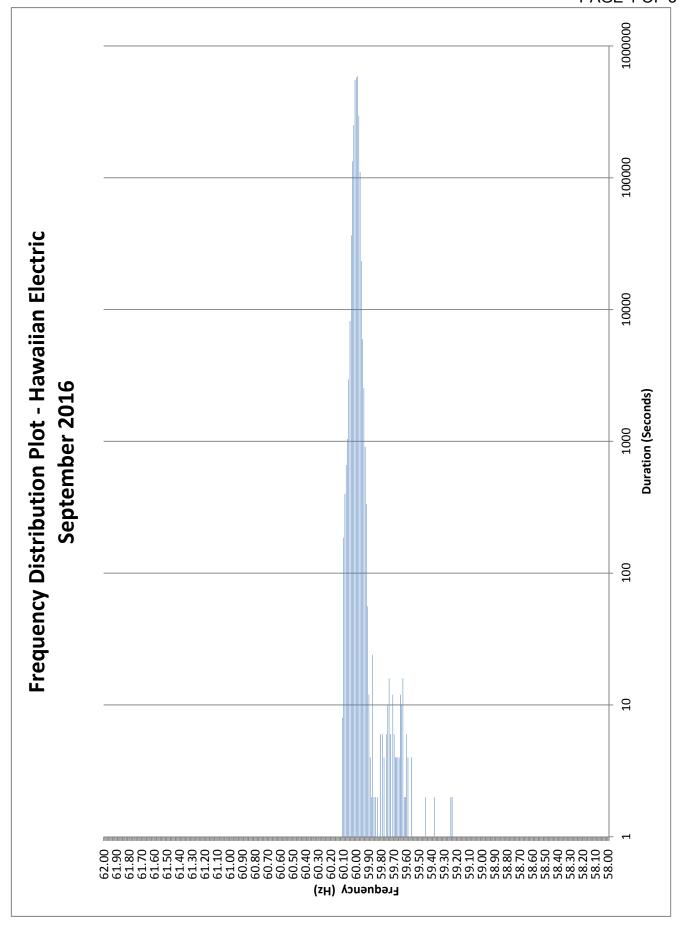
The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending September 30, 2016):

# 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:

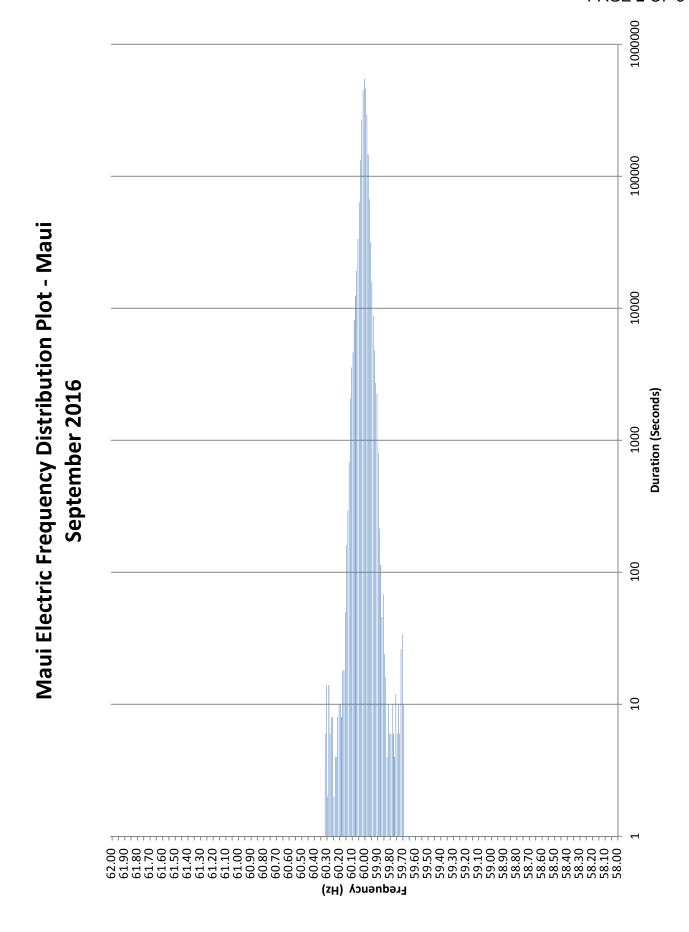
The tabulation of each curtailment event for each resource is provided in Attachment 6.

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

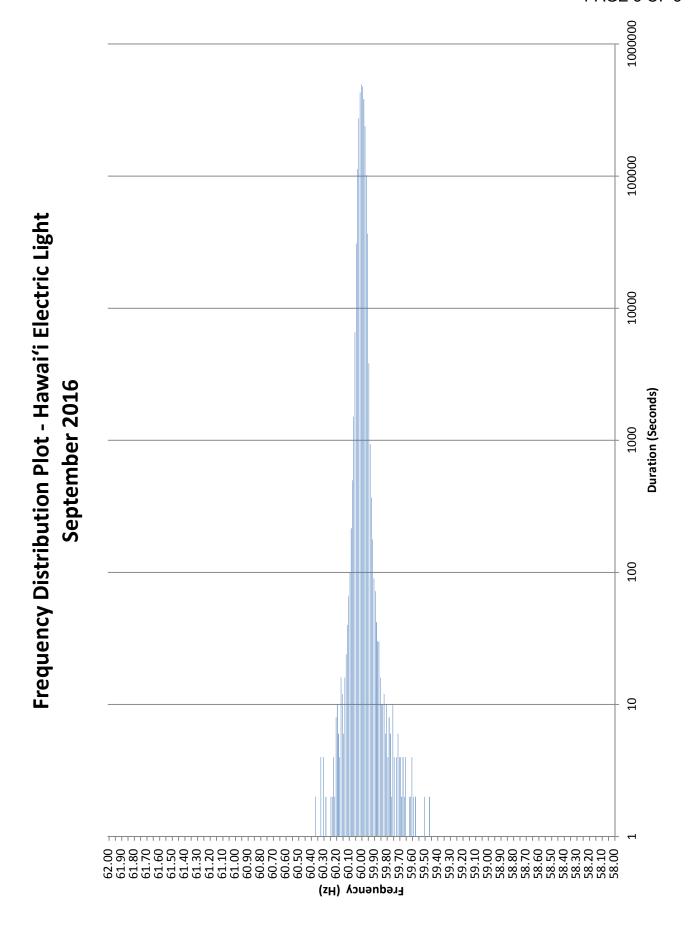
Curtailed MWH from non-dispatchable resources are difficult to determine due to the variability of the resource during curtailment periods. In some cases, the curtailed MWH estimates were provided by the IPPs under curtailment. The Hawaiian Electric Companies do not make any representations as to the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



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DOCKET NO. 2011-0206 ORDER NO. 30371 I.C.(1)(a) ATTACHMENT 1 PAGE 3 OF 3



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Hawaiian Electric Frequency Excursion Statistics						
September 2016						
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz				
Number of Excursions	445	613				
Maximum Duration (sec)	290	606				
Maximum Deviation (Hz)	59.244	60.106				
Total Duration of Excursions (sec)	6006	7686				

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Maui Electric Frequency Excursion Statistics						
September 2016						
	<59.95 Hz	>60.05 Hz				
Number of Excursions	6806	6802				
Maximum Duration (sec)	504	834				
Maximum Deviation (Hz)	59.6878	60.3117				
Total Duration of Excursions (sec)	49270	65328				

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Hawai'i Electric Light Frequency Excursion Statistics September 2016						
50 05 Hz	>60 05 Hz					
	162					
ַ	59.95 Hz 4859 112 59.457 21834					

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#### HAWAIIAN ELECTRIC COMPANY, INC. CONTINGENCY RESERVE ACTIVATION EVENTS SEPTEMBER 2016

		F	requency (H	z)			
Event #	Date & Time	Prior to Event	Nadir	Trigger	Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
1	09/20/16 18:45	59.45	59.24	NA	-97.00	0:53	K6 tripped offline while generating ~15 MW. W10 and CIP called online for spinning reserve.

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#### HAWAIIAN ELECTRIC COMPANY, INC. DEMAND RESPONSE EVENTS SEPTEMBER 2016

		Frequency (Hz)					
Event #	Date & Time	Prior to Event	Nadir	Trigger	Load Shed (MW)	Duration (HH:MM)	Description
1	09/20/16 18:45	59.45	59.24	59.7	NA	U.OP	K6 tripped offline while generating ~15 MW. RDLC and CIDLC activated.

Hawaiian Electric Curtailment Report September 2016

			Hawanan Lic	ctric Cartainine	in Kepon Sepi	CITIBET 2010	
	Curtailment	MW output		MW output after curtailment	Estimated MWh of curtailed energy during		
Start Date/Time	Set Point	of curtailment	End Date/Time	released	event (1)	IPP	Reason for Curtailment
09/08/16 07:32	0.0	0.40	09/08/16 17:46	0	*	KREP	System constraints
09/09/16 08:12	0.0	2.18	09/09/16 16:27	0	*	KREP	System constraints
09/26/16 07:04	0.0	20.00	09/26/16 08:18	0	*	KWF	Facility Requested/System constraints
09/26/16 07:09	0.0	30.00	09/26/16 17:13	0	*	Mauka	Facility Requested/System constraints
09/26/16 07:10	0.0	13.40	09/26/16 08:25	0	*	Makai	Facility Requested/System constraints
09/26/16 16:46	0.0	17.30	09/26/16 17:07	0	*	KWF	Facility Requested/System constraints
09/26/16 16:50	0.0	10.40	09/26/16 17:12	0	*	Makai	Facility Requested/System constraints
09/27/16 06:55	0.0	3.80	09/27/16 08:08	0	*	Mauka	Facility Requested/System constraints
09/27/16 06:56	0.0	1.60	09/27/16 21:10	0	*	Makai	Facility Requested/System constraints
09/27/16 07:04	0.0	18.40	09/27/16 21:06	0	*	KWF	Facility Requested/System constraints
09/27/16 17:38	0.0	12.30	09/27/16 21:09	0	*	Mauka	Facility Requested/System constraints
09/28/16 06:14	0.0	9.40	09/28/16 07:35	0	*	Mauka	Facility Requested/System constraints
09/28/16 06:15	0.0	3.60	09/28/16 16:03	0	*	Makai	Facility Requested/System constraints
09/28/16 06:20	0.0	8.40	09/28/16 16:53	0	*	KWF	Facility Requested/System constraints
09/28/16 15:04	0.0	26.00	09/28/16 16:04	0	*	Mauka	Facility Requested/System constraints
09/29/16 06:10	0.0	18.10	09/29/16 07:47	0	*	KWF	Facility Requested/System constraints
09/29/16 06:24	0.0	31.10	09/29/16 17:50	0	*	Mauka	Facility Requested/System constraints
09/29/16 06:24	0.0	5.30	09/29/16 07:52	0	*	Makai	Facility Requested/System constraints
09/29/16 17:15	0.0	24.30	09/29/16 17:48	0	*	KWF	Facility Requested/System constraints
09/29/16 17:16	0.0	4.30	09/29/16 17:50	0	*	Makai	Facility Requested/System constraints
09/30/16 06:26	0.0	23.00	09/30/16 07:32	0	*	KWF	Facility Requested/System constraints
09/30/16 06:36	0.0	15.00	09/30/16 17:48	0	*	Mauka	Facility Requested/System constraints
09/30/16 06:35	0.0	7.60	09/30/16 07:34	0	*	Makai	Facility Requested/System constraints
09/30/16 17:31	0.0	18.70	09/30/16 17:45	0	*	KWF	Facility Requested/System constraints
09/30/16 17:35	0.0	12.30	09/30/16 17:47	0	*	Makai	Facility Requested/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

<sup>(1)</sup> 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.

<sup>\*</sup> Data has not been provided by IPP.

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September 2016

Maui Electric

#### Maui Curtailment Report

Electric					
Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/1/2016 9:22	0:01	KWPII	0.002		Oversupply
9/1/2016 9:24 9/1/2016 9:31	0:05 0:01	KWPII	0.232 0.022		Oversupply Oversupply
9/1/2016 11:57	0:17	KWPII	1.400		Oversupply
9/1/2016 22:34	0:02	KWPII	0.016	14.720	Oversupply
9/2/2016 0:28	0:56	KWPII	2.911		Oversupply
9/2/2016 1:35 9/2/2016 3:16	3:40 1:52	KWPII AWE	37.447 7.716		Oversupply Oversupply
9/2/2016 5:17	0:48	KWPII	4.096		Oversupply
9/2/2016 7:32	1:35	KWPII	9.192	16.217	Oversupply
9/2/2016 9:09	4:08	KWPII	60.830		Oversupply
9/2/2016 10:03 9/2/2016 10:09	0:03 3:01	AWE AWE	0.008 11.713		Oversupply Oversupply
9/2/2016 13:13	0:01	AWE	0.001		Oversupply
9/2/2016 13:19	0:34	KWPII	4.933	16.214	Oversupply
9/2/2016 13:56	0:18	KWPII	0.867		Oversupply
9/3/2016 2:01 9/3/2016 2:10	0:05 0:01	KWPII	0.080 0.001		Oversupply Oversupply
9/3/2016 2:33	0:07	KWPII	0.126	16.217	Oversupply
9/3/2016 2:50	0:08	KWPII	0.051	16.177	Oversupply
9/3/2016 3:06 9/3/2016 16:53	1:56	KWPII	4.965		Oversupply
9/5/2016 0:08	0:01 0:14	KWP KWPII	0.000 1.042		Oversupply Oversupply
9/5/2016 0:24	0:10	KWPII	0.585		Oversupply
9/5/2016 0:26	0:04	AWE	0.043	21.000	Oversupply
9/5/2016 0:55	0:24	KWPII	1.802		Oversupply
9/5/2016 0:56 9/5/2016 1:22	0:19 0:14	AWE KWPII	1.142 1.591		Oversupply Oversupply
9/5/2016 1:23	0:07	AWE	0.336		Oversupply
9/5/2016 1:31	0:01	AWE	0.002	16.120	Oversupply
9/5/2016 1:39	0:18	KWPII	2.058		Oversupply
9/5/2016 3:25 9/5/2016 3:29	1:43 1:02	KWPII AWE	27.619 5.514		Oversupply Oversupply
9/5/2016 4:37	0:12		0.648		Oversupply
9/5/2016 4:58	0:03	AWE	0.059	17.137	Oversupply
9/5/2016 5:09	1:05	KWPII	17.913		Oversupply
9/5/2016 6:15 9/5/2016 6:19	0:01 0:59	KWPII	0.029 3.939		Oversupply Oversupply
9/5/2016 7:23	0:08	KWPII	0.178		Oversupply
9/5/2016 7:32	0:16	KWPII	0.675	19.207	Oversupply
9/5/2016 8:49	0:06	KWPII	0.141		Oversupply
9/5/2016 8:56 9/5/2016 8:58	0:01 0:12	KWPII	0.048 0.746		Oversupply Oversupply
9/5/2016 9:12	3:11	KWPII	45.553		Oversupply
9/5/2016 10:46	0:28	AWE	1.248	21.000	Oversupply
9/5/2016 11:51	0:26	AWE	1.129		Oversupply
9/5/2016 12:11 9/5/2016 12:18	0:09 0:01	KWP AWE	0.098 0.001		System constraint Oversupply
9/5/2016 12:18	0:02	KWP	0.038		System constraint
9/5/2016 12:25	0:13	KWPII	1.684	15.250	Oversupply
9/5/2016 12:39	0:01	KWPII	0.037		Oversupply
9/5/2016 12:41	0:30	KWPII	4.844		Oversupply
9/5/2016 12:42 9/5/2016 13:09	0:04 0:04	AWE KWP	0.088 0.072		Oversupply System constraint
9/5/2016 13:14	1:35	KWP	7.755		System constraint
	2:33	KWPII	26.409	19.196	Oversupply
9/5/2016 13:14					
9/5/2016 13:29	0:01	AWE	0.004	20.957	Oversupply
9/5/2016 13:29 9/5/2016 13:40	0:01 0:02	AWE AWE	0.004 0.014	20.957 21.000	Oversupply Oversupply
9/5/2016 13:29	0:01	AWE AWE AWE	0.004	20.957 21.000 20.967	Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23	0:01 0:02 0:01 0:05 0:01	AWE AWE AWE KWPII	0.004 0.014 0.000 0.162 0.017	20.957 21.000 20.967 18.625 11.172	Oversupply Oversupply Oversupply Oversupply Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35	0:01 0:02 0:01 0:05 0:01 0:08	AWE AWE AWE KWPII KWPII KWPII	0.004 0.014 0.000 0.162 0.017 0.200	20.957 21.000 20.967 18.625 11.172 7.815	Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 1:02	0:01 0:02 0:01 0:05 0:01 0:08	AWE AWE AWE KWPII KWPII KWPII	0.004 0.014 0.000 0.162 0.017 0.200 0.056	20.957 21.000 20.967 18.625 11.172 7.815	Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:67 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 2:42 9/6/2016 3:10	0:01 0:02 0:01 0:05 0:01 0:08	AWE AWE AWE KWPII KWPII KWPII KWPII KWPII AWE	0.004 0.014 0.000 0.162 0.017 0.200	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000	Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:47 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 2:42 9/6/2016 3:10 9/6/2016 3:36	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06	AWE AWE AWE KWPII KWPII KWPII KWPII KWPII KWPII KWPII KWPII	0.004 0.014 0.000 0.162 0.017 0.200 0.056 8.765 0.181	20,957 21,000 20,967 18,625 11,172 7,815 16,002 17,333 21,000	Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:67 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 3:10 9/6/2016 3:42 9/6/2016 3:36 9/6/2016 3:36	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31	AWE AWE AWE KWPII KWPII KWPII KWPII KWPII KWPII KWPII AWE KWPII	0.004 0.014 0.000 0.162 0.017 0.200 0.056 8.785 0.181 6.730	20,957 21,000 20,967 18,625 11,172 7,815 16,002 17,333 21,000 17,548 19,018	Oversupply
9/6/2016 13:29 9/6/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:33 9/6/2016 0:33 9/6/2016 1:02 9/6/2016 2:42 9/6/2016 3:10 9/6/2016 4:08 9/6/2016 4:08	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31 1:18	AWE AWE AWE KWPII KWPII KWPII KWPII KWPII KWPII KWPII KWPII AWE KWPII KWPII	0.004 0.014 0.014 0.017 0.000 0.162 0.017 0.200 0.056 8.765 0.1818 6.730 12.111	20,957 21,000 20,967 18,625 11,172 7,815 16,002 17,333 21,000 17,548 19,018	Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:23 9/6/2016 1:02 9/6/2016 3:10 9/6/2016 3:30 9/6/2016 5:27 9/6/2016 5:39 9/6/2016 5:39	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31 1:18 0:10 0:01	AWE AWE AWE KWPII KWPII KWPII KWPII KWPII KWPII AWE KWPII KWPII KWPII KWPII KWPII KWPII KWPII KWPII	0.004 0.014 0.000 0.162 0.017 0.200 0.056 8.765 0.181 6.730 12.111 0.356 0.007	20,957 21,000 20,967 18,625 11,172 7,815 16,002 17,333 21,000 17,548 19,018 18,926 18,451 18,045	Oversupply
9/6/2016 13:29 9/5/2016 13:40 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 3:10 9/6/2016 3:36 9/6/2016 4:08 9/6/2016 5:27 9/6/2016 5:39 9/6/2016 5:59 9/6/2016 5:59	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31 1:18 0:10 0:01	AWE AWE AWE KWPII	0.004 0.014 0.014 0.000 0.162 0.017 0.200 0.056 8.765 0.181 6.730 12.111 0.356 0.007 0.006	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.045	Oversupply
9/5/2016 13:29 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 3:0 9/6/2016 3:10 9/6/2016 3:36 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 7:50 9/6/2016 7:50	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31 1:18 0:10 0:01	AWE AWE AWE AWE KWPII	0.004 0.014 0.000 0.162 0.017 0.200 0.056 8.765 0.181 6.730 12.111 0.356 0.007 0.006	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.045 18.619 18.560	Oversupply
9/6/2016 13:29 9/5/2016 13:40 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:35 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 3:10 9/6/2016 3:10 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 7:50 9/6/2016 7:50 9/6/2016 7:50	0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:53 0:06 0:31 1:18 0:10 0:01	AWE AWE AWE KWPII	0.004 0.014 0.014 0.000 0.162 0.017 0.200 0.056 8.765 0.181 6.730 12.111 0.356 0.007 0.006	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.645 18.619 18.560 17.573	Oversupply
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9/6/2016 13:29 9/6/2016 13:40 9/5/2016 13:40 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 23:15 9/6/2016 0:23 9/6/2016 0:35 9/6/2016 0:35 9/6/2016 1:02 9/6/2016 2:42 9/6/2016 3:40 9/6/2016 3:40 9/6/2016 5:37 9/6/2016 5:37 9/6/2016 5:37 9/6/2016 5:39 9/6/2016 5:57 9/6/2016 5:39 9/6/2016 8:03 9/6/2016 8:03 9/6/2016 8:11 9/6/2016 8:21 9/6/2016 8:21 9/6/2016 8:32 9/6/2016 8:32 9/6/2016 8:33 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 0:37 9/7/2016 0:33 9/7/2016 1:03 9/7/2016 5:33 9/7/2016 5:33 9/7/2016 5:33 9/7/2016 5:33 9/7/2016 6:54 9/7/2016 6:54	0:01 0:02 0:01 0:05 0:01 0:05 0:01 0:08 0:03 0:53 0:53 0:06 0:03 0:06 0:03 0:01 0:01 0:01 0:01 0:01 0:01 0:01	AWE AWE AWE AWE AWE AWE KWPII	0.004 0.014 0.014 0.014 0.014 0.016 0.017 0.200 0.056 8.765 0.181 6.730 12.111 0.356 0.007 0.006 0.025 0.022 0.032 0.012 0.010 0.050 0.025 0.028 0.032 0.027 0.088 4.414 0.000 0.337 1.270 0.088 0.088 0.088 0.088 0.088 0.399 0.019	20.957 21.000 20.967 18.625 11.172 7.816 16.002 17.343 21.000 17.548 19.018 18.856 18.451 18.619 18.560 17.573 19.154 19.018 18.590 17.573 19.154 19.018 18.590 17.573 19.154 19.066 19.016 18.932 21.000 5.495 11.332 21.000 5.495 11.332 21.000 5.495 11.332 21.000 5.495 11.3232 11.3233 11.3243 11.3241 11	Oversupply
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9/6/2016 13:29 9/6/2016 13:40 9/5/2016 13:40 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 0:35 9/6/2016 0:33 9/6/2016 0:33 9/6/2016 1:02 9/6/2016 3:10 9/6/2016 3:36 9/6/2016 3:36 9/6/2016 5:37 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 5:39 9/6/2016 8:21 9/6/2016 8:21 9/6/2016 8:21 9/6/2016 8:32 9/6/2016 8:32 9/6/2016 8:33 9/6/2016 9:35 9/6/2016 9:35 9/6/2016 1:37 9/7/2016 1:03 9/7/2016 5:33 9/7/2016 5:33 9/7/2016 6:58 9/7/2016 6:58 9/7/2016 6:58 9/7/2016 6:44 9/7/2016 6:58 9/7/2016 6:58 9/7/2016 6:58	0:01 0:02 0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:06 0:31 1:18 0:10 0:01 0:01 0:01 0:01 0:01 0:0	AWE AWE AWE AWE AWE AWE KWPII	0.004 0.014 0.014 0.014 0.014 0.016 0.016 0.017 0.200 0.056 0.087 0.097 0.006 0.098 0.0181 0.0106 0.098 0.097 0.098	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.191 18.560 17.533 19.154 19.018 18.926 18.451 19.018 18.926 18.450 17.573 19.154 19.018 18.926 18.450 19.016 18.932 21.000 5.495 17.210 18.720 4.711 13.544 14.240 13.243 17.403 18.956 10.583 17.210 18.720 11.985 11.985 17.210 18.720 11.985	Oversupply
9/6/2016 13:29 9/6/2016 13:40 9/5/2016 13:40 9/5/2016 13:40 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 13:57 9/5/2016 0:23 9/6/2016 0:23 9/6/2016 0:33 9/6/2016 3:40 9/6/2016 3:40 9/6/2016 3:40 9/6/2016 3:40 9/6/2016 5:47 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 5:57 9/6/2016 8:00 9/6/2016 8:00 9/6/2016 8:00 9/6/2016 8:00 9/6/2016 8:00 9/6/2016 8:33 9/6/2016 8:33 9/6/2016 8:33 9/6/2016 8:33 9/6/2016 8:33 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/6/2016 9:39 9/7/2016 0:33 9/7/2016 1:08 9/7/2016 1:39 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:33 9/7/2016 6:54 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:45 9/7/2016 8:51 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 8:53 9/7/2016 10:59	0:01 0:02 0:01 0:05 0:01 0:05 0:01 0:08 0:03 0:03 0:03 0:01 0:01 0:01 0:01 0:01	AWE  AWE  AWE  AWE  AWE  KWPII  KWPII	0.004 0.014 0.014 0.014 0.0162 0.017 0.200 0.056 8.765 0.181 0.336 0.025 0.008 0.0162 0.008 0.0162 0.008 0.0162 0.008 0.017 0.009 0.008 0.018 0.018 0.019	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.045 18.619 18.560 17.573 19.154 19.016 18.922 21.000 21.000 21.000 21.000 21.000 21.000 21.000	Oversupply
9(5/2016 13:29 9(5/2016 13:40 9(5/2016 13:40 9(5/2016 13:40 9(5/2016 13:57 9(5/2016 13:57 9(5/2016 13:57 9(5/2016 0:23 9(6/2016 0:23 9(6/2016 0:35 9(6/2016 1:02 9(6/2016 2:42 9(6/2016 3:10 9(6/2016 3:36 9(6/2016 5:37 9(6/2016 5:37 9(6/2016 5:37 9(6/2016 5:37 9(6/2016 5:37 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:00 9(6/2016 8:32 9(6/2016 8:32 9(6/2016 8:33 9(6/2016 9:35 9(6/2016 9:35 9(6/2016 10:37 9(7/2016 0:33 9(7/2016 10:37 9(7/2016 10:37 9(7/2016 1:39 9(7/2016 1:39 9(7/2016 1:39 9(7/2016 1:39 9(7/2016 1:39 9(7/2016 1:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 3:39 9(7/2016 5:31 9(7/2016 5:31 9(7/2016 5:38 9(7/2016 6:58 9(7/2016 6:58 9(7/2016 8:45 9(7/2016 6:58 9(7/20	0:01 0:02 0:01 0:02 0:01 0:05 0:01 0:08 0:03 0:06 0:31 1:18 0:10 0:01 0:01 0:01 0:01 0:01 0:0	AWE  AWE  AWE  AWE  AWE  KWPII  KWPII	0.004 0.014 0.014 0.014 0.014 0.016 0.016 0.017 0.200 0.056 0.087 0.097 0.006 0.098 0.0181 0.0106 0.098 0.097 0.098	20.957 21.000 20.967 18.625 11.172 7.815 16.002 17.333 21.000 17.548 19.018 18.926 18.451 18.045 18.619 18.560 17.573 19.154 19.016 18.922 21.000 21.000 21.000 21.000 21.000 21.000 21.000	Oversupply

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September 2016

Maul Electric

#### Maui Curtailment Report

Stort Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
Start Date and Time 9/7/2016 11:17	0:54		13.621		Oversupply
9/7/2016 11:31	0:10		0.268	21.000	Oversupply
9/7/2016 11:56	0:02		0.019	21.000	Oversupply
9/7/2016 12:01	0:05		0.067	21.000	Oversupply
9/7/2016 12:12	0:24		3.865	15.750	Oversupply
9/7/2016 12:38	2:49		19.914		Oversupply
9/7/2016 22:46	0:06		0.055	19.202	Oversupply
9/7/2016 22:53	0:02		0.019		Oversupply
9/7/2016 23:04 9/8/2016 0:02	1:40 0:36		18.901 0.959	19.193	Oversupply Oversupply
9/8/2016 0:45	1:20		12.783		Oversupply
9/8/2016 2:09	3:37		46.154	19.042	Oversupply
9/8/2016 2:16	0:04		0.066	17.427	Oversupply
9/8/2016 2:24	0:31		1.682		Oversupply
9/8/2016 2:58	1:18		7.215	20.493	Oversupply
9/8/2016 4:17	0:13		0.391	20.790	Oversupply
9/8/2016 4:31 9/8/2016 7:18	0:08 0:47		0.180 2.184	21.000	Oversupply Oversupply
9/8/2016 8:07	0:47		0.002	20.708	Oversupply
9/8/2016 8:10	0:03		0.010	20.700	Oversupply
9/8/2016 8:17	4:15		62.838	20.708	Oversupply
9/8/2016 10:51	0:05		0.094	21.000	Oversupply
9/8/2016 11:11	0:11		0.219		Oversupply
9/8/2016 12:35	0:57	KWPII	8.090		Oversupply
9/8/2016 13:33 9/8/2016 13:40	0:04 0:01		0.166 0.003	18.993	Oversupply Oversupply
9/8/2016 13:45	1:42		7.272	20.667	Oversupply
9/8/2016 22:10	0:03		0.070		Oversupply
9/8/2016 22:34	0:07	KWPII	0.155	20.691	Oversupply
9/8/2016 23:05	0:44	KWPII	3.594	20.708	Oversupply
9/8/2016 23:52	1:37		16.255	20.704	Oversupply
9/9/2016 1:17	0:07		0.219	17.513	Oversupply
9/9/2016 1:30 9/9/2016 1:40	4:20 0:14		70.650 0.450	20.606 16.112	Oversupply Oversupply
9/9/2016 1:40	2:04		7.214	20.580	Oversupply
9/9/2016 5:52	0:13	KWPII	0.786	20.636	Oversupply
9/9/2016 6:11	0:08	KWPII	0.150	20.632	Oversupply
9/9/2016 7:32	0:02		0.023	20.460	Oversupply
9/9/2016 7:37	0:04		0.048		Oversupply
9/9/2016 8:17	0:42		7.140	20.669	Oversupply
9/9/2016 8:48 9/9/2016 8:54	0:04 0:01		0.155 0.021		Oversupply Oversupply
9/9/2016 9:01	0:01		0.023	17.893	Oversupply
9/9/2016 9:05	0:36		8.443	18.510	Oversupply
9/9/2016 9:15	0:18	AWE	0.606	20.677	Oversupply
9/9/2016 9:35	0:01		0.001	20.070	Oversupply
9/9/2016 9:43	0:07		0.491	18.488	Oversupply
9/9/2016 9:53	0:08		0.188	19.816	Oversupply
9/9/2016 10:04 9/9/2016 10:17	0:01 0:33		0.020 4.924		Oversupply Oversupply
9/9/2016 10:17	0:33		1.873	20.100	Oversupply
9/9/2016 11:39	0:01		0.009		Oversupply
9/9/2016 11:50	0:01	KWPII	0.023	17.111	Oversupply
9/9/2016 11:52	0:05		0.179	16.412	Oversupply
9/9/2016 12:36	0:01		0.018	15.581	Oversupply
9/9/2016 12:40	0:15		0.477		Oversupply
9/9/2016 14:46 9/9/2016 15:41	0:03 0:55		0.075 5.442		Oversupply
9/10/2016 0:05	0:55		0.607		Oversupply Oversupply
9/10/2016 0:34	0:13		3.443	20.601	Oversupply
9/10/2016 1:26	0:01		0.025	15.918	Oversupply
9/10/2016 1:28	3:24		30.747	20.670	Oversupply
9/10/2016 5:11	0:12		0.736	20.314	Oversupply
9/10/2016 6:30	0:01		0.001	20.133	Oversupply
9/10/2016 13:55 9/10/2016 14:40	0:05 0:11		0.111 1.604		Oversupply Oversupply
9/10/2016 14:41	0:01		0.014	20.687	Oversupply
9/11/2016 3:08	0:01		0.000		Oversupply
9/11/2016 13:29	0:01		0.000	0.002	Oversupply
9/15/2016 1:23	0:13	AWE	0.518	12.187	Oversupply
9/15/2016 2:11	0:53		5.986		Oversupply
9/15/2016 4:19	0:27		1.096	20.690	Oversupply
9/15/2016 5:28 9/15/2016 5:46	0:15 0:03		0.396 0.012	20.600	Oversupply Oversupply
9/15/2016 5:50	0:03		0.050	20,043	Oversupply
9/15/2016 5:57	0:01	AWE	0.000	20.003	Oversupply
9/15/2016 6:00	0:02	AWE	0.005	20.287	Oversupply
9/15/2016 9:10	1:17		3.962	20.647	Oversupply and system constraint
9/15/2016 11:52	0:20 0:05		0.585	20.373	Oversupply
9/15/2016 22:11 9/15/2016 22:34	0:05 6:33		0.116 98.582	18.969	Oversupply Oversupply
9/16/2016 0:43	0:01		0.001	21,000	Oversupply
9/16/2016 0:47	0:02	AWE	0.004	21.000	Oversupply
9/16/2016 0:51	1:09	AWE	4.257	21.000	Oversupply
9/16/2016 2:01	2:59		25.839	21.000	Oversupply
9/16/2016 5:09	0:16		2.474	17.495	Oversupply
9/16/2016 5:26 9/16/2016 9:37	0:12 0:29		0.871 7.011	17.968	Oversupply Oversupply
9/16/2016 9:37	0:29		7.011 0.964	18.934	Oversupply
9/16/2016 10:15	0:21		2.313	19,222	Oversupply
9/16/2016 12:34	0:08	KWPII	0.103	6.832	Oversupply
9/17/2016 9:11	0:05		0.523	14.465	Oversupply
9/17/2016 9:36	0:27		1.337	21.000	Oversupply
9/17/2016 10:10	0:04		0.184	17.286	Oversupply
9/17/2016 17:10 9/17/2016 22:55	0:12 2:27		0.355 32.166	21.000	Oversupply Oversupply
9/17/2016 22:55	0:01		0.001	20.708	Oversupply
9/18/2016 0:50	0:01		0.001	21.000	Oversupply
9/18/2016 0:53	0:03	AWE	0.010	21.000	Oversupply
9/18/2016 0:57	0:05	AWE	0.021	21.000	Oversupply
9/18/2016 1:09	0:04		0.066		Oversupply
9/18/2016 1:14	0:03		0.057		Oversupply
9/18/2016 1:24 9/18/2016 1:27	12:00 0:03		199.410 0.101	20.708	Oversupply Oversupply
9/18/2016 1:27	0:03		0.101		Oversupply
9/18/2016 2:02	0:20		0.524		Oversupply
9/18/2016 2:27	0:22	AWE	1.196	21.000	Oversupply
9/18/2016 2:51	1:24		5.470	21.000	Oversupply
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September 2016

Maui

#### Maui Curtailment Report

Maui Electric				Maui Curtailment R	eport September 2016
Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/18/2016 4:19 9/18/2016 4:26	0:06 0:01	AWE AWE	0.224 0.001	21.000 Oversupply 18.023 Oversupply	
9/18/2016 4:34	0:04	AWE	0.101	20.820 Oversupply	
9/18/2016 4:40 9/18/2016 4:45	0:04 0:02	AWE AWE	0.046 0.029	20.077 Oversupply 19.717 Oversupply	
9/18/2016 4:52	0:01	AWE	0.017	20.510 Oversupply	
9/18/2016 4:55 9/18/2016 8:10	0:01	AWE AWE	0.001 0.020	20.357 Oversupply 21.000 Oversupply	
9/18/2016 8:14 9/18/2016 9:22	1:06 0:01	AWE AWE	2.388 0.001	21.000 Oversupply 21.000 Oversupply	
9/18/2016 9:27	0:02	AWE	0.003	21.000 Oversupply	
9/18/2016 9:30 9/18/2016 9:34	0:03 3:40	AWE AWE	0.007 21.858	21.000 Oversupply 21.000 Oversupply	
9/18/2016 13:15	0:01	AWE	0.002	21.000 Oversupply	
9/18/2016 13:26 9/18/2016 14:38	1:11 0:03	KWPII	15.377 0.005	20.708 Oversupply 20.705 Oversupply	· · · · · · · · · · · · · · · · · · ·
9/18/2016 22:23	0:03	KWPII	0.038	20.708 Oversupply	
9/18/2016 22:48 9/18/2016 22:58	0:06 0:06	KWPII	0.075 0.068	20.703 Oversupply 20.708 Oversupply	
9/18/2016 23:39	2:02	KWPII	18.391	20.708 Oversupply	
9/19/2016 1:29 9/19/2016 1:43	0:04 1:34	AWE KWPII	0.010 26.345	21.000 Oversupply 20.706 Oversupply	
9/19/2016 2:18	0:03	AWE	0.052	17.723 Oversupply	
9/19/2016 2:22 9/19/2016 2:27	0:04 0:06	AWE AWE	0.095 0.120	18.260 Oversupply 18.600 Oversupply	
9/19/2016 2:44 9/19/2016 3:05	0:03 0:04	AWE AWE	0.086 0.034	18.937 Oversupply 17.803 Oversupply	
9/19/2016 3:10	0:01	AWE	0.024	18.013 Oversupply	
9/19/2016 3:20 9/19/2016 3:28	0:20 0:07	KWPII AWE	6.021 0.427	20.708 Oversupply 20.447 Oversupply	
9/19/2016 3:42	0:26	KWPII	2.777	20.708 Oversupply	
9/19/2016 4:12 9/19/2016 4:18	0:04 0:06	KWPII	0.050 0.089	20.701 Oversupply 20.687 Oversupply	
9/19/2016 4:27	0:07	KWPII	0.065	20.693 Oversupply	
9/19/2016 4:44 9/19/2016 4:49	0:02 0:01	KWPII KWPII	0.004 0.001	20.701 Oversupply 20.699 Oversupply	
9/19/2016 8:23 9/19/2016 10:07	0:01 0:14	AWE KWPII	0.000 0.458	0.010 Oversupply 20.705 Oversupply	
9/19/2016 10:55	0:01	KWPII	0.001	20.705 Oversupply	
9/19/2016 12:43 9/19/2016 13:30	0:17 0:06	KWPII	0.365 0.134	20.705 Oversupply 20.705 Oversupply	
9/19/2016 13:38	0:06	KWPII	0.084	20.705 Oversupply	
9/19/2016 13:45 9/19/2016 23:42	0:11 0:17	KWPII	0.183 0.187	20.705 Oversupply 20.705 Oversupply	
9/20/2016 0:16	0:08	KWPII	0.265	20.705 Oversupply	
9/20/2016 0:29 9/20/2016 1:14	0:40 0:11	KWPII	2.256 0.217	20.705 Oversupply 20.705 Oversupply	
9/20/2016 1:30 9/20/2016 9:27	1:44 0:01	KWPII	10.098 0.001	20.705 Oversupply 20.705 Oversupply	
9/20/2016 9:30	0:06	KWPII	0.074	20.705 Oversupply	
9/20/2016 9:38 9/20/2016 9:44	0:02 0:01	KWPII	0.008 0.001	20.705 Oversupply 20.705 Oversupply	
9/20/2016 9:52	0:06	KWPII	0.085	20.705 Oversupply	
9/20/2016 10:36 9/20/2016 12:23	0:05 0:10	KWPII	0.034 0.535	20.705 Oversupply 20.705 Oversupply	
9/20/2016 12:35	0:13	KWPII KWPII	0.438	20.705 Oversupply	
9/20/2016 13:15 9/20/2016 13:35	0:02 0:13	KWPII	0.004 0.268	20.705 Oversupply 20.705 Oversupply	
9/21/2016 8:58 9/22/2016 8:54	0:06 0:34	KWPII	0.242 1.496	20.705 Oversupply 20.705 Oversupply	
9/22/2016 22:03	0:52	KWPII	2.891	20.705 Oversupply	
9/22/2016 23:00 9/23/2016 3:39	0:56 2:26	KWPII	2.512 35.390	20.705 Oversupply 20.705 Oversupply	
9/23/2016 7:40	0:06	KWPII KWPII	0.108	20.705 Oversupply	
9/23/2016 8:39 9/23/2016 13:02	1:20 0:02	KWPII	17.227 0.009	20.705 Oversupply 20.705 Oversupply	
9/23/2016 13:24 9/23/2016 13:49	0:24 1:10	KWPII	2.366 8.693	20.705 Oversupply 20.705 Oversupply	
9/23/2016 15:22	0:03	KWPII	0.021	20.705 Oversupply	
9/24/2016 5:01 9/24/2016 13:08	0:01 1:46	KWPII	0.000 5.408	20.705 Oversupply 20.705 Oversupply	
9/24/2016 14:55	0:05	KWPII	0.028	20.705 Oversupply	
9/24/2016 15:05 9/24/2016 22:09	0:34 0:02	KWPII	0.966 0.030	20.705 Oversupply 20.705 Oversupply	
9/25/2016 1:06	0:02 0:02	KWPII	0.014 0.018	20.705 Oversupply	
9/25/2016 1:32 9/25/2016 1:35	0:01	KWPII	0.015	20.705 Oversupply 20.705 Oversupply	
9/25/2016 1:38 9/25/2016 1:54	0:05 0:06	KWPII	0.137 0.769	20.705 Oversupply 20.705 Oversupply	
9/25/2016 2:07	0:07	KWPII	0.705	20.705 Oversupply	
9/25/2016 2:19 9/25/2016 2:28	0:01 3:34	KWPII	0.006 33.729	20.705 Oversupply 20.705 Oversupply	
9/25/2016 8:58	4:25 0:07	KWPII KWPII	49.949	20.705 Oversupply	
9/25/2016 13:28 9/25/2016 13:43	0:07	KWPII	0.334 1.187	20.705 Oversupply 20.705 Oversupply	
9/25/2016 14:56 9/26/2016 1:47	0:10 0:02	KWPII	0.348 0.006	20.705 Oversupply 20.705 Oversupply	
9/26/2016 1:50	3:13	KWPII	16.740	20.705 Oversupply	
9/26/2016 4:07 9/26/2016 5:06	0:01	AWE KWPII	0.020 0.029	18.563 Oversupply 20.705 Oversupply	
9/26/2016 5:43	0:01	KWPII	0.002	20.705 Oversupply	
9/26/2016 5:53 9/26/2016 7:32	0:04 0:15	KWPII	0.044 0.629	20.705 Oversupply 20.705 Oversupply	
9/26/2016 8:22	0:56	KWPII	2.970	20.705 Oversupply	
9/26/2016 9:19 9/26/2016 9:38	0:01 0:16	KWPII KWPII	0.001 0.329	20.705 Oversupply 20.705 Oversupply	
9/26/2016 10:00	0:07 3:14	KWPII KWPII	0.052	20.705 Oversupply	
9/26/2016 10:34 9/26/2016 13:55	0:01	KWPII	20.360 0.002	20.705 Oversupply 20.705 Oversupply	
9/26/2016 14:04 9/26/2016 23:00	0:48 0:14	KWPII KWPII	1.597 0.533	20.705 Oversupply 20.705 Oversupply	
9/26/2016 23:24	0:16	KWPII	0.868	20.705 Oversupply	
9/26/2016 23:53 9/27/2016 2:53	2:59 0:27	KWPII	18.474 0.850	20.705 Oversupply 20.705 Oversupply	
9/27/2016 3:22	0:02	KWPII	0.013	20.705 Oversupply	
9/27/2016 3:27 9/27/2016 7:23	0:01	KWPII	0.000 0.000	20.705 Oversupply 20.705 Oversupply	
9/27/2016 7:58	0:08	KWPII	0.403	20.705 Oversupply	

#### **DOCKET NO. 2011-0206** ORDER NO. 30371 I.C.(3)(a)&(b) **ATTACHMENT 6** PAGE 5 OF 9

September 2016

Maui Curtailment Report Maui Electric

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/27/2016 8:18	0:11	KWPII	0.191	20.705	Oversupply
9/27/2016 8:34	0:13	KWPII	0.625		Oversupply
9/27/2016 9:07 9/27/2016 10:05	0:57 0:04	KWPII	4.174 0.067		Oversupply Oversupply
9/27/2016 10:03	0:03	KWPII	0.020		Oversupply
9/27/2016 10:18	0:01	KWPII	0.007	20.705	Oversupply
9/27/2016 10:21 9/27/2016 10:26	0:04	KWPII	0.041		Oversupply
9/27/2016 10:26	0:11 1:27	KWPII	0.164 8.774		Oversupply Oversupply
9/27/2016 12:48	0:30	KWPII	2.066		Oversupply
9/27/2016 21:41	0:01	KWPII	0.000	20.705	Oversupply
9/27/2016 22:30	0:08	KWPII	0.162		Oversupply
9/27/2016 23:12 9/27/2016 23:53	0:05 0:46	KWPII	0.065 2.865	20.705	Oversupply Oversupply
9/28/2016 0:42	3:21	KWPII	39.996	20.705	Oversupply
9/28/2016 4:04	0:01	KWPII	0.002		Oversupply
9/28/2016 4:32 9/28/2016 4:36	0:02 0:02	KWPII	0.019 0.034		Oversupply Oversupply
9/28/2016 4:41	0:02	KWPII	0.010	20.705	Oversupply
9/28/2016 4:43	0:08	KWPII	0.090	20.705	Oversupply
9/28/2016 5:10	0:17	KWPII	0.682		Oversupply
9/28/2016 5:30 9/28/2016 6:58	0:01	KWPII	0.000 0.001		Oversupply Oversupply
9/28/2016 7:17	0:09	KWPII	0.302		Oversupply
9/28/2016 7:27	0:13	KWPII	0.614	20.705	Oversupply
9/28/2016 7:43	0:02	KWPII	0.009		Oversupply
9/28/2016 7:48 9/28/2016 7:53	0:04	KWPII	0.083 0.001	20.705	Oversupply Oversupply
9/28/2016 7:55	0:04	KWPII	0.050	20.705	Oversupply
9/28/2016 13:16	0:01	KWPII	0.204	20.705	Oversupply
9/28/2016 15:19	0:23	KWPII	1.402		Oversupply
9/28/2016 17:31 9/28/2016 17:54	0:01 0:14	KWPII	0.000	20.705	Oversupply Oversupply
9/28/2016 17:54	0:14	KWPII	1.448	20.705	Oversupply
9/28/2016 22:54	0:01	KWPII	0.001	20.705	Oversupply
9/28/2016 22:56	0:02	KWPII	0.013		Oversupply
9/28/2016 22:59 9/29/2016 0:50	7:14 0:28	KWPII AWE	108.489 0.959	20.705	Oversupply Oversupply
9/29/2016 1:41	0:05	AWE	0.199		Oversupply
9/29/2016 1:49	0:12	AWE	0.369		Oversupply
9/29/2016 2:13 9/29/2016 2:45	0:07	AWE AWE	0.097	14.563	Oversupply Oversupply
9/29/2016 2:45	0:15 0:03	AWE	0.366 0.040	12.783	Oversupply
9/29/2016 3:32	0:22	AWE	2.058	21.000	Oversupply
9/29/2016 3:55	0:02	AWE	0.033		Oversupply
9/29/2016 4:07 9/29/2016 4:33	0:24 0:19	AWE AWE	1.065 1.590		Oversupply Oversupply
9/29/2016 4:53	0:16	AWE	0.501	21.000	Oversupply
9/29/2016 7:51	0:02	KWPII	0.006	20.705	Oversupply
9/29/2016 7:58 9/29/2016 10:21	7:13 0:25	KWPII AWE	107.874 0.625	20.705	Oversupply Oversupply
9/29/2016 10:47	0:03	AWE	0.027	20.423	Oversupply
9/29/2016 10:55	0:01	AWE	0.006	19.537	Oversupply
9/29/2016 10:58	0:03	AWE	0.078	20.087	Oversupply
9/29/2016 11:02 9/29/2016 11:05	0:02	AWE AWE	0.035 0.013	20.527	Oversupply Oversupply
9/29/2016 11:07	0:03	AWE	0.044	21.000	Oversupply
9/29/2016 11:16	0:01	AWE	0.000	21.000	Oversupply
9/29/2016 11:41 9/29/2016 11:45	0:02	AWE AWE	0.007 0.001	21.000	Oversupply Oversupply
9/29/2016 11:48	0:01	AWE	0.001	20.993	Oversupply
9/29/2016 11:50	0:02	AWE	0.009	21.000	Oversupply
9/29/2016 12:00	1:49	AWE	5.149	21.000	Oversupply
9/29/2016 20:25 9/29/2016 20:36	0:09	KWPII	0.086 0.046	20.705	Oversupply Oversupply
9/29/2016 21:46	0:03	KWPII	0.025	20.705	Oversupply
9/29/2016 21:50	0:01	KWPII	0.001	20.705	Oversupply
9/29/2016 22:17 9/29/2016 23:08	0:04	KWPII	0.009	20.705	Oversupply Oversupply
9/29/2016 23:37	0:01	KWPII	0.004	20.705	Oversupply
9/29/2016 23:57	0:02	KWPII	0.172	20.705	Oversupply
9/30/2016 0:00	0:21	KWPII	2.478	20.705	Oversupply
9/30/2016 0:22 9/30/2016 2:04	5:28 0:01	KWPII AWE	86.525 0.015		Oversupply Oversupply
9/30/2016 2:04	0:01	AWE	0.015	14.987	Oversupply Oversupply
9/30/2016 2:19	0:03	AWE	0.095	16.517	Oversupply
9/30/2016 2:42	0:01	AWE	0.015		Oversupply
9/30/2016 2:44 9/30/2016 2:58	0:01 0:53	AWE AWE	0.024 4.810		Oversupply Oversupply
9/30/2016 3:54	0:33	AWE	0.751		Oversupply
9/30/2016 4:08	0:12	AWE	0.374	16.500	Oversupply
9/30/2016 4:47 9/30/2016 4:51	0:02	AWE AWE	0.031 0.240		Oversupply Oversupply
9/30/2016 4:51	0:09	BS250	Data is not available	Data is not available	
9/30/2016 7:13	0:36	KWPII	2.686	20.705	Oversupply
9/30/2016 8:08	6:47	BS250	Data is not available	Data is not available	
9/30/2016 8:08 9/30/2016 10:43	6:48 0:01	KWPII AWE	93.415 0.002		Oversupply Oversupply
9/30/2016 10:43	0:19	AWE	0.225		Oversupply
9/30/2016 11:10	0:08	AWE	0.187	21.000	Oversupply
9/30/2016 11:19 9/30/2016 11:59	0:38 0:39	AWE AWE	1.149 1.065		Oversupply Oversupply
9/30/2016 11:59	0:39	AWE	0.002		Oversupply
9/30/2016 12:43	0:06	AWE	0.010	21.000	Oversupply
9/30/2016 14:55	1:56	BS250	Data is not available	Data is not available	
9/30/2016 22:52 9/30/2016 22:59	0:05 1:01	KWPII	0.147 13.933		Oversupply Oversupply
Notes:	1.01	15571 11	13.333	20.700	

9/30/2016 22:59 1:01 KWPI 13.933 20.705 [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 ("MAV") that Maui Electric can accept into the Maui system, based on the system rent available variable generation ("CAV"), regulating reserve down requirement ("RB7N"), and available regulating reserve down ("ARRD"). Thus, the AGC MAVG - calculated is equal to CAV'G less (RRDR less ARRD). Additionally, the AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control allows

#### Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/2/2016 9:09	0:09	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 10:10 9/2/2016 10:32	0:17 0:05	LSR LSR	Data is not available	Data is not available  Data is not available	Oversupply
9/2/2016 10:32	0:04	LSR	Data is not available Data is not available	Data is not available	Oversupply Oversupply
9/2/2016 11:09	0:04	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 11:16 9/2/2016 11:58	0:34 0:06	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/2/2016 11:36	0:10	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 12:26	0:25	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 13:08	0:01	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 13:11 9/2/2016 13:56	0:30 0:08	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/2/2016 14:08	0:05	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 14:49	0:04	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 15:03 9/2/2016 15:10	0:03 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply · · · · · · · · · · · · · · · · · · ·
9/2/2016 16:16	0:02	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 16:19	0:16	LSR	Data is not available	Data is not available	Oversupply
9/2/2016 16:39	0:04	LSR	Data is not available  Data is not available	Data is not available	Oversupply
9/2/2016 16:45 9/3/2016 7:05	0:41 0:05	LSR LSR	Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 7:14	0:01	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 7:18	0:22	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 7:49 9/3/2016 9:03	0:02 0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 9:10	0:08	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 9:24	0:02	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 9:32	0:04	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 9:59 9/3/2016 10:05	0:05 1:21	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 11:27	0:06	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 11:41	0:01	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 11:44 9/3/2016 12:25	0:01 0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 12:30	0:07	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 12:39	0:08	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 12:48 9/3/2016 13:41	0:09	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 14:09	1:30	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 15:40	0:19	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 16:07 9/3/2016 16:28	0:01 0:36	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/3/2016 17:44	0:06	LSR	Data is not available	Data is not available	Oversupply
9/3/2016 17:54	0:08	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 7:12	0:02	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 7:17 9/4/2016 7:34	0:01 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 7:37	0:01	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 7:40	0:10	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 7:57 9/4/2016 8:05	0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 8:10	0:03	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 8:15	0:07	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 8:26 9/4/2016 8:30	0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 8:39	0:04	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 8:48	0:09	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 9:00 9/4/2016 9:08	0:02 0:28	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 9:37	0:02	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 9:41	0:01	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 9:47	0:01	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 9:53 9/4/2016 10:07	0:12 0:09	LSR LSR	Data is not available Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 10:21	0:08	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 10:34	0:11	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 10:47 9/4/2016 13:03	0:12 0:12	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 13:38	0:12	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 14:14	0:02	LSR	Data is not available	Data is not available	Oversupply
9/4/2016 14:17 9/4/2016 14:26	0:05 0:24	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/4/2016 14:54	0:42	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 6:54	0:05	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 7:03 9/5/2016 7:32	0:26 0:05	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 7:32	0:05	LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply
9/5/2016 8:37	0:13	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 8:54	0:03	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 8:59 9/5/2016 9:17	0:14 0:13	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 9:55	0:03	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 10:22	0:04	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 10:33 9/5/2016 10:56	0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 11:20	0:03	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 11:54	0:33	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 12:33	0:01	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 12:42 9/5/2016 13:01	0:05 0:13	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 13:18	0:05	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 13:33	0:02	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 13:44 9/5/2016 13:59	0:11 0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 14:48	0:42	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 15:35	0:36	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 16:20 9/5/2016 17:03	0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/5/2016 17:03	0:01	LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply
	2.02				

#### Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/5/2016 17:17	0:11	LSR	Data is not available	Data is not available	Oversupply
9/5/2016 17:31 9/6/2016 7:24	0:14 0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/6/2016 7:26	0:01	LSR	Data is not available	Data is not available	Oversupply
9/6/2016 7:30 9/6/2016 9:04	1:33 0:05	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/6/2016 9:10	0:02	LSR	Data is not available	Data is not available	Oversupply
9/7/2016 8:37 9/7/2016 9:16	0:36 0:06	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/7/2016 9:44	0:02	LSR	Data is not available	Data is not available	Oversupply
9/7/2016 9:47 9/7/2016 10:07	0:10 0:10	LSR	Data is not available	Data is not available  Data is not available	Oversupply
9/7/2016 10:07	0:10	LSR LSR	Data is not available  Data is not available	Data is not available	Oversupply Oversupply
9/7/2016 11:02	0:01	LSR	Data is not available	Data is not available	Oversupply
9/7/2016 11:13 9/7/2016 11:38	0:24 0:51	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply · · · · · · · · · · · · · · · · · · ·
9/7/2016 12:34	0:39	LSR	Data is not available	Data is not available	Oversupply
9/8/2016 8:00 9/8/2016 8:11	0:10 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/8/2016 8:14	0:40	LSR	Data is not available	Data is not available	Oversupply
9/8/2016 9:01 9/8/2016 9:03	0:01 0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/8/2016 9:09	0:01	LSR	Data is not available	Data is not available	Oversupply
9/8/2016 9:11 9/10/2016 7:28	0:12 0:03	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/10/2016 7:41	0:01	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 8:07 9/10/2016 8:21	0:07 0:11	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply
9/10/2016 8:41	0:08	LSR	Data is not available	Data is not available	Oversupply Oversupply
9/10/2016 8:51	0:14	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 9:08 9/10/2016 9:31	0:21 0:11	LSR LSR	Data is not available  Data is not available	Data is not available Data is not available	Oversupply Oversupply
9/10/2016 9:43	0:01	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 10:16 9/10/2016 10:42	0:21 0:10	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/10/2016 11:01	0:09	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 11:13 9/10/2016 11:20	0:05 0:35	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/10/2016 11:59	0:51	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 12:54 9/10/2016 14:41	0:02 0:03	LSR LSR	Data is not available	Data is not available	Oversupply
9/10/2016 14:41	0:14	LSR	Data is not available  Data is not available	Data is not available Data is not available	Oversupply Oversupply
9/10/2016 15:53	0:11	LSR	Data is not available	Data is not available	Oversupply
9/10/2016 16:07 9/14/2016 15:24	0:14 0:15	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/14/2016 16:47	0:15	LSR	Data is not available	Data is not available	Oversupply
9/15/2016 7:03 9/15/2016 10:14	3:10 0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/15/2016 10:19	0:13	LSR	Data is not available	Data is not available	Oversupply
9/15/2016 10:33 9/15/2016 10:41	0:02 0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/15/2016 10:43	0:13	LSR	Data is not available	Data is not available	Oversupply
9/15/2016 10:57 9/15/2016 11:39	0:38 0:42	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/15/2016 12:23	0:06	LSR	Data is not available	Data is not available	Oversupply
9/15/2016 12:32 9/17/2016 8:06	0:31 0:21	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 8:30	0:10	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 8:42 9/17/2016 8:45	0:01 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply
9/17/2016 8:49	0:03	LSR	Data is not available	Data is not available	Oversupply Oversupply
9/17/2016 8:55	0:03	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 9:00 9/17/2016 9:04	0:02 0:03	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 9:09	0:18	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 9:55 9/17/2016 9:58	0:02 0:01	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 10:00	0:01	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 10:05 9/17/2016 10:08	0:02 0:03	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 10:22	0:02	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 10:28 9/17/2016 10:59	0:02 0:19	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 11:27	0:05	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 11:36 9/17/2016 11:55	0:09 0:07	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/17/2016 12:03	0:06	LSR	Data is not available	Data is not available	Oversupply
9/17/2016 12:13 9/17/2016 12:44	0:14 0:07	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/18/2016 7:34	0:02	LSR	Data is not available	Data is not available	Oversupply
9/18/2016 8:33 9/18/2016 9:05	0:15 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/18/2016 9:25	0:01	LSR	Data is not available	Data is not available	Oversupply
9/18/2016 9:29 9/18/2016 9:33	0:02	LSR LSR	Data is not available Data is not available	Data is not available	Oversupply
9/18/2016 9:33	0:01 0:04	LSR	Data is not available  Data is not available	Data is not available Data is not available	Oversupply Oversupply
9/19/2016 7:10	0:07	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 7:20 9/19/2016 7:30	0:09 1:18	LSR LSR	Data is not available Data is not available	Data is not available Data is not available	Oversupply Oversupply
9/19/2016 8:52	0:44	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 9:38 9/19/2016 9:47	0:03 0:21	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/19/2016 10:10	0:40	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 10:53 9/19/2016 11:00	0:02 0:02	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/19/2016 11:05	0:03	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 11:09 9/19/2016 11:13	0:02 0:04	LSR LSR	Data is not available  Data is not available	Data is not available  Data is not available	Oversupply Oversupply
9/19/2016 11:21	0:03	LSR	Data is not available	Data is not available	Oversupply
			•		

#### **DOCKET NO. 2011-0206** ORDER NO. 30371 I.C.(3)(a)&(b) **ATTACHMENT 6** PAGE & OF 9



#### Lanai Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/19/2016 11:25	0:03	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 11:29	0:27	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 14:45	0:02	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 14:50	0:04	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 15:52	0:01	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 15:59	0:01	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 16:05	0:01	LSR	Data is not available	Data is not available	Oversupply
9/19/2016 16:35	0:26	LSR	Data is not available	Data is not available	Oversupply
9/20/2016 7:43	0:03	LSR	Data is not available	Data is not available	Oversupply
9/20/2016 7:51	0:09	LSR	Data is not available	Data is not available	Oversupply
9/22/2016 9:00	0:03	LSR	Data is not available	Data is not available	Oversupply
9/22/2016 9:07	0:01	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 7:36	0:25	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 8:04	0:01	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 8:06	0:01	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 8:09	0:27	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 8:49	0:14	LSR	Data is not available	Data is not available	Oversupply
9/29/2016 9:04	0:16	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.

The historical Lanai curtailment limit data used to determine the curtailment event starts and durations information was periodically inaccurate due to an off scale SCADA parameter. Therefore, the Miki Basin Diesel Operator Hourly Log data was used to modify the occasionally inaccurate curtailment limit.

DOCKET NO. 2011-0206 ORDER NO. 30371 I.C.(3)(a)&(b) ATTACHMENT 6 PAGE 9 OF 9

#### Hawai`i Electric Light Company Curtailment Report September 2016

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released <sup>1</sup>	IPP	Reason for Curtailment
09/07/16 12:17	0.2 MW	09/07/16 13:07	0.0 MW	TGUHI1	Oversupply
09/15/16 08:20	19.9 MW	09/15/16 09:26	19.5 MW	Tawhiri	Facility requested
09/16/16 05:14	19.8 MW	09/16/16 10:23	18.6 MW	Tawhiri	Facility requested
09/16/16 12:31	19.9 MW	09/16/16 17:11	17.7 MW	Tawhiri	Facility requested
09/18/16 15:39	19.9 MW	09/18/16 16:33	17.9 MW	Tawhiri	Facility requested
09/19/16 00:45	19.8 MW	09/19/16 03:50	19.7 MW	Tawhiri	Oversupply

<sup>&</sup>lt;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.

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