



October 24, 2018

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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'<sup>1</sup> monthly report for September 2018 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

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

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

Sincerely,

Kevin M. Katsura  
Director  
Regulatory Non-Rate Proceedings

Enclosure

c: Service List

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<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, 2018):

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

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

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

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

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

The following provides information with respect to items 2a) through 2c) – (all statements are current as of the month ending September 30, 2018):

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

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

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

Maui Electric's and Hawai'i Electric Light's under frequency load shed activations are provided in Attachment 4. Hawaiian Electric did not have any under frequency load shed activations for the month of 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's demand response activations for system events are provided in Attachment 5. Hawai'i Electric Light currently does not have a demand response program. Maui Electric has implemented the Fast Demand Response pilot program on a limited basis. Hawai'i Electric Light plans to use the findings of Maui Electric's pilot program to help in the evaluation and development of future demand response programs. Maui Electric executes a weekly testing protocol which measures customer participation. This program is not currently used in response to actual system events.

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

The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending September 30, 2018):

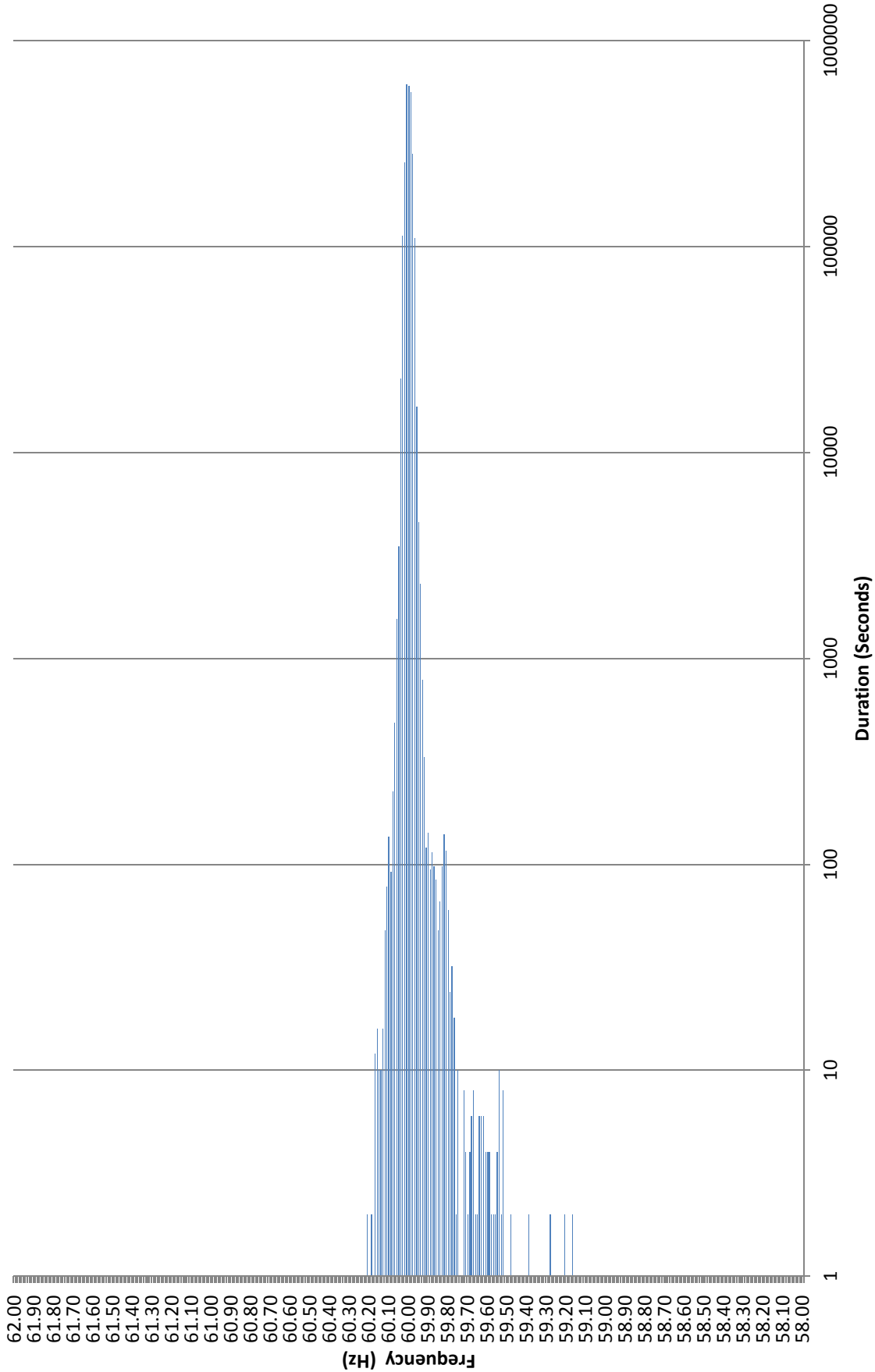
**3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:**

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

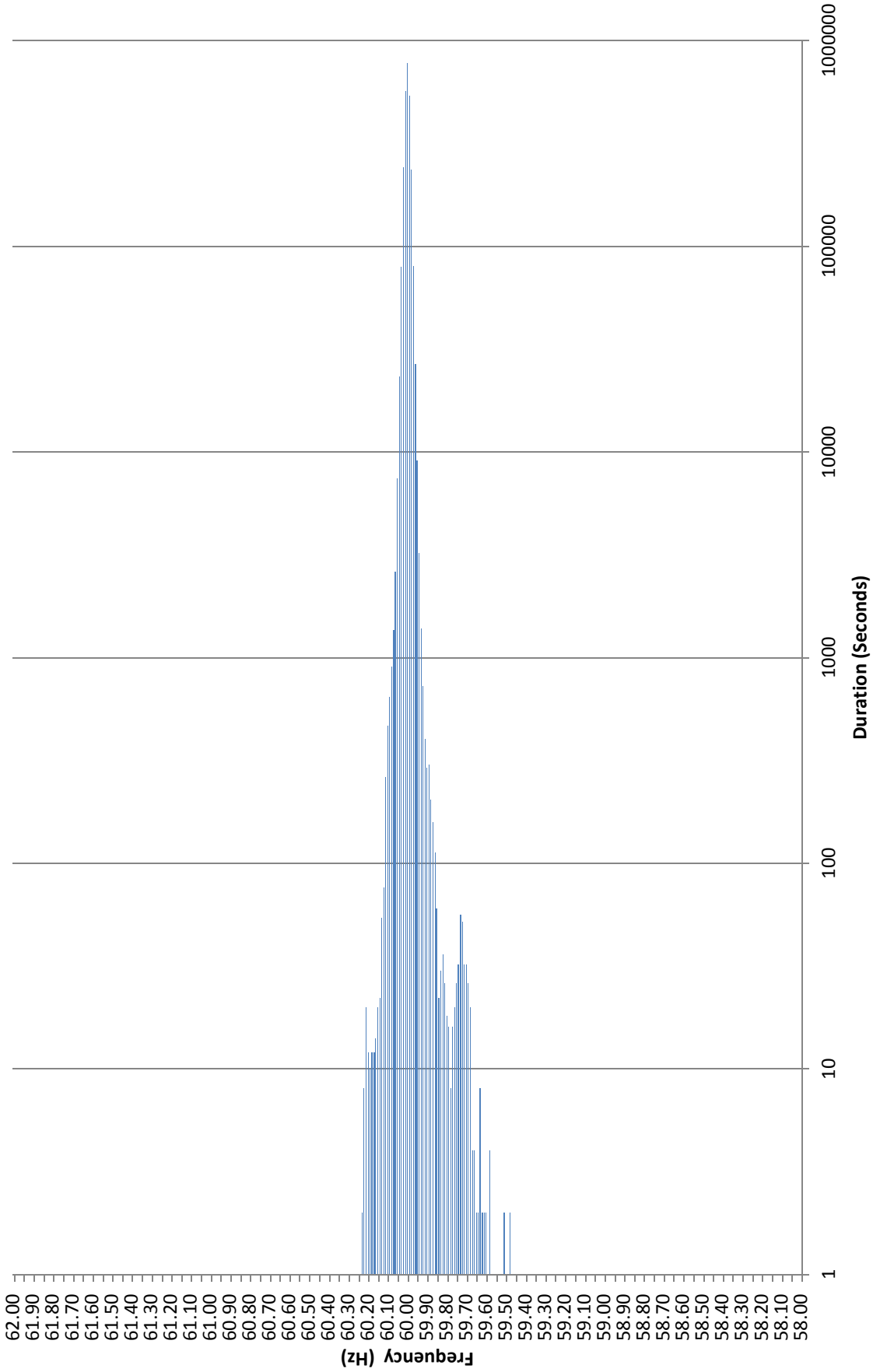
**3b) Total MWh of non-dispatchable renewable resources curtailed for the month:**

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

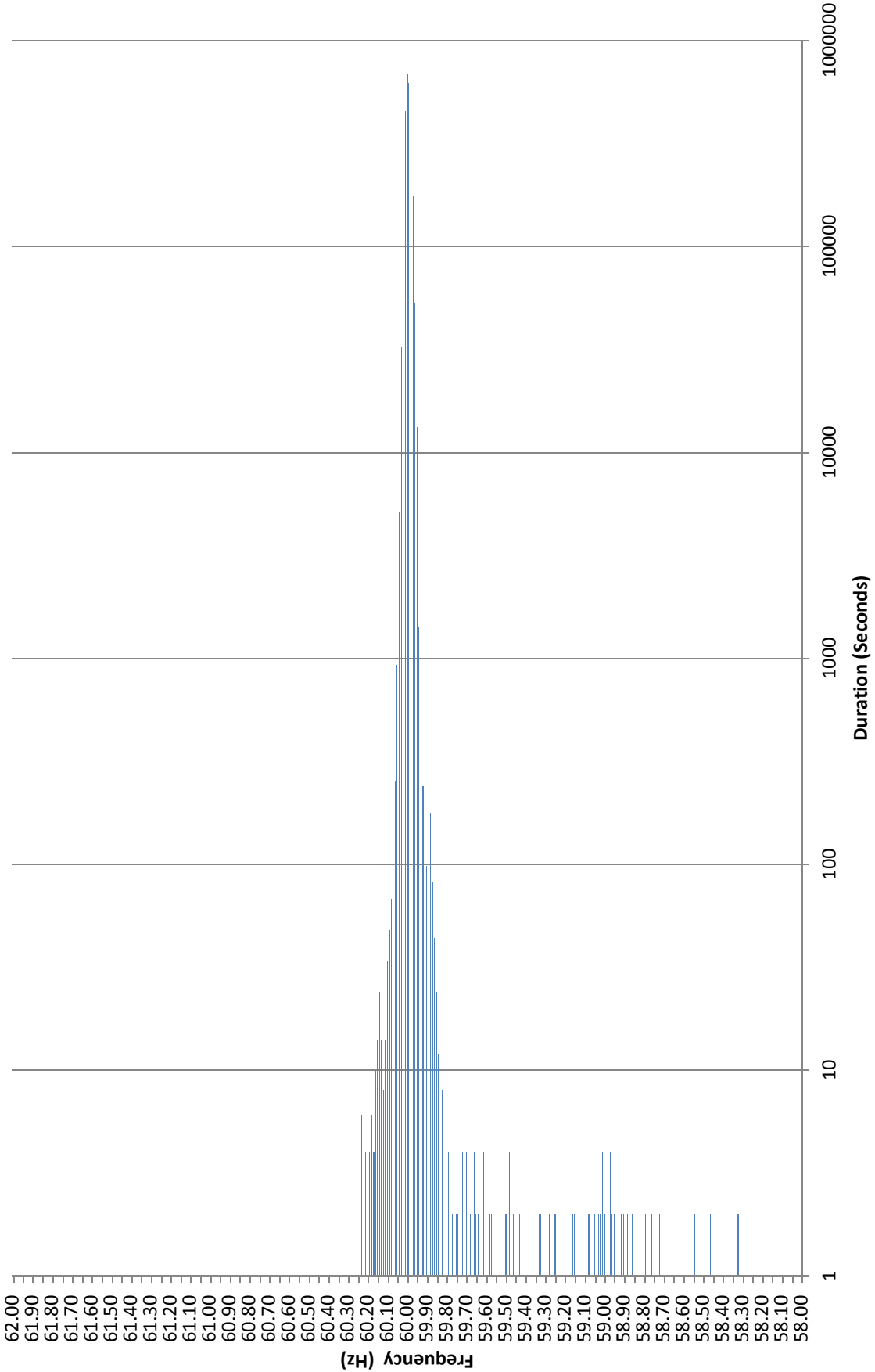
# Frequency Distribution Plot - Hawaiian Electric September 2018



# Frequency Distribution Plot - Maui Electric September 2018



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



Hawaiian Electric Frequency Excursion Statistics September 2018		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	380	226
Maximum Duration (sec)	492	380
Maximum Deviation (Hz)	59.17	60.208
Total Duration of Excursions (sec)	6324	3780

Maui Electric Frequency Excursion Statistics September 2018		
	<59.95 Hz	>60.05 Hz
Number of Excursions	1998	1400
Maximum Duration (sec)	400	496
Maximum Deviation (Hz)	59.483	60.229
Total Duration of Excursions (sec)	10694	9132



Hawai'i Electric Light Frequency Excursion Statistics September 2018		
	<59.95 Hz	>60.05 Hz
Number of Excursions	1564	169
Maximum Duration (sec)	806	150
Maximum Deviation (Hz)	58.289	60.292
Total Duration of Excursions (sec)	8448	890

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

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	9/8/2018 1:45	60.00	59.17	NA	-40	2:00	Kahe 5 tripped offline while generating ~94MW.



**HAWAII ELECTRIC LIGHT COMPANY, INC.  
UNDERFREQUENCY LOAD SHEDDING EVENTS  
SEPTEMBER 2018**

Event #	Date	Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
			Prior to Event	Nadir	Level UFLS Occurred			
1	9/2/2018	5:47	59.9988	58.29	59.30 (K), 59.10, 58.80, 58.50, 58.20	40.92	1:03	Hamakua Energy Partner CT2 tripped offline unexpectedly while generating 19.7MW. Keahole CT-5 was generating 20.0MW when it automatically responded to the sudden frequency change and reached 22.7 MW before tripping offline as it exceeded its temperature limit.
2	9/6/2018	19:43	59.9988	58.75	59.50 (K), 59.30 (K), 59.10, 58.80	48.95	0:41	Hill 5 tripped offline unexpectedly while generating 12.1 MW. Keahole CT-5 was generating 19.3MW when it automatically responded to the sudden frequency change and reached 22.1 MW before tripping offline as it exceeded its temperature limit.

Note: (K) indicates "Kicker" (long time delay) stage operation.  
59.50 Hz at 20-seconds  
59.30 Hz at 10-seconds

HAWAIIAN ELECTRIC COMPANY, INC.  
 DEMAND RESPONSE EVENTS  
 September 2018

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	9/8/2018 1:45	60.00	59.17	59.70	NA	0:03	Kahe 5 tripped while generating ~94MW. RDLC/CIDLC activated.

Hawaiian Electric Curtailment Report September 2018

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
09/01/18 07:37	0.0	2.70	09/01/18 08:41	0	*	KLS2	System Constraints
09/07/18 07:00	0.0	0.02	09/07/18 07:50	0	*	KREP	System Constraints
09/07/18 16:52	0.0	0.50	09/07/18 17:12	0	*	KREP	System Constraints
09/14/18 07:14	0.0	4.00	09/14/18 14:58	0	*	Waianae	System Constraints
09/14/18 07:16	0.0	0.00	09/14/18 08:20	0	*	Aloha	System Constraints
09/14/18 14:14	0.0	4.50	09/14/18 15:09	0	*	Aloha	System Constraints
09/15/18 08:30	0.0	0.00	09/15/18 10:00	0	*	North	System Constraints
09/15/18 08:30	0.0	0.00	09/15/18 10:01	0	*	South	System Constraints
09/15/18 15:15	0.0	1.80	09/15/18 16:22	0	*	North	System Constraints
09/15/18 15:16	0.0	0.50	09/15/18 16:23	0	*	South	System Constraints
09/16/18 07:22	0.0	5.90	09/16/18 16:17	0	*	Waianae	System Constraints
09/16/18 07:22	0.0	0.60	09/16/18 07:29	0	*	Aloha	System Constraints
09/16/18 15:18	0.0	3.70	09/16/18 16:19	0	*	Aloha	System Constraints
09/18/18 16:26	0.0	3.37	09/19/18 18:53	0	*	KLS2	Facility Requested Curtailment & System Constraints
09/19/18 06:43	0.0	0.20	09/19/18 08:53	0	*	KREP	System Constraints
09/19/18 16:46	0.0	1.50	09/19/18 17:59	0	*	KREP	System Constraints
09/20/18 18:51	0.0	0.00	09/21/18 05:49	0	*	KLS2	System Constraints
09/20/18 18:52	0.0	0.00	09/20/18 19:30	0	*	KREP	System Constraints
09/21/18 02:34	0.0	0.00	09/21/18 03:31	0	*	KREP	System Constraints
09/22/18 06:28	0.0	0.00	09/22/18 06:53	0	*	KREP	System Constraints
09/22/18 15:00	0.0	1.70	09/22/18 15:04	0	*	KREP	System Constraints
09/25/18 07:34	0.0	1.60	09/25/18 18:02	0	*	KWF	System Constraints
09/25/18 07:39	0.0	0.00	09/25/18 18:25	0	*	Makai	System Constraints
09/25/18 07:39	0.0	0.30	09/25/18 07:57	0	*	Mauka	System Constraints
09/25/18 17:01	0.0	5.00	09/25/18 18:25	0	*	Mauka	System Constraints
09/26/18 07:09	0.0	0.00	09/26/18 19:37	0	*	KWF	System Constraints
09/26/18 07:13	0.0	1.40	09/26/18 18:04	0	*	Makai	System Constraints
09/26/18 07:13	0.0	2.90	09/26/18 07:32	0	*	Mauka	System Constraints
09/26/18 16:30	0.0	3.00	09/26/18 18:04	0	*	Mauka	System Constraints
09/27/18 07:38	0.0	0.00	09/27/18 07:56	0	*	KWF	System Constraints
09/27/18 07:40	0.0	0.00	09/27/18 07:54	0	*	Makai	System Constraints
09/27/18 07:40	0.0	0.00	09/27/18 17:57	0	*	Mauka	System Constraints
09/27/18 16:57	0.0	0.00	09/27/18 17:53	0	*	KWF	System Constraints
09/27/18 17:00	0.0	0.00	09/27/18 17:44	0	*	Makai	System Constraints
09/27/18 18:41	0.0	0.00	09/28/18 07:13	0	*	Makai	System Constraints
09/28/18 08:02	0.0	0.00	09/28/18 12:07	0	*	KWF	Facility Requested Curtailment
09/28/18 12:07	10.0	0.00	09/28/18 13:08	0	*	KWF	Facility Requested Curtailment

Aloha1 = Aloha Solar 1 PV Farm  
KLS2 = Kalaehoa Solar 2 PV Farm  
KREP = Kalaehoa 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**

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/1/2018 0:01	0:04	KWP	0.046	18.080	Oversupply
9/1/2018 5:51	0:17	KWP	0.485	18.621	Oversupply
9/1/2018 6:09	0:34	KWP	1.272	18.814	Oversupply
9/1/2018 6:10	0:32	SMRR	0.027	-0.007	Oversupply
9/1/2018 6:56	0:01	SMRR	0.002	0.189	Oversupply
9/1/2018 7:13	0:04	SMRR	0.024	0.073	Oversupply
9/1/2018 7:14	0:04	KWP	0.035	16.995	Oversupply
9/1/2018 7:17	0:01	SMRR	0.007	-0.002	Oversupply
9/1/2018 7:18	0:01	SMRR	0.007	-0.002	Oversupply
9/1/2018 7:20	0:08	SMRR	0.068	0.002	Oversupply
9/1/2018 7:21	0:08	KWP	0.117	18.372	Oversupply
9/1/2018 7:32	0:01	SMRR	0.009	0.485	Oversupply
9/1/2018 7:32	0:41	SMRR	0.667	0.022	Oversupply
9/1/2018 7:33	0:47	KWP	2.093	19.682	Oversupply
9/1/2018 7:48	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 8:14	0:05	SMRR	0.121	0.000	Oversupply
9/1/2018 8:19	0:01	SMRR	0.018	-0.002	Oversupply
9/1/2018 8:20	5:27	SMRR	14.052	0.005	Oversupply
9/1/2018 8:21	5:27	KWP	85.193	20.679	Oversupply
9/1/2018 10:28	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:28	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:30	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:30	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:32	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:32	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:35	0:02	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:35	0:02	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:40	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:40	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:42	0:04	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:42	0:04	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:46	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 10:51	0:11	5A	Data is not available	Data is not available	Oversupply
9/1/2018 10:51	0:11	BS	Data is not available	Data is not available	Oversupply
9/1/2018 10:52	0:01	KWP	0.000	13.903	Oversupply
9/1/2018 10:54	0:02	AWE	0.002	0.100	Oversupply
9/1/2018 10:58	0:03	KWP	0.032	14.237	Oversupply
9/1/2018 10:59	0:01	AWE	0.002	0.200	Oversupply
9/1/2018 11:02	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 11:02	0:02	KWP	0.113	17.883	Oversupply
9/1/2018 11:05	0:03	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:05	0:03	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:05	0:04	AWE	0.007	0.400	Oversupply
9/1/2018 11:07	0:01	KWP	0.004	13.681	Oversupply
9/1/2018 11:09	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:09	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:09	0:07	KWP	0.366	17.572	Oversupply
9/1/2018 11:11	0:07	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:11	0:07	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:15	0:11	AWE	0.037	0.300	Oversupply
9/1/2018 11:17	0:02	KWP	0.247	18.483	Oversupply
9/1/2018 11:20	0:02	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:20	0:02	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:21	0:01	KWP	0.046	15.311	Oversupply
9/1/2018 11:23	0:12	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:23	0:12	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:23	0:07	KWP	0.484	15.912	Oversupply
9/1/2018 11:27	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 11:31	0:05	AWE	0.010	0.200	Oversupply
9/1/2018 11:31	0:08	KWP	0.850	18.120	Oversupply
9/1/2018 11:36	0:07	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:36	0:07	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:40	0:01	KWP	0.110	17.787	Oversupply
9/1/2018 11:43	0:07	KWP	0.874	20.603	Oversupply
9/1/2018 11:44	0:05	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:44	0:05	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:46	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 11:50	0:28	5A	Data is not available	Data is not available	Oversupply
9/1/2018 11:50	0:28	BS	Data is not available	Data is not available	Oversupply
9/1/2018 11:50	0:01	AWE	0.002	0.100	Oversupply
9/1/2018 11:51	0:02	KWP	0.269	18.980	Oversupply
9/1/2018 11:53	0:02	AWE	0.007	0.200	Oversupply
9/1/2018 11:56	0:02	KWP	0.243	19.298	Oversupply
9/1/2018 11:59	0:03	AWE	0.010	0.300	Oversupply
9/1/2018 11:59	0:04	KWP	0.476	17.446	Oversupply
9/1/2018 12:04	0:02	KWP	0.243	17.357	Oversupply
9/1/2018 12:07	0:02	KWP	0.241	18.328	Oversupply
9/1/2018 12:08	0:03	AWE	0.005	0.100	Oversupply
9/1/2018 12:10	0:02	KWP	0.264	17.838	Oversupply
9/1/2018 12:12	0:04	AWE	0.007	0.100	Oversupply
9/1/2018 12:13	0:01	KWP	0.146	18.898	Oversupply
9/1/2018 12:15	0:07	KWP	0.844	18.661	Oversupply
9/1/2018 12:20	0:08	5A	Data is not available	Data is not available	Oversupply



**Maui Curtailment Report**

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/1/2018 12:20	0:08	BS	Data is not available	Data is not available	Oversupply
9/1/2018 12:23	0:01	KWP	0.154	18.468	Oversupply
9/1/2018 12:25	0:04	AWE	0.012	0.200	Oversupply
9/1/2018 12:25	0:02	KWP	0.389	20.655	Oversupply
9/1/2018 12:29	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 12:29	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 12:30	0:02	AWE	0.003	0.100	Oversupply
9/1/2018 12:32	0:27	5A	Data is not available	Data is not available	Oversupply
9/1/2018 12:32	0:27	BS	Data is not available	Data is not available	Oversupply
9/1/2018 12:33	0:10	KWP	1.338	19.284	Oversupply
9/1/2018 12:36	0:01	AWE	0.003	0.200	Oversupply
9/1/2018 12:44	0:03	KWP	0.390	18.683	Oversupply
9/1/2018 12:48	0:05	KWP	0.472	15.919	Oversupply
9/1/2018 12:54	0:02	KWP	0.169	15.348	Oversupply
9/1/2018 12:57	0:05	KWP	0.320	15.348	Oversupply
9/1/2018 13:00	0:06	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:00	0:06	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:03	0:03	KWP	0.125	14.266	Oversupply
9/1/2018 13:07	0:06	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:07	0:06	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:07	0:02	KWP	0.159	16.771	Oversupply
9/1/2018 13:10	0:01	KWP	0.041	13.547	Oversupply
9/1/2018 13:12	0:01	KWP	0.075	15.823	Oversupply
9/1/2018 13:14	0:03	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:14	0:03	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:17	0:04	KWP	0.164	16.364	Oversupply
9/1/2018 13:18	0:10	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:18	0:10	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:23	0:01	KWP	0.076	17.964	Oversupply
9/1/2018 13:26	0:05	KWP	0.227	17.809	Oversupply
9/1/2018 13:29	0:04	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:29	0:04	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:32	0:02	KWP	0.046	17.609	Oversupply
9/1/2018 13:34	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:34	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:39	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:39	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:42	0:01	5A	Data is not available	Data is not available	Oversupply
9/1/2018 13:42	0:01	BS	Data is not available	Data is not available	Oversupply
9/1/2018 13:47	0:01	SMRR	0.036	0.048	Oversupply
9/1/2018 13:48	0:01	SMRR	0.036	0.284	Oversupply
9/1/2018 13:49	0:09	SMRR	0.425	0.413	Oversupply
9/1/2018 13:51	0:08	KWP/II	0.587	12.727	Oversupply
9/1/2018 13:58	0:01	SMRR	0.036	0.162	Oversupply
9/1/2018 13:59	1:21	SMRR	3.563	0.389	Oversupply
9/1/2018 14:00	1:21	KWP/II	5.963	13.551	Oversupply
9/1/2018 15:23	0:01	SMRR	0.018	1.697	Oversupply
9/1/2018 15:25	0:01	SMRR	0.019	1.710	Oversupply
9/1/2018 15:26	0:01	SMRR	0.019	1.603	Oversupply
9/1/2018 15:26	0:01	SMRR	0.019	1.547	Oversupply
9/1/2018 15:27	0:01	SMRR	0.019	1.540	Oversupply
9/1/2018 15:28	0:01	SMRR	0.018	1.525	Oversupply
9/1/2018 15:29	0:01	SMRR	0.019	1.410	Oversupply
9/1/2018 17:46	0:25	SMRR	0.158	0.446	Oversupply
9/1/2018 17:47	0:15	KWP/II	0.442	7.780	Oversupply
9/1/2018 18:03	0:09	KWP/II	0.212	7.229	Oversupply
9/3/2018 12:51	0:01	SMRR	0.022	1.998	Oversupply
9/3/2018 12:51	0:01	SMRR	0.022	0.722	Oversupply
9/3/2018 12:52	0:32	SMRR	1.354	0.021	Oversupply
9/3/2018 12:53	0:20	KWP/II	0.106	1.079	Oversupply
9/3/2018 12:53	0:33	AWE	2.020	20.600	Oversupply
9/3/2018 13:24	0:01	SMRR	0.034	0.029	Oversupply
9/3/2018 13:25	0:01	KWP/II	0.004	0.224	Oversupply
9/3/2018 13:25	0:01	SMRR	0.034	0.163	Oversupply
9/3/2018 13:26	0:01	SMRR	0.033	0.599	Oversupply
9/3/2018 22:14	0:08	KWP/II	0.204	20.577	Oversupply
9/3/2018 23:25	0:02	KWP/II	0.022	18.292	Oversupply
9/4/2018 0:11	0:19	KWP/II	0.756	20.476	Oversupply
9/4/2018 1:20	0:18	KWP/II	0.835	20.453	Oversupply
9/4/2018 1:41	0:10	KWP/II	0.152	19.790	Oversupply
9/4/2018 2:01	0:39	KWP/II	1.641	20.566	Oversupply
9/4/2018 4:07	0:02	KWP/II	0.018	20.360	Oversupply
9/4/2018 4:20	0:03	KWP/II	0.027	20.520	Oversupply
9/4/2018 4:25	0:03	KWP/II	0.039	20.276	Oversupply
9/4/2018 4:29	0:18	KWP/II	0.543	20.686	Oversupply
9/4/2018 4:53	0:03	KWP/II	0.034	20.697	Oversupply
9/4/2018 5:24	0:07	KWP/II	0.161	20.708	Oversupply
9/4/2018 7:28	0:10	SMRR	0.048	0.019	Oversupply
9/4/2018 7:30	0:09	KWP/II	0.103	20.708	Oversupply
9/4/2018 8:25	0:01	SMRR	0.002	1.035	Oversupply
9/4/2018 8:26	0:01	SMRR	0.002	1.103	Oversupply
9/4/2018 8:38	0:01	SMRR	0.004	0.944	Oversupply
9/4/2018 8:39	0:01	SMRR	0.004	1.146	Oversupply





**Maui Curtailment Report**

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/4/2018 9:31	0:01	SMRR	-0.001	2.141	Oversupply
9/4/2018 9:32	0:01	SMRR	-0.001	1.707	Oversupply
9/4/2018 9:32	0:01	SMRR	-0.001	1.557	Oversupply
9/4/2018 11:49	0:01	SMRR	0.021	2.668	Oversupply
9/4/2018 11:50	0:02	SMRR	0.043	1.619	Oversupply
9/4/2018 11:51	0:01	KWPPI	0.004	20.269	Oversupply
9/4/2018 11:51	0:01	SMRR	0.022	0.135	Oversupply
9/4/2018 11:52	0:01	SMRR	0.022	0.208	Oversupply
9/4/2018 11:53	0:08	KWPPI	0.116	20.372	Oversupply
9/4/2018 11:53	0:07	SMRR	0.192	0.028	Oversupply
9/4/2018 12:00	0:01	SMRR	0.008	0.305	Oversupply
9/4/2018 12:01	0:01	SMRR	0.008	0.764	Oversupply
9/4/2018 12:10	0:01	SMRR	0.008	2.641	Oversupply
9/4/2018 17:02	0:24	KWPPI	1.516	20.708	Oversupply
9/5/2018 10:39	0:01	SMRR	0.001	1.201	Oversupply
9/5/2018 10:40	0:02	SMRR	0.002	1.660	Oversupply
9/5/2018 10:41	0:01	SMRR	0.001	1.474	Oversupply
9/5/2018 10:42	0:01	KWPPI	0.005	20.708	Oversupply
9/5/2018 10:42	0:01	SMRR	0.001	2.221	Oversupply
9/5/2018 10:43	0:01	SMRR	0.001	1.732	Oversupply
9/5/2018 10:44	0:01	SMRR	0.001	2.049	Oversupply
9/5/2018 10:44	0:01	SMRR	-0.013	2.795	Oversupply
9/5/2018 10:45	0:01	SMRR	0.003	2.774	Oversupply
9/5/2018 10:46	0:01	SMRR	0.003	2.729	Oversupply
9/5/2018 10:47	0:01	SMRR	0.003	2.588	Oversupply
9/5/2018 10:47	0:04	SMRR	0.012	1.300	Oversupply
9/5/2018 10:50	0:03	KWPPI	0.018	20.708	Oversupply
9/5/2018 10:51	0:01	SMRR	0.003	1.361	Oversupply
9/5/2018 10:52	0:01	SMRR	0.003	2.156	Oversupply
9/5/2018 10:53	0:01	SMRR	0.002	2.222	Oversupply
9/5/2018 10:54	0:01	SMRR	0.003	2.205	Oversupply
9/5/2018 10:54	0:01	SMRR	0.003	2.556	Oversupply
9/5/2018 10:55	0:01	SMRR	0.003	2.300	Oversupply
9/5/2018 10:56	0:01	SMRR	0.003	2.502	Oversupply
9/5/2018 11:04	0:10	KWPPI	0.321	20.708	Oversupply
9/5/2018 11:28	0:05	KWPPI	0.046	20.708	Oversupply
9/5/2018 11:36	0:01	SMRR	0.005	1.650	Oversupply
9/5/2018 11:37	0:02	KWPPI	0.012	20.708	Oversupply
9/5/2018 11:37	0:02	SMRR	0.009	1.831	Oversupply
9/5/2018 11:39	0:01	SMRR	0.005	2.266	Oversupply
9/5/2018 11:39	0:01	SMRR	0.005	2.041	Oversupply
9/5/2018 11:40	0:01	KWPPI	0.005	20.708	Oversupply
9/5/2018 11:40	0:01	SMRR	0.005	1.992	Oversupply
9/5/2018 11:41	0:01	SMRR	0.005	2.208	Oversupply
9/5/2018 11:43	0:01	SMRR	0.005	2.634	Oversupply
9/5/2018 11:44	0:01	SMRR	0.001	2.793	Oversupply
9/5/2018 11:45	0:01	SMRR	0.002	2.752	Oversupply
9/5/2018 11:47	0:01	SMRR	0.002	2.782	Oversupply
9/5/2018 11:48	0:01	SMRR	0.002	2.769	Oversupply
9/5/2018 11:49	0:01	SMRR	0.002	2.741	Oversupply
9/5/2018 11:52	0:01	SMRR	0.002	2.790	Oversupply
9/5/2018 11:53	0:01	SMRR	0.002	2.759	Oversupply
9/5/2018 11:56	0:01	SMRR	0.002	2.781	Oversupply
9/5/2018 12:05	0:01	SMRR	0.004	2.792	Oversupply
9/5/2018 12:05	0:01	SMRR	0.004	2.778	Oversupply
9/5/2018 12:06	0:01	SMRR	0.004	2.803	Oversupply
9/5/2018 12:24	0:01	SMRR	0.005	2.769	Oversupply
9/5/2018 12:25	0:01	SMRR	0.005	2.746	Oversupply
9/5/2018 12:26	0:01	SMRR	0.005	2.756	Oversupply
9/5/2018 12:27	0:01	SMRR	0.005	2.752	Oversupply
9/5/2018 12:27	0:01	SMRR	0.005	2.794	Oversupply
9/5/2018 12:28	0:03	SMRR	0.017	2.796	Oversupply
9/5/2018 12:30	0:02	KWPPI	0.010	20.708	Oversupply
9/5/2018 12:31	0:01	SMRR	0.004	2.784	Oversupply
9/5/2018 12:33	0:01	SMRR	0.004	2.783	Oversupply
9/5/2018 12:34	0:01	SMRR	0.004	1.855	Oversupply
9/5/2018 12:34	0:02	SMRR	0.008	2.219	Oversupply
9/5/2018 12:35	0:02	KWPPI	0.007	20.704	Oversupply
9/5/2018 12:36	0:01	SMRR	0.004	2.772	Oversupply
9/5/2018 12:37	0:01	SMRR	0.004	2.747	Oversupply
9/5/2018 12:37	0:01	SMRR	0.004	2.745	Oversupply
9/5/2018 12:38	0:01	SMRR	0.004	2.762	Oversupply
9/5/2018 12:40	0:01	SMRR	0.004	2.749	Oversupply
9/6/2018 6:42	0:01	SMRR	0.000	0.089	Oversupply
9/6/2018 9:27	0:01	AWE	0.002	0.100	Oversupply
9/6/2018 10:45	0:13	SMRR	0.521	2.806	Oversupply
9/6/2018 10:47	0:12	KWPPI	0.745	20.278	Oversupply
9/6/2018 10:58	0:01	SMRR	0.031	0.105	Oversupply
9/6/2018 10:59	0:01	SMRR	0.024	0.565	Oversupply
9/6/2018 11:00	0:01	SMRR	0.019	1.175	Oversupply
9/6/2018 11:01	0:01	SMRR	0.019	1.368	Oversupply
9/6/2018 11:01	0:01	SMRR	0.019	1.852	Oversupply
9/6/2018 11:04	0:01	SMRR	0.019	2.873	Oversupply



Maui Curtailment Report

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/6/2018 11:07	0:01	SMRR	0.019	2.140	Oversupply
9/6/2018 11:08	0:01	SMRR	0.019	1.377	Oversupply
9/6/2018 11:08	0:02	SMRR	0.039	0.131	Oversupply
9/6/2018 11:09	0:02	KVPPI	0.007	20.399	Oversupply
9/6/2018 11:10	0:01	SMRR	0.019	0.307	Oversupply
9/6/2018 11:11	0:01	SMRR	0.019	0.468	Oversupply
9/6/2018 11:11	0:10	SMRR	0.262	0.263	Oversupply
9/6/2018 11:12	0:11	KVPPI	0.154	20.503	Oversupply
9/6/2018 11:21	0:01	SMRR	0.021	0.035	Oversupply
9/6/2018 11:22	0:01	SMRR	0.021	0.795	Oversupply
9/7/2018 11:24	0:01	SMRR	0.004	3.108	Oversupply
9/7/2018 11:55	0:01	AWE	0.002	0.100	System constraint
9/7/2018 13:39	0:01	SMRR	0.006	2.705	Oversupply
9/7/2018 13:39	0:01	SMRR	0.006	2.287	Oversupply
9/7/2018 13:40	0:01	SMRR	0.006	1.165	Oversupply
9/7/2018 13:41	0:01	SMRR	0.006	1.536	Oversupply
9/7/2018 13:42	0:01	SMRR	0.006	2.049	Oversupply
9/7/2018 13:42	0:01	SMRR	0.006	2.221	Oversupply
9/7/2018 13:43	0:01	SMRR	0.006	2.294	Oversupply
9/9/2018 11:39	0:01	SMRR	0.002	2.056	Oversupply
9/9/2018 11:46	0:01	SMRR	0.008	2.816	Oversupply
9/9/2018 11:48	0:01	SMRR	0.008	2.563	Oversupply
9/9/2018 11:49	0:01	SMRR	0.008	2.579	Oversupply
9/9/2018 11:51	0:01	SMRR	0.008	2.408	Oversupply
9/9/2018 11:51	0:01	SMRR	0.008	2.014	Oversupply
9/9/2018 11:52	0:01	SMRR	0.008	1.971	Oversupply
9/9/2018 11:53	0:02	SMRR	0.016	1.482	Oversupply
9/9/2018 11:54	0:01	SMRR	0.008	2.566	Oversupply
9/9/2018 11:55	0:01	SMRR	0.008	1.988	Oversupply
9/9/2018 11:58	0:01	SMRR	0.008	1.874	Oversupply
9/9/2018 11:59	0:01	SMRR	0.006	1.100	Oversupply
9/9/2018 12:00	0:01	SMRR	0.003	1.012	Oversupply
9/9/2018 12:00	0:01	SMRR	0.003	1.876	Oversupply
9/9/2018 12:01	0:01	SMRR	0.003	1.323	Oversupply
9/9/2018 12:02	0:01	SMRR	0.003	2.178	Oversupply
9/9/2018 12:20	0:01	SMRR	0.002	2.671	Oversupply
9/9/2018 12:29	0:01	SMRR	0.002	2.553	Oversupply
9/9/2018 12:30	0:01	SMRR	0.026	1.804	Oversupply
9/9/2018 12:30	0:01	SMRR	0.026	1.088	Oversupply
9/9/2018 12:31	0:01	SMRR	0.026	1.291	Oversupply
9/9/2018 12:32	0:01	SMRR	0.026	1.596	Oversupply
9/9/2018 12:33	0:01	SMRR	0.026	1.578	Oversupply
9/9/2018 12:33	0:01	SMRR	0.026	1.328	Oversupply
9/9/2018 12:34	0:01	SMRR	0.026	1.303	Oversupply
9/9/2018 12:35	0:01	SMRR	0.026	2.223	Oversupply
9/9/2018 12:36	0:01	SMRR	0.026	0.776	Oversupply
9/9/2018 12:36	0:01	SMRR	0.026	0.038	Oversupply
9/9/2018 12:37	0:04	KVPPI	0.049	12.001	Oversupply
9/9/2018 12:37	0:03	SMRR	0.105	0.025	Oversupply
9/9/2018 12:41	0:01	SMRR	0.026	1.221	Oversupply
9/9/2018 12:42	0:01	SMRR	0.026	0.656	Oversupply
9/9/2018 12:42	0:01	SMRR	0.026	0.286	Oversupply
9/9/2018 12:43	0:02	SMRR	0.087	0.016	Oversupply
9/9/2018 12:44	0:02	KVPPI	0.022	12.961	Oversupply
9/9/2018 12:46	0:01	SMRR	0.033	0.295	Oversupply
9/9/2018 12:48	0:01	SMRR	0.032	1.240	Oversupply
9/9/2018 12:49	0:01	SMRR	0.033	1.311	Oversupply
9/9/2018 12:49	0:01	SMRR	0.033	0.900	Oversupply
9/9/2018 12:50	0:02	SMRR	0.064	0.009	Oversupply
9/9/2018 12:51	0:02	KVPPI	0.007	12.569	Oversupply
9/9/2018 12:52	0:01	SMRR	0.033	0.049	Oversupply
9/9/2018 12:52	0:01	SMRR	0.033	0.772	Oversupply
9/9/2018 12:53	0:01	SMRR	0.033	0.412	Oversupply
9/9/2018 12:54	0:19	KVPPI	0.430	13.708	Oversupply
9/9/2018 12:54	0:18	SMRR	0.842	0.009	Oversupply
9/9/2018 13:12	0:01	SMRR	0.036	0.201	Oversupply
9/9/2018 13:13	0:04	SMRR	0.156	0.069	Oversupply
9/9/2018 13:15	0:02	KVPPI	0.034	13.638	Oversupply
9/9/2018 13:17	0:01	SMRR	0.028	0.535	Oversupply
9/9/2018 13:18	0:01	SMRR	0.028	0.946	Oversupply
9/9/2018 13:18	0:01	SMRR	0.027	1.119	Oversupply
9/9/2018 13:19	0:01	SMRR	0.029	1.904	Oversupply
9/9/2018 13:20	0:01	SMRR	0.028	1.963	Oversupply
9/9/2018 13:21	0:01	SMRR	0.028	2.041	Oversupply
9/9/2018 13:21	0:01	SMRR	0.028	2.120	Oversupply
9/9/2018 13:22	0:01	SMRR	0.027	1.384	Oversupply
9/9/2018 13:23	0:01	SMRR	0.028	0.841	Oversupply
9/9/2018 13:24	0:18	SMRR	0.799	0.085	Oversupply
9/9/2018 13:26	0:18	KVPPI	0.574	14.594	Oversupply
9/9/2018 13:42	0:01	SMRR	0.035	0.000	Oversupply
9/9/2018 13:43	0:01	SMRR	0.036	0.001	Oversupply
9/9/2018 13:44	0:01	SMRR	0.037	0.985	Oversupply
9/9/2018 13:46	0:01	SMRR	0.005	2.893	Oversupply



Maui Curtailment Report

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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/9/2018 13:48	0:01	SMRR	0.005	2.202	Oversupply
9/9/2018 13:53	0:01	SMRR	0.005	2.555	Oversupply
9/9/2018 13:53	0:01	SMRR	0.005	1.677	Oversupply
9/9/2018 13:54	0:01	SMRR	0.005	1.767	Oversupply
9/10/2018 23:05	0:21	KWP	0.679	20.471	Oversupply
9/11/2018 0:28	0:01	KWP	0.000	20.487	Oversupply
9/11/2018 12:39	0:01	SMRR	0.012	1.967	Oversupply
9/11/2018 12:40	0:08	SMRR	0.151	0.700	Oversupply
9/11/2018 12:42	0:06	KWP	0.124	20.708	Oversupply
9/11/2018 12:48	0:01	SMRR	0.019	-0.002	Oversupply
9/11/2018 12:48	0:01	SMRR	0.019	0.462	Oversupply
9/11/2018 12:49	0:01	SMRR	0.019	-0.005	Oversupply
9/11/2018 12:50	0:01	SMRR	0.019	0.562	Oversupply
9/11/2018 12:51	0:01	SMRR	0.019	0.151	Oversupply
9/11/2018 12:52	0:01	SMRR	0.019	1.448	Oversupply
9/11/2018 13:27	0:01	SMRR	0.001	2.448	Oversupply
9/11/2018 13:29	0:01	SMRR	0.006	2.015	Oversupply
9/11/2018 13:30	0:01	SMRR	0.019	1.629	Oversupply
9/11/2018 13:31	0:02	SMRR	0.058	0.386	Oversupply
9/11/2018 13:33	0:01	KWP	0.002	20.705	Oversupply
9/11/2018 13:33	0:01	SMRR	0.019	0.075	Oversupply
9/11/2018 13:34	0:01	SMRR	0.019	0.475	Oversupply
9/11/2018 13:37	0:01	SMRR	0.019	0.972	Oversupply
9/11/2018 13:37	0:01	SMRR	0.019	1.058	Oversupply
9/11/2018 22:57	0:01	KWP	0.010	19.211	Oversupply
9/11/2018 23:44	0:07	KWP	0.091	19.211	Oversupply
9/12/2018 0:14	0:03	KWP	0.044	19.211	Oversupply
9/12/2018 0:21	0:01	KWP	0.004	19.211	Oversupply
9/12/2018 0:23	0:03	KWP	0.038	19.211	Oversupply
9/12/2018 0:27	0:09	KWP	0.096	19.211	Oversupply
9/12/2018 0:41	1:51	KWP	15.970	19.211	System constraint
9/12/2018 2:37	4:04	KWP	5.900	26.761	System constraint
9/12/2018 2:45	0:01	AWE	0.005	0.300	Oversupply
9/12/2018 6:29	0:18	KWP	0.399	2.744	System constraint
9/12/2018 6:42	0:52	KWP	1.123	1.312	System constraint
9/12/2018 7:35	0:03	KWP	0.000	0.015	System constraint
9/12/2018 7:39	0:05	KWP	0.001	0.015	System constraint
9/12/2018 7:45	0:06	KWP	0.001	0.007	System constraint
9/12/2018 7:52	0:20	KWP	0.006	0.037	System constraint
9/12/2018 8:13	0:02	KWP	0.000	0.007	System constraint
9/12/2018 8:17	0:01	KWP	0.000	0.007	System constraint
9/12/2018 8:19	0:07	KWP	0.001	0.007	System constraint
9/12/2018 9:32	0:01	KWP	0.000	0.007	System constraint
9/12/2018 9:34	0:55	KWP	0.007	0.007	System constraint
9/12/2018 10:35	0:14	AWE	1.138	20.000	Oversupply
9/12/2018 10:47	0:02	SMRR	0.006	1.784	Oversupply
9/12/2018 10:50	0:02	KWP	0.000	0.007	System constraint
9/12/2018 10:52	0:12	AWE	0.530	20.200	Oversupply
9/12/2018 11:02	0:01	KWP	0.000	0.007	System constraint
9/12/2018 11:51	0:16	KWP	0.006	0.037	Oversupply
9/12/2018 12:08	0:54	KWP	0.025	0.044	Oversupply
9/12/2018 13:05	0:01	KWP	0.000	0.007	Oversupply
9/12/2018 13:07	0:02	KWP	0.000	0.007	Oversupply
9/12/2018 13:10	0:01	KWP	0.000	0.007	Oversupply
9/12/2018 13:12	0:01	KWP	0.000	0.007	Oversupply
9/12/2018 13:14	0:39	KWP	0.005	0.007	Oversupply
9/12/2018 13:54	0:06	KWP	0.001	0.007	Oversupply
9/12/2018 14:32	0:35	KWP	0.010	0.030	Oversupply
9/12/2018 15:08	7:31	KWP	0.280	0.074	Oversupply
9/12/2018 22:42	0:03	KWP	0.000	0.007	Oversupply
9/12/2018 22:46	0:05	KWP	0.001	0.007	Oversupply
9/12/2018 22:52	0:05	KWP	0.001	0.007	Oversupply
9/12/2018 22:58	1:01	KWP	0.027	0.037	Oversupply
9/13/2018 1:10	0:31	KWP	0.012	0.030	Oversupply
9/13/2018 5:42	1:06	KWP	1.306	1.244	Oversupply
9/13/2018 6:50	0:09	KWP	0.279	2.706	Oversupply
9/13/2018 7:12	0:01	KWP	0.010	1.060	Oversupply
9/13/2018 7:15	0:02	KWP	0.004	1.186	Oversupply
9/13/2018 7:18	0:53	KWP	1.128	1.282	Oversupply
9/13/2018 8:18	1:05	KWP	13.802	18.883	Oversupply
9/13/2018 8:22	0:16	KWP	1.180	18.150	Oversupply
9/13/2018 9:08	0:01	SMRR	-0.001	2.140	Oversupply
9/13/2018 9:15	0:02	SMRR	0.009	0.893	Oversupply
9/13/2018 9:18	0:01	SMRR	0.004	0.944	Oversupply
9/13/2018 9:19	0:01	SMRR	0.004	0.022	Oversupply
9/13/2018 9:20	0:01	SMRR	0.004	0.223	Oversupply
9/13/2018 9:21	0:02	SMRR	0.009	0.433	Oversupply
9/13/2018 9:23	0:01	SMRR	0.004	0.009	Oversupply
9/13/2018 9:26	0:06	KWP	0.096	19.146	Oversupply
9/13/2018 9:32	0:01	SMRR	0.007	1.354	Oversupply
9/13/2018 9:37	0:01	SMRR	0.007	1.062	Oversupply
9/13/2018 9:37	0:01	SMRR	0.007	0.020	Oversupply
9/13/2018 9:38	0:01	KWP	0.017	18.333	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/13/2018 9:38	0:01	SMRR	0.007	0.469	Oversupply
9/13/2018 9:39	0:01	SMRR	0.007	0.116	Oversupply
9/13/2018 9:40	0:01	SMRR	0.007	0.451	Oversupply
9/13/2018 9:40	0:01	SMRR	0.007	0.968	Oversupply
9/13/2018 9:42	0:31	SMRR	1.131	0.960	Oversupply
9/13/2018 9:43	0:31	KWPPII	2.390	19.066	Oversupply
9/13/2018 10:13	0:01	SMRR	0.032	0.281	Oversupply
9/13/2018 10:17	0:02	SMRR	0.055	1.085	Oversupply
9/13/2018 10:18	0:16	KWPPII	0.572	18.954	Oversupply
9/13/2018 10:19	0:01	SMRR	0.028	0.148	Oversupply
9/13/2018 10:19	0:14	SMRR	0.488	0.013	Oversupply
9/13/2018 10:33	0:01	SMRR	0.027	0.018	Oversupply
9/13/2018 10:36	0:01	SMRR	0.026	0.953	Oversupply
9/13/2018 10:37	0:01	SMRR	0.027	0.793	Oversupply
9/13/2018 10:38	0:01	SMRR	0.027	0.652	Oversupply
9/13/2018 10:38	0:01	SMRR	0.027	1.238	Oversupply
9/13/2018 10:39	0:01	SMRR	0.026	1.657	Oversupply
9/13/2018 10:40	0:01	SMRR	0.027	2.584	Oversupply
9/13/2018 10:41	0:01	SMRR	0.027	1.769	Oversupply
9/13/2018 10:41	0:01	SMRR	0.027	1.698	Oversupply
9/13/2018 10:42	0:01	SMRR	0.026	0.982	Oversupply
9/13/2018 10:43	0:01	SMRR	0.027	0.761	Oversupply
9/13/2018 10:44	0:56	KWPPII	4.627	18.858	Oversupply
9/13/2018 10:44	0:55	SMRR	2.540	0.015	Oversupply
9/13/2018 11:39	0:01	SMRR	0.034	0.125	Oversupply
9/13/2018 11:39	0:01	SMRR	0.034	0.736	Oversupply
9/13/2018 11:40	0:01	SMRR	0.034	1.071	Oversupply
9/13/2018 11:41	0:04	KWPPII	0.033	19.140	Oversupply
9/13/2018 11:41	0:03	SMRR	0.137	0.880	Oversupply
9/13/2018 11:44	0:01	SMRR	0.035	0.026	Oversupply
9/13/2018 11:45	0:01	SMRR	0.036	0.445	Oversupply
9/13/2018 11:46	0:32	KWPPII	5.268	19.199	Oversupply
9/13/2018 11:46	0:32	SMRR	1.497	0.106	Oversupply
9/13/2018 12:23	0:15	SMRR	0.638	1.320	Oversupply
9/13/2018 12:24	0:15	KWPPII	0.612	19.145	Oversupply
9/13/2018 12:38	0:01	SMRR	0.032	0.107	Oversupply
9/13/2018 12:43	0:01	SMRR	0.033	0.990	Oversupply
9/13/2018 12:44	0:01	SMRR	0.033	1.169	Oversupply
9/13/2018 12:44	0:11	SMRR	0.466	1.146	Oversupply
9/13/2018 12:48	0:02	KWPPII	0.008	19.202	Oversupply
9/13/2018 12:51	0:05	KWPPII	0.028	19.209	Oversupply
9/13/2018 12:55	0:01	SMRR	0.033	0.134	Oversupply
9/13/2018 12:56	0:01	SMRR	0.033	0.566	Oversupply
9/13/2018 12:57	0:01	SMRR	0.033	0.839	Oversupply
9/13/2018 23:18	0:31	KWPPII	0.688	20.708	Oversupply
9/14/2018 0:03	5:10	KWPPII	36.319	20.708	Oversupply
9/14/2018 8:04	0:01	SMRR	0.009	1.171	Oversupply
9/14/2018 8:04	0:01	SMRR	0.009	1.185	Oversupply
9/14/2018 8:05	0:01	SMRR	0.009	0.130	Oversupply
9/14/2018 8:06	5:56	SMRR	14.469	0.017	Oversupply
9/14/2018 8:11	5:51	KWPPII	52.961	20.708	Oversupply
9/14/2018 14:02	0:01	SMRR	0.009	0.204	Oversupply
9/14/2018 14:02	0:01	SMRR	0.009	-0.001	Oversupply
9/14/2018 14:03	0:01	KWPPII	0.004	20.462	Oversupply
9/15/2018 0:45	0:04	KWPPII	0.037	20.153	Oversupply
9/15/2018 0:51	0:14	KWPPII	0.177	20.450	Oversupply
9/15/2018 1:06	0:09	KWPPII	0.250	20.295	Oversupply
9/15/2018 1:16	0:01	KWPPII	0.004	20.119	Oversupply
9/15/2018 1:25	4:35	KWPPII	25.931	20.708	Oversupply
9/15/2018 7:52	0:01	SMRR	0.005	1.072	Oversupply
9/15/2018 7:53	0:09	SMRR	0.095	0.819	Oversupply
9/15/2018 7:56	0:08	KWPPII	0.123	20.708	Oversupply
9/15/2018 8:02	0:01	SMRR	0.016	0.028	Oversupply
9/15/2018 8:03	0:01	SMRR	0.016	0.021	Oversupply
9/15/2018 8:04	0:01	SMRR	0.016	0.031	Oversupply
9/15/2018 8:04	0:01	SMRR	0.016	0.072	Oversupply
9/15/2018 8:05	0:01	SMRR	0.016	0.203	Oversupply
9/15/2018 8:06	0:02	SMRR	0.049	0.005	Oversupply
9/15/2018 8:08	0:02	KWPPII	0.005	20.708	Oversupply
9/15/2018 8:08	0:01	SMRR	0.016	0.095	Oversupply
9/15/2018 8:09	0:11	SMRR	0.183	0.025	Oversupply
9/15/2018 8:13	0:07	KWPPII	0.133	20.708	Oversupply
9/15/2018 8:20	0:01	SMRR	0.009	0.223	Oversupply
9/15/2018 8:23	0:01	SMRR	0.009	0.495	Oversupply
9/15/2018 8:23	0:01	SMRR	0.009	0.240	Oversupply
9/15/2018 8:24	0:01	SMRR	0.009	0.349	Oversupply
9/15/2018 8:25	0:01	SMRR	0.009	0.375	Oversupply
9/15/2018 8:30	0:01	SMRR	0.013	0.323	Oversupply
9/15/2018 8:31	0:03	SMRR	0.050	0.019	Oversupply
9/15/2018 8:34	0:01	SMRR	0.012	0.193	Oversupply
9/15/2018 8:35	0:14	KWPPII	0.334	20.708	Oversupply
9/15/2018 8:35	0:14	SMRR	0.225	0.016	Oversupply
9/15/2018 8:49	2:14	SMRR	5.062	0.405	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/15/2018 8:50	2:13	KWP/II	27.493	20.708	Oversupply
9/15/2018 10:38	0:07	AWE	0.160	21.000	Oversupply
9/15/2018 10:47	0:09	AWE	0.307	17.700	Oversupply
9/15/2018 10:57	0:01	AWE	0.007	17.300	Oversupply
9/15/2018 11:03	0:01	SMRR	0.033	0.532	Oversupply
9/15/2018 11:04	0:01	SMRR	0.033	1.263	Oversupply
9/15/2018 11:04	0:24	SMRR	1.085	1.665	Oversupply
9/15/2018 11:05	0:23	KWP/II	1.808	20.708	Oversupply
9/15/2018 11:28	0:01	SMRR	0.035	0.141	Oversupply
9/15/2018 11:29	0:01	SMRR	0.035	0.626	Oversupply
9/15/2018 11:30	0:01	SMRR	0.028	0.968	Oversupply
9/15/2018 11:30	0:01	SMRR	0.028	0.992	Oversupply
9/15/2018 11:31	0:01	SMRR	0.028	0.820	Oversupply
9/15/2018 11:32	0:01	SMRR	0.027	0.992	Oversupply
9/15/2018 11:34	0:01	SMRR	0.028	1.626	Oversupply
9/15/2018 11:35	0:01	SMRR	0.027	2.332	Oversupply
9/15/2018 11:36	0:01	SMRR	0.028	2.426	Oversupply
9/15/2018 11:37	0:01	SMRR	0.028	1.101	Oversupply
9/15/2018 11:37	0:01	SMRR	0.028	0.482	Oversupply
9/15/2018 11:38	0:11	KWP/II	0.223	20.696	Oversupply
9/15/2018 11:38	0:11	SMRR	0.456	0.028	Oversupply
9/15/2018 11:50	0:01	SMRR	0.034	0.406	Oversupply
9/15/2018 11:50	0:01	SMRR	0.034	0.943	Oversupply
9/15/2018 11:51	0:01	SMRR	0.034	1.219	Oversupply
9/15/2018 11:52	0:31	SMRR	1.217	1.057	Oversupply
9/15/2018 11:53	0:49	KWP/II	1.625	20.708	Oversupply
9/15/2018 12:23	0:01	SMRR	0.013	-0.004	Oversupply
9/15/2018 12:24	0:18	SMRR	0.383	0.079	Oversupply
9/15/2018 12:42	0:01	SMRR	0.019	0.211	Oversupply
9/15/2018 12:42	0:01	SMRR	0.019	0.657	Oversupply
9/15/2018 12:43	0:01	SMRR	0.019	1.234	Oversupply
9/15/2018 12:44	0:01	SMRR	0.019	0.925	Oversupply
9/15/2018 12:45	0:01	SMRR	0.035	0.876	Oversupply
9/15/2018 12:45	0:02	SMRR	0.069	0.054	Oversupply
9/15/2018 12:46	0:05	KWP/II	0.025	20.704	Oversupply
9/15/2018 12:47	0:01	SMRR	0.035	0.077	Oversupply
9/15/2018 12:48	0:02	SMRR	0.069	0.018	Oversupply
9/15/2018 12:50	0:01	SMRR	0.035	0.361	Oversupply
9/15/2018 12:51	0:01	SMRR	0.035	0.320	Oversupply
9/15/2018 12:52	0:01	SMRR	0.035	0.081	Oversupply
9/15/2018 12:52	0:01	SMRR	0.034	0.003	Oversupply
9/15/2018 12:53	0:01	SMRR	0.035	0.459	Oversupply
9/15/2018 12:54	0:01	SMRR	0.035	0.004	Oversupply
9/15/2018 12:55	0:01	SMRR	0.035	0.123	Oversupply
9/15/2018 12:55	1:43	SMRR	3.588	0.004	Oversupply
9/15/2018 12:57	1:42	KWP/II	6.745	20.708	Oversupply
9/15/2018 14:39	0:01	SMRR	0.020	0.372	Oversupply
9/15/2018 14:39	0:01	SMRR	0.020	0.809	Oversupply
9/16/2018 1:32	0:01	KWP/II	0.001	20.708	Oversupply
9/16/2018 1:35	0:14	KWP/II	0.266	20.708	Oversupply
9/16/2018 2:18	1:55	KWP/II	6.868	20.708	Oversupply
9/16/2018 4:16	0:57	KWP/II	3.917	20.708	Oversupply
9/16/2018 5:19	0:04	KWP/II	0.015	20.708	Oversupply
9/16/2018 5:24	0:16	KWP/II	0.644	20.708	Oversupply
9/16/2018 5:48	0:14	KWP/II	0.264	20.708	Oversupply
9/16/2018 7:34	0:01	SMRR	0.006	0.738	Oversupply
9/16/2018 7:35	0:01	SMRR	0.006	0.753	Oversupply
9/16/2018 7:35	0:01	SMRR	0.006	0.294	Oversupply
9/16/2018 7:37	0:01	SMRR	0.006	0.037	Oversupply
9/16/2018 7:38	0:28	SMRR	0.427	0.212	Oversupply
9/16/2018 7:40	0:24	KWP/II	0.770	20.708	Oversupply
9/16/2018 8:05	0:03	KWP/II	0.018	20.708	Oversupply
9/16/2018 8:06	0:01	SMRR	0.015	0.069	Oversupply
9/16/2018 8:07	0:01	SMRR	0.015	0.057	Oversupply
9/16/2018 8:08	0:01	SMRR	0.014	0.428	Oversupply
9/16/2018 8:09	0:01	SMRR	0.015	0.208	Oversupply
9/16/2018 8:10	0:04	SMRR	0.073	0.065	Oversupply
9/16/2018 8:14	0:01	SMRR	0.015	0.222	Oversupply
9/16/2018 8:14	0:01	SMRR	0.015	0.374	Oversupply
9/16/2018 8:15	7:29	SMRR	14.667	0.203	Oversupply
9/16/2018 8:17	7:27	KWP/II	120.898	20.708	Oversupply
9/16/2018 10:03	0:29	AWE	1.604	21.000	Oversupply
9/16/2018 10:34	0:03	AWE	0.018	20.300	Oversupply
9/16/2018 10:38	0:01	AWE	0.008	20.800	Oversupply
9/16/2018 10:43	0:02	AWE	0.012	20.500	Oversupply
9/16/2018 10:46	0:01	AWE	0.016	20.200	Oversupply
9/16/2018 10:50	0:02	AWE	0.023	20.500	Oversupply
9/16/2018 10:54	0:08	AWE	0.352	21.000	Oversupply
9/16/2018 11:03	0:03	AWE	0.084	20.000	Oversupply
9/16/2018 11:11	0:04	AWE	0.044	20.800	Oversupply
9/16/2018 11:16	0:02	AWE	0.040	20.200	Oversupply
9/16/2018 11:19	0:01	AWE	0.008	20.600	Oversupply
9/16/2018 11:22	0:04	AWE	0.024	20.700	Oversupply



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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/16/2018 11:28	0:40	AWE	2.095	20.600	Oversupply
9/16/2018 12:10	0:04	AWE	0.089	20.100	Oversupply
9/16/2018 12:15	1:48	AWE	8.499	21.000	Oversupply
9/16/2018 14:04	0:01	AWE	0.009	18.600	Oversupply
9/16/2018 14:06	0:01	AWE	0.000	18.600	Oversupply
9/16/2018 15:44	0:02	SMRR	0.027	0.007	Oversupply
9/16/2018 15:45	0:08	KWPPII	0.068	20.654	Oversupply
9/16/2018 15:45	0:07	SMRR	0.101	0.002	Oversupply
9/16/2018 15:52	0:01	SMRR	0.011	0.167	Oversupply
9/16/2018 15:53	0:02	SMRR	0.022	0.147	Oversupply
9/16/2018 15:54	0:01	KWPPII	0.001	20.629	Oversupply
9/16/2018 15:55	0:01	SMRR	0.011	0.409	Oversupply
9/16/2018 23:58	0:06	KWPPII	0.087	20.708	Oversupply
9/17/2018 0:11	0:02	KWPPII	0.008	20.708	Oversupply
9/17/2018 0:37	0:10	KWPPII	0.210	20.708	Oversupply
9/17/2018 0:55	1:34	KWPPII	9.413	20.708	Oversupply
9/17/2018 2:36	0:01	KWPPII	0.003	20.693	Oversupply
9/17/2018 2:38	0:03	KWPPII	0.016	20.700	Oversupply
9/17/2018 2:44	0:31	KWPPII	1.367	20.679	Oversupply
9/17/2018 3:35	0:01	KWPPII	0.008	20.638	Oversupply
9/17/2018 3:37	0:01	KWPPII	0.005	20.542	Oversupply
9/17/2018 3:42	0:14	KWPPII	0.326	20.683	Oversupply
9/17/2018 4:28	0:24	KWPPII	1.492	20.688	Oversupply
9/17/2018 7:55	0:01	SMRR	0.001	1.101	Oversupply
9/17/2018 7:58	0:18	SMRR	0.357	0.601	Oversupply
9/17/2018 8:01	0:16	KWPPII	0.552	20.708	Oversupply
9/17/2018 8:16	0:01	SMRR	0.018	0.032	Oversupply
9/17/2018 8:17	0:01	SMRR	0.018	0.053	Oversupply
9/17/2018 8:18	0:01	KWPPII	0.001	20.553	Oversupply
9/17/2018 8:18	3:06	SMRR	7.156	0.003	Oversupply
9/17/2018 8:20	3:04	KWPPII	26.675	20.707	Oversupply
9/17/2018 11:23	0:01	SMRR	0.029	0.039	Oversupply
9/17/2018 11:24	0:01	SMRR	0.029	0.445	Oversupply
9/17/2018 11:25	0:01	SMRR	0.029	0.578	Oversupply
9/17/2018 11:26	0:01	SMRR	0.029	1.070	Oversupply
9/17/2018 11:27	0:01	SMRR	0.028	2.029	Oversupply
9/17/2018 11:30	0:01	SMRR	0.020	1.865	Oversupply
9/17/2018 11:31	0:07	SMRR	0.178	0.564	Oversupply
9/17/2018 11:32	0:07	KWPPII	0.297	19.065	Oversupply
9/17/2018 11:39	1:35	SMRR	4.036	0.191	Oversupply
9/17/2018 11:40	1:35	KWPPII	12.624	20.690	Oversupply
9/17/2018 13:15	0:01	SMRR	0.008	0.298	Oversupply
9/17/2018 13:16	0:08	KWPPII	0.147	20.647	Oversupply
9/17/2018 13:16	0:07	SMRR	0.076	0.007	Oversupply
9/17/2018 13:23	0:01	SMRR	0.009	0.006	Oversupply
9/17/2018 13:23	0:01	SMRR	0.009	0.374	Oversupply
9/17/2018 22:11	0:28	KWPPII	1.905	20.708	Oversupply
9/17/2018 22:42	0:03	KWPPII	0.019	20.708	Oversupply
9/17/2018 22:48	0:05	KWPPII	0.152	20.708	Oversupply
9/18/2018 0:18	0:04	KWPPII	0.062	20.708	Oversupply
9/18/2018 1:47	0:04	KWPPII	0.020	20.690	Oversupply
9/18/2018 2:47	1:00	KWPPII	5.386	20.659	Oversupply
9/18/2018 3:48	0:01	KWPPII	0.007	19.346	Oversupply
9/18/2018 3:55	0:04	KWPPII	0.035	19.262	Oversupply
9/18/2018 4:20	0:14	KWPPII	0.453	20.187	Oversupply
9/18/2018 4:42	0:16	KWPPII	0.394	20.072	Oversupply
9/18/2018 7:32	0:20	SMRR	0.200	0.698	Oversupply
9/18/2018 7:34	0:20	KWPPII	1.023	20.707	Oversupply
9/18/2018 7:52	0:01	SMRR	0.008	0.018	Oversupply
9/18/2018 7:53	0:01	SMRR	0.008	0.270	Oversupply
9/18/2018 7:54	0:01	SMRR	0.008	0.573	Oversupply
9/18/2018 8:09	0:01	SMRR	0.001	1.371	Oversupply
9/18/2018 8:10	0:01	SMRR	0.001	0.472	Oversupply
9/18/2018 8:17	0:01	SMRR	0.015	0.938	Oversupply
9/18/2018 8:17	0:01	SMRR	0.015	0.247	Oversupply
9/18/2018 8:18	0:01	SMRR	0.015	0.321	Oversupply
9/18/2018 8:19	0:14	KWPPII	0.440	20.603	Oversupply
9/18/2018 8:19	0:13	SMRR	0.266	0.010	Oversupply
9/18/2018 8:32	0:01	SMRR	0.019	0.000	Oversupply
9/18/2018 8:33	0:01	SMRR	0.019	0.366	Oversupply
9/18/2018 8:33	0:01	SMRR	0.018	0.497	Oversupply
9/18/2018 8:34	0:01	SMRR	0.019	0.428	Oversupply
9/18/2018 8:35	0:01	KWPPII	0.014	20.028	Oversupply
9/18/2018 8:35	0:01	SMRR	0.019	-0.004	Oversupply
9/18/2018 8:36	0:01	SMRR	0.019	0.533	Oversupply
9/18/2018 8:36	0:35	SMRR	1.020	0.738	Oversupply
9/18/2018 8:37	0:35	KWPPII	1.765	20.488	Oversupply
9/18/2018 9:12	0:01	SMRR	0.025	0.222	Oversupply
9/18/2018 9:12	0:05	SMRR	0.151	0.017	Oversupply
9/18/2018 9:13	0:05	KWPPII	0.085	20.520	Oversupply
9/18/2018 9:17	0:01	SMRR	0.025	0.321	Oversupply
9/18/2018 9:18	0:01	SMRR	0.025	1.058	Oversupply
9/18/2018 9:18	0:02	SMRR	0.051	0.481	Oversupply



Maui Curtailment Report

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/18/2018 9:19	0:14	KWP/II	0.343	20.289	Oversupply
9/18/2018 9:20	0:01	SMRR	0.025	0.213	Oversupply
9/18/2018 9:21	0:12	SMRR	0.359	0.012	Oversupply
9/18/2018 9:33	0:01	SMRR	0.016	0.661	Oversupply
9/18/2018 9:34	0:01	KWP/II	0.013	20.116	Oversupply
9/18/2018 9:34	0:01	SMRR	0.016	0.147	Oversupply
9/18/2018 9:35	0:01	SMRR	0.016	0.103	Oversupply
9/18/2018 9:35	0:01	SMRR	0.015	0.021	Oversupply
9/18/2018 9:36	0:01	SMRR	0.016	0.655	Oversupply
9/18/2018 9:39	0:01	SMRR	0.016	2.310	Oversupply
9/18/2018 9:41	0:01	SMRR	0.016	2.468	Oversupply
9/18/2018 9:41	0:01	SMRR	0.015	1.552	Oversupply
9/18/2018 9:42	0:01	SMRR	0.016	1.249	Oversupply
9/18/2018 9:43	0:01	SMRR	0.016	1.163	Oversupply
9/18/2018 9:44	0:01	SMRR	0.015	1.067	Oversupply
9/18/2018 9:44	0:01	SMRR	0.025	0.224	Oversupply
9/18/2018 9:45	0:01	SMRR	0.031	0.062	Oversupply
9/18/2018 9:46	0:02	KWP/II	0.025	19.752	Oversupply
9/18/2018 9:46	0:08	SMRR	0.336	0.012	Oversupply
9/18/2018 9:49	0:03	KWP/II	0.034	19.923	Oversupply
9/18/2018 9:53	0:02	KWP/II	0.025	19.657	Oversupply
9/18/2018 9:54	0:01	SMRR	0.031	0.123	Oversupply
9/18/2018 9:55	0:01	SMRR	0.031	0.228	Oversupply
9/18/2018 9:56	1:27	KWP/II	11.408	20.354	Oversupply
9/18/2018 9:56	1:28	SMRR	3.899	0.005	Oversupply
9/18/2018 11:24	0:01	KWP/II	0.001	18.954	Oversupply
9/18/2018 11:24	0:01	SMRR	0.027	0.377	Oversupply
9/18/2018 11:24	0:01	SMRR	0.027	0.223	Oversupply
9/18/2018 11:25	0:01	SMRR	0.027	0.056	Oversupply
9/18/2018 11:26	0:01	SMRR	0.027	0.800	Oversupply
9/18/2018 11:31	0:01	SMRR	-0.001	2.672	Oversupply
9/18/2018 12:10	0:01	SMRR	0.001	1.273	Oversupply
9/18/2018 12:19	0:01	SMRR	0.005	1.946	Oversupply
9/18/2018 12:19	0:02	SMRR	0.010	1.462	Oversupply
9/18/2018 12:21	0:01	SMRR	0.005	0.965	Oversupply
9/18/2018 12:22	0:01	SMRR	0.005	1.629	Oversupply
9/18/2018 12:22	0:01	SMRR	0.005	0.526	Oversupply
9/18/2018 12:26	0:01	SMRR	0.005	1.540	Oversupply
9/18/2018 12:27	0:03	SMRR	0.027	0.258	Oversupply
9/18/2018 12:28	0:02	KWP/II	0.051	17.819	Oversupply
9/18/2018 12:30	0:01	SMRR	0.018	0.221	Oversupply
9/18/2018 12:31	0:01	KWP/II	0.004	15.893	Oversupply
9/18/2018 12:31	0:02	SMRR	0.055	0.059	Oversupply
9/18/2018 12:33	0:05	SMRR	0.128	0.091	Oversupply
9/18/2018 12:34	0:05	KWP/II	0.174	18.090	Oversupply
9/18/2018 12:42	0:01	SMRR	0.018	1.687	Oversupply
9/18/2018 12:43	0:01	SMRR	0.018	1.817	Oversupply
9/18/2018 12:50	0:01	SMRR	0.018	2.361	Oversupply
9/18/2018 12:51	0:01	SMRR	0.018	1.279	Oversupply
9/18/2018 12:52	0:01	SMRR	0.017	0.432	Oversupply
9/18/2018 12:52	0:01	SMRR	0.018	1.359	Oversupply
9/18/2018 12:53	0:01	SMRR	0.018	1.776	Oversupply
9/18/2018 12:54	0:01	SMRR	0.018	1.632	Oversupply
9/18/2018 12:55	0:01	SMRR	0.018	0.704	Oversupply
9/18/2018 12:55	0:01	SMRR	0.017	0.311	Oversupply
9/18/2018 12:56	0:01	SMRR	0.018	0.826	Oversupply
9/18/2018 12:57	0:01	SMRR	0.018	0.805	Oversupply
9/18/2018 12:58	0:01	SMRR	0.018	0.504	Oversupply
9/18/2018 12:58	0:01	SMRR	0.017	0.335	Oversupply
9/18/2018 12:59	0:01	SMRR	0.010	0.382	Oversupply
9/18/2018 13:00	0:01	SMRR	0.003	1.440	Oversupply
9/18/2018 14:21	0:01	SMRR	0.003	2.054	Oversupply
9/18/2018 14:22	0:01	SMRR	0.003	1.734	Oversupply
9/18/2018 19:31	0:01	KWP/II	0.001	0.063	Oversupply
9/19/2018 11:17	0:01	KWP/II	0.000	0.015	Oversupply
9/21/2018 6:23	0:01	KWP/II	0.000	0.010	Oversupply
9/22/2018 7:33	0:01	SMRR	0.000	0.487	Oversupply
9/25/2018 7:03	0:01	AWE	0.005	0.300	Oversupply
9/27/2018 13:43	0:01	AWE	0.002	0.100	Oversupply
9/28/2018 7:03	0:01	AWE	0.005	0.300	Oversupply
9/28/2018 14:50	0:01	KWP/II	0.000	0.011	Oversupply
9/28/2018 21:47	0:01	KWP/II	0.002	0.092	Oversupply
9/28/2018 22:31	0:05	KWP/II	0.101	20.351	Oversupply
9/28/2018 23:03	0:04	KWP/II	0.055	20.388	Oversupply
9/28/2018 23:09	0:01	KWP/II	0.021	19.304	Oversupply
9/29/2018 1:14	0:01	KWP/II	0.000	0.003	Oversupply
9/29/2018 4:30	0:03	KWP/II	0.068	16.660	Oversupply
9/29/2018 4:34	0:03	KWP/II	0.031	15.653	Oversupply
9/29/2018 12:55	0:01	SMRR	0.002	0.971	Oversupply
9/29/2018 12:55	0:01	SMRR	0.002	0.905	Oversupply
9/29/2018 13:31	0:01	SMRR	0.005	2.045	Oversupply
9/29/2018 13:33	0:01	SMRR	0.005	1.577	Oversupply
9/29/2018 13:34	0:01	SMRR	0.005	2.091	Oversupply



**Maui Curtailment Report**

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
9/30/2018 3:45	0:12	KWPPII	0.322	18.969	Oversupply
9/30/2018 4:44	0:30	KWPPII	1.963	19.197	Oversupply
9/30/2018 5:23	0:06	KWPPII	0.114	18.119	Oversupply
9/30/2018 5:31	0:06	KWPPII	0.124	18.561	Oversupply
9/30/2018 5:45	0:02	KWPPII	0.026	18.403	Oversupply
9/30/2018 6:41	0:03	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 6:41	0:03	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 6:41	0:02	SMRR	0.001	0.047	Oversupply
9/30/2018 6:44	0:18	SMRR	0.041	0.062	Oversupply
9/30/2018 6:45	0:19	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 6:45	0:19	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 6:47	0:16	KWPPII	1.494	20.019	Oversupply
9/30/2018 7:02	0:01	SMRR	0.001	0.011	Oversupply
9/30/2018 9:21	0:01	SMRR	0.000	1.837	Oversupply
9/30/2018 9:34	0:01	SMRR	0.019	2.198	Oversupply
9/30/2018 9:35	0:05	SMRR	0.114	1.281	Oversupply
9/30/2018 9:36	0:04	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 9:36	0:04	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 9:36	0:05	KWPPII	0.185	13.223	Oversupply
9/30/2018 9:40	0:01	SMRR	0.019	0.129	Oversupply
9/30/2018 9:40	0:01	SMRR	0.019	0.972	Oversupply
9/30/2018 9:41	0:01	SMRR	0.019	0.965	Oversupply
9/30/2018 9:42	0:01	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 9:42	0:01	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 9:42	0:01	SMRR	0.019	0.226	Oversupply
9/30/2018 9:43	0:01	KWPPII	0.011	7.949	Oversupply
9/30/2018 9:43	0:01	SMRR	0.019	0.106	Oversupply
9/30/2018 9:43	0:01	SMRR	0.019	0.168	Oversupply
9/30/2018 9:44	0:35	SMRR	1.457	0.007	Oversupply
9/30/2018 9:45	0:35	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 9:45	0:35	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 9:45	0:36	KWPPII	6.625	18.108	Oversupply
9/30/2018 10:02	0:03	AWE	0.040	17.000	Oversupply
9/30/2018 10:07	0:02	AWE	0.023	17.500	Oversupply
9/30/2018 10:12	0:03	AWE	0.098	18.500	Oversupply
9/30/2018 10:22	1:01	ESA	Data is not available	Data is not available	Oversupply
9/30/2018 10:22	1:01	ESB	Data is not available	Data is not available	Oversupply
9/30/2018 10:22	1:00	SMRR	2.246	0.659	Oversupply
9/30/2018 10:23	1:00	KWPPII	6.590	19.720	Oversupply
9/30/2018 11:22	0:01	SMRR	0.024	0.133	Oversupply
9/30/2018 11:23	0:01	SMRR	0.024	1.794	Oversupply
9/30/2018 11:28	0:01	SMRR	0.024	2.498	Oversupply
9/30/2018 11:30	0:01	SMRR	0.008	2.515	Oversupply
9/30/2018 11:30	0:01	SMRR	0.007	1.736	Oversupply
9/30/2018 11:31	0:01	SMRR	0.008	1.308	Oversupply
9/30/2018 11:32	0:01	SMRR	0.008	2.109	Oversupply
9/30/2018 11:33	0:01	SMRR	0.008	0.836	Oversupply
9/30/2018 11:33	0:01	SMRR	0.007	1.420	Oversupply
9/30/2018 11:34	0:01	SMRR	0.008	1.705	Oversupply
<b>Total Estimated Curtailed MWh</b>			<b>673.372</b>		

Notes:

- Curtailment for Kaheawa Wind Power ("KWP"), Makila Hydroelectric ("MH"), AAAAA Rent-A-Space Maui LTD ("5A"), Bioreal Solar, LLC ("BS"), Auwahi Wind Energy ("AWE"), Kaheawa Wind Power II ("KWPPII"), Bioreal Solar 250, LLC ("BS250"), Extra Spaces A ("ESA"), Extra Spaces B ("ESB"), and South Maui Renewable Resources ("SMRR") 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.
- Curtailment signals sent to 5A, BS, BS250, ESA, ESB, or SMRR during nighttime hours only are not recorded as curtailment events because no energy generation is possible during that time.
- The BS250 facility was offline for the entire month of September and therefore does not appear in this report.
- 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 data to calculate the Estimated Curtailed MWH and Peak MW Curtailed is not provided by 5A, BS, BS 250, ESA, ESB, and MH.
- The ESA and ESB facilities were offline until September 21, 2018. No curtailment events were recorded prior to this date.
- The Estimated Curtailed MWH and Peak MW Curtailed are calculated with information provided by AWE, KWP, KWPPII, and SMRR. Maui Electric does not make any representation as to its accuracy.





Lanai Curtailment Report

September 2018

Start Date and Time	Duration	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
9/1/2018 7:03	0:01	LSR	Data is not available	Data is not available	Oversupply
9/1/2018 7:14	3:06	LSR	Data is not available	Data is not available	Oversupply
9/3/2018 8:22	1:42	LSR	Data is not available	Data is not available	Oversupply
9/3/2018 15:46	1:11	LSR	Data is not available	Data is not available	Oversupply
9/4/2018 15:16	0:01	LSR	Data is not available	Data is not available	Oversupply
9/4/2018 15:20	0:59	LSR	Data is not available	Data is not available	Oversupply
9/6/2018 15:34	0:30	LSR	Data is not available	Data is not available	Oversupply
9/11/2018 12:43	0:15	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 10:06	0:04	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 10:17	0:12	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 10:40	0:05	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 11:33	0:01	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 11:37	0:02	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 12:49	0:32	LSR	Data is not available	Data is not available	Oversupply
9/14/2018 13:29	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 9:37	0:05	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 9:44	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 9:48	0:04	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 9:59	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 10:52	0:04	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 10:57	0:08	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 11:06	0:04	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 11:41	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 14:38	0:04	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 14:45	0:02	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 14:51	0:07	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 15:00	0:06	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 15:09	0:05	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 15:15	0:05	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 15:23	0:08	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 15:51	0:01	LSR	Data is not available	Data is not available	Oversupply
9/15/2018 16:00	0:06	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 8:36	0:05	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 8:54	0:10	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 10:53	0:03	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 10:57	0:03	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 11:02	0:13	LSR	Data is not available	Data is not available	Oversupply
9/16/2018 11:18	4:55	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 11:57	0:02	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 12:08	0:04	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 12:48	0:10	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 13:03	0:01	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 13:06	0:03	LSR	Data is not available	Data is not available	Oversupply
9/17/2018 13:18	0:02	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 12:06	0:05	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 12:24	0:01	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 12:26	0:02	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 12:38	0:09	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 12:53	0:03	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 13:12	0:08	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 13:26	0:01	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 13:45	0:04	LSR	Data is not available	Data is not available	Oversupply
9/23/2018 13:51	0:01	LSR	Data is not available	Data is not available	Oversupply
9/25/2018 9:01	0:13	LSR	Data is not available	Data is not available	Oversupply
9/25/2018 10:14	0:06	LSR	Data is not available	Data is not available	Oversupply
9/25/2018 10:35	0:16	LSR	Data is not available	Data is not available	Oversupply
9/26/2018 10:02	0:01	LSR	Data is not available	Data is not available	Oversupply
9/26/2018 10:06	0:04	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 13:50	0:01	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 14:16	0:05	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 14:25	0:13	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 14:40	0:10	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 14:56	0:05	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 15:17	0:01	LSR	Data is not available	Data is not available	Oversupply
9/29/2018 15:27	0:05	LSR	Data is not available	Data is not available	Oversupply
9/30/2018 9:37	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 2018

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released <sup>1</sup>	IPP	Reason for Curtailment
09/11/18 07:37	0.1 MW	09/11/18 08:27	0.0 MW	Pakini Nui Windfarm	System constraint
09/11/18 11:36	3.5 MW	09/11/18 11:54	3.0 MW	Pakini Nui Windfarm	System constraint
09/20/18 08:08	5.6 MW	09/20/18 15:33	0.0 MW	Wailuku River Hydro	System constraint
09/25/18 06:50	3.9 MW	09/25/18 17:17	0.0 MW	Wailuku River Hydro	System constraint
09/29/18 10:28	6.0 MW	09/29/18 11:45	4.0 MW	Hawi Renewable Dev	System constraint
09/29/18 14:52	4.4 MW	09/29/18 19:37	1.9 MW	Hawi Renewable Dev	System constraint
09/30/18 03:38	4.9 MW	10/02/18 08:29	0.0 MW	Hawi Renewable Dev	System constraint

<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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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
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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.  
Moriwaka Lau & Fong LLP  
841 Bishop Street, Suite 400  
Honolulu, Hawaii 96813  
Counsel for KAUAI ISLAND UTILITY COOPERATIVE

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ERIK W. KVAM  
CHIEF EXECUTIVE OFFICER  
ZERO EMISSIONS LEASING LLC  
4188-4 Keanu Street  
Honolulu, HI 96816

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

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Electronically Transmitted

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

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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
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

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ALISON SILVERSTEIN  
19213 Luedtke Lane  
Pflugerville, TX 78660

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Electronically Transmitted

BRENDAN KIRBY  
12011 SW Pineapple Court  
Palm City, FL 34990

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