



October 26, 2015

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PUBLIC UTILITIES
COMMISSION

The Honorable Chair and Members
of the Hawai'i Public Utilities Commission
Kekuaaoa 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 September 2015 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 Company is 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

cc: 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".

SERVICE LIST
(Docket No. 2011-0206)

JEFFREY T. ONO EXECUTIVE DIRECTOR DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS DIVISION OF CONSUMER ADVOCACY P.O. Box 541 Honolulu, HI 96809	2 Copies Via Hand Delivery
GREGG J. KINKLEY, ESQ. DEPARTMENT OF THE ATTORNEY GENERAL 425 Queen Street Honolulu, Hawaii 96813 Counsel for DBEDT	1 Copy Electronically Transmitted
DANIEL W.S. LAWRENCE, ESQ. DEPARTMENT OF THE CORPORATION COUNSEL CITY AND COUNTY OF HONOLULU 530 S. King Street, Room 110 Honolulu, HI 96813 Counsel for the CITY AND COUNTY OF HONOLULU	1 Copy Electronically Transmitted
MOLLY A. STEBBINS, ESQ. WILLIAM V. BRILHANTE, JR., ESQ. DEPARTMENT OF THE CORPORATION COUNSEL COUNTY OF HAWAII 101 Aupuni Street, Suite 325 Hilo, HI 96720 Counsel for the COUNTY OF HAWAII	1 Copy Electronically Transmitted
HENRY Q CURTIS VICE PRESIDENT FOR CONSUMER ISSUES LIFE OF THE LAND P.O. Box 37158 Honolulu, HI 96837-0158	1 Copy Electronically Transmitted
WARREN S. BOLLMEIER II PRESIDENT HAWAII RENEWABLE ENERGY ALLIANCE 46-040 Konane Place, #3816 Kaneohe, HI 96744	1 Copy Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

DOUGLAS A. CODIGA, ESQ.
SCHLACK ITO LLLC
Topa Financial Center
745 Fort Street, Suite 1500
Honolulu, HI 96813
Counsel for BLUE PLANET FOUNDATION

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

ERIK W. KVAM
CHIEF EXECUTIVE OFFICER
ZERO EMISSIONS LEASING LLC
1110 University Avenue, Suite 402
Honolulu, HI 96826

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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(Docket No. 2011-0206)

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

1 Copy
Electronically Transmitted

MICHAEL J. HOPPER, ESQ.
DEPUTY CORPORATION COUNSEL
DEPARTMENT OF THE CORPORATION COUNSEL
COUNTY OF MAUI
200 S. High Street
Wailuku, HI 96793
Counsel for the COUNTY OF MAUI

1 Copy
Electronically Transmitted

CURTIS SEYMOUR
SENIOR MANAGER, GOVERNMENT AFFAIRS
SUN EDISON LLC
600 Clipper Drive
Belmont, CA 94002

1 Copy
Electronically Transmitted

MONA W. CLARK, ESQ.
OFFICE OF THE COUNTY ATTORNEY
COUNTY OF KAUAI
4444 Rice Street, Suite 200
Lihue, HI 96766-1300

1 Copy
Electronically Transmitted

BRADLEY ALBERT
PRESIDENT
HAWAII PV COALITION
P.O. Box 81501
Haiku, HI 96708

1 Copy
Electronically Transmitted

HILTON H. UNEMORI
ECM, INC.
130 N. Market Street
Wailuku, HI 96793-1716
For SOUTH MAUI RENEWABLE RESOURCES, LLC

1 Copy
Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

SKY STANFIELD
KEYES, FOX & WIEDMAN LLP
436 14th Street, Suite 1305
Oakland, CA 94612
For the INTERSTATE RENEWABLE ENERGY COUNCIL

1 Copy
Electronically Transmitted

PETE COOPER
SOLARCITY CORPORATION
REGIONAL DIRECTOR, HAWAII
599 Kahelu Street
Mililani, HI 96789

1 Copy
Electronically Transmitted

STANLEY ALLEN GRAY, SENIOR DEVELOPER
Pier 1, Bay 3
San Francisco, CA 94111
For MOLOKAI RENEWABLES LLC

1 Copy
Electronically Transmitted

ALISON SILVERSTEIN
19213 Luedtke Lane
Pflugerville, TX 78660

1 Copy
Electronically Transmitted

BRENDAN KIRBY
12011 SW Pineapple Court
Palm City, FL 34990

1 Copy
Electronically Transmitted

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, 2015):

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, 2015):

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:

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

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

Hawaiian Electric did not have any demand response activations for system events for the month of September. 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. Therefore, Attachment 5 is not being provided for this reporting period.

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

The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending September 30, 2015):

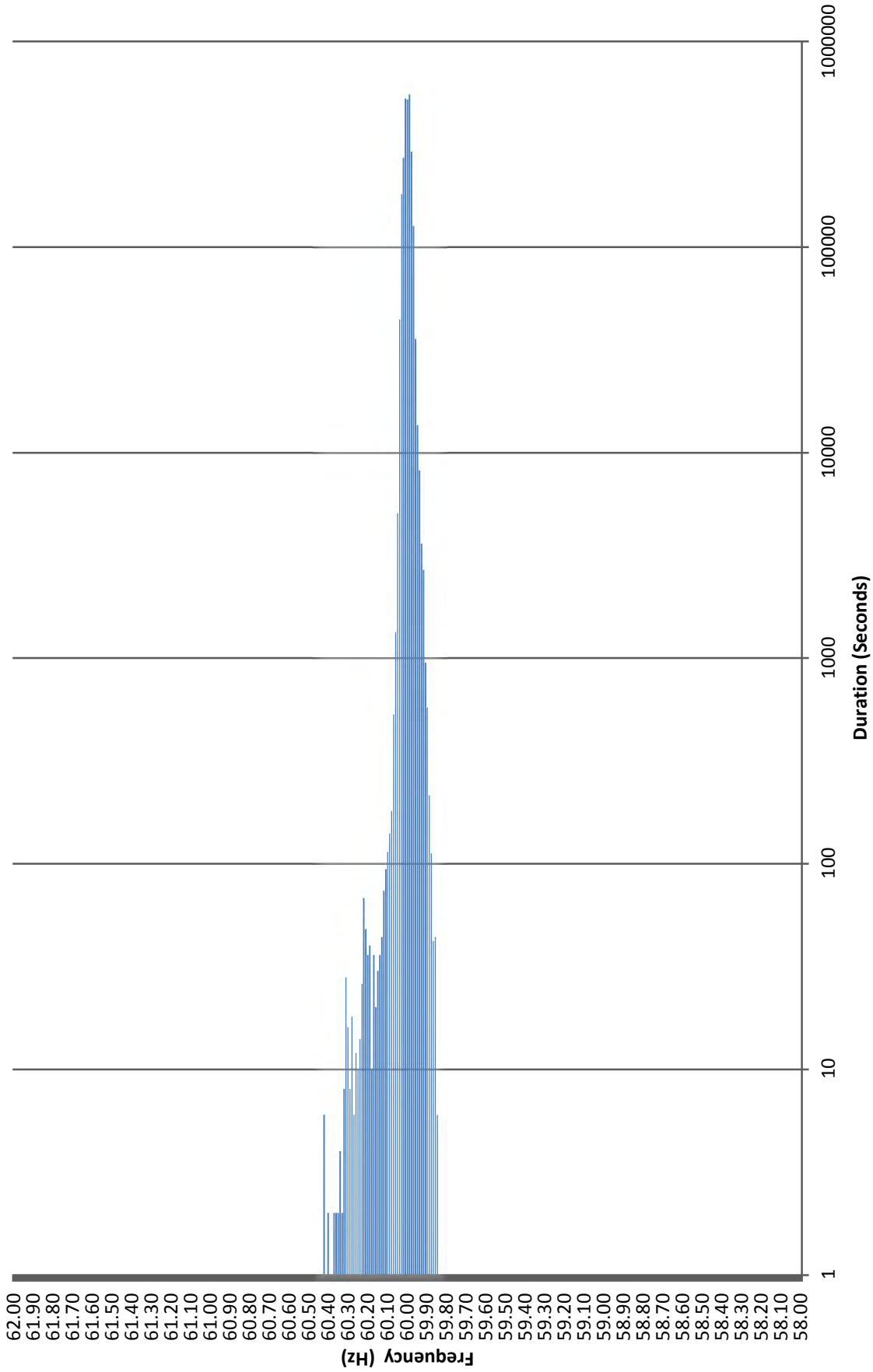
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

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

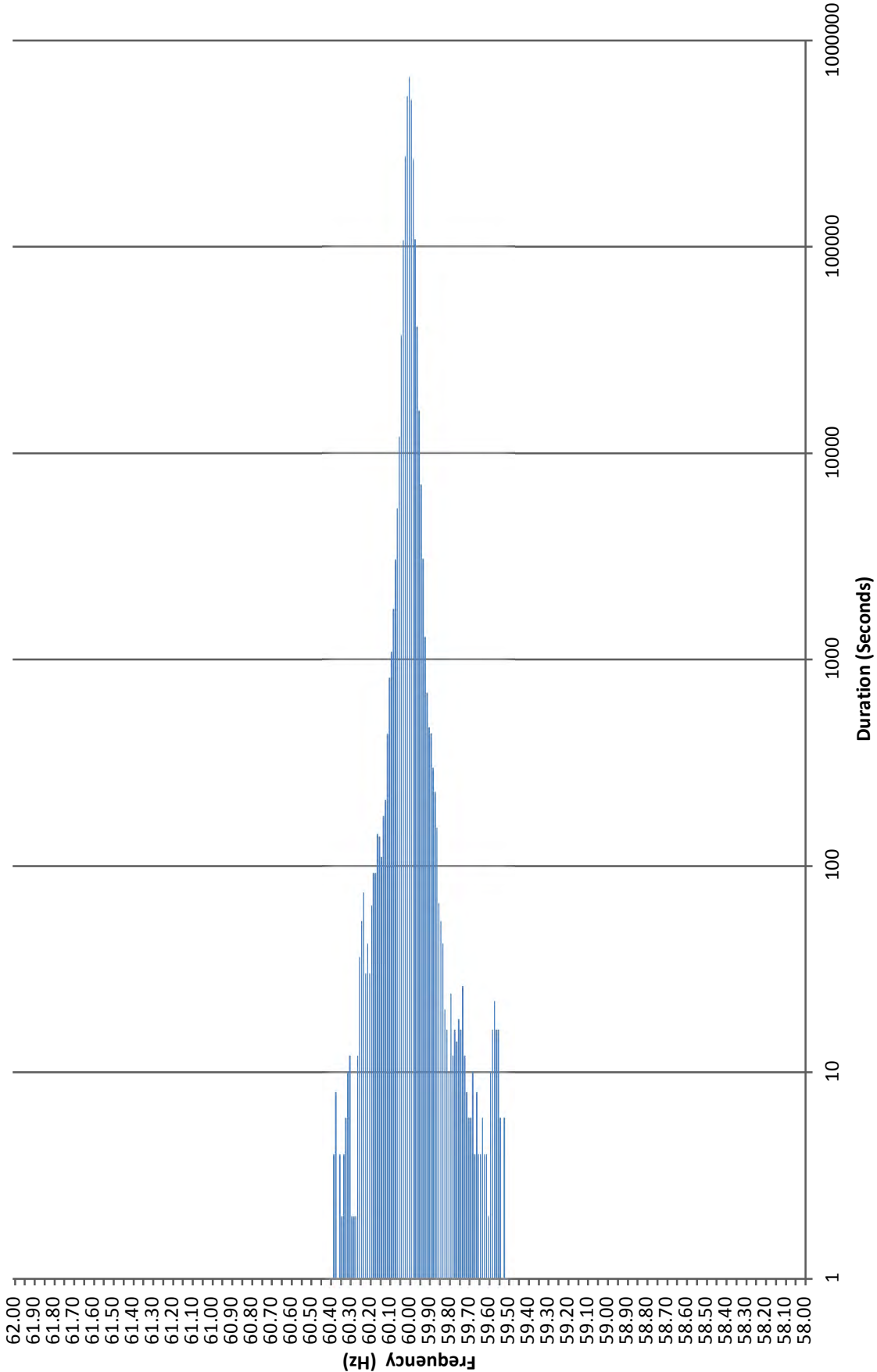
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

Hawai'i Electric Light did not curtail any non-dispatchable renewable resources in the month of August. 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.

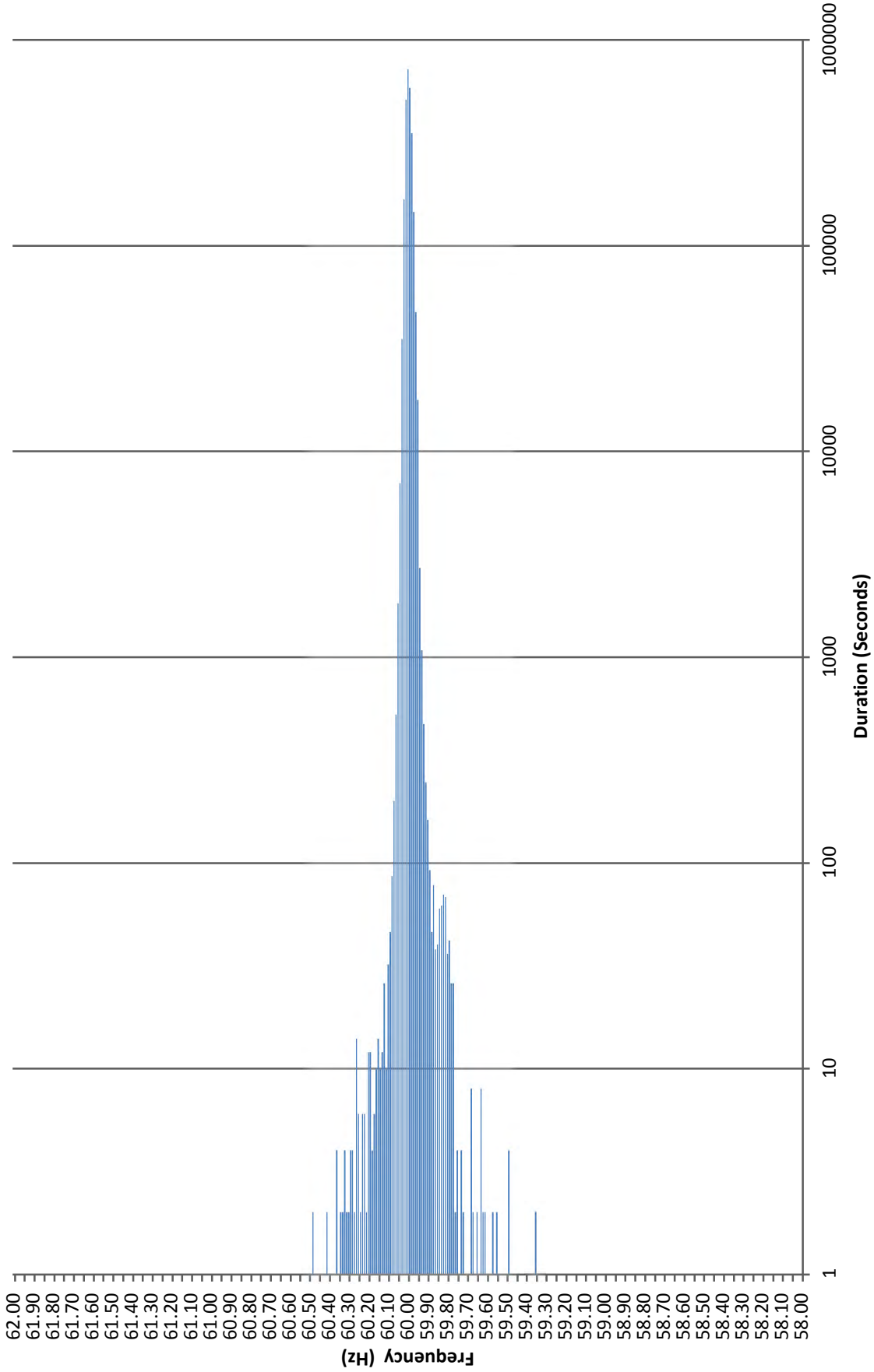
Frequency Distribution Plot - Hawaiian Electric September 2015



**Maui Electric Frequency Distribution Plot - Maui
September 2015**



**Frequency Distribution Plot - Hawai'i Electric Light
September 2015**



Hawaiian Electric Frequency Excursion Statistics September 2015		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	1091	294
Maximum Duration (sec)	762	488
Maximum Deviation (Hz)	59.853	60.424
Total Duration of Excursions (sec)	21424	4336

Maui Electric Frequency Excursion Statistics September 2015		
	<59.95 Hz	>60.05 Hz
Number of Excursions	3609	2426
Maximum Duration (sec)	822	740
Maximum Deviation (Hz)	59.5179	60.3792
Total Duration of Excursions (sec)	20224	18322

Hawai'i Electric Light Frequency Excursion Statistics September 2015		
	<59.95 Hz	>60.05 Hz
Number of Excursions	2373	395
Maximum Duration (sec)	268	78
Maximum Deviation (Hz)	59.349	60.482
Total Duration of Excursions (sec)	13832	1718

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Hawaiian Electric Curtailment Report September 2015

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
09/02/15 18:00	0.0	0.30	09/02/15 18:34	0	*	Makai	System Constraints
09/02/15 18:01	0.0	2.40	09/02/15 18:09	0	*	Mauka	System Constraints
09/02/15 18:10	0.0	0.00	09/02/15 18:35	0	*	KWF	System Constraints
09/08/15 06:55	0.0	0.00	09/08/15 08:00	0	*	KWF	System Constraints
09/08/15 15:27	0.0	0.00	09/08/15 16:34	0	*	KWF	System Constraints
09/09/15 06:25	0.0	0.00	09/09/15 07:53	0	*	KWF	System Constraints
09/09/15 15:01	0.0	5.00	09/09/15 17:38	0	*	KWF	System Constraints
09/10/15 05:43	0.0	0.00	09/10/15 08:04	0	*	KWF	System Constraints
09/10/15 14:24	0.0	0.00	09/10/15 15:29	0	*	KWF	System Constraints
09/10/15 16:48	0.0	1.10	09/10/15 17:32	0	*	KWF	System Constraints
09/16/15 06:50	0.0	10.10	09/16/15 17:22	0	*	KWF	System Constraints
09/16/15 06:50	0.0	6.60	09/16/15 08:33	0	*	Makai	System Constraints
09/16/15 14:47	0.0	2.40	09/16/15 17:22	0	*	Makai	System Constraints
09/17/15 07:08	0.0	3.80	09/17/15 07:51	0	*	Makai	System Constraints
09/17/15 07:14	0.0	7.50	09/17/15 07:51	0	*	KWF	System Constraints
09/17/15 15:09	0.0	13.70	09/17/15 15:28	0	*	Makai	System Constraints
09/17/15 15:08	0.0	8.70	09/17/15 15:28	0	*	KWF	System Constraints
09/18/15 10:01	0.0	17.90	09/18/15 10:56	0	*	KWF	System Constraints
09/18/15 10:01	0.0	14.80	09/18/15 10:57	0	*	Makai	System Constraints

KLS2 = Kalaeloa Solar 2 PV Farm

KREP = Kalaeloa Renewable Energy Park

KWF = Kahuku Wind Farm

Makai = Kawaioloa Makai Wind Farm

Mauka = Kawaioloa Mauka Wind Farm

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

* Data has not been provided by IPP.



Maui Curtailment Report September 2015

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/1/2015 2:01	0:06	KWP/II	0.168	7.424	Oversupply
9/1/2015 2:14	0:05	KWP/II	0.151	10.614	Oversupply
9/1/2015 23:39	0:01	KWP/II	0.003	13.270	Oversupply
9/1/2015 23:47	0:02	KWP/II	0.092	14.385	Oversupply
9/1/2015 23:52	0:03	KWP/II	0.089	13.751	Oversupply
9/1/2015 23:59	0:03	KWP/II	0.095	13.300	Oversupply
9/2/2015 0:06	0:02	KWP/II	0.072	14.046	Oversupply
9/2/2015 0:34	0:01	KWP/II	0.015	14.234	Oversupply
9/2/2015 3:14	0:02	KWP/II	0.045	13.241	Oversupply
9/2/2015 3:18	0:02	KWP/II	0.079	14.693	Oversupply
9/2/2015 3:47	0:01	KWP/II	0.021	14.799	Oversupply
9/2/2015 3:49	0:03	KWP/II	0.069	14.854	Oversupply
9/2/2015 3:54	0:01	KWP/II	0.018	12.778	Oversupply
9/2/2015 5:08	0:01	KWP/II	0.017	14.270	Oversupply
9/9/2015 10:13	0:07	AWE	0.012	0.233	Oversupply
9/9/2015 10:24	0:08	AWE	0.011	0.193	Oversupply
9/9/2015 10:39	0:04	AWE	0.012	0.300	Oversupply
9/9/2015 10:06	0:38	SA	Data is not available	Data is not available	System constraints
9/9/2015 10:06	0:38	BS	Data is not available	Data is not available	System constraints
9/9/2015 14:29	0:01	AWE	0.000	0.002	Oversupply
9/9/2015 14:29	0:01	KWP	0.000	0.002	Oversupply
9/13/2015 13:31	3:37	KWP/II	26.609	20.707	Oversupply
9/13/2015 20:59	0:51	KWP/II	4.054	20.705	Oversupply
9/13/2015 22:25	0:19	KWP/II	0.526	20.430	Oversupply
9/13/2015 22:46	1:40	KWP/II	21.107	20.677	Oversupply
9/14/2015 0:13	0:07	AWE	0.104	20.867	Oversupply
9/14/2015 0:27	0:44	KWP/II	10.092	19.176	Oversupply
9/14/2015 1:01	0:04	AWE	0.026	15.007	Oversupply
9/14/2015 1:12	0:34	KWP/II	9.895	20.455	Oversupply
9/14/2015 1:15	0:13	AWE	0.439	17.247	Oversupply
9/14/2015 1:32	0:09	AWE	0.258	11.580	Oversupply
9/14/2015 1:47	2:08	KWP/II	31.800	20.694	Oversupply
9/14/2015 3:37	0:03	AWE	0.048	11.223	Oversupply
9/14/2015 3:45	0:02	AWE	0.032	10.207	Oversupply
9/14/2015 3:56	1:02	KWP/II	15.652	19.211	Oversupply
9/14/2015 4:20	0:09	AWE	0.490	18.367	Oversupply
9/14/2015 4:40	0:11	AWE	0.487	17.193	Oversupply
9/14/2015 4:59	0:24	KWP/II	2.853	20.708	Oversupply
9/14/2015 9:05	0:28	KWP/II	1.151	20.708	Oversupply
9/14/2015 10:47	2:29	KWP/II	18.989	20.708	Oversupply
9/14/2015 13:20	0:04	KWP/II	0.160	20.505	Oversupply
9/14/2015 13:54	0:09	KWP/II	0.481	20.040	Oversupply
9/15/2015 6:25	0:06	KWP/II	0.243	12.742	Oversupply
9/15/2015 6:33	0:35	KWP/II	1.802	17.634	Oversupply
9/15/2015 9:30	0:27	AWE	1.056	20.600	Oversupply
9/15/2015 10:28	1:54	AWE	8.498	21.000	Oversupply
9/15/2015 12:54	0:31	AWE	1.427	21.000	Oversupply
9/15/2015 15:44	0:11	AWE	0.164	21.000	Oversupply
9/15/2015 22:07	0:21	AWE	0.694	21.000	Oversupply
9/15/2015 22:33	0:03	AWE	0.004	21.000	Oversupply
9/15/2015 22:40	0:02	AWE	0.002	21.000	Oversupply
9/15/2015 22:44	0:25	AWE	0.817	21.000	Oversupply
9/15/2015 23:12	0:01	AWE	0.001	20.953	Oversupply
9/15/2015 23:14	0:01	AWE	0.000	21.000	Oversupply
9/15/2015 23:17	0:01	AWE	0.007	21.000	Oversupply
9/15/2015 23:20	0:03	AWE	0.048	20.847	Oversupply
9/15/2015 23:24	0:05	AWE	0.092	19.880	Oversupply
9/15/2015 23:30	3:36	AWE	20.404	21.000	Oversupply
9/16/2015 3:08	0:49	AWE	3.404	14.060	Oversupply
9/16/2015 3:58	0:13	AWE	0.398	10.897	Oversupply
9/16/2015 4:13	0:03	AWE	0.054	9.803	Oversupply
9/16/2015 4:22	0:02	AWE	0.059	11.643	Oversupply
9/16/2015 5:28	0:05	AWE	0.038	10.677	Oversupply
9/16/2015 5:58	0:05	AWE	0.079	15.253	Oversupply
9/16/2015 8:30	0:04	AWE	0.087	18.500	Oversupply
9/16/2015 8:40	0:04	AWE	0.093	19.517	Oversupply
9/16/2015 8:45	0:05	AWE	0.137	20.113	Oversupply
9/16/2015 8:53	0:04	AWE	0.037	20.763	Oversupply
9/16/2015 8:58	0:03	AWE	0.004	21.000	Oversupply
9/16/2015 9:28	0:02	AWE	0.017	16.833	Oversupply
9/16/2015 9:40	0:02	AWE	0.021	19.540	Oversupply
9/16/2015 10:21	0:07	AWE	0.286	21.000	Oversupply
9/16/2015 10:31	0:11	AWE	0.302	20.953	Oversupply
9/16/2015 10:43	0:05	AWE	0.224	20.950	Oversupply
9/16/2015 10:49	0:05	AWE	0.225	20.963	Oversupply
9/16/2015 10:56	0:04	AWE	0.116	19.910	Oversupply
9/16/2015 11:03	0:01	AWE	0.008	19.727	Oversupply
9/16/2015 11:05	0:03	AWE	0.041	19.220	Oversupply
9/16/2015 11:09	0:05	AWE	0.159	19.767	Oversupply
9/16/2015 11:16	0:03	AWE	0.069	19.277	Oversupply
9/16/2015 11:25	0:08	AWE	0.237	21.000	Oversupply
9/16/2015 11:35	0:02	AWE	0.016	20.407	Oversupply
9/16/2015 11:42	0:05	AWE	0.125	20.827	Oversupply
9/16/2015 11:48	0:14	AWE	0.638	21.000	Oversupply
9/16/2015 12:04	0:07	AWE	0.140	20.997	Oversupply
9/16/2015 12:12	0:09	AWE	0.162	21.000	Oversupply
9/16/2015 12:26	0:01	AWE	0.001	21.000	Oversupply
9/16/2015 12:30	0:04	AWE	0.067	21.000	Oversupply
9/16/2015 21:26	0:01	KWP/II	0.008	17.735	Oversupply
9/16/2015 21:38	0:14	KWP/II	0.647	18.818	Oversupply
9/16/2015 22:03	0:06	KWP/II	0.151	18.952	Oversupply
9/16/2015 22:10	0:01	KWP/II	0.002	19.015	Oversupply
9/16/2015 22:28	0:02	KWP/II	0.026	18.354	Oversupply
9/16/2015 22:32	0:48	KWP/II	5.268	18.933	Oversupply
9/16/2015 23:41	1:52	KWP/II	9.980	18.917	Oversupply
9/17/2015 1:39	2:49	KWP/II	20.805	18.785	Oversupply
9/17/2015 4:35	0:02	KWP/II	0.028	15.499	Oversupply
9/17/2015 4:40	0:01	KWP/II	0.026	15.375	Oversupply
9/17/2015 4:44	0:03	KWP/II	0.033	16.343	Oversupply
9/17/2015 4:48	0:03	KWP/II	0.061	16.868	Oversupply
9/17/2015 4:53	0:07	KWP/II	0.267	16.926	Oversupply
9/17/2015 5:07	0:01	KWP/II	0.014	16.254	Oversupply
9/17/2015 5:19	0:03	KWP/II	0.057	16.588	Oversupply
9/17/2015 5:25	0:01	KWP/II	0.006	17.261	Oversupply
9/17/2015 6:44	0:39	KWP/II	4.439	18.771	Oversupply
9/17/2015 7:25	0:16	KWP/II	1.317	19.040	Oversupply
9/17/2015 7:42	0:55	KWP/II	10.064	19.120	Oversupply
9/17/2015 8:35	0:01	AWE	0.000	18.987	Oversupply
9/17/2015 8:38	3:36	KWP/II	62.305	19.193	Oversupply
9/17/2015 8:40	0:02	AWE	0.060	19.853	Oversupply
9/17/2015 8:43	0:07	AWE	0.195	20.210	Oversupply
9/17/2015 8:54	0:01	AWE	0.028	17.495	Oversupply
9/17/2015 8:57	1:05	AWE	4.347	21.000	Oversupply
9/17/2015 10:01	0:18	AWE	0.507	21.000	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/17/2015 10:23	0:02	AWE	0.003	21.000	Oversupply
9/17/2015 10:26	0:12	AWE	0.132	21.000	Oversupply
9/17/2015 10:40	0:57	AWE	3.674	21.000	Oversupply
9/17/2015 11:38	0:22	AWE	0.872	21.000	Oversupply
9/17/2015 12:01	0:01	AWE	0.001	21.000	Oversupply
9/17/2015 12:04	0:04	AWE	0.009	21.000	Oversupply
9/17/2015 12:10	0:01	AWE	0.000	21.000	Oversupply
9/17/2015 12:17	3:21	KWP/II	32.135	20.352	Oversupply
9/17/2015 15:39	0:01	KWP/II	0.001	18.342	Oversupply
9/17/2015 17:46	0:04	KWP/II	0.020	20.491	Oversupply
9/17/2015 20:38	0:07	KWP/II	0.152	18.132	Oversupply
9/17/2015 21:38	0:01	KWP/II	0.009	14.416	Oversupply
9/17/2015 21:40	8:05	KWP/II	128.022	20.708	Oversupply
9/17/2015 22:21	0:05	AWE	0.003	21.000	Oversupply
9/18/2015 0:07	2:48	AWE	14.285	21.000	Oversupply
9/18/2015 2:56	2:23	AWE	17.192	21.000	Oversupply
9/18/2015 5:20	0:17	AWE	0.463	21.000	Oversupply
9/18/2015 5:47	1:07	KWP/II	7.635	20.705	Oversupply
9/18/2015 6:59	0:01	KWP/II	0.002	20.666	Oversupply
9/18/2015 7:04	0:03	KWP/II	0.047	20.620	Oversupply
9/18/2015 7:09	0:06	KWP/II	0.055	20.624	Oversupply
9/18/2015 7:16	0:05	KWP/II	0.016	20.542	Oversupply
9/18/2015 7:22	0:03	KWP/II	0.011	20.298	Oversupply
9/18/2015 7:41	0:04	KWP/II	0.044	20.619	Oversupply
9/18/2015 7:54	0:09	KWP/II	0.377	20.585	Oversupply
9/18/2015 8:54	1:16	KWP/II	12.574	20.708	Oversupply
9/18/2015 10:13	0:28	KWP/II	2.799	20.708	Oversupply
9/18/2015 10:45	5:42	KWP/II	42.660	20.708	Oversupply
9/18/2015 18:07	0:02	KWP/II	0.009	20.470	Oversupply
9/18/2015 18:10	0:03	KWP/II	0.005	20.698	Oversupply
9/18/2015 22:24	0:01	KWP/II	0.002	20.653	Oversupply
9/18/2015 22:27	1:23	KWP/II	7.774	20.661	Oversupply
9/18/2015 23:52	0:56	KWP/II	8.389	16.728	Oversupply
9/19/2015 0:29	0:02	AWE	0.050	16.727	Oversupply
9/19/2015 0:36	0:02	AWE	0.037	16.470	Oversupply
9/19/2015 0:39	0:05	AWE	0.114	15.603	Oversupply
9/19/2015 0:49	0:05	KWP/II	0.449	12.055	Oversupply
9/19/2015 3:26	0:02	AWE	0.053	20.800	Oversupply
9/19/2015 3:29	0:03	AWE	0.053	20.370	Oversupply
9/19/2015 3:33	0:14	AWE	0.405	20.073	Oversupply
9/19/2015 4:38	0:24	KWP/II	1.062	5.072	Oversupply
9/19/2015 4:38	0:25	AWE	1.142	17.493	Oversupply
9/19/2015 5:04	0:01	KWP/II	0.022	1.379	Oversupply
9/19/2015 5:10	0:01	KWP/II	0.000	1.574	Oversupply
9/19/2015 5:24	0:01	AWE	0.005	21.000	Oversupply
9/19/2015 5:27	0:03	AWE	0.010	21.000	Oversupply
9/19/2015 5:36	0:01	AWE	0.001	20.993	Oversupply
9/19/2015 5:39	0:01	AWE	0.004	20.937	Oversupply
9/19/2015 5:43	0:11	AWE	0.228	20.873	Oversupply
9/19/2015 5:44	0:07	KWP/II	0.229	2.880	Oversupply
9/19/2015 5:52	0:06	KWP/II	0.463	6.078	Oversupply
9/19/2015 5:55	0:10	AWE	0.148	21.000	Oversupply
9/19/2015 6:00	0:01	KWP/II	0.089	5.322	Oversupply
9/19/2015 6:03	0:02	KWP/II	0.147	4.949	Oversupply
9/19/2015 10:08	0:01	KWP/II	0.006	5.674	Oversupply
9/19/2015 10:18	0:09	KWP/II	0.877	13.593	Oversupply
9/19/2015 10:28	0:03	KWP/II	0.296	11.006	Oversupply
9/19/2015 10:33	0:01	AWE	0.001	21.000	Oversupply
9/19/2015 10:33	0:02	KWP/II	0.211	11.099	Oversupply
9/19/2015 10:36	0:01	AWE	0.002	21.000	Oversupply
9/19/2015 10:36	0:11	KWP/II	17.551	12.882	Oversupply
9/19/2015 10:44	0:03	AWE	0.027	21.000	Oversupply
9/19/2015 10:48	0:02	KWP/II	0.358	14.114	Oversupply
9/19/2015 10:48	0:02	AWE	0.011	21.000	Oversupply
9/19/2015 10:56	0:02	AWE	0.010	21.000	Oversupply
9/19/2015 10:56	0:50	KWP/II	11.874	20.249	Oversupply
9/19/2015 11:49	0:07	KWP/II	0.499	15.533	Oversupply
9/19/2015 12:23	0:01	KWP/II	0.026	13.073	Oversupply
9/19/2015 12:47	0:19	KWP/II	2.824	19.048	Oversupply
9/19/2015 12:54	0:01	AWE	0.000	21.000	Oversupply
9/19/2015 13:07	0:21	KWP/II	2.926	19.876	Oversupply
9/19/2015 13:29	0:04	KWP/II	0.129	17.224	Oversupply
9/19/2015 13:37	0:03	KWP/II	0.027	17.725	Oversupply
9/19/2015 13:44	0:26	KWP/II	2.518	19.475	Oversupply
9/19/2015 14:12	0:16	KWP/II	1.002	19.526	Oversupply
9/19/2015 22:30	0:28	KWP/II	3.614	20.496	Oversupply
9/19/2015 23:23	0:04	KWP/II	0.152	17.990	Oversupply
9/19/2015 23:28	0:04	KWP/II	0.096	14.531	Oversupply
9/19/2015 23:33	0:26	KWP/II	2.325	13.770	Oversupply
9/20/2015 0:06	0:33	KWP/II	7.097	20.394	Oversupply
9/20/2015 0:24	0:09	AWE	0.200	20.320	Oversupply
9/20/2015 0:41	0:38	KWP/II	8.921	18.888	Oversupply
9/20/2015 0:58	0:12	AWE	0.590	13.977	Oversupply
9/20/2015 1:22	0:52	KWP/II	5.679	16.363	Oversupply
9/20/2015 2:15	0:01	KWP/II	0.003	6.146	Oversupply
9/20/2015 2:26	0:12	KWP/II	0.494	9.582	Oversupply
9/20/2015 3:01	11:46	KWP/II	155.487	20.708	Oversupply
9/20/2015 3:03	0:02	AWE	0.029	14.007	Oversupply
9/20/2015 3:08	0:21	AWE	1.048	14.797	Oversupply
9/20/2015 3:30	2:00	AWE	11.167	18.957	Oversupply
9/20/2015 5:31	0:05	AWE	0.127	19.633	Oversupply
9/20/2015 5:41	0:09	AWE	0.086	19.470	Oversupply
9/20/2015 14:50	0:01	KWP/II	0.002	20.708	Oversupply
9/20/2015 17:26	0:02	KWP/II	0.002	20.708	Oversupply
9/20/2015 17:29	0:11	KWP/II	0.097	20.708	Oversupply
9/20/2015 17:43	0:12	KWP/II	0.087	20.708	Oversupply
9/20/2015 21:56	7:28	KWP/II	127.157	20.708	Oversupply
9/21/2015 0:04	0:01	AWE	0.001	21.000	Oversupply
9/21/2015 0:07	5:10	AWE	38.768	21.000	Oversupply
9/21/2015 5:25	1:18	KWP/II	11.170	20.491	Oversupply
9/21/2015 8:41	0:04	KWP/II	0.075	18.749	Oversupply
9/21/2015 8:47	0:16	KWP/II	0.825	20.499	Oversupply
9/21/2015 9:13	0:26	KWP/II	0.841	20.465	Oversupply
9/21/2015 10:02	0:22	KWP/II	0.824	20.705	Oversupply
9/21/2015 10:25	0:38	KWP/II	1.177	20.708	Oversupply
9/21/2015 11:24	0:01	KWP/II	0.005	20.676	Oversupply
9/21/2015 11:26	3:06	KWP/II	17.407	20.707	Oversupply
9/21/2015 14:34	0:01	KWP/II	0.001	20.518	Oversupply
9/21/2015 21:57	0:15	KWP/II	0.369	20.531	Oversupply
9/21/2015 22:14	0:01	KWP/II	0.006	20.505	Oversupply
9/21/2015 22:16	0:58	KWP/II	2.014	20.542	Oversupply
9/21/2015 22:50	6:16	KWP/II	96.216	20.708	Oversupply
9/22/2015 0:50	0:06	AWE	0.081	19.653	Oversupply
9/22/2015 0:57	0:03	AWE	0.048	18.510	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/22/2015 1:01	0:05	AWE	0.089	18.557	Oversupply
9/22/2015 1:07	0:13	AWE	0.402	19.440	Oversupply
9/22/2015 1:21	0:05	AWE	0.113	16.853	Oversupply
9/22/2015 1:29	3:33	AWE	26.982	20.737	Oversupply
9/22/2015 5:09	1:17	KWP/II	15.788	20.682	Oversupply
9/22/2015 6:11	12:33	BS250	Data is not available	Data is not available	Oversupply
9/22/2015 6:31	0:18	KWP/II	0.928	20.705	Oversupply
9/22/2015 7:27	0:02	KWP/II	0.014	19.967	Oversupply
9/22/2015 7:30	0:02	KWP/II	0.032	20.317	Oversupply
9/22/2015 7:33	0:11	KWP/II	0.462	20.495	Oversupply
9/22/2015 7:54	1:23	KWP/II	7.275	20.692	Oversupply
9/22/2015 9:24	1:43	KWP/II	6.808	20.648	Oversupply
9/22/2015 11:08	0:15	KWP/II	0.454	20.672	Oversupply
9/22/2015 11:27	0:19	KWP/II	0.657	20.627	Oversupply
9/22/2015 11:48	0:54	KWP/II	5.279	20.646	Oversupply
9/22/2015 12:43	0:04	KWP/II	0.104	20.485	Oversupply
9/22/2015 12:51	0:06	KWP/II	0.031	20.662	Oversupply
9/22/2015 13:03	0:01	KWP/II	0.006	20.636	Oversupply
9/22/2015 13:05	0:01	KWP/II	0.001	20.612	Oversupply
9/22/2015 14:30	0:06	KWP/II	0.100	20.125	Oversupply
9/22/2015 16:04	0:01	KWP/II	0.002	20.578	Oversupply
9/22/2015 16:24	0:18	KWP/II	0.517	20.663	Oversupply
9/22/2015 23:09	0:21	KWP/II	2.263	12.333	Oversupply
9/22/2015 23:17	0:01	AWE	0.006	19.947	Oversupply
9/22/2015 23:24	0:02	AWE	0.032	20.043	Oversupply
9/22/2015 23:37	0:01	KWP/II	0.037	8.696	Oversupply
9/23/2015 0:38	0:38	KWP/II	3.035	10.041	Oversupply
9/23/2015 0:42	0:05	AWE	0.150	17.993	Oversupply
9/23/2015 0:52	0:25	AWE	2.365	21.000	Oversupply
9/23/2015 1:21	0:05	AWE	0.056	21.000	Oversupply
9/23/2015 1:29	0:06	AWE	0.018	21.000	Oversupply
9/23/2015 1:36	0:02	AWE	0.003	21.000	Oversupply
9/23/2015 1:40	0:02	AWE	0.002	21.000	Oversupply
9/23/2015 2:21	0:01	AWE	0.002	14.927	Oversupply
9/23/2015 2:25	0:08	AWE	0.307	16.247	Oversupply
9/23/2015 2:39	0:01	AWE	0.000	16.813	Oversupply
9/23/2015 2:50	0:46	KWP/II	2.183	6.326	Oversupply
9/23/2015 2:54	0:02	AWE	0.033	16.087	Oversupply
9/23/2015 2:57	0:35	AWE	4.388	20.987	Oversupply
9/23/2015 3:34	0:01	AWE	0.005	20.267	Oversupply
9/23/2015 5:28	0:01	AWE	0.000	21.000	Oversupply
9/23/2015 5:49	0:15	KWP/II	0.550	6.741	Oversupply
9/23/2015 5:57	0:01	AWE	0.001	20.233	Oversupply
9/23/2015 5:59	0:01	AWE	0.006	19.887	Oversupply
9/23/2015 6:02	0:01	AWE	0.013	19.840	Oversupply
9/23/2015 6:05	0:01	AWE	0.005	20.800	Oversupply
9/23/2015 6:05	0:03	KWP/II	0.056	3.086	Oversupply
9/23/2015 6:07	0:01	AWE	0.001	20.950	Oversupply
9/23/2015 6:10	0:05	KWP/II	0.169	3.612	Oversupply
9/23/2015 6:10	0:05	AWE	0.033	21.000	Oversupply
9/23/2015 6:11	4:05	BS250	Data is not available	Data is not available	Oversupply
9/23/2015 6:16	0:03	AWE	0.010	21.000	Oversupply
9/23/2015 6:21	0:44	AWE	3.248	21.000	Oversupply
9/23/2015 6:23	0:42	KWP/II	3.535	8.134	Oversupply
9/23/2015 18:14	0:29	BS250	Data is not available	Data is not available	Oversupply
9/23/2015 20:05	0:01	AWE	0.000	0.003	Oversupply
9/23/2015 22:49	0:07	KWP/II	0.160	20.523	Oversupply
9/23/2015 23:14	4:25	KWP/II	25.357	20.681	Oversupply
9/24/2015 3:42	0:22	KWP/II	0.618	19.799	Oversupply
9/24/2015 4:21	0:01	KWP/II	0.006	20.223	Oversupply
9/24/2015 4:27	0:02	KWP/II	0.036	19.434	Oversupply
9/24/2015 5:28	0:04	KWP/II	0.040	18.540	Oversupply
9/24/2015 5:38	0:03	KWP/II	0.068	19.408	Oversupply
9/24/2015 5:52	0:15	KWP/II	0.912	20.200	Oversupply
9/24/2015 9:15	0:03	BS250	Data is not available	Data is not available	Oversupply
9/24/2015 9:15	0:03	KWP/II	0.040	20.344	Oversupply
9/24/2015 10:00	3:40	BS250	Data is not available	Data is not available	Oversupply
9/24/2015 10:00	3:04	KWP/II	14.036	20.662	Oversupply
9/24/2015 17:17	1:26	BS250	Data is not available	Data is not available	Oversupply
9/24/2015 21:58	0:08	KWP/II	0.102	20.697	Oversupply
9/24/2015 22:40	0:06	KWP/II	0.059	20.505	Oversupply
9/24/2015 22:47	0:03	KWP/II	0.031	20.586	Oversupply
9/24/2015 22:51	0:04	KWP/II	0.023	20.656	Oversupply
9/24/2015 23:03	0:02	KWP/II	0.001	20.621	Oversupply
9/24/2015 23:11	0:02	KWP/II	0.013	20.625	Oversupply
9/24/2015 23:15	0:10	KWP/II	0.241	20.697	Oversupply
9/24/2015 23:26	6:35	KWP/II	95.194	20.708	Oversupply
9/25/2015 1:26	0:01	AWE	0.005	17.390	Oversupply
9/25/2015 1:33	0:01	AWE	0.032	18.233	Oversupply
9/25/2015 1:37	0:04	AWE	0.057	17.213	Oversupply
9/25/2015 1:42	0:15	AWE	0.752	20.250	Oversupply
9/25/2015 1:58	0:02	AWE	0.059	17.503	Oversupply
9/25/2015 2:06	0:02	AWE	0.035	16.953	Oversupply
9/25/2015 2:09	0:02	AWE	0.031	16.313	Oversupply
9/25/2015 3:32	0:02	AWE	0.009	13.837	Oversupply
9/25/2015 4:37	0:02	AWE	0.028	18.450	Oversupply
9/25/2015 6:04	0:11	KWP/II	0.393	20.708	Oversupply
9/25/2015 6:11	2:35	BS250	Data is not available	Data is not available	Oversupply
9/25/2015 6:31	0:39	KWP/II	1.578	20.708	Oversupply
9/25/2015 7:14	0:02	KWP/II	0.011	20.708	Oversupply
9/25/2015 7:17	0:22	KWP/II	0.832	20.708	Oversupply
9/25/2015 7:42	0:32	KWP/II	1.088	20.708	Oversupply
9/25/2015 8:15	0:21	KWP/II	0.284	20.708	Oversupply
9/25/2015 8:42	0:05	KWP/II	0.023	20.708	Oversupply
9/25/2015 9:39	5:01	BS250	Data is not available	Data is not available	Oversupply
9/25/2015 9:40	0:03	KWP/II	0.020	20.708	Oversupply
9/25/2015 9:48	3:54	KWP/II	25.460	20.708	Oversupply
9/25/2015 13:46	0:02	KWP/II	0.002	20.708	Oversupply
9/25/2015 14:07	0:11	KWP/II	0.103	20.708	Oversupply
9/25/2015 17:36	1:08	BS250	Data is not available	Data is not available	Oversupply
9/25/2015 20:52	0:08	KWP/II	0.175	20.708	Oversupply
9/25/2015 21:02	1:15	KWP/II	6.117	20.708	Oversupply
9/25/2015 22:19	0:10	KWP/II	0.082	20.708	Oversupply
9/25/2015 22:32	3:40	KWP/II	46.784	20.708	Oversupply
9/26/2015 0:39	0:02	AWE	0.001	21.000	Oversupply
9/26/2015 1:28	0:38	AWE	1.529	21.000	Oversupply
9/26/2015 2:14	3:13	KWP/II	41.509	20.708	Oversupply
9/26/2015 2:19	0:02	AWE	0.051	20.667	Oversupply
9/26/2015 2:24	0:10	AWE	0.163	21.000	Oversupply
9/26/2015 2:35	0:01	AWE	0.002	19.613	Oversupply
9/26/2015 2:37	0:03	AWE	0.042	20.420	Oversupply
9/26/2015 2:49	0:01	AWE	0.007	19.327	Oversupply
9/26/2015 6:11	12:33	BS250	Data is not available	Data is not available	Oversupply
9/26/2015 7:23	0:07	KWP/II	0.168	20.708	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/26/2015 7:43	0:06	KWP/II	0.066	20.708	Oversupply
9/26/2015 7:51	0:01	KWP/II	0.000	20.708	Oversupply
9/26/2015 8:05	0:14	KWP/II	0.374	20.708	Oversupply
9/26/2015 8:25	1:35	KWP/II	11.835	20.708	Oversupply
9/26/2015 10:03	0:24	KWP/II	1.303	20.708	Oversupply
9/26/2015 10:36	0:08	KWP/II	0.156	20.708	Oversupply
9/26/2015 10:45	0:59	KWP/II	7.630	20.708	Oversupply
9/26/2015 12:20	1:02	KWP/II	11.543	20.708	Oversupply
9/26/2015 13:07	0:11	AWE	0.397	21.000	Oversupply
9/26/2015 13:23	2:08	KWP/II	23.181	20.708	Oversupply
9/26/2015 20:56	9:12	KWP/II	148.006	20.708	Oversupply
9/27/2015 1:10	4:12	AWE	32.747	21.000	Oversupply
9/27/2015 5:24	0:18	AWE	0.585	20.583	Oversupply
9/27/2015 5:45	0:10	AWE	0.120	19.083	Oversupply
9/27/2015 5:57	0:01	AWE	0.012	19.817	Oversupply
9/27/2015 6:00	0:01	AWE	0.001	19.143	Oversupply
9/27/2015 6:10	4:34	KWP/II	60.564	20.708	Oversupply
9/27/2015 6:11	8:24	BS250	Data is not available	Data is not available	Oversupply
9/27/2015 10:47	2:08	KWP/II	14.202	20.708	Oversupply
9/27/2015 12:56	0:04	KWP/II	0.017	20.708	Oversupply
9/27/2015 20:55	0:05	KWP/II	0.092	20.708	Oversupply
9/27/2015 21:01	0:04	KWP/II	0.033	20.708	Oversupply
9/27/2015 21:33	0:01	KWP/II	0.002	20.708	Oversupply
9/27/2015 21:35	9:27	KWP/II	147.578	20.708	Oversupply
9/27/2015 23:36	6:11	AWE	72.309	21.000	Oversupply
9/28/2015 5:48	0:01	AWE	0.001	21.000	Oversupply
9/28/2015 6:11	12:33	BS250	Data is not available	Data is not available	Oversupply
9/28/2015 7:26	6:08	KWP/II	87.053	19.211	Oversupply
9/28/2015 9:32	0:09	AWE	0.334	20.800	Oversupply
9/28/2015 9:42	2:32	AWE	14.577	21.000	Oversupply
9/28/2015 12:16	0:22	AWE	1.171	20.977	Oversupply
9/28/2015 12:40	0:08	AWE	0.346	19.863	Oversupply
9/28/2015 12:49	0:11	AWE	0.261	19.577	Oversupply
9/28/2015 13:01	0:03	AWE	0.040	19.513	Oversupply
9/28/2015 13:05	0:16	AWE	0.542	20.350	Oversupply
9/28/2015 13:36	1:10	KWP/II	11.024	20.500	Oversupply
9/28/2015 14:38	0:30	KWP/II	1.683	20.883	Oversupply
9/28/2015 15:19	0:01	KWP/II	0.011	20.821	Oversupply
9/28/2015 15:22	0:01	KWP/II	0.004	20.818	Oversupply
9/28/2015 15:24	0:55	KWP/II	2.531	20.894	Oversupply
9/28/2015 16:27	0:09	KWP/II	0.102	20.708	Oversupply
9/28/2015 16:37	0:06	KWP/II	0.020	20.898	Oversupply
9/28/2015 17:06	0:34	KWP/II	2.956	20.708	Oversupply
9/28/2015 17:51	0:04	KWP/II	0.054	20.708	Oversupply
9/28/2015 17:56	0:07	KWP/II	0.115	20.698	Oversupply
9/28/2015 18:08	0:12	KWP/II	0.485	20.699	Oversupply
9/28/2015 18:56	0:02	KWP/II	0.002	20.697	Oversupply
9/28/2015 18:59	0:01	KWP/II	0.002	20.698	Oversupply
9/28/2015 19:03	0:01	KWP/II	0.001	20.698	Oversupply
9/28/2015 19:09	0:02	KWP/II	0.017	20.696	Oversupply
9/28/2015 19:21	0:10	KWP/II	0.261	20.707	Oversupply
9/28/2015 19:49	0:40	KWP/II	1.581	20.708	Oversupply
9/28/2015 20:48	0:03	KWP/II	0.032	20.696	Oversupply
9/28/2015 20:52	1:59	KWP/II	11.626	20.708	Oversupply
9/28/2015 22:54	0:01	KWP/II	0.000	20.708	Oversupply
9/28/2015 22:56	0:03	KWP/II	0.031	20.708	Oversupply
9/28/2015 23:02	5:27	KWP/II	89.394	20.708	Oversupply
9/29/2015 1:07	0:03	AWE	0.060	10.743	Oversupply
9/29/2015 1:14	0:18	AWE	1.002	12.400	Oversupply
9/29/2015 1:34	1:23	AWE	5.082	11.980	Oversupply
9/29/2015 2:58	1:08	AWE	4.795	13.000	Oversupply
9/29/2015 4:38	0:02	AWE	0.017	7.873	Oversupply
9/29/2015 4:15	0:01	AWE	0.008	7.890	Oversupply
9/29/2015 4:31	1:42	KWP/II	17.474	20.708	Oversupply
9/29/2015 7:23	0:04	KWP/II	0.041	20.707	Oversupply
9/29/2015 8:04	5:04	KWP/II	92.535	20.708	Oversupply
9/29/2015 9:35	0:23	AWE	1.077	17.180	Oversupply
9/29/2015 10:02	0:02	AWE	0.019	17.660	Oversupply
9/29/2015 10:06	0:01	AWE	0.001	16.803	Oversupply
9/29/2015 10:08	0:10	AWE	0.396	17.690	Oversupply
9/29/2015 10:19	0:07	AWE	0.194	17.420	Oversupply
9/29/2015 10:28	2:25	AWE	15.325	20.940	Oversupply
9/29/2015 12:55	0:06	AWE	0.126	20.873	Oversupply
9/29/2015 13:02	0:01	AWE	0.017	19.507	Oversupply
9/29/2015 13:10	2:10	KWP/II	34.433	20.492	Oversupply
9/29/2015 13:43	0:02	AWE	0.007	19.783	Oversupply
9/29/2015 13:46	0:01	AWE	0.005	18.770	Oversupply
9/29/2015 13:49	0:09	AWE	0.073	20.923	Oversupply
9/29/2015 14:01	0:04	AWE	0.033	20.927	Oversupply
9/29/2015 14:08	0:13	AWE	0.456	21.000	Oversupply
9/29/2015 14:26	0:01	AWE	0.002	20.977	Oversupply
9/29/2015 14:28	0:01	AWE	0.012	20.587	Oversupply
9/29/2015 14:33	0:01	AWE	0.004	19.763	Oversupply
9/29/2015 14:37	0:01	AWE	0.000	20.967	Oversupply
9/29/2015 14:40	0:01	AWE	0.003	20.347	Oversupply
9/29/2015 14:42	0:01	AWE	0.002	19.733	Oversupply
9/29/2015 14:44	0:08	AWE	0.225	20.699	Oversupply
9/29/2015 14:58	0:01	AWE	0.002	20.107	Oversupply
9/29/2015 15:03	0:02	AWE	0.019	20.363	Oversupply
9/29/2015 15:11	0:01	AWE	0.003	20.853	Oversupply
9/29/2015 15:22	0:59	KWP/II	10.277	20.700	Oversupply
9/29/2015 16:27	0:05	KWP/II	0.044	20.840	Oversupply
9/29/2015 16:33	0:02	KWP/II	0.004	20.692	Oversupply
9/29/2015 16:36	1:56	KWP/II	10.758	20.708	Oversupply
9/29/2015 19:39	0:30	KWP/II	1.551	20.708	Oversupply
9/29/2015 20:23	9:15	KWP/II	154.992	20.708	Oversupply
9/29/2015 23:31	5:25	AWE	63.086	21.000	Oversupply
9/30/2015 4:57	0:01	AWE	0.020	14.233	Oversupply
9/30/2015 5:04	0:27	AWE	1.373	20.560	Oversupply
9/30/2015 5:32	0:01	AWE	0.009	19.570	Oversupply
9/30/2015 5:40	0:39	KWP/II	7.053	20.708	Oversupply
9/30/2015 6:20	0:01	KWP/II	0.005	19.211	Oversupply
9/30/2015 6:22	0:04	KWP/II	0.059	19.211	Oversupply
9/30/2015 6:43	7:05	KWP/II	134.868	20.708	Oversupply
9/30/2015 7:48	0:01	AWE	0.001	18.230	Oversupply
9/30/2015 7:51	0:03	AWE	0.076	19.780	Oversupply
9/30/2015 8:23	0:05	AWE	0.065	20.073	Oversupply
9/30/2015 8:29	0:02	AWE	0.038	19.373	Oversupply
9/30/2015 8:33	0:01	AWE	0.005	19.277	Oversupply
9/30/2015 8:35	1:27	AWE	7.137	20.420	Oversupply
9/30/2015 10:03	0:02	AWE	0.035	20.070	Oversupply
9/30/2015 10:08	3:58	AWE	23.065	19.893	Oversupply
9/30/2015 13:48	0:25	KWP/II	7.667	20.707	Oversupply
9/30/2015 13:51	0:13	AWE	0.321	21.000	Oversupply



Maui Curtailment Report September 2015

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/30/2015 14:05	0:02	AWE	0.004	20.980	Oversupply
9/30/2015 14:09	0:01	AWE	0.002	21.000	Oversupply
9/30/2015 14:17	0:02	KWP/II	0.354	16.217	Oversupply
9/30/2015 14:20	2:49	KWP/II	25.767	20.708	Oversupply
9/30/2015 16:40	0:01	MH	Data is not available	Data is not available	System constraints
9/30/2015 17:54	0:01	KWP/II	0.007	20.696	Oversupply
9/30/2015 18:05	0:01	KWP/II	0.005	20.707	Oversupply
9/30/2015 18:11	0:01	KWP/II	0.002	20.708	Oversupply
9/30/2015 21:28	0:05	KWP/II	0.102	20.708	Oversupply
9/30/2015 21:50	0:09	KWP/II	0.471	20.700	Oversupply
9/30/2015 22:08	0:20	KWP/II	0.550	20.708	Oversupply
9/30/2015 22:29	1:31	KWP/II	20.044	20.708	Oversupply
9/30/2015 23:46	0:07	AWE	0.138	18.863	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 ("KWP/II") 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 KWP/II. 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.



Lanai Curtailment Report August 2015

Start Date/Time	Duration (h:mm)	IPP Curtailed	Estimated MWH Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/14/2015 16:03	0:01	LSR	Data is not available	Data is not available	Oversupply
9/14/2015 16:14	0:10	LSR	Data is not available	Data is not available	Oversupply
9/14/2015 16:30	0:03	LSR	Data is not available	Data is not available	Oversupply
9/14/2015 16:51	0:13	LSR	Data is not available	Data is not available	Oversupply
9/14/2015 17:15	0:07	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 7:18	1:10	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 8:33	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 8:51	0:16	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 9:10	0:18	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 10:19	0:16	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 10:37	0:02	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 10:42	0:03	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 11:02	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 11:09	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 11:17	0:09	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 11:27	2:08	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 13:36	0:03	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 14:48	0:06	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 16:17	0:41	LSR	Data is not available	Data is not available	Oversupply
9/15/2015 17:02	0:04	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 6:59	0:16	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 7:16	0:13	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 7:41	0:18	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 8:11	0:40	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 8:53	0:07	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 9:10	0:02	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 9:13	0:05	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 10:11	0:01	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 10:23	0:03	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 10:32	0:37	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 11:27	0:02	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 11:33	0:01	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 11:37	0:02	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 11:45	0:04	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 11:52	0:07	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 12:04	0:45	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 12:53	0:14	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 13:15	0:01	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 14:04	0:03	LSR	Data is not available	Data is not available	Oversupply
9/16/2015 16:07	1:11	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 6:55	0:13	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 7:09	4:45	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 12:07	0:01	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 12:31	0:08	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 13:07	0:12	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 13:43	0:12	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 13:56	2:26	LSR	Data is not available	Data is not available	Oversupply
9/17/2015 16:56	0:48	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 6:57	0:11	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 7:12	0:03	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 7:22	0:20	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 7:50	0:20	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 8:19	1:02	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 10:10	0:01	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 10:29	0:04	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 10:40	0:21	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 11:02	0:02	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 11:06	0:03	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 11:22	0:08	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 11:37	0:05	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 12:05	1:08	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 13:43	1:37	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 16:19	0:03	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 16:32	0:58	LSR	Data is not available	Data is not available	Oversupply
9/18/2015 17:38	0:04	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 6:47	0:05	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 7:00	0:21	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 7:28	0:22	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 7:51	0:01	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 7:55	1:09	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 9:06	0:26	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 9:33	0:13	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 9:49	0:21	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 10:15	0:12	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 10:33	0:13	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 10:49	0:23	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 11:18	0:02	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 11:24	0:35	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 12:10	0:23	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 12:34	0:03	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 12:40	0:20	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 13:11	0:01	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 13:21	0:02	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 13:25	0:04	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 13:32	0:21	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 15:43	0:02	LSR	Data is not available	Data is not available	Oversupply
9/19/2015 16:14	0:03	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 6:49	0:03	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 6:55	0:08	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 7:09	0:02	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 8:24	0:12	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 8:44	0:15	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:08	0:05	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:14	0:01	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:16	0:04	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:28	0:01	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:32	0:03	LSR	Data is not available	Data is not available	Oversupply
9/20/2015 9:36	0:04	LSR	Data is not available	Data is not available	Oversupply



Lanai Curtailment Report August 2015

Start Date/Time	Duration (h:mm)	IPP Curtailed	Estimated MWH Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/30/2015 8:41	0:19	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 9:03	0:24	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 9:28	0:08	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 9:49	0:35	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 10:25	3:16	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 13:42	0:19	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 14:02	1:50	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 15:53	0:08	LSR	Data is not available	Data is not available	Oversupply
9/30/2015 16:50	0:15	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 September 2015

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released ¹	IPP	Reason for Curtailment
09/08/15 08:11	0.0 MW	09/08/15 15:19	0.0 MW	Tawhiri	Facility requested
09/26/15 17:13	16.4 MW	09/26/15 19:00	15.0 MW	Tawhiri	Facility requested

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