July 30, 2012

Dean K. Matsuura
Manager
Regulatory Affairs

FILED
2012 JUL 30 P 4:51
PUBLIC UTILITIES COMMISSION

The Honorable Chair and Members
of the Hawaii Public Utilities Commission
Kekuanaoa Building, 1st Floor
465 South King Street
Honolulu, Hawaii 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 June 2012 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

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

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

Sincerely,

Enclosure

cc: Service List

[1] Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited are collectively referred to as the "Hawaiian Electric Companies" or "Companies".

SERVICE LIST
(Docket No. 2011-0206)

JEFFREY T. ONO
EXECUTIVE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
DIVISION OF CONSUMER ADVOCACY
P.O. Box 541
Honolulu, HI 96809

2 Copies
Via Hand Delivery

GREGG J. KINKLEY, ESQ.
DEPARTMENT OF THE ATTORNEY GENERAL
425 Queen Street
Honolulu, Hawaii 96813
Counsel for DBEDT

1 Copy
Electronically Transmitted

DANIEL W.S. LAWRENCE, ESQ.
DEPARTMENT OF THE CORPORATION COUNSEL
CITY AND COUNTY OF HONOLULU
530 S. King Street, Room 110
Honolulu, HI 96813
Counsel for the CITY AND COUNTY OF HONOLULU

1 Copy
Electronically Transmitted

LINCOLN S.T. ASHIDA, ESQ.
WILLIAM V. BRILHANTE, JR., ESQ.
MICHAEL J. UDOVIC, ESQ.
DEPARTMENT OF THE CORPORATION COUNSEL
COUNTY OF HAWAII
101 Aupuni Street, Suite 325
Hilo, HI 96720
Counsel for the COUNTY OF HAWAII

1 Copy
Electronically Transmitted

HENRY Q CURTIS
KAT BRADY
LIFE OF THE LAND
76 North King Street, Suite 203
Honolulu, HI 96817

1 Copy
Electronically Transmitted

WARREN S. BOLLMEIER II
PRESIDENT
HAWAII RENEWABLE ENERGY ALLIANCE
46-040 Konane Place, #3816
Kaneohe, HI 96744

1 Copy
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SERVICE LIST
(Docket No. 2011-0206)

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

1 Copy
Electronically Transmitted

ISAAC MORIWAKE, ESQ.
DAVID HENKIN, ESQ.
EARTHJUSTICE
223 South King Street, Ste. 400
Honolulu, HI 96813-4501
Counsel for HAWAII SOLAR ENERGY ASSOCIATION

1 Copy
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KENT D. MORIHARA, ESQ.
KRIS N. NAKAGAWA, ESQ.
LAUREN M. IMADA-LEE, 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
2800 Woodlawn Drive, Suite 131
Honolulu, HI 96822

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

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SERVICE LIST
(Docket No. 2011-0206)

DEAN T. YAMAMOTO, ESQ.
DUKE T. OISHI, ESQ,
YAMAMOTO & SETTLE
700 Bishop Street, Suite 200
Honolulu, HI 96813
Counsel for FOREST CITY HAWAII RESIDENTIAL, INC., CASTLE & COOKE HOMES HAWAII, INC., CASTLE & COOKE RESORTS, LLC and LANAI SUST AINABILITY RESEARCH, LLC

1 Copy
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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

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

THOMAS C., GORAK, ESQ.
GORAK & BAY, L.L.C.
1161 Ikena Circle
Honolulu, HI 96821
Counsel for SUN EDISON LLC

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)

KEVIN T. FOX
KEYES & FOX, LLP
436 14th Street, Suite 1305
Oakland, CA 94612
For the INTERSTATE RENEWABLE ENERGY COUNCIL

1 Copy
Electronically Transmitted

MARCO MANGELSDORF, PRESIDENT
DOUGLAS BATH, VICE-PRESIDENT
PROVISION SOLAR, INC.
69 Railroad Avenue, A-7
Hilo, Hawaii 96720

1 Copy
Electronically Transmitted

HUGH D. BAKER, JR.
HDBAKER & COMPANY HAWAII LLC
78-7000 Kewalo Street
Kailua-Kona, HI 96740

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

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

1 Copy
Electronically Transmitted

ALISON SILVERSTEIN
19213 Luedtke Lane
Pflugerville, TX 78660

1 Copy
Electronically Transmitted

BRENDAN KIRBY
12011 SW Pineapple Court
Palm City, FL 34990

1 Copy
Electronically Transmitted

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

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

The following provides information with respect to items 1a) through 1b) – (all statements are current as of the month ending June 30, 2012):

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, MECO (Maui Division) and HELCO 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, MECO (Maui Division) and HELCO 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 June 30, 2012):

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

Hawaiian Electric's contingency reserve actions are provided in Attachment 3. MECO and HELCO 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:

The tabulation of under frequency load shed events is provided in Attachment 4.
Hawaiian Electric and HELCO did not have any under frequency load shed events for the month of June.

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. MECO and HELCO currently do not have demand response programs.

(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.

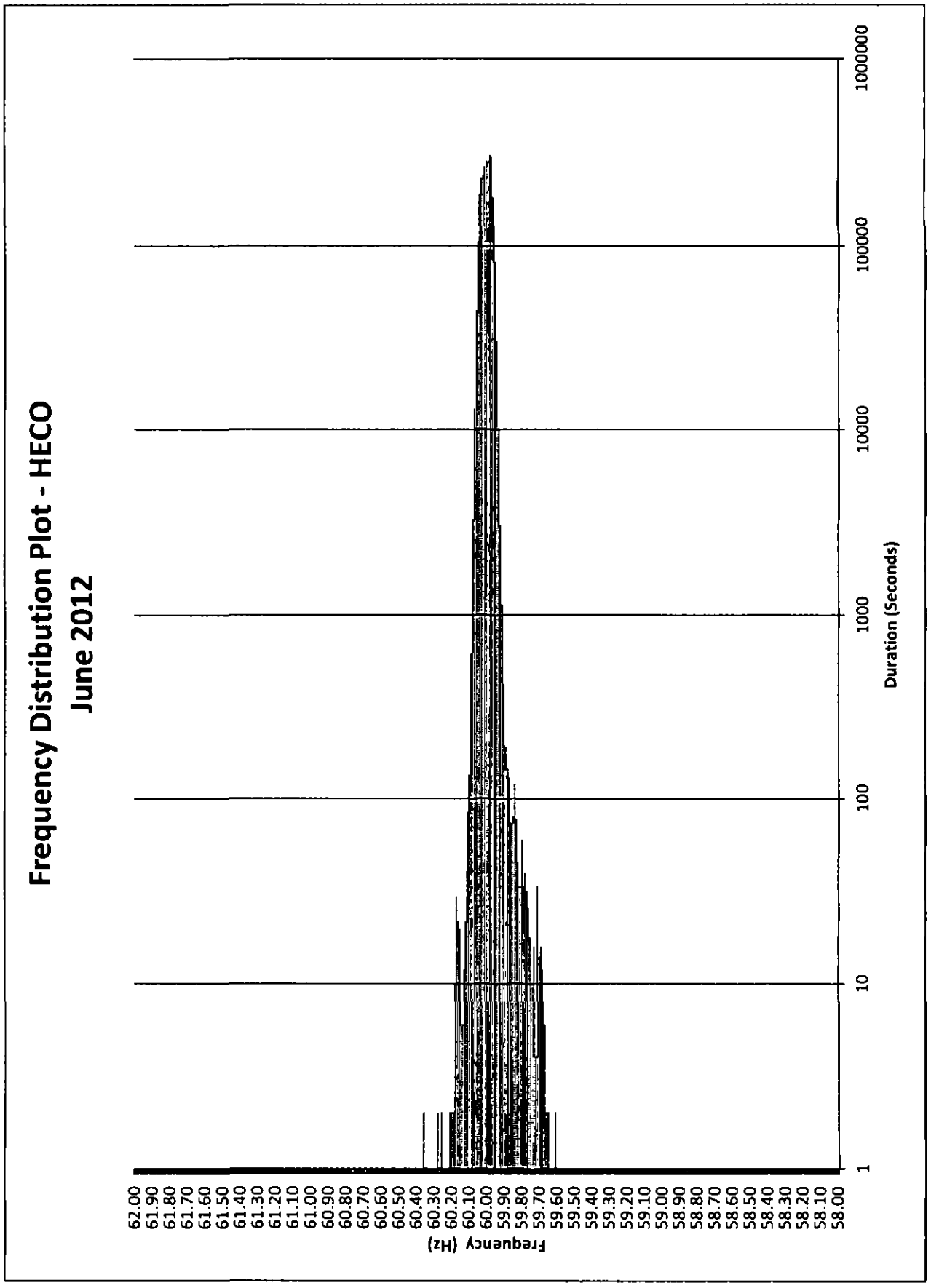
The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending June 30, 2012):

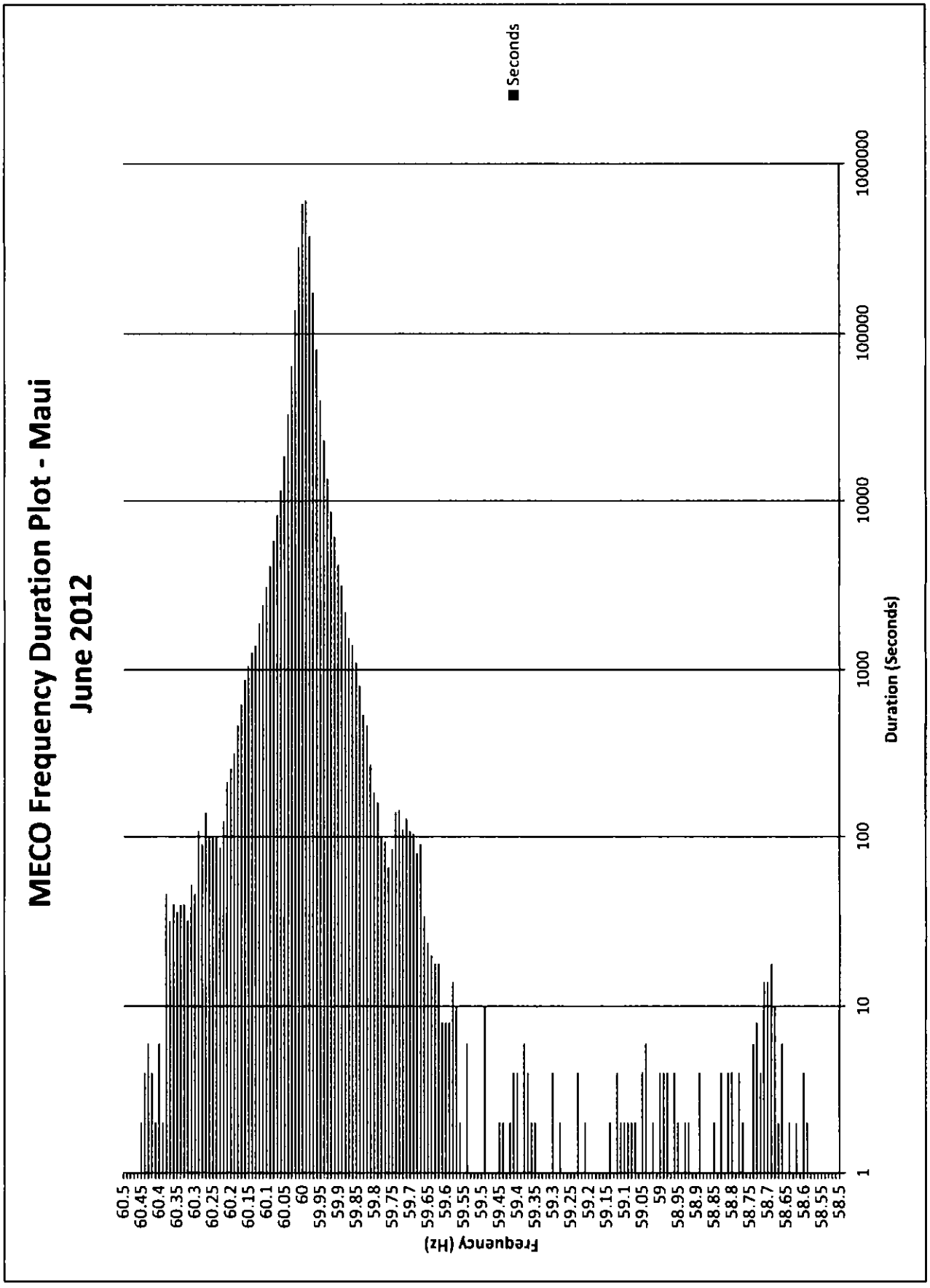
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

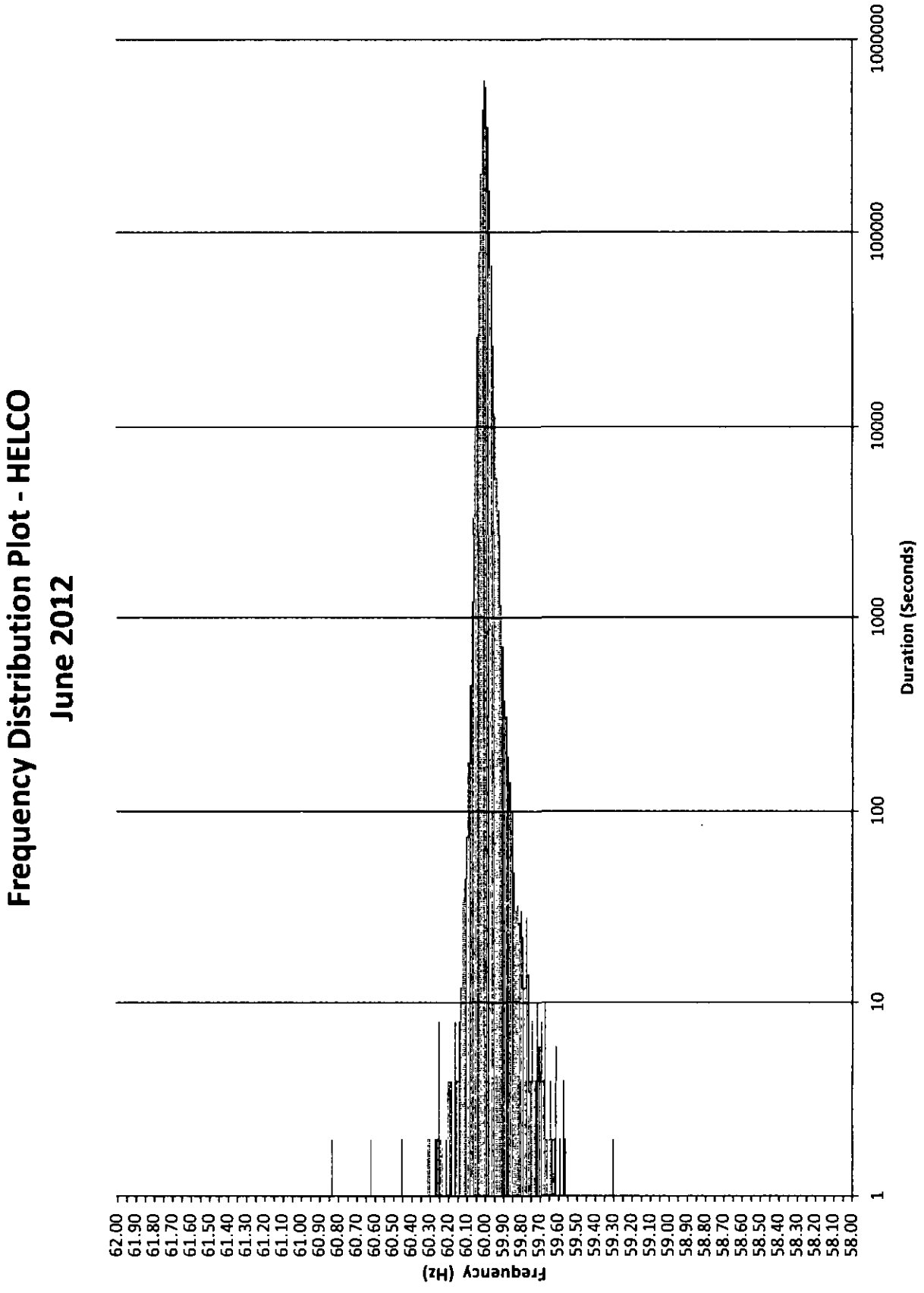
The tabulation of each curtailment event for each resource is provided in Attachment 6.

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. HELCO is not providing an estimate of curtailed MWH, as this information is not provided to HELCO from the IPP. 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 - HECO
June 2012
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


MECO Frequency Duration Plot - Maui
June 2012
Seconds
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5
59.45
59.4
59.35
59.3
59.25
59.2
59.15
59.1
59.05
59
58.95
58.9
58.85
58.8
58.75
58.7
58.65
58.6
58.55
58.5


Frequency Distribution Plot - HELCO
June 2012
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00
Duration (Seconds)
1
10
100
1000
10000
100000
1000000

HECO Frequency Excursion Statistics June 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	3133	3948
Maximum Duration (sec)	864	370
Maximum Deviation (Hz)	59.612	60.361
Total Duration of Excursions (sec)	77032	102538

MECO Frequency Excursion Statistics June 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	50225	20810
Maximum Duration (sec)	3600	950
Maximum Deviation (Hz)	58.58748	60.44708
Total Duration of Excursions (sec)	100450	41620

HELCO Frequency Excursion Statistics June 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	4907	1768
Maximum Duration (sec)	190	74
Maximum Deviation (Hz)	59.30469	60.83301
Total Duration of Excursions (sec)	34408	9210

HAWAIIAN ELECTRIC COMPANY, INC.
CONTINGENCY RESERVE ACTIVATION EVENTS
JUNE 2012

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	06/01/12 17:20	60.000	59.667	NA	-56.03	0:19	K4 tripped while carrying ~52 MW. W9 was brought on to cover the spinning reserve shortfall.
2	06/25/12 15:25	59.967	NA	NA	-31.19	0:53	A fault occurred while performing switching operations. The event did not affect any customers, though some voltage senstive equipment turned off (~60 MW). The rapid decrease in output of CIP CT1 from this loss of customer equipment initiated a controlled shutdown of CIP CT1 due to environmental permit rules. Once CT1 was brought back online, the deficit in spinning reserve was resolved.
3							
4							
5							

MAUI ELECTRIC COMPANY, LTD
UNDERFREQUENCY LOAD SHEDDING EVENTS
JUNE 2012

Island	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Levels UFLS Occurred			
Maui	6/17/2012	59.967	58.60	59.30, 58.70	12.65	0:24	A system frequency depression of 58.6HZ occurred due to loss of 32.1MW of generation from KWP1 and KWP2 in 11 minutes.

HAWAIIAN ELECTRIC COMPANY, INC.
DEMAND RESPONSE EVENTS
JUNE 2012

Event #	Date & Time	Frequency (Hz)			Load *Shed* (MW)	*Duration* (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	06/01/12 17:20	59.904	59.667	59.70	8.90	0:04	Kahe 4 tripped while carrying ~52 MW of load; RDLC activated
2	06/05/12 02:06	60.009	59.649	59.70	3.90	0.03	Kalaeloa CT2 tripped while carrying ~63 MW; RDLC activated
3	06/11/12 12:10	59.796	59.612	59.70	6.50	0.05	K6 tripped while carrying ~71 MW of load; RDLC activated

HAWAIIAN ELECTRIC COMPANY, INC.
CURTAILMENT REPORT
JUNE 2012

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
06/01/12 06:14	0 0	28 21	06/01/12 08:57	0	*	KWF	repair broken cross-arm on pole; Wahlawa-Waialua 46kV ckt
06/02/12 08:13	0 0	19 37	06/02/12 17:34	0	*	KWF	string new conductor for Kawailoa Wind Farm
06/03/12 08:08	0 0	20 76	06/03/12 18:47	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/04/12 06:08	0 0	0.00	06/04/12 19:17	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/05/12 06:11	0 0	14 32	06/05/12 23.36	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/06/12 07:21	0.0	21.55	06/06/12 18:25	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/07/12 05:17	0.0	21 59	06/07/12 17:30	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/08/12 05:42	0 0	13.76	06/08/12 17:20	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/10/12 06:21	0.0	13.26	06/10/12 17:41	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/11/12 06:26	0 0	2.26	06/11/12 17:32	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/12/12 06 37	0 0	4.37	06/12/12 19:37	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/13/12 06:02	0 0	0.19	06/13/12 19:31	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/14/12 06:09	0 0	3.63	06/14/12 20:43	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/15/12 06:10	0 0	5.23	06/15/12 20:59	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/16/12 06:11	0 0	11.70	06/16/12 19:52	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/17/12 01:00	0.0	0.00	06/17/12 02:56	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/17/12 06:07	0 0	22 24	06/17/12 18:29	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/18/12 05.34	0 0	22 26	06/18/12 20:16	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/19/12 04 43	0 0	19.23	06/19/12 19:52	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/20/12 04:42	0 0	4.61	06/20/12 19 27	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/21/12 04.52	0 0	12.47	06/21/12 19 35	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/22/12 04 44	0 0	6.14	06/22/12 19 14	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/23/12 04 46	0 0	12.15	06/23/12 18:27	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/24/12 04.58	0 0	13.09	06/24/12 19 39	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/25/12 04 58	0 0	23.55	06/25/12 19:35	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/26/12 05:08	0 0	18.88	06/26/12 20 52	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/27/12 05 00	0 0	21.40	06/27/12 18 41	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
06/28/12 05:32	0 0	12.63	after 06/30/12	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades

KWF = Kahuku Wind Farm

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

* Data has not been provided by KWF.

MECO-Maui Curtailment Report June 2012

Start Date/Time	Duration (HH MM)	IPP Curtailed	FW Estimated curtailed energy during event (MWh)	FW Peak MW Curtailed	Reason for curtailment
6/2/2012 0 33	4 45	KWP	30 69	28 50	Excess energy
6/2/2012 23 40	7 28	KWP	93 38	28 51	Excess energy
6/3/2012 23 47	6 14	KWP	70 73	28 24	Excess energy
6/5/2012 0 09	5 41	KWP	56 29	25 47	Excess energy
6/6/2012 2 03	3 46	KWP	11 16	24 75	Excess energy
6/10/2012 0 00	6 01	KWPII	No Data Available	No Data Available	Excess energy
6/11/2012 2 09	3 00	KWPII	No Data Available	No Data Available	Excess energy
6/11/2012 23 18	9 18	KWPII	No Data Available	No Data Available	Excess energy
6/14/2012 8 52	9 45	KWP	1 37	3 79	Transmission line maintenance
6/15/2012 3 26	1 19	KWPII	No Data Available	No Data Available	Excess energy
6/15/2012 8 52	0 12	KWPII	No Data Available	No Data Available	Maintain regulating reserve down
6/15/2012 20 59	11 14	KWPII	No Data Available	No Data Available	Excess energy
6/16/2012 0 42	5 37	KWP	37 53	29 78	Excess energy
6/16/2012 22 24	10 47	KWPII	No Data Available	No Data Available	Excess energy
6/16/2012 23 58	6 30	KWP	73 96	28 57	Excess energy
6/17/2012 22 34	8 03	KWPII	No Data Available	No Data Available	Excess energy
6/17/2012 23 38	5 36	KWP	55 09	28 57	System fault and high wind conditions
6/18/2012 22 35	9 35	KWPII	No Data Available	No Data Available	Excess energy and maintain regulating reserve up
6/18/2012 23 54	5 20	KWP	63 83	27 04	Excess energy and high wind conditions
6/19/2012 10 20	7 25	KWPII	No Data Available	No Data Available	Maintain regulating reserve up
6/19/2012 22 48	8 19	KWPII	No Data Available	No Data Available	Excess energy and maintain regulating reserve up
6/20/2012 0 01	6 02	KWP	27 84	26 59	Excess energy
6/20/2012 6 49	10 53	KWP	94 38	27 47	Transmission line maintenance
6/20/2012 8 30	29 23	KWPII	No Data Available	No Data Available	Maintain regulating reserve up and regulating reserve down
6/21/2012 2 32	2 08	KWP	No Data Available	24 92	Excess energy
6/21/2012 6 15	10 00	KWP	27 93	25 80	Transmission line maintenance and maintain regulating reserve down
6/21/2012 23 15	5 46	KWPII	No Data Available	No Data Available	Maintain regulating reserve down and excess energy
6/22/2012 1 34	14 57	KWP	No Data Available	6 88	Proactive curtailment and transmission line maintenance
6/22/2012 5 49	2 30	KWPII	No Data Available	No Data Available	Maintain regulating reserve up
6/22/2012 16 08	2 39	KWPII	No Data Available	No Data Available	Maintain regulating reserve down
6/22/2012 22 27	56 47	KWPII	No Data Available	No Data Available	Maintain regulating reserve up, excess energy, and maintain regulating reserve down
6/23/2012 0 33	6 57	KWP	56 04	29 63	Excess energy
6/24/2012 0 09	6 46	KWP	74 91	27 04	Excess energy
6/24/2012 19 48	21 00	KWP	No Data Available	No Data Available	High wind - self curtailment, excess energy, and transmission line maintenance
6/25/2012 0 00	268 26	KWPII	No Data Available	No Data Available	Maintain regulating reserve down, maintain regulating reserve up, and excess energy
6/26/2012 0 08	5 53	KWP	53 59	27 05	Excess energy and extreme weather conditions
6/27/2012 0 08	5 55	KWP	71 28	28 53	Excess energy
6/27/2012 23 47	6 12	KWP	74 47	30 00	Excess energy
6/29/2012 2 57	0 15	KWP	No Data Available	No Data Available	Excess energy
6/29/2012 23 53	6 33	KWP	75 66	29 95	Excess energy

Notes
- During curtailment events set point for Kaheawa Wind Power ("KWP") and Kaheawa Wind Power II ("KWPII") are adjusted to ensure maximum energy contribution KWP "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind, and MECO does not make any representation as to its accuracy KWPII "Estimated curtailed energy during event" and "Peak MW curtailed" information was not available.
- Makila Hydro's actual hours of operation are typically manually controlled by the project
- Estimated curtailed energy during curtailment events is not available for Makila Hydro or AAAAA Rent-A-Space Maui LTD
- KWPII delivered test energy to MECO throughout the month of June 2012

MECO - Lanai (La Ola PV Farm) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
6/1/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola. La Ola curtailment limit was set earlier at 1 MW
6/2/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/3/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/4/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/5/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/6/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/7/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola. La Ola curtailment limit was set earlier at 1 MW.
6/8/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/9/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/10/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola. La Ola curtailment limit was set earlier at 1 MW.
6/11/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/12/12 9:00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola. La Ola curtailment limit was set earlier at 1 MW
6/13/12 11:00	0.99	6/13/12 11:10	1.00	One Operator, set max output to 1MW
6/13/12 12:02	0.35	6/13/12 12:09	0.50	One Operator, set max output to 1MW
6/13/12 13:04	0.95	6/13/12 13:10	1.00	One Operator, set max output to 1MW
6/13/12 14:02	0.18	6/13/12 14:13	0.30	One Operator, set max output to 1MW
6/14/12 7:10	0.82	6/14/12 7:17	0.45	One Operator, set max output to 1MW
6/14/12 8:07	0.99	6/14/12 8:13	0.60	One Operator, set max output to 1MW
6/14/12 9:07	0.99	6/14/12 9:14	0.91	One Operator, set max output to 1MW
6/14/12 10:08	1.00	6/14/12 10:15	0.93	One Operator, set max output to 1MW
6/14/12 11:09	1.00	6/14/12 11:15	0.97	One Operator, set max output to 1MW
6/14/12 12:04	0.27	6/14/12 12:10	0.80	One Operator, set max output to 1MW
6/14/12 13:12	0.46	6/14/12 13:17	0.65	One Operator, set max output to 1MW
6/14/12 14:09	0.40	6/14/12 14:17	0.13	One Operator, set max output to 1MW
6/14/12 15:00	0.19	6/14/12 15:13	0.09	One Operator, set max output to 1MW
6/15/12 10:00	1.20	6/15/12 10:07	0.60	One Operator, set max output to 1MW
6/15/12 11:02	0.60	6/15/12 11:10	0.70	One Operator, set max output to 1MW
6/15/12 12:03	0.40	6/15/12 12:14	0.70	One Operator, set max output to 1MW
6/15/12 13:05	0.40	6/15/12 13:12	0.80	One Operator, set max output to 1MW
6/15/12 13:58	0.40	6/15/12 14:05	0.40	One Operator, set max output to 1MW
6/15/12 15:05	0.18	6/15/12 15:20	0.30	One Operator, set max output to 1MW
6/15/12 15:55	0.19	6/15/12 16:07	0.19	One Operator, set max output to 1MW

MECO - Lanai (La Ola PV Farm) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
6/16/12 9 02	1 00	6/16/12 9 09	0 95	One Operator, set max output to 1MW
6/16/12 10 01	0 24	6/16/12 10 11	0 50	One Operator, set max output to 1MW
6/16/12 11 03	0 50	6/16/12 11:15	0 40	One Operator, set max output to 1MW
6/16/12 12 07	1 20	6/16/12 12 15	0 80	One Operator, set max output to 1MW
6/16/12 12 57	0 80	6/16/12 13 05	0 60	One Operator, set max output to 1MW
6/16/12 14 00	0 30	6/16/12 14 09	0 44	One Operator, set max output to 1MW
6/16/12 15 10	0 42	6/16/12 15 21	0 41	One Operator, set max output to 1MW
6/17/12 9 01	0 50	6/17/12 9 10	1 22	One Operator, set max output to 1MW
6/17/12 10 10	0.93	6/17/12 10.17	0 97	One Operator, set max output to 1MW
6/17/12 11.02	1 20	6/17/12 11:11	0 90	One Operator, set max output to 1MW
6/17/12 12 05	0 70	6/17/12 12 16	0 70	One Operator, set max output to 1MW
6/17/12 13 00	0 50	6/17/12 13 09	0 60	One Operator, set max output to 1MW
6/17/12 14 05	0.40	6/17/12 14 20	0 50	One Operator set max output to 1MW
6/17/12 15 10	0 40	6/17/12 15 22	0 50	One Operator, set max output to 1MW
6/18/12 9 00	0 50	6/18/12 9 10	0 70	One Operator, set max output to 1MW
6/18/12 10 05	0 60	6/18/12 10 19	0 70	One Operator, set max output to 1MW
6/18/12 11 10	0 90	6/18/12 11 18	0 50	One Operator, set max output to 1MW
6/18/12 12 08	0 60	6/18/12 12 20	0 60	One Operator, set max output to 1MW
6/18/12 13 03	1 20	6/18/12 13.15	0 90	One Operator, set max output to 1MW
6/18/12 14 00	1.20	6/18/12 14.10	1.00	One Operator, set max output to 1MW
6/18/12 15 10	0 70	6/18/12 15 20	0 80	One Operator, set max output to 1MW
6/19/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/20/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/21/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/22/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/23/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/24/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.
6/25/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/26/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/27/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction. MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW
6/28/12 9 00	Data was not available	Data was not available	Data was not available	MECO SCADA La Ola PV curtailment control malfunction MECO is unable to curtail La Ola La Ola curtailment limit was set earlier at 1 MW.

Note In April the testing period to increase the La Ola PV Farm's output to 1200 kW began. La Ola has not been able to comply with the 360 kW per minute ramp rate and on 6/27/12, MECO issued a letter to Lanai Sustainability Research allowing La Ola to operate at a full capacity of 1,200 kW on a conditional basis At this time, MECO does not have an accurate method for calculating the watt-hours curtailed nor does LSR provide MECO with watt-hours curtailed and peak watt-hours curtailed

HELCO Curtailment Report June 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
06/01/12 02:02	18.6 MW	06/01/12 04:08	18.6 MW	Tawhiri Group B curtailed - excess energy
06/02/12 00:08	18.5 MW	06/02/12 06:15	13.7 MW	Tawhiri Group B curtailed - excess energy
06/02/12 03:05	6.7 MW	06/02/12 03:49	5.0 MW	HRD curtailed - excess energy
06/03/12 00:29	13.0 MW	06/03/12 06:13	6.4 MW	Tawhiri Group B curtailed - excess energy
06/03/12 23:37	18.7 MW	06/04/12 05:24	17.8 MW	Tawhiri Group B curtailed - excess energy
06/03/12 23:44	7.6 MW	06/03/12 23:58	7.5 MW	HRD curtailed - excess energy
06/04/12 00:24	7.3 MW	06/04/12 01:12	7.7 MW	HRD curtailed - excess energy
06/06/12 00:25	17.1 MW	06/06/12 05:06	17.2 MW	Tawhiri Group B curtailed - excess energy
06/06/12 08:45	33.8 MW	06/06/12 10:55	32.6 MW	PGV curtailed - fine tune testing
06/07/12 02:27	12.9 MW	06/07/12 03:56	12.7 MW	Tawhiri Group B curtailed - excess energy
06/08/12 00:28	18.2 MW	06/08/12 05:13	15.6 MW	Tawhiri Group B curtailed - excess energy
06/09/12 00:39	12.9 MW	06/09/12 05:47	13.5 MW	Tawhiri Group B curtailed - excess energy
06/13/12 02:11	16.5 MW	06/13/12 04:45	15.8 MW	Tawhiri Group B curtailed - excess energy
06/14/12 02:51	12.5 MW	06/14/12 04:40	7.9 MW	Tawhiri Group B curtailed - excess energy
06/17/12 00:35	16.3 MW	06/17/12 05:59	15.2 MW	Tawhiri Group B curtailed - excess energy
06/17/12 10:25	16.3 MW	06/17/12 17:09	14.5 MW	Tawhiri - High wind curtail at Tawhiri request.
06/19/12 00:26	16.3 MW	06/19/12 04:51	3.0 MW	Tawhiri Group B curtailed - excess energy
06/21/12 00:43	9.3 MW	06/21/12 04:38	4.1 MW	Tawhiri Group B curtailed - excess energy
06/22/12 00:51	11.4 MW	06/22/12 05:07	8.5 MW	Tawhiri Group B curtailed - excess energy
06/23/12 01:44	13.5 MW	06/23/12 04:45	14.6 MW	Tawhiri Group B curtailed - excess energy
06/23/12 23:29	16.3 MW	06/24/12 05:44	13.3 MW	Tawhiri Group B curtailed - excess energy
06/24/12 00:35	7.6 MW	06/24/12 05:10	5.4 MW	HRD curtailed - excess energy
06/24/12 23:08	16.3 MW	06/25/12 05:58	16.3 MW	Tawhiri Group B curtailed - excess energy
06/25/12 01:08	7.6 MW	06/25/12 04:09	2.9 MW	HRD curtailed - excess energy
06/29/12 00:18	4.4 MW	06/29/12 05:31	4.4 MW	Tawhiri Group B curtailed - excess energy
06/29/12 01:06	6.1 MW	06/29/12 05:13	0.2 MW	HRD curtailed - excess energy
06/30/12 00:12	7.4 MW	06/30/12 05:24	1.6 MW	Tawhiri Group B curtailed - excess energy
06/30/12 02:37	3.2 MW	06/30/12 05:14	0.4 MW	HRD curtailed - excess energy