



March 24, 2017

FILED

2017 MAR 24 P 4:02

PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

Subject: Docket No. 2011-0206
Reliability Standards Working Group
Monthly Report

Pursuant to Ordering Paragraph 3 of the Commission's Order No. 30371, filed on May 4, 2012, in the above subject proceeding, enclosed as Exhibit A is the Hawaiian Electric Companies'¹ monthly report for February 2017 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

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

If you have any questions on this matter, please contact Marisa Chun at (808) 543-4723.

Sincerely,

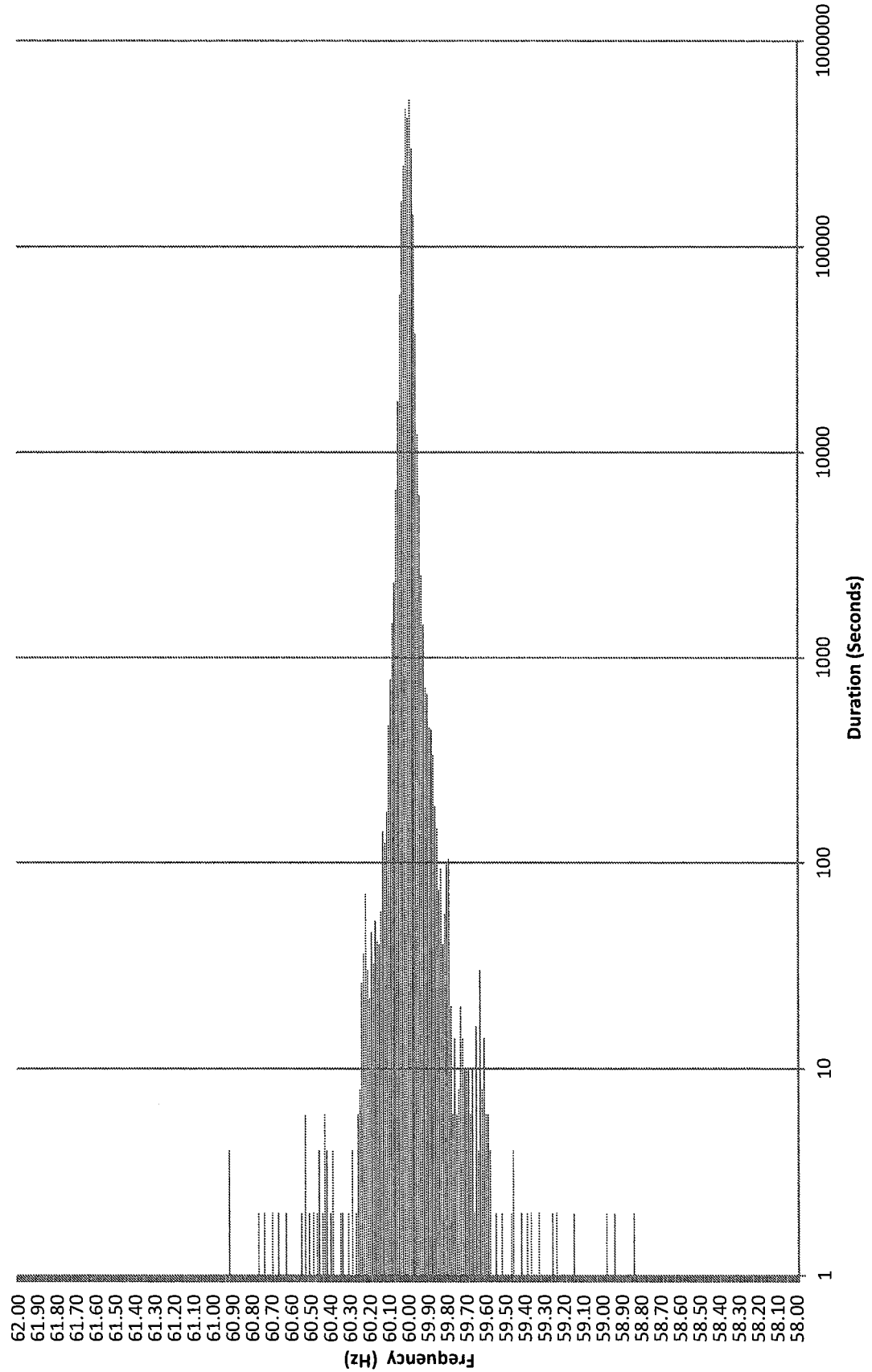
Daniel G. Brown
Manager
Regulatory Non-Rate Proceedings

Enclosure

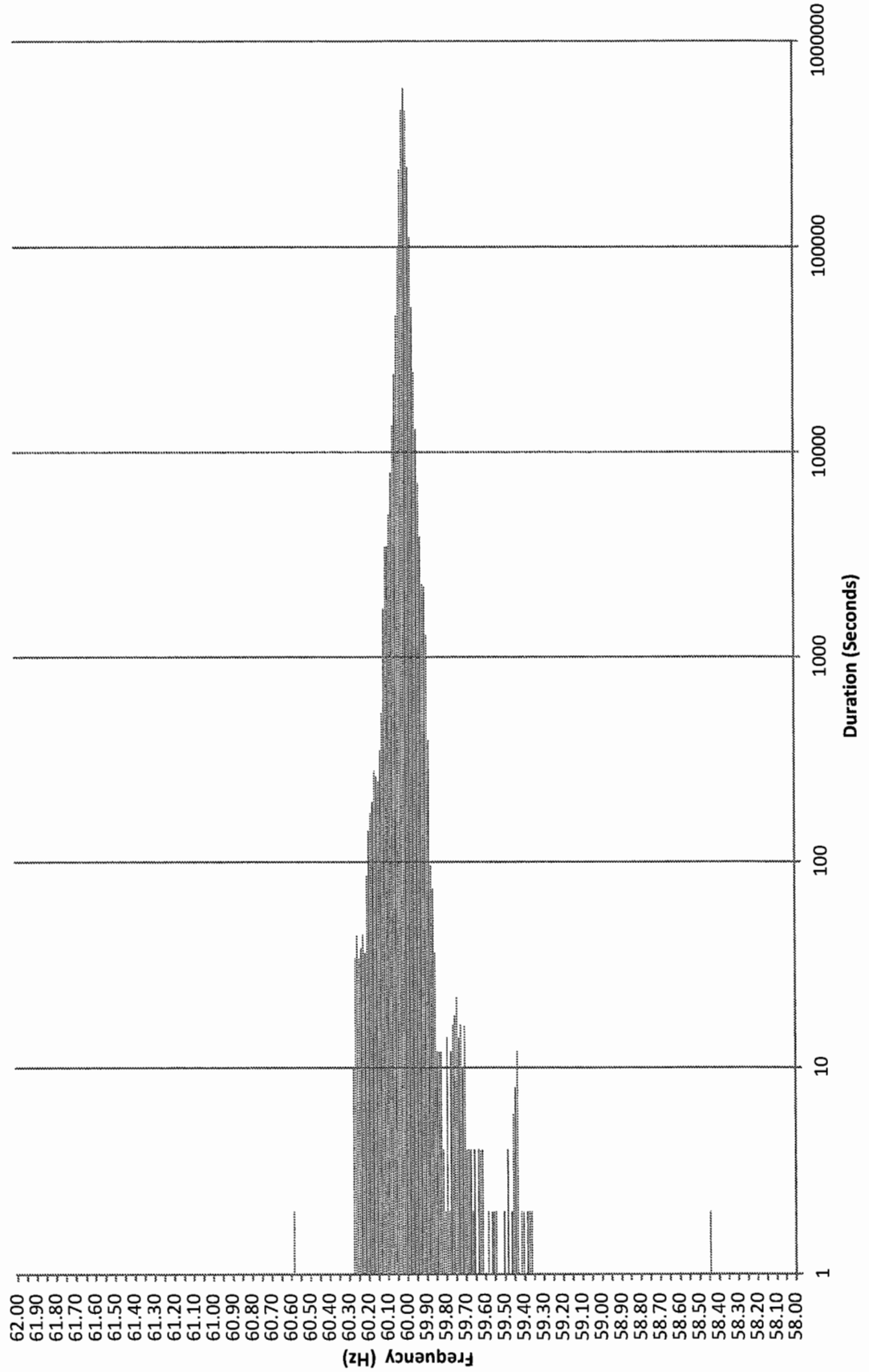
c: Service List

¹ Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc., and Maui Electric Company, Limited are collectively referred to as the "Hawaiian Electric Companies" or "Companies".

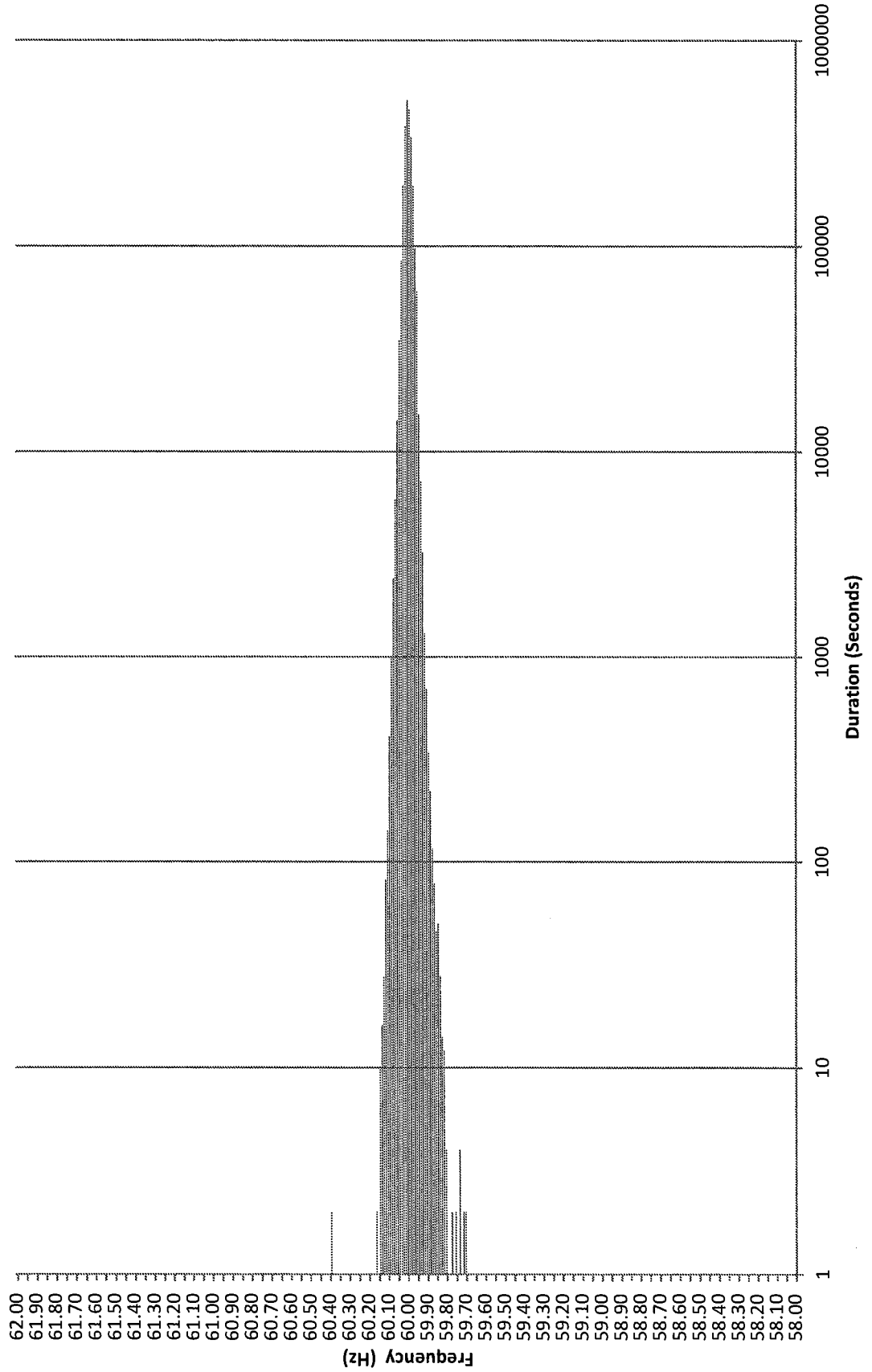
Frequency Distribution Plot - Hawaiian Electric February 2016



Maui Electric Frequency Distribution Plot - Maui February 2017



Frequency Distribution Plot - Hawai'i Electric Light February 2017



Hawaiian Electric Frequency Excursion Statistics February 2016		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	1025	1695
Maximum Duration (sec)	1076	620
Maximum Deviation (Hz)	57.02	60.922
Total Duration of Excursions (sec)	17834	17880

Maui Electric Frequency Excursion Statistics February 2017		
	<59.95 Hz	>60.05 Hz
Number of Excursions	5293	5087
Maximum Duration (sec)	1014	832
Maximum Deviation (Hz)	58.435	60.582
Total Duration of Excursions (sec)	40804	47472

Hawai'i Electric Light Frequency Excursion Statistics February 2017		
	<59.95 Hz	>60.05 Hz
Number of Excursions	9341	2856
Maximum Duration (sec)	244	80
Maximum Deviation (Hz)	59.701	60.390
Total Duration of Excursions (sec)	61098	15468

Hawaiian Electric Curtailment Report February 2017

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
02/01/17 06:57	0.0	0.00	02/01/17 17:36	0	*	Waianae	System constraints
02/01/17 07:00	0.0	0.00	02/01/17 08:37	0	*	Aloha	System constraints
02/01/17 17:17	0.0	0.00	02/01/17 17:36	0	*	Aloha	System constraints
02/02/17 06:39	0.0	0.00	02/02/17 16:10	0	*	Waianae	System constraints
02/02/17 06:41	0.0	0.00	02/02/17 06:45	0	*	Aloha	System constraints
02/02/17 16:02	0.0	0.00	02/02/17 16:12	0	*	Aloha	System constraints
02/03/17 07:05	0.0	0.00	02/03/17 20:06	0	*	Waianae	System constraints
02/03/17 07:07	0.0	0.00	02/03/17 07:16	0	*	Aloha	System constraints
02/03/17 15:57	0.0	0.00	02/03/17 16:02	0	*	Aloha	System constraints
02/07/17 05:42	0.0	0.00	02/07/17 06:23	0	*	North	System constraints
02/07/17 05:43	0.0	0.00	02/07/17 06:24	0	*	South	System constraints
02/07/17 15:08	0.0	0.00	02/07/17 15:46	0	*	KWF	System constraints
02/07/17 15:11	0.0	1.00	02/07/17 15:48	0	*	Makai	System constraints
02/07/17 18:27	0.0	0.00	02/07/17 19:06	0	*	North	System constraints
02/07/17 18:27	0.0	0.00	02/07/17 19:06	0	*	South	System constraints
02/10/17 05:43	0.0	0.00	02/10/17 07:03	0	*	KLS2	System constraints
02/10/17 18:02	0.0	0.00	02/10/17 18:54	0	*	KLS2	System constraints
02/12/17 13:51	0.0	0.00	02/12/17 14:07	0	*	KWF	System constraints
02/12/17 22:37	0.0	6.00	02/13/17 01:47	0	*	Makai	System constraints
02/14/17 18:13	0.0	1.70	02/14/17 18:28	0	*	Waianae	System constraints
02/15/17 19:33	0.0	0.00	02/15/17 19:55	0	*	KWF	System constraints
02/15/17 19:38	0.0	0.00	02/15/17 19:57	0	*	Makai	System constraints
02/18/17 00:05	0.0	0.00	02/18/17 07:46	0	*	Waianae	System constraints
02/20/17 10:55	0.0	27.50	02/20/17 15:01	0	*	Waianae	Oversupply
02/20/17 11:42	0.0	4.40	02/20/17 15:44	3.09	*	Aloha	Oversupply
02/22/17 06:38	0.0	22.00	02/22/17 08:25	0	*	KWF	System constraints
02/22/17 06:45	0.0	13.00	02/22/17 08:28	0	*	Makai	System constraints
02/22/17 15:02	0.0	21.00	02/22/17 16:09	0	*	KWF	System constraints
02/22/17 15:04	0.0	16.00	02/22/17 16:12	0	*	Makai	System constraints
02/23/17 06:46	0.0	10.00	02/23/17 07:40	0	*	KWF	System constraints
02/23/17 06:50	0.0	4.00	02/23/17 07:38	0	*	Makai	System constraints
02/23/17 16:46	0.0	6.00	02/23/17 17:28	0	*	KWF	System constraints
02/23/17 16:48	0.0	5.00	02/23/17 17:31	0	*	Makai	System constraints
02/23/17 18:03	0.0	1.20	02/23/17 19:53	0	*	Waianae	System constraints
02/23/17 18:07	0.0	0.00	02/23/17 19:55	0	*	Aloha	System constraints
02/24/17 05:40	0.0	0.00	02/24/17 08:43	0	*	Waianae	System constraints
02/24/17 05:46	0.0	0.00	02/24/17 11:16	0	*	Aloha	System constraints
02/24/17 07:40	0.0	0.00	02/24/17 11:36	0	*	KLS2	System constraints
02/24/17 07:43	0.0	0.00	02/24/17 11:30	0	*	KREP	System constraints
02/24/17 07:43	0.0	0.00	02/24/17 11:19	0	*	North	System constraints
02/24/17 07:43	0.0	0.00	02/24/17 11:20	0	*	South	System constraints
02/24/17 07:46	0.0	5.90	02/24/17 11:32	0	*	Mauka	System constraints
02/24/17 07:46	0.0	2.20	02/24/17 11:33	0	*	Makai	System constraints
02/24/17 07:49	0.0	10.00	02/24/17 11:35	0	*	KWF	System constraints
02/28/17 06:47	0.0	0.00	02/28/17 14:30	0	*	Waianae	System constraints
02/28/17 06:51	0.0	0.00	02/28/17 08:31	0	*	Aloha	System constraints
02/28/17 12:59	0.0	0.70	02/28/17 14:37	0.37	*	Aloha	System constraints

Aloha = Aloha Solar PV Farm (Plant not in Commercial operation. Curtailment times may be approximate due to commissioning testing occurring at same time.)

KLS2 = Kalaeloa Solar 2 PV Farm

KREP = Kalaeloa Renewable Energy Park

KWF = Kahuku Wind Farm

Makai = Kawailoa Makai Wind Farm

Mauka = Kawailoa Mauka Wind Farm

North = Waihonu North PV Farm

South = Waihonu South PV Farm

Waianae = Waianae Solar PV Farm

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

* Data has not been provided by IPP.



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWh	Peak MW Curtailed	Reasons for Curtailment
2/1/2017 0:00	1:45	KWPII	7.489	20.703	Oversupply
2/1/2017 2:51	1:49	KWPII	14.963	20.708	Oversupply
2/1/2017 11:03	0:03	KWPII	0.146	15.330	Oversupply
2/1/2017 11:29	0:18	KWPII	1.433	11.683	Oversupply
2/1/2017 12:32	0:03	KWPII	0.033	5.037	Oversupply
2/1/2017 12:43	0:01	KWPII	0.017	4.147	Oversupply
2/1/2017 13:19	0:04	BS250	Data is not available	Data is not available	Oversupply
2/1/2017 13:19	0:03	KWPII	0.069	9.140	Oversupply
2/1/2017 14:16	0:01	KWPII	0.000	0.005	Oversupply
2/2/2017 13:30	0:13	SA	Data is not available	Data is not available	Oversupply
2/2/2017 13:30	0:13	BS	Data is not available	Data is not available	Oversupply
2/2/2017 13:30	0:13	BS250	Data is not available	Data is not available	Oversupply
2/2/2017 13:31	0:01	KWPII	0.000	0.238	Oversupply
2/2/2017 13:33	0:02	KWPII	0.006	0.447	Oversupply
2/2/2017 13:36	0:07	KWPII	0.036	0.654	Oversupply
2/2/2017 13:54	0:12	SA	Data is not available	Data is not available	Oversupply
2/2/2017 13:54	0:12	BS	Data is not available	Data is not available	Oversupply
2/2/2017 13:54	0:12	BS250	Data is not available	Data is not available	Oversupply
2/2/2017 13:55	0:05	KWPII	0.005	0.262	Oversupply
2/2/2017 14:01	0:03	KWPII	0.003	0.316	Oversupply
2/2/2017 14:05	0:01	KWPII	0.001	0.221	Oversupply
2/3/2017 17:37	0:01	AWE	0.000	0.007	Oversupply
2/4/2017 14:28	0:01	AWE	0.000	0.003	Oversupply
2/5/2017 11:01	3:55	KWPII	32.331	20.687	Oversupply
2/5/2017 12:17	2:39	BS250	Data is not available	Data is not available	Oversupply
2/5/2017 14:58	0:02	BS250	Data is not available	Data is not available	Oversupply
2/5/2017 14:59	0:01	KWPII	0.002	20.655	Oversupply
2/5/2017 15:06	0:16	BS250	Data is not available	Data is not available	Oversupply
2/5/2017 15:07	0:19	KWPII	0.427	20.697	Oversupply
2/5/2017 15:23	0:02	BS250	Data is not available	Data is not available	Oversupply
2/5/2017 21:26	0:01	AWE	0.000	0.007	Oversupply
2/6/2017 1:27	0:06	KWPII	0.071	20.549	Oversupply
2/6/2017 1:34	2:53	KWPII	9.464	20.348	Oversupply
2/6/2017 1:37	0:04	AWE	0.006	0.190	Oversupply
2/6/2017 2:37	1:50	AWE	4.453	8.017	Oversupply
2/6/2017 4:28	0:01	KWPII	0.007	18.440	Oversupply
2/6/2017 4:30	0:39	KWPII	2.149	20.204	Oversupply
2/6/2017 10:46	0:02	BS250	Data is not available	Data is not available	Oversupply
2/6/2017 10:46	0:04	KWPII	0.041	20.702	Oversupply
2/6/2017 10:55	1:26	KWPII	15.174	20.899	Oversupply
2/6/2017 11:37	0:06	BS250	Data is not available	Data is not available	Oversupply
2/6/2017 12:24	0:01	BS250	Data is not available	Data is not available	Oversupply
2/6/2017 12:29	0:43	KWPII	3.328	20.705	Oversupply
2/6/2017 13:16	0:09	KWPII	0.427	20.708	Oversupply
2/6/2017 13:29	0:06	BS250	Data is not available	Data is not available	Oversupply
2/6/2017 13:29	0:06	KWPII	0.168	20.689	Oversupply
2/6/2017 23:50	0:01	AWE	0.000	0.030	Oversupply
2/10/2017 12:06	0:01	AWE	0.000	0.003	Oversupply
2/11/2017 2:14	1:03	KWPII	7.551	19.174	Oversupply
2/11/2017 3:18	0:01	KWPII	0.019	18.871	Oversupply
2/11/2017 3:20	0:01	KWPII	0.011	18.819	Oversupply
2/11/2017 3:22	0:02	KWPII	0.014	19.121	Oversupply
2/11/2017 3:26	0:05	KWPII	0.113	19.116	Oversupply
2/11/2017 3:38	0:01	KWPII	0.005	17.383	Oversupply
2/11/2017 3:52	0:01	KWPII	0.006	17.174	Oversupply
2/11/2017 4:20	0:01	KWPII	0.003	18.368	Oversupply
2/11/2017 5:52	0:16	KWPII	1.363	20.366	Oversupply
2/11/2017 6:19	0:19	AWE	0.263	1.307	Oversupply
2/11/2017 12:07	0:23	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 12:07	0:22	KWPII	1.980	19.615	Oversupply
2/11/2017 12:31	0:04	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 12:31	0:20	KWPII	0.508	20.694	Oversupply
2/11/2017 12:36	0:15	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 13:15	0:09	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 13:15	0:08	KWPII	0.221	20.640	Oversupply
2/11/2017 13:44	0:02	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:19	0:02	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:22	0:01	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:22	0:01	KWPII	0.003	20.562	Oversupply
2/11/2017 14:24	0:01	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:24	0:02	KWPII	0.003	20.585	Oversupply
2/11/2017 14:27	0:03	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:28	0:02	KWPII	0.006	20.602	Oversupply
2/11/2017 14:32	0:05	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:32	0:05	KWPII	0.071	20.636	Oversupply
2/11/2017 14:43	0:01	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 14:43	0:07	KWPII	0.131	20.632	Oversupply
2/11/2017 14:45	0:05	BS250	Data is not available	Data is not available	Oversupply
2/11/2017 16:05	0:01	AWE	0.000	0.003	Oversupply
2/11/2017 23:28	0:01	KWPII	0.030	18.729	Oversupply
2/11/2017 23:34	0:01	KWPII	0.017	18.759	Oversupply
2/11/2017 23:36	0:02	KWPII	0.041	18.842	Oversupply
2/12/2017 0:09	0:01	KWPII	0.000	18.473	Oversupply
2/12/2017 0:11	0:18	KWPII	0.843	19.106	Oversupply
2/12/2017 1:13	0:02	KWPII	0.007	19.009	Oversupply
2/12/2017 1:18	0:08	KWPII	0.104	18.877	Oversupply
2/12/2017 1:27	2:13	KWPII	8.543	19.023	Oversupply
2/12/2017 3:42	0:33	KWPII	1.234	17.689	Oversupply
2/12/2017 4:20	0:01	KWPII	0.007	18.606	Oversupply
2/12/2017 4:23	0:38	KWPII	1.822	18.808	Oversupply
2/12/2017 4:24	0:01	AWE	0.000	0.007	Oversupply
2/12/2017 6:20	0:11	KWPII	0.869	17.302	Oversupply
2/12/2017 10:36	0:05	KWPII	0.230	12.338	Oversupply
2/12/2017 10:53	0:08	KWPII	0.354	14.085	Oversupply
2/12/2017 12:22	1:20	KWPII	4.050	8.977	Oversupply
2/13/2017 0:19	0:02	KWPII	0.012	18.023	Oversupply
2/13/2017 1:41	0:01	KWPII	0.000	18.633	Oversupply
2/13/2017 1:45	0:15	KWPII	0.401	19.778	Oversupply
2/13/2017 2:03	1:03	KWPII	3.921	19.729	Oversupply
2/13/2017 3:08	0:14	KWPII	0.545	18.301	Oversupply
2/13/2017 3:24	0:19	KWPII	0.346	16.988	Oversupply
2/13/2017 3:47	0:44	KWPII	1.942	17.279	Oversupply
2/13/2017 4:32	0:26	KWPII	1.496	18.357	Oversupply
2/13/2017 5:10	0:10	KWPII	0.265	18.050	Oversupply
2/13/2017 10:09	2:56	KWPII	25.549	19.571	Oversupply
2/13/2017 12:45	0:15	AWE	0.250	5.123	Oversupply
2/13/2017 13:06	1:56	KWPII	25.714	19.861	Oversupply
2/13/2017 15:04	0:16	KWPII	0.421	20.241	Oversupply

Maui Curtailment Report



Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
2/14/2017 0:08	5:10	KWPII	57.301	20.546	Oversupply
2/14/2017 5:19	0:05	KWPII	0.072	20.298	Oversupply
2/14/2017 5:34	0:01	KWPII	0.006	20.367	Oversupply
2/14/2017 9:49	0:02	BS250	Data is not available	Data is not available	Oversupply
2/14/2017 9:53	0:04	BS250	Data is not available	Data is not available	Oversupply
2/14/2017 9:54	0:03	KWPII	0.032	19.057	Oversupply
2/14/2017 10:45	0:01	BS250	Data is not available	Data is not available	Oversupply
2/14/2017 11:01	0:06	BS250	Data is not available	Data is not available	Oversupply
2/14/2017 11:01	0:06	KWPII	0.057	20.151	Oversupply
2/14/2017 11:08	0:01	BS250	Data is not available	Data is not available	Oversupply
2/14/2017 11:08	3:26	KWPII	17.341	20.581	Oversupply
2/18/2017 4:05	0:01	AWE	0.000	0.003	Oversupply
2/19/2017 2:47	1:30	KWPII	9.530	17.707	Oversupply
2/19/2017 4:21	2:24	KWPII	17.474	17.714	Oversupply
2/19/2017 11:19	0:02	BS250	Data is not available	Data is not available	Oversupply
2/19/2017 11:22	0:02	BS250	Data is not available	Data is not available	Oversupply
2/19/2017 11:22	0:01	KWPII	0.015	17.714	Oversupply
2/19/2017 11:27	0:22	BS250	Data is not available	Data is not available	Oversupply
2/19/2017 11:29	0:20	KWPII	1.240	17.714	Oversupply
2/19/2017 11:57	0:15	BS250	Data is not available	Data is not available	Oversupply
2/19/2017 11:58	0:11	KWPII	0.634	19.211	Oversupply
2/19/2017 12:16	0:01	BS250	Data is not available	Data is not available	Oversupply
2/19/2017 12:18	0:01	KWPII	0.001	17.714	Oversupply
2/19/2017 12:24	1:26	KWP	13.563	25.787	Oversupply
2/19/2017 12:25	0:02	KWPII	0.010	19.211	Oversupply
2/19/2017 14:27	0:08	KWPII	0.192	4.241	Oversupply
2/19/2017 14:37	0:03	KWPII	0.001	4.241	Oversupply
2/19/2017 14:41	0:04	KWPII	0.001	4.241	Oversupply
2/19/2017 14:52	0:03	KWPII	0.000	4.241	Oversupply
2/19/2017 16:57	0:21	KWPII	0.429	19.211	Oversupply
2/20/2017 2:23	0:02	KWPII	0.008	2.744	Oversupply
2/20/2017 2:27	0:23	AWE	0.818	8.293	Oversupply
2/20/2017 2:40	0:06	KWPII	0.030	1.247	Oversupply
2/20/2017 3:18	0:02	KWPII	0.001	1.247	Oversupply
2/20/2017 9:17	0:09	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 9:26	5:41	KWPII	99.183	20.708	Oversupply
2/20/2017 9:41	0:09	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 10:02	0:01	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 10:05	5:02	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 10:28	0:05	AWE	0.251	13.987	Oversupply
2/20/2017 10:36	0:09	AWE	0.533	12.640	Oversupply
2/20/2017 10:46	0:27	AWE	1.901	8.623	Oversupply
2/20/2017 11:14	3:29	AWE	31.508	17.600	Oversupply
2/20/2017 11:25	0:46	KWP	3.352	24.368	Oversupply
2/20/2017 12:20	0:04	KWP	0.083	24.335	Oversupply
2/20/2017 14:44	0:01	AWE	0.009	16.547	Oversupply
2/20/2017 15:09	0:52	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 15:09	0:52	KWPII	3.945	20.708	Oversupply
2/20/2017 16:03	0:03	KWPII	0.047	20.693	Oversupply
2/20/2017 16:04	0:01	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 16:08	0:04	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 16:07	0:04	KWPII	0.041	20.674	Oversupply
2/20/2017 17:17	0:02	KWPII	0.005	20.702	Oversupply
2/20/2017 17:18	0:01	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:20	0:01	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:22	0:03	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:23	0:03	KWPII	0.025	20.607	Oversupply
2/20/2017 17:34	0:01	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:34	0:01	KWPII	0.004	20.676	Oversupply
2/20/2017 17:38	0:02	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:39	0:01	KWPII	0.009	20.706	Oversupply
2/20/2017 17:43	0:03	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 17:50	0:04	BS250	Data is not available	Data is not available	Oversupply
2/20/2017 22:07	0:15	KWPII	0.418	20.708	Oversupply
2/20/2017 22:39	0:02	KWPII	0.003	20.708	Oversupply
2/20/2017 22:50	0:03	KWPII	0.004	20.708	Oversupply
2/20/2017 22:54	7:49	KWPII	127.588	20.708	Oversupply
2/20/2017 23:47	0:52	AWE	3.469	18.067	Oversupply
2/21/2017 0:40	1:37	AWE	11.946	20.580	Oversupply
2/21/2017 2:18	0:02	AWE	0.032	11.780	Oversupply
2/21/2017 2:21	0:25	AWE	1.567	17.577	Oversupply
2/21/2017 2:49	1:56	AWE	9.176	19.760	Oversupply
2/21/2017 4:46	0:01	AWE	0.011	18.530	Oversupply
2/21/2017 4:46	0:01	AWE	0.005	18.110	Oversupply
2/21/2017 7:28	0:21	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 7:30	0:04	KWPII	0.001	20.708	Oversupply
2/21/2017 7:36	0:13	KWPII	0.436	20.708	Oversupply
2/21/2017 8:45	0:02	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 8:45	0:02	KWPII	0.003	20.708	Oversupply
2/21/2017 8:50	0:05	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 8:50	0:05	KWPII	0.069	20.705	Oversupply
2/21/2017 8:54	0:10	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 8:54	0:11	KWPII	0.118	20.699	Oversupply
2/21/2017 9:30	0:48	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 9:31	0:03	KWPII	0.006	20.708	Oversupply
2/21/2017 9:38	0:42	KWPII	5.164	20.708	Oversupply
2/21/2017 10:05	0:02	AWE	0.035	14.540	Oversupply
2/21/2017 10:20	2:28	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 10:20	2:27	KWPII	43.740	19.211	Oversupply
2/21/2017 10:30	0:04	AWE	0.086	14.757	Oversupply
2/21/2017 10:39	0:01	AWE	0.017	14.440	Oversupply
2/21/2017 10:42	0:04	AWE	0.041	14.453	Oversupply
2/21/2017 10:47	0:02	AWE	0.035	14.717	Oversupply
2/21/2017 10:51	0:03	AWE	0.027	14.400	Oversupply
2/21/2017 10:57	0:18	AWE	0.706	15.830	Oversupply
2/21/2017 11:17	0:03	AWE	0.045	14.440	Oversupply
2/21/2017 11:21	0:02	AWE	0.031	14.663	Oversupply
2/21/2017 11:24	0:09	AWE	0.416	15.137	Oversupply
2/21/2017 11:35	0:01	AWE	0.019	13.567	Oversupply
2/21/2017 11:37	0:02	AWE	0.040	14.323	Oversupply
2/21/2017 11:47	0:07	AWE	0.174	14.647	Oversupply
2/21/2017 12:11	0:01	AWE	0.002	17.590	Oversupply
2/21/2017 12:33	0:02	AWE	0.016	17.617	Oversupply
2/21/2017 12:49	2:59	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 12:49	2:59	KWPII	24.863	19.211	Oversupply
2/21/2017 15:50	0:03	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 15:51	0:01	KWPII	0.009	19.142	Oversupply
2/21/2017 16:00	0:01	BS250	Data is not available	Data is not available	Oversupply



Maui Curtailment Report

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
2/21/2017 16:06	0:01	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 16:08	0:02	KWPII	0.018	20.700	Oversupply
2/21/2017 16:11	0:01	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 16:11	0:01	KWPII	0.001	20.705	Oversupply
2/21/2017 16:13	0:01	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 16:32	0:01	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 16:32	0:01	KWPII	0.001	20.708	Oversupply
2/21/2017 16:34	0:01	BS250	Data is not available	Data is not available	Oversupply
2/21/2017 22:49	6:36	KWPII	113.791	20.708	Oversupply
2/22/2017 2:12	0:16	AWE	0.344	4.300	Oversupply
2/22/2017 2:32	2:38	AWE	25.626	20.060	Oversupply
2/22/2017 5:11	0:01	AWE	0.013	15.893	Oversupply
2/22/2017 5:14	0:02	AWE	0.054	17.337	Oversupply
2/22/2017 5:26	0:38	KWPII	6.525	19.211	Oversupply
2/22/2017 5:28	0:02	AWE	0.007	19.367	Oversupply
2/22/2017 9:01	0:01	KWPII	0.001	20.708	Oversupply
2/22/2017 9:20	2:18	BS250	Data is not available	Data is not available	Oversupply
2/22/2017 9:20	2:19	KWPII	32.762	20.708	Oversupply
2/22/2017 10:23	0:05	AWE	0.108	14.350	Oversupply
2/22/2017 10:31	1:07	AWE	11.194	20.693	Oversupply
2/22/2017 11:34	0:01	KWP	0.000	23.652	Oversupply
2/22/2017 11:39	2:00	KWP	9.268	24.183	Oversupply
2/22/2017 11:40	0:03	KWPII	0.689	19.183	Oversupply
2/22/2017 11:40	3:42	AWE	49.334	21.000	Oversupply
2/22/2017 11:44	3:55	KWPII	74.808	20.670	Oversupply
2/22/2017 13:40	0:10	KWP	0.208	22.255	Oversupply
2/22/2017 15:40	1:31	KWPII	16.522	20.707	Oversupply
2/22/2017 23:00	2:29	KWPII	19.206	20.708	Oversupply
2/23/2017 1:35	4:03	KWPII	41.836	20.708	Oversupply
2/23/2017 8:59	0:01	AWE	0.000	0.003	Oversupply
2/23/2017 9:44	0:01	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 9:44	0:28	KWPII	0.854	20.567	Oversupply
2/23/2017 9:46	0:09	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 9:56	0:05	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:02	0:10	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:14	3:23	KWPII	58.318	20.590	Oversupply
2/23/2017 10:15	0:03	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:19	0:12	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:32	0:02	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:40	0:37	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 10:53	0:07	AWE	0.232	9.543	Oversupply
2/23/2017 11:01	0:02	AWE	0.076	7.753	Oversupply
2/23/2017 11:05	2:14	AWE	11.527	17.430	Oversupply
2/23/2017 11:25	0:01	KWP	0.004	18.243	Oversupply
2/23/2017 11:29	0:28	KWP	1.342	16.902	Oversupply
2/23/2017 13:19	0:07	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 13:21	0:12	AWE	1.220	15.433	Oversupply
2/23/2017 13:33	0:04	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 13:39	0:10	BS250	Data is not available	Data is not available	Oversupply
2/23/2017 13:38	2:08	KWPII	20.485	20.671	Oversupply
2/23/2017 23:15	6:49	KWPII	96.697	20.657	Oversupply
2/24/2017 1:08	1:06	AWE	2.840	8.190	Oversupply
2/24/2017 1:33	0:01	KWP	0.009	23.539	Oversupply
2/24/2017 1:35	0:02	KWP	0.015	23.626	Oversupply
2/24/2017 1:38	0:01	KWP	0.001	23.067	Oversupply
2/24/2017 1:40	0:36	KWP	1.080	24.789	Oversupply
2/24/2017 2:16	0:15	AWE	0.028	0.250	Oversupply
2/24/2017 2:17	0:10	KWP	0.156	23.619	Oversupply
2/24/2017 2:29	0:02	KWP	0.020	22.890	Oversupply
2/24/2017 2:33	0:06	AWE	0.009	0.243	Oversupply
2/24/2017 2:49	0:13	KWP	0.281	23.878	Oversupply
2/24/2017 3:05	0:27	KWP	0.648	23.894	Oversupply
2/24/2017 3:33	0:12	KWP	0.293	24.259	Oversupply
2/24/2017 3:46	0:11	KWP	0.184	23.337	Oversupply
2/24/2017 3:59	0:09	KWP	0.062	23.220	Oversupply
2/24/2017 4:09	0:02	KWP	0.008	22.449	Oversupply
2/24/2017 4:14	0:01	KWP	0.000	23.026	Oversupply
2/24/2017 6:53	0:01	AWE	0.000	0.010	Oversupply
2/24/2017 6:56	0:01	AWE	0.000	0.007	Oversupply
2/24/2017 10:14	3:04	KWPII	40.115	20.396	Oversupply
2/24/2017 11:18	0:05	AWE	0.239	10.050	Oversupply
2/24/2017 11:27	0:57	AWE	6.824	15.480	Oversupply
2/24/2017 12:06	0:01	KWP	0.002	11.218	Oversupply
2/24/2017 12:09	0:01	KWP	0.014	11.855	Oversupply
2/24/2017 12:17	0:02	KWP	0.003	11.126	Oversupply
2/24/2017 12:20	0:01	KWP	0.001	11.044	Oversupply
2/24/2017 12:25	0:12	AWE	0.822	15.803	Oversupply
2/24/2017 13:21	0:01	BS250	Data is not available	Data is not available	Oversupply
2/24/2017 14:00	0:02	BS250	Data is not available	Data is not available	Oversupply
2/24/2017 14:00	0:02	KWPII	0.018	7.283	Oversupply
2/25/2017 3:38	0:01	AWE	0.000	0.007	Oversupply
2/25/2017 3:45	0:01	AWE	0.000	0.003	Oversupply
2/26/2017 21:10	0:01	KWP	0.000	0.004	Oversupply
2/27/2017 2:18	0:14	KWPII	1.088	14.586	Oversupply
2/27/2017 2:31	2:50	KWPII	30.233	16.213	Oversupply
2/27/2017 11:22	0:02	BS250	Data is not available	Data is not available	Oversupply
2/27/2017 11:22	0:01	KWP	0.000	0.003	Oversupply
2/27/2017 11:22	0:02	AWE	0.058	17.030	Oversupply
2/27/2017 23:13	0:06	KWPII	0.188	14.498	Oversupply
2/28/2017 0:03	0:02	KWPII	0.035	17.029	Oversupply
2/28/2017 0:11	0:02	KWPII	0.038	16.281	Oversupply
2/28/2017 4:51	1:08	KWPII	14.044	16.619	Oversupply
2/28/2017 4:52	1:01	AWE	5.733	21.000	Oversupply
2/28/2017 6:01	0:03	AWE	0.044	20.727	Oversupply
2/28/2017 6:01	0:02	KWPII	0.175	13.070	Oversupply
2/28/2017 8:32	0:03	BS250	Data is not available	Data is not available	Oversupply
2/28/2017 8:34	0:01	KWPII	0.001	16.888	Oversupply
2/28/2017 16:11	0:01	KWP	0.000	0.001	Oversupply

Notes:

- Curtailment for Kaheawa Wind Power ("KWP"), Makila Hydroelectric ("MH"), AAAAA Rent-A-Space Maui LTD ("SA"), Bioreal Solar, LLC ("BS"), Auwahi Wind Energy ("AWE"), Kaheawa Wind Power II ("KWPII") Bioreal Solar 250, LLC ("BS250") may now be controlled by Maui Electric's Automatic Generation Control System ("AGC") or a Maui Electric operator-entered curtailment limit. The AGC curtailment control automatically calculates the amount of Maximum Allowable Variable Generation ("MAVG") that Maui Electric can accept into the Maui system, based on the system current available variable generation ("CAVG"), regulating reserve down requirement ("RRDR"), and available regulating reserve down ("ARRD"). Thus, the AGC MAVG - calculated is equal to CAVG less (RRDR less ARRD). Additionally, the AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control will employ the lesser of the AGC MAVG - calculated and AGC MAVG - entered values in the control logic.
- The Estimated Curtailed MWH and Peak MW Curtailed are calculated with information provided by AWE, KWP, and KWPII. Maui Electric does not make any representation as to its accuracy.
- The data to calculate the Estimated Curtailed MWH and Peak MW Curtailed is not provided by SA, BS, BS 250 or MH.
- Curtailment signals sent to SA, 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

February 2017

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
2/8/2017 13:06	0:01	LSR	Data is not available	Data is not available	Oversupply
2/8/2017 13:09	0:01	LSR	Data is not available	Data is not available	Oversupply
2/8/2017 14:09	0:02	LSR	Data is not available	Data is not available	Oversupply
2/8/2017 14:12	0:13	LSR	Data is not available	Data is not available	Oversupply
2/9/2017 9:00	0:01	LSR	Data is not available	Data is not available	Oversupply
2/15/2017 17:02	0:05	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 14:49	0:02	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:00	0:03	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:04	0:01	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:12	0:01	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:16	0:02	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:19	0:04	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 15:26	0:07	LSR	Data is not available	Data is not available	Oversupply
2/18/2017 16:19	0:04	LSR	Data is not available	Data is not available	Oversupply
2/19/2017 9:31	1:14	LSR	Data is not available	Data is not available	Oversupply
2/20/2017 10:48	0:05	LSR	Data is not available	Data is not available	Oversupply
2/21/2017 16:35	0:02	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 February 2017

Start Date/Time	MW Output Prior to Start of Curtailment	End Date/Time	MW Output After Curtailment Released ¹	IPP	Reason for Curtailment
02/09/17 09:22	1.0 MW	02/09/17 13:36	0.1 MW	TGUHI1	System constraint
02/20/17 12:28	19.8 MW	02/21/17 15:11	17.8 MW	Tawhiri	Facility requested
02/24/17 10:56	0.6 MW	02/24/17 14:56	0.0 MW	TGUHI1	Oversupply
02/24/17 11:41	0.2 MW	02/24/17 14:46	0.0 MW	WHCC	
02/24/17 11:51	19.8 MW	02/24/17 14:24	18.0 MW	Tawhiri	

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

SERVICE LIST
(Docket No. 2011-0206)

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

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

1 Copy
Electronically Transmitted

KENT D. MORIHARA, ESQ.
KRIS N. NAKAGAWA, ESQ.
LAUREN M. IMADA-LEE, ESQ.
TANYA M. FERNANDES, ESQ.
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
4188-4 Keanu Street
Honolulu, HI 96816

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

SERVICE LIST
(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
SHUTE, MIHALY & WEINBERGER LLP
396 Hayes Street
San Francisco, CA 94102
For the INTERSTATE RENEWABLE ENERGY COUNCIL

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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