



October 27, 2016

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

PUBLIC UTILITIES
COMMISSION

Dear Commissioners:

Subject: Hawaiian Electric Energy Cost Adjustment Factor for November 2016

Hawaiian Electric Company Inc.'s ("Hawaiian Electric" or "Company") November 2016 energy cost adjustment factor is -3.848 cents per kilowatt-hour ("kWh"), an increase of 0.116 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$131.04, an increase of \$0.27 compared to rates effective October 1, 2016. The increase in the typical residential bill is due to the increase in the energy cost adjustment factor (+\$0.58) and the decrease in the Purchased Power Adjustment Clause rate (-\$0.31).

The Company's fuel composite cost of generation increased 27.08 cents per million BTU to 851.20 cents per million BTU. The Company's Distributed Generation ("DG") energy component increased 0.002 cents per kWh to 0.005 cents per kWh. The composite cost of purchased energy increased 0.420 cents per kWh to 7.937 cents per kWh.

In accordance with Decision and Order No. 33745, filed in Docket No. 2014-0086 on June 6, 2016, the Company is collecting the Commission-approved D-VAR adder True-up for the Kahuku Wind Farm purchased power expense through the energy cost adjustment clause ("ECAC") over the twelve-month period from August 2016 through July 2017. The adjustment to the ECAC for this item will be shown separately each month on Attachment 2, page 2, at line 84. The calculation of the rate adjustment for November 2016 is shown on Attachment 4, pages 5-6.

The attached sheets set forth the energy cost adjustment factor in cents per kWh for each rate schedule that is applicable for prorata use beginning November 1, 2016.

Very truly yours,

Dean K. Matsuura
Manager, Regulatory Rate Proceedings

Attachments

cc: Division of Consumer Advocacy

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FACTOR

	<u>Effective Dates</u>		<u>Change</u>
	<u>10/1/16</u>	<u>11/01/16</u>	
Composite Cost Of Generation, ¢/mmbtu	824.12	851.20	27.08
DG Energy Component, ¢/kWh	0.003	0.005	0.002
Composite Cost Of Purchased Energy, ¢/kWh	7.517	7.937	0.420
 <u>Residential, Schedule "R"</u>			
Energy Cost Adjustment, ¢/kWh	(3.964)	(3.848)	0.116
 <u>Others, Schedules "G,J,DS,P,F"</u>			
Energy Cost Adjustment, ¢/kWh	(3.964)	(3.848)	0.116
 <u>Residential Customer with:</u>			
600 kWh Consumption, \$/bill	155.71	156.03	0.32
500 kWh Consumption, \$/bill	130.77	131.04	0.27

Supersedes Sheet Effective: October 1, 2016

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING

ENERGY COST ADJUSTMENT (ECA) FILING - November 1, 2016 (page 1 of 2)

Line		
1	Effective Date	- November 1, 2016
2	Supersedes Factor	- October 1, 2016

GENERATION COMPONENT

CENTRAL STATION					DG ENERGY COMPONENT		
FUEL PRICES, ¢/MBTU							
3	Honolulu			843.50			
4	Kahe			843.82			
5	Waiau-Steam			843.50			
6	Waiau-Diesel			1,159.88			
7	CIP-Diesel			N/A			
8	CIP-Biodiesel			619.05			
9	Other			0			
BTU MIX, %							
10	Honolulu			0.00	32 COMPOSITE COST OF DG ENERGY, ¢/kWh 7.610		
11	Kahe			70.50	33 % Input to System kWh Mix 0.06		
12	Waiau-Steam			25.29			
13	Waiau-Diesel			3.13			
14	CIP-Diesel			N/A	34 WTD COMP DG ENRGY COST, ¢/kWh (Lines 32 x 33) 0.00457		
15	CIP-Biodiesel			1.08			
16	Other			0.00			
				100.00	35 BASE DG ENERGY COMP COST 0.000		
17	COMPOSITE COST OF GENERATION, CNTRL STN + OTHER ¢/mmbtu			851.20	36 Base % Input to System kWh Mix 0.00		
18	% Input to system kWh Mix			44.53	37 WTD BASE DG ENERGY COST, ¢/kWh (Line 35 x 36) 0.00000		
EFFICIENCY FACTOR, mmbtu/kWh							
	(A)	(B)	(C)	(D)	38 Cost Less Base (Line 34 - 37) 0.00457		
		Eff Factor	Percent of	Weighted	39 Loss Factor 1.053		
	Fuel Type	mmbtu/kwh	Centrl Stn + Other	Eff Factor	40 Revenue Tax Req Multiplier 1.0975		
19	LSFO	0.011079	97.70	0.010824	41 DG FACTOR, ¢/kWh (Line 38 x 39 x 40) 0.00528		
20	Diesel	0.019721	1.73	0.000341			
21	Biodiesel	0.020169	0.57	0.000115			
22	Other	0.011143	0.00	0.000000			
(Lines 19 through 22): Col(B) x Col(C) = Col(D)							
23	Weighted Efficiency Factor, mmbtu/kWh [(lines 19(D) + 20(D) + 21(D) + 22(D))]			0.011280			
24	WGTD. COMPOSITE CNTRL STN + OTHER GEN COST, ¢/kWh (lines 17 x 18 x 23)			4.27556			
25	BASE CNTRL STN + OTHER GEN. COST, ¢/Mbtu			1,354.58			
26	Base % Input to System kWh Mix			57.59			
27	Efficiency Factor, Mbtu/kWh			0.011142			
28	WEIGHTED BASE CNTRL STN + OTHER GEN COST ¢/KWH (lines 25 x 26 x 27)			8.69190			
29	Cost Less Base (Line 24 - 28)			(4.41634)	SUMMARY OF TOTAL GENERATION FACTOR, ¢/kWh		
30	Revenue Tax Req Multiplier			1.0975	42 CNTRL STN + OTHER (line 31) (4.84693)		
31	CNTRL STN + OTHER GENERATION FACTOR, ¢/KWH (Line 29 x 30)			(4.84693)	43 DG (line 41) 0.00528		
					44 TOTAL GENERATION FACTOR, ¢/KWH (lines 42 + 43) (4.84165)		

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING

ENERGY COST ADJUSTMENT (ECA) FILING - November 1, 2016 (page 2 of 2)

<u>Line</u>		
1	Effective Date	- November 1, 2016
2	Supercedes Factor	- October 1, 2016

<u>Line</u>	<u>PURCHASED ENERGY COMPONENT</u>		
	PURCHASED ENERGY PRICE - ¢/KWH		
45	THC	- On Peak	9.021
46		- Off Peak	8.866
47	HRRV	- On Peak	16.65
48		- Off Peak	16.17
49	HRRV	- On Peak (excess)	10.60
50		- Off Peak (excess)	6.36
51	Chevron	- On Peak	9.021
52		- Off Peak	8.866
53	Kalaeloa		9.073
54	AES-HI		3.166
55	Kawailoa		21.417
56	Kahuku Wind		20.100
57	As Available I		21.401
58	FIT		18.974
	PURCHASED ENERGY KWH MIX, %		
59	THC	- On Peak	0.22
60		- Off Peak	0.16
61	HRRV	- On Peak	6.87
62		- Off Peak	2.45
63	HRRV	- On Peak (excess)	0.00
64		- Off Peak (excess)	0.83
65	Chevron	- On Peak	0.00
66		- Off Peak	0.00
67	Kalaeloa		43.64
68	AES-HI		40.69
69	Kawailoa		2.40
70	Kahuku Wind		1.54
71	As Available I		0.47
72	FIT		0.73
			100.00
73	COMPOSITE COST OF PURCHASED ENERGY, ¢/KWH		7.937
74	% Input to System kWh Mix		55.41
75	WTD CMP PURCH ENRGY COST, ¢/KWH (lines 73 x 74)		4.39789
76	BASE PURCH ENERGY COMP COST		8.328
77	Base % Input to System kWh Mix		42.41
78	WEIGHTED COMP. PURCH. ENERGY COST, ¢/KWH (lines 76 x 77)		3.53190
79	Cost Less Base (Line 75 - 78)		0.86599
80	Loss Factor		1.053
81	Revenue Tax Req Multiplier		1.0975
82	PURCHASED ENERGY FACTOR, ¢/KWH (lines 79 x 80 x 81)		1.00080

<u>Line</u>	<u>SYSTEM COMPOSITE</u>	
83	GEN AND PURCHASED ENERGY FACTOR, ¢/kWh (lines 44 + 82)	(3.84085)
84	Kahuku Wind D-VAR Adjustment, ¢/kWh	0.023
85	ECA Reconciliation Adjustment	(0.030)
86	ECA FACTOR, ¢/kWh (lines 83 + 84 + 85)	(3.848)

Hawaiian Electric Company, Inc.
FUEL OIL INVENTORY PRICES FOR 11-01-16

	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, ¢/Mbtu	843.50	843.50	843.50
Kahe Fuel Additive, ¢/Mbtu	-	0.32	-
Honolulu Trucking Cost, ¢/Mbtu	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, ¢/Mbtu	843.50	843.82	843.50
	Waiau	CIP	
Average Diesel / Biodiesel Oil, ¢/Mbtu	1,159.88	619.05	
Thruput Charges, ¢/Mbtu	-	-	
Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu	1,159.88	619.05	
	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, \$/bbl	53.19	53.19	53.19
Kahe Fuel Additive, \$/bbl	-	0.02	-
Honolulu Trucking Cost, \$/bbl	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, \$/bbl	53.19	53.21	53.19
	Waiau	CIP	
Average Diesel / Biodiesel Oil, \$/bbl	66.55	32.78	
Thruput Charges, ¢/Mbtu	-	-	
Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl	66.55	32.78	
Distributed Generation Fuel Prices Used for Filing, ¢/kWh			7.610

FOAC November 2016

<u>LSFO</u>	BARRELS	MBTU	AMOUNT	AVE \$/MBTU
Per FOAC run	760,315	4,794,307.27	40,440,168.72	8.435039
Additional	-	-	-	-
Forecast Amt	760,315	4,794,307.27	40,440,168.72	8.435039
	-	6.20	-	ADD'L BBL
	4,794,307	760,315	6.3057	MBTU / BBL
	40,440,169	760,315	53.19	DOLLARS / BBL
<u>WAI AU DIESEL</u>	24,990	143,377.51	1,663,013.58	11.598846
	1,663,014	24,990	66.55	DOLLARS / BBL
<u>CIP BIODIESEL</u>	42,404	224,538.13	1,389,997.21	6.190473
	1,389,997	42,404	32.78	DOLLARS / BBL
KAHE FUEL ADDITIVE *				
Additional	-	-	-	0.003194
Forecast Amt	-	-	-	0.003194
\$ / BBL =		-	0.02	DOLLARS / BBL
HONOLULU TRUCKING COST				
Per FOAC run	-	-	-	-
Additional	-	-	-	-
Forecast Amt	-	-	-	-
\$ / BBL =	-	-	-	DOLLARS / BBL

* Annualized amount per HECO T-4 in Docket No. 2010-0080

Hawaiian Electric Company, Inc.

CONTRACT PRICES EFFECTIVE 10-1-16

<u>TYPE OF OIL BURNED</u>	<u>\$/BBL</u>	<u>¢/MBTU</u>
LOW SULFUR FUEL OIL		
Tax *	3.7705	60.82
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
DIESEL		
Tax *	4.8236	82.32
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
BIODIESEL		
Tax *	0.0000	0.00
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00

* Tax includes HGET, Hawaii Use Tax, Liquid Fuel Tax, LUST, Federal Oil Spill Recovery Fee, and Environmental Response, Energy and FS Tax.

Note: Since these components are not accounted for separately in inventory, contract prices for the current month are being provided. Contract prices are considered accurate pending actual delivery of the fuel.

HAWAIIAN ELECTRIC COMPANY, INC.

DETERMINATION OF DISTRIBUTED GENERATION EXPENSE

Line No.		
L1	Estimated Distributed Generation Fuel Cost (\$/mbtu)	\$7.34
L2	Estimated Distributed Generation Fuel Transport Cost (\$/mbtu)	\$0.00
L3 = L1+ L2	Estimated Total Fuel and Transportation Cost (\$/mbtu)	\$7.34
L4	Estimated Mbtu Generation for month (November 2016)	3,100
L5 = L3 x L4	Estimated Distributed Generation Total Fuel Cost (\$)	\$22,743
L6	Estimated Distributed Generation kWh Produced (November 2016)	299,000
L7 = (L5 ÷ L6) x 100	Distributed Generation Fuel Prices Used for Filing, (¢/kWh)	7.6100

Hawaiian Electric Company, Inc.
ECA RECONCILIATION ADJUSTMENT
November 2016

1.	Amount to be returned	\$	(435,211)
2.	Monthly Amount (Line 1 x 1/3)	\$	(145,070)
3.	Revenue Tax Divisor		0.91115
4.	Total (Line 2 / Line 3)	\$	(159,217)
5.	Estimated MWh Sales (November 2016)		535,900
6.	ECA Reconciliation Adjustment, ¢/kWh (Line 4 ÷ Line 5)		<u><u>(0.030)</u></u>

Hawaiian Electric Company, Inc.
2016 FUEL OIL ADJUSTMENT RECONCILIATION SUMMARY
(Thousand \$)

<u>Line</u>	<u>Description</u>	Info Only		Basis for Recon	
		W/O DeadBand September 2016 Cumulative <u>YTD Total</u>	collection by company*	W/ DeadBand September 2016 Cumulative <u>YTD Total</u>	collectn by company*
ACTUAL COSTS:					
1	Generation	\$219,095.9		\$219,095.9	
2	Distributed Generation	\$0.2		\$0.2	
3	Purch Power	\$190,144.6		\$190,144.6	
4	TOTAL	\$409,240.7		\$409,240.7	
FUEL FILING COST					
5	Generation	\$218,831.5		\$219,057.8	
6	Distributed Generation	\$0.2		\$0.2	
7	Purch Power	\$190,144.6		\$190,144.6	
8	TOTAL	\$408,976.3		\$409,202.6	
BASE FUEL COST					
9	Generation	\$311,778.3		\$311,778.3	
10	Distributed Generation	\$0.0		\$0.0	
11	Purch Power	\$305,866.2		\$305,866.2	
12	TOTAL	\$617,644.5		\$617,644.5	
13	FUEL-BASE COST (Line 8-12)	-\$208,668.2		-\$208,441.9	
14	ACTUAL FOA LESS TAX	-\$200,521.4		-\$200,521.4	
15	Less: FOA reconciliation adj for prior year	\$8,887.7		\$8,887.7	
16	ADJUSTED FOA LESS TAX	-\$209,409.1		-\$209,409.1	
17	FOA-(FUEL-BASE) (Line 16-13)	-\$740.9	under	-\$967.2	under
ADJUSTMENTS:					
18	Current year FOA accrual reversal	-\$4,871.8		-\$4,871.8	
19	Other prior year FOA	\$0.0		\$0.0	
20	Other	\$0.0		\$0.0	
21	QUARTERLY FOA RECONCILIATION (Line 17+18+19+20)	-\$5,612.7	under	-\$5,839.0	under
22	2nd Quarter Reconciliation YTD			-\$6,274.2	under
23	Amount to be returned			\$435.2	

* Over means an over-collection by the company.
Under means an under-collection by the company.

Hawaiian Electric Company, Inc.
DEADBAND CALCULATION
2016

	Notes	YTD
Industrial		
Industrial Efficiency Factor (per D&O), BTU/kWh*	f	11,079
Industrial Deadband Definition, +/- BTU/kWh	d	50
Industrial Portion of Recorded Sales, kWh	a	2,478,383,438
Industrial Consumption (Recorded), MMBTU	b	27,491,027
Industrial Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	11,092
Lower limit of Industrial Deadband, BTU/kWh	e = f-d	11,029
Higher limit of Industrial Deadband, BTU/kWh	g = f+d	11,129
Industrial Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	11,092
Diesel		
Diesel Efficiency Factor (per D&O), BTU/kWh*	f	19,721
Diesel Deadband Definition, +/- BTU/kWh	d	50
Diesel Portion of Recorded Sales, MWh	a	8,235,947
Diesel Consumption (Recorded), MMBTU	b	272,304
Diesel Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	33,063
Lower limit of Diesel Deadband, BTU/kWh	e = f-d	19,671
Higher limit of Diesel Deadband, BTU/kWh	g = f+d	19,771
Diesel Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	19,771
Biodiesel		
Biodiesel Efficiency Factor (per D&O), BTU/kWh*	f	20,169
Biodiesel Deadband Definition, +/- BTU/kWh	d	50
Biodiesel Portion of Recorded Sales, MWh	a	28,437,617
Biodiesel Consumption (Recorded), MMBTU	b	496,274
Biodiesel Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	17,451
Lower limit of Biodiesel Deadband, BTU/kWh	e = f-d	20,119
Higher limit of Biodiesel Deadband, BTU/kWh	g = f+d	20,219
Biodiesel Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	20,119
Hydro		
Hydro Efficiency Factor (per D&O), BTU/kWh*	f	0
Hydro Deadband Definition, +/- BTU/kWh	d	50
Hydro Portion of Recorded Sales, MWh	a	0
Hydro Consumption (Recorded), MMBTU	b	0
Hydro Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	0
Lower limit of Hydro Deadband, BTU/kWh	e = f-d	-50
Higher limit of Hydro Deadband, BTU/kWh	g = f+d	50
Hydro Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	0
Other		
Other Efficiency Factor (per D&O), BTU/kWh*	f	0
Other Deadband Definition, +/- BTU/kWh	d	50
Other Portion of Recorded Sales, MWh	a	0
Other Consumption (Recorded), MMBTU	b	0
Other Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	0
Lower limit of Other Deadband, BTU/kWh	e = f-d	-50
Higher limit of Other Deadband, BTU/kWh	g = f+d	50
Other Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	0

* YTD Efficiency Factor (per D&O) is actual YTD & projected to the end of the year weighted by calendar days in the year.

HAWAIIAN ELECTRIC COMPANY, INC.
GENERATION FUEL FILING COST AND GENERATION BASE FUEL COST,
September 2016 Year-to-Date

	<u>Without Deadband</u>	<u>With Deadband - As Filed</u>
<u>INDUSTRIAL FUEL FILING COST</u>		
LSFO Portion of Recorded Sales , MWH	2,478,383,438	2,478,383,438
LSFO Sales Efficiency Factor (mmbtu/kwh)	0.011079	0.011092
Mmbtu adjusted for Sales Efficiency Factor	27,458,010,110	27,490,229,094
\$/mmbtu	<u>\$7.5734</u>	<u>\$7.5734</u>
TOTAL LSFO \$ TO BE RECOVERED	\$207,951,113	\$208,195,121
<u>DIESEL FUEL FILING COST</u>		
Diesel Portion of Recorded Sales, MWH	8,235,947	8,235,947
Diesel Sales Efficiency Factor (mmbtu/kwh)	0.019721	0.019771
Mmbtu adjusted for Sales Efficiency Factor	162,421,111	162,832,908
\$/mmbtu	<u>\$11.4076</u>	<u>\$11.4076</u>
TOTAL DIESEL \$ TO BE RECOVERED	\$1,852,837	\$1,857,535
<u>BIODIESEL FUEL FILING COST</u>		
Biodiesel Portion of Recorded Sales , MWH	28,437,617	28,437,617
Biodiesel Sales Efficiency Factor (mmbtu/kwh)	0.020169	0.020119
Mmbtu adjusted for Sales Efficiency Factor	573,558,297	572,136,416
\$/mmbtu	<u>\$15.7395</u>	<u>\$15.7395</u>
TOTAL BIODIESEL \$ TO BE RECOVERED	\$9,027,504	\$9,005,124
<u>TOTAL GENERATION FUEL FILING COST</u>		
Generation Portion of Recorded Sales , MWH		
Sales Efficiency Factor (mmbtu/kwh)		
Mmbtu adjusted for Sales Efficiency Factor		
\$/mmbtu		
TOTAL GENERATION FUEL FILING COST \$	\$218,831,454	\$219,057,780
<u>GENERATION BASE FUEL COST</u>		
TOTAL GENERATION BASE FUEL COST	\$311,778,286	\$311,778,286
TOTAL GENERATION FUEL FILING COST \$ YTD	\$218,831,454	\$219,057,780
TOTAL GENERATION BASE FUEL COST YTD	\$311,778,286	\$311,778,286

Hawaiian Electric Company, Inc.
D-VAR TRUE-UP RECONCILIATION ADJUSTMENT
November 2016

1.	Amount to be collected	\$	1,369,958
2.	Monthly Amount (Line 1 x 1/12)	\$	114,163
3.	Revenue Tax Divisor		0.91115
4.	Total (Line 2 / Line 3)	\$	125,296
5.	Estimated MWh Sales (November 2016)		535,900
6.	ECA Reconciliation Adjustment, ¢/kWh (Line 4 ÷ Line 5)		<u><u>0.023</u></u>

Hawaiian Electric Company, Inc.
D-VAR TRUE-UP INVOICE CALCULATION DETAIL
August 2016

Calendar Year	Period	Purchased kWh	D-VAR Adder Rate	Total \$ D-VAR Adder
2014	Feb 20, 2014 - Feb 28, 2014	389,441	0.00803	\$3,127.21
2014	Mar 1, 2014 - Mar 31, 2014	6,042,435	0.00803	\$48,520.75
2014	Apr 1, 2014 - Apr 30, 2014	11,342,696	0.00803	\$91,081.85
2014	May 1, 2014 - May 31, 2014	3,448,360	0.00803	\$27,690.33
2014	Jun 1, 2014 - Jun 30, 2014	7,028,597	0.00803	\$56,439.63
2014	Jul 1, 2014 - Jul 31, 2014	7,721,272	0.00803	\$62,001.81
2014	Aug 1, 2014 - Aug 31, 2014	5,756,344	0.00803	\$46,223.44
2014	Sep 1, 2014 - Sep 30, 2014	2,617,658	0.00803	\$21,019.79
2014	Oct 1, 2014 - Oct 31, 2014	6,352,080	0.00803	\$51,007.20
2014	Nov 1, 2014 - Nov 30, 2014	6,780,346	0.00803	\$54,446.18
2014	Dec 1, 2014 - Dec 31, 2014	6,648,312	0.00803	\$53,385.95
2015	Jan 1, 2015 - Jan 31, 2015	1,517,565	0.00815	\$12,368.15
2015	Feb 1, 2015 - Feb 28, 2015	3,268,230	0.00815	\$26,636.07
2015	Mar 1, 2015 - Mar 31, 2015	5,053,246	0.00815	\$41,183.95
2015	Apr 1, 2015 - Apr 30, 2015	10,743,497	0.00815	\$87,559.50
2015	May 1, 2015 - May 31, 2015	8,390,762	0.00815	\$68,384.71
2015	Jun 1, 2015 - Jun 30, 2015	5,091,589	0.00815	\$41,496.45
2015	Jul 1, 2015 - Jul 31, 2015	6,226,672	0.00815	\$50,747.38
2015	Aug 1, 2015 - Aug 31, 2015	5,168,759	0.00815	\$42,125.39
2015	Sep 1, 2015 - Sep 30, 2015	8,176,819	0.00815	\$66,641.07
2015	Oct 1, 2015 - Oct 31, 2015	4,051,552	0.00815	\$33,020.15
2015	Nov 1, 2015 - Nov 30, 2015	11,136,512	0.00815	\$90,762.57
2015	Dec 1, 2015 - Dec 31, 2015	10,086,891	0.00815	\$82,208.16
2016	Jan 1, 2016 - Jan 31, 2016	1,534,568	0.00827	\$12,690.88
2016	Feb 1, 2016 - Feb 29, 2016	4,263,613	0.00827	\$35,260.08
2016	Mar 1, 2016 - Mar 31, 2016	4,871,944	0.00827	\$40,290.98
2016	Apr 1, 2016 - Apr 30, 2016	8,570,808	0.00827	\$70,880.58
2016	May 1, 2016 - May 31, 2016	6,379,411	0.00827	\$52,757.73

\$1,369,957.94

HAWAIIAN ELECTRIC COMPANY, INC.
2016 Cumulative Reconciliation Balance

	(1)		(2)	(3)	(4)	(5)	(6)
<u>Month</u>	<u>YTD FOA Reconciliation</u>	<u>Qtr</u>	<u>FOA Rec Adjust Variance</u>	<u>FOA Rec Less Variance</u>	<u>Try to Collect</u>	<u>Actual Collect</u>	<u>Month-end Cumulative Balance</u>
December '15					4,516,067	4,466,182	(4,472,032)
January '16					4,516,067	4,450,144	(21,888)
February	(4,371,700)	(4)	44,029	(4,415,729)	1,457,233	1,422,190	(3,015,427)
March					1,457,233	1,420,558	(1,594,869)
April					1,457,233	1,463,268	(131,601)
May	(2,067,034)	(1)	(137,641)	(1,929,393)	689,011	687,091	(1,373,903)
June					689,011	708,113	(665,790)
July					689,011	721,298	55,508
August	(4,207,200)	(2)	23,216	(4,230,416)	1,402,400	1,513,131	(2,661,776)
September					1,402,400	1,483,222	(1,178,554)
October					1,402,400		
November	435,211	(3)	223,840	211,371	(145,070)		

NOTES:

- Col(1): Quarterly FOA reconciliation amounts. (Refer to Attachment 4)
A positive number is an over-collection. A negative number is an under-collection.
- Col(2): FOA reconciliation adjustment variance accumulated during the last three months, starting with the fourth prior month; the difference between the estimated recorded sales used to derive the \$/kwh adjustment and the actual recorded sales.
(Col(5)-Col(4))
- Col(3): FOA reconciliation generated in the current quarter. The YTD FOA reconciliation difference minus the adjustment variance. Col(1)-Col(2)
- Col(4): Amount that the FOA reconciliation adjustment is trying to collect. (Col(1) * 1/3)
- Col(5): Actual collected amount. (recorded sales * \$/kwh adjustment/1.09751)
- Col(6): Cumulative balance of the FOA reconciliation (Previous balance + Col(3) + Col(5))

Hawaiian Electric Company, Inc.
FUEL OIL ADJUSTMENT FACTOR DATA

<u>EFFECTIVE DATE</u>	<u>FUEL FACTOR CENTS / KWH RESIDENTIAL & COMMERCIAL</u>	<u>RESIDENTIAL BILL (\$)</u>	
		<u>@ 500 KWH</u>	<u>@ 600 KWH</u>
January 1, 2012	11.428	171.04	204.17
February 1, 2012	10.924	167.64	200.11
March 1, 2012	11.530	170.67	203.74
April 1, 2012	11.600	170.71	203.79
May 1, 2012	13.122	180.63	215.69
June 1, 2012	13.274	183.06	218.60
July 1, 2012	12.917	181.60	216.85
August 1, 2012	12.332	180.60	215.65
September 1, 2012	7.083	175.67	209.82
October 1, 2012	7.023	176.13	210.37
November 1, 2012	5.828	167.64	200.18
December 1, 2012	5.029	163.64	195.38
January 1, 2013	5.885	168.27	200.91
February 1, 2013	7.674	180.93	216.11
March 1, 2013	8.113	183.12	218.75
April 1, 2013	5.602	170.09	203.11
May 1, 2013	5.631	167.15	199.59
June 1, 2013	5.502	171.23	204.47
July 1, 2013	5.422	171.06	204.27
August 1, 2013	5.844	175.95	210.14
September 1, 2013	4.640	170.05	203.06
October 1, 2013	5.521	174.43	208.32
November 1, 2013	5.406	174.29	208.15
December 1, 2013	5.087	172.67	206.20
January 1, 2014	5.946	176.84	211.22
February 1, 2014	7.338	181.96	217.36
March 1, 2014	5.978	176.41	210.70
April 1, 2014	6.057	177.55	212.05
May 1, 2014	5.541	176.07	210.28
June 1, 2014	5.685	180.90	216.08
July 1, 2014	5.721	181.86	217.24
August 1, 2014	5.901	182.65	218.17
September 1, 2014	5.988	183.30	218.96
October 1, 2014	5.155	179.10	213.91
November 1, 2014	3.694	170.67	203.79
December 1, 2014	2.659	165.48	197.32
January 1, 2015	1.065	157.06	187.22
February 1, 2015	-0.755	148.91	177.45
March 1, 2015	-1.863	142.92	170.25
April 1, 2015	-1.151	140.96	167.91
May 1, 2015	-1.931	140.48	167.34
June 8, 2015	-1.624	144.54	172.20
July 1, 2015	-0.997	146.21	174.20
August 1, 2015	-1.673	142.51	169.75
September 1, 2015	-1.343	144.33	171.94
October 1, 2015	-2.793	136.95	163.07
November 1, 2015	-3.179	132.36	157.57
December 1, 2015	-3.353	131.47	156.51
January 1, 2016	-3.748	129.34	153.97
February 1, 2016	-4.637	127.47	151.74
March 1, 2016	-5.498	123.06	146.43
April 1, 2016	-5.393	123.34	146.76
May 1, 2016	-5.527	124.85	148.58
June 1, 2016	-4.651	129.34	153.95
July 1, 2016	-3.854	133.43	158.90
August 1, 2016	-3.176	134.73	160.45
September 1, 2016	-3.345	133.98	159.57
October 1, 2016	-3.964	130.77	155.71
November 1, 2016	-3.848	131.04	156.03

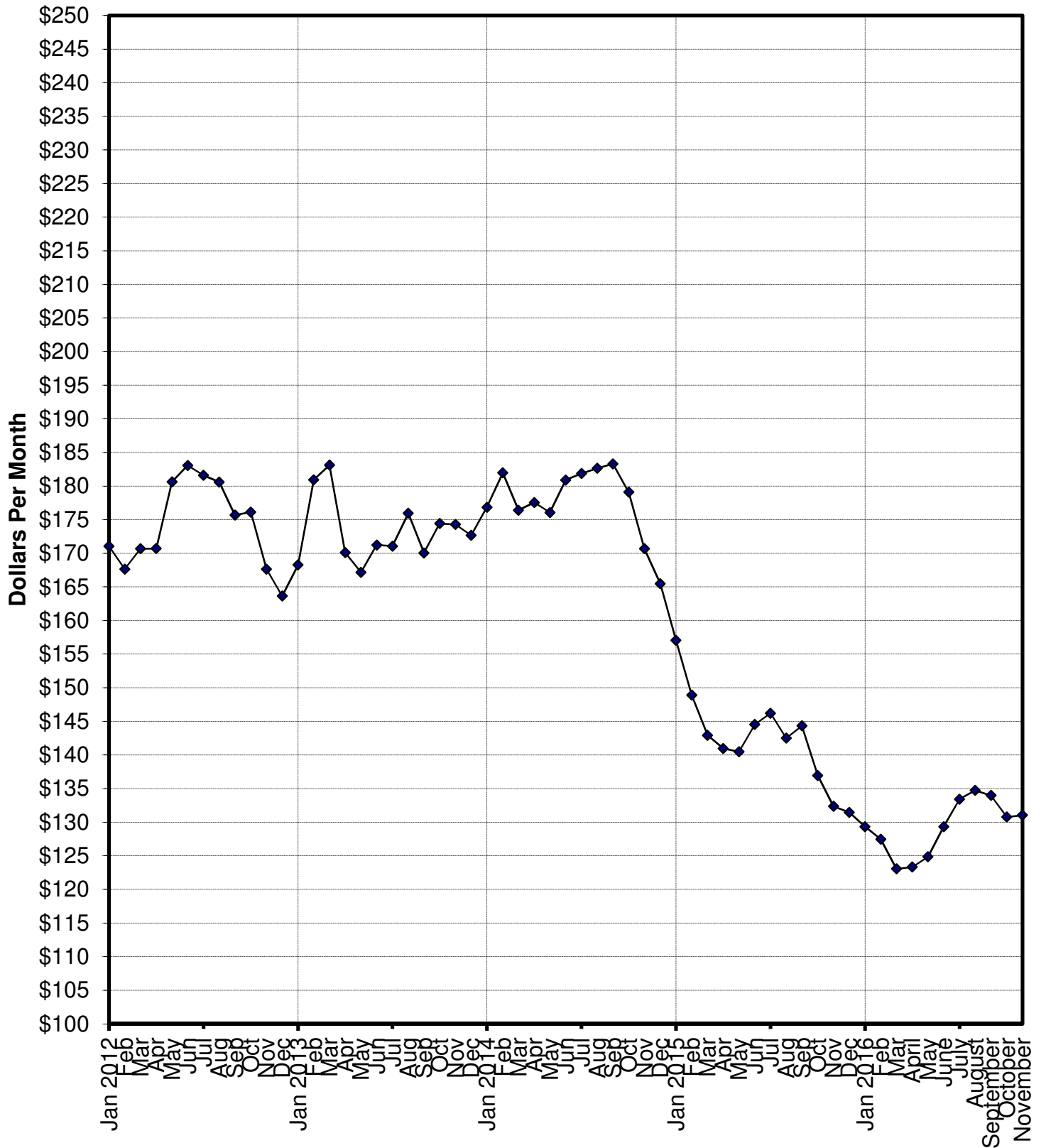
**Hawaiian Electric Company, Inc.
RESIDENTIAL SURCHARGE DATA**

EFFECTIVE DATE	DESCRIPTION OF SURCHARGE	RATE
09/01/12	FINAL RATE INCREASE (TY2011) 3.39% EFFECTIVE 09/01/12, DOCKET NO. 2010-0080	
9/1/2012 - 09/30/2012	REFUND OF 2011 INTERIM RATE INCREASE	-0.64 PERCENT ON BASE
10/1/2012 - 12/31/2012	REFUND OF 2011 INTERIM RATE INCREASE	0.00 PERCENT ON BASE
11/1/2012 - 01/31/2013	PURCHASED POWER ADJUSTMENT CLAUSE	2.6960 CENTS/KWH
1/1/2013 - 01/31/2013	REFUND OF 2011 INTERIM RATE INCREASE	-0.18 PERCENT ON BASE
1/1/2013 - 6/30/2013	RESID. PBF SURCHARGE ADJUSTMENT	0.7850 CENTS/KWH
2/1/2013	REFUND OF 2011 INTERIM RATE INCREASE	0.00 PERCENT ON BASE
2/1/2013 - 4/30/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.3989 CENTS/KWH
4/1/2013 - 4/30/2013	SOLARSAVER ADJUSTMENT	-0.1196 CENTS/KWH
4/1/2013 - 3/31/2014	RESIDENTIAL DSM ADJUSTMENT	0.1067 CENTS/KWH
5/1/2013 - 3/31/2014	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
5/1/2013 - 7/31/2013	PURCHASED POWER ADJUSTMENT CLAUSE	2.6617 CENTS/KWH
5/15/2013 - 2/28/2014	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0211 CENTS/KWH
6/1/2013 - 5/31/2014	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.3119 CENTS/KWH
7/1/2013 - 6/30/2014	RESID. PBF SURCHARGE ADJUSTMENT	0.8312 CENTS/KWH
8/1/2013 - 8/31/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.2174 CENTS/KWH
9/1/2013 - 9/30/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.2422 CENTS/KWH
10/1/2013 - 10/31/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.2377 CENTS/KWH
11/1/2013 - 11/30/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.3246 CENTS/KWH
12/1/2013 - 12/31/2013	PURCHASED POWER ADJUSTMENT CLAUSE	3.3179 CENTS/KWH
1/1/2014 - 1/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.2943 CENTS/KWH
2/1/2014 - 2/28/2014	PURCHASED POWER ADJUSTMENT CLAUSE	2.9263 CENTS/KWH
3/1/2014 - 3/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.1754 CENTS/KWH
3/1/2014 - 7/6/2014	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0226 CENTS/KWH
4/1/2014 - 4/30/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.4058 CENTS/KWH
4/1/2014 - 3/31/2015	RESIDENTIAL DSM ADJUSTMENT	0.1423 CENTS/KWH
4/1/2014 - 4/30/2014	SOLARSAVER ADJUSTMENT	-0.1177 CENTS/KWH
5/1/2014 - 5/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.4058 CENTS/KWH
5/1/2014 - 3/31/2015	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
6/1/2014 - 6/30/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.5152 CENTS/KWH
6/1/2014 - 5/31/2015	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	2.1269 CENTS/KWH
7/1/2014 - 7/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.4876 CENTS/KWH
7/1/2014 - 11/30/2014	RESID. PBF SURCHARGE ADJUSTMENT	1.0157 CENTS/KWH
7/7/2014 - 02/28/2015	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0223 CENTS/KWH
8/1/2014 - 8/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.4655 CENTS/KWH
9/1/2014 - 9/30/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.5100 CENTS/KWH
10/1/2014 - 10/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.5018 CENTS/KWH
11/1/2014 - 11/30/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.2773 CENTS/KWH
12/1/2014 - 12/31/2014	PURCHASED POWER ADJUSTMENT CLAUSE	3.2747 CENTS/KWH
12/1/2014 - 06/30/2015	GREEN INFRASTRUCTURE FEE	1.2900 DOLLARS/MONTH
12/1/2014 - 6/30/2015	RESID. PBF SURCHARGE ADJUSTMENT	0.7583 CENTS/KWH
01/1/2015 - 01/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.1849 CENTS/KWH
02/1/2015 - 02/28/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.3760 CENTS/KWH
03/1/2015 - 03/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.2873 CENTS/KWH
3/1/2015 - 08/16/2015	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0204 CENTS/KWH
04/1/2015 - 04/30/2015	PURCHASED POWER ADJUSTMENT CLAUSE	2.4105 CENTS/KWH
4/1/2015 - 4/30/2015	SOLARSAVER ADJUSTMENT	-0.1178 CENTS/KWH
4/1/2015 - 03/31/2016	RESIDENTIAL DSM ADJUSTMENT	0.0348 CENTS/KWH
05/1/2015 - 05/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	2.9760 CENTS/KWH
5/1/2015 - 03/31/2016	SOLAR SAVER ADJUSTMENT	0.00 CENTS/KWH
06/1/2015 - 06/30/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.4972 CENTS/KWH
06/1/2015 - 06/7/2015	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.00 CENTS/KWH
6/8/2015 - 5/31/2016	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	2.1078 CENTS/KWH
07/1/2015 - 07/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.4646 CENTS/KWH
7/1/2015 - 6/30/2016	RESID. PBF SURCHARGE ADJUSTMENT	0.4749 CENTS/KWH
7/1/2015 - 12/31/2015	GREEN INFRASTRUCTURE FEE	1.4200 DOLLARS/MONTH
08/1/2015 - 08/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.4002 CENTS/KWH
8/17/2015 - 12/16/2015	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0304 CENTS/KWH
09/1/2015 - 09/30/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.4246 CENTS/KWH
10/1/2015 - 10/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	3.3971 CENTS/KWH
11/1/2015 - 11/30/2015	PURCHASED POWER ADJUSTMENT CLAUSE	2.8651 CENTS/KWH
12/1/2015 - 12/31/2015	PURCHASED POWER ADJUSTMENT CLAUSE	2.8628 CENTS/KWH
01/1/2016 - 01/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	2.8642 CENTS/KWH
12/17/2015 - 02/29/2016	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0204 CENTS/KWH
01/01/2016 - 06/30/2016	GREEN INFRASTRUCTURE FEE	1.3000 DOLLARS/MONTH
02/1/2016 - 02/29/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.3809 CENTS/KWH
03/1/2016 - 03/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.3578 CENTS/KWH
3/1/2016 - 05/14/2016	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0204 CENTS/KWH
04/1/2016 - 04/30/2016	SOLAR SAVER ADJUSTMENT	-0.1223 CENTS/KWH
04/1/2016 - 04/30/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.3834 CENTS/KWH
4/1/2016	RESIDENTIAL DSM ADJUSTMENT	0.0811 CENTS/KWH
5/1/2016	SOLAR SAVER ADJUSTMENT	0.00 CENTS/KWH
05/1/2016 - 05/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.6989 CENTS/KWH
5/15/2016	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0000 CENTS/KWH
06/1/2016 - 06/30/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.7373 CENTS/KWH
6/1/2016	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	2.1098 CENTS/KWH
07/1/2016 - 07/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.6808 CENTS/KWH
7/1/2016 - 12/31/2016	GREEN INFRASTRUCTURE FEE	1.1300 DOLLARS/MONTH
7/1/2016	RESID. PBF SURCHARGE ADJUSTMENT	0.5865 CENTS/KWH
08/1/2016 - 08/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.2621 CENTS/KWH
09/1/2016 - 09/30/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.2827 CENTS/KWH
10/1/2016 - 10/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.2576 CENTS/KWH
11/1/2016 - 11/30/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.1959 CENTS/KWH

~ Surcharges currently in effect are in bold.

~ Base charges include customer charge, demand charge, energy charge, power factor adjustment, voltage discount and minimum charge.

Hawaiian Electric Company, Inc. Residential Bill at 500 KWH/Month Consumption



Hawaiian Electric Company, Inc.
CALCULATIONS OF THE AVERAGE RESIDENTIAL CUSTOMER BILL

	Rate		Charge (\$) at 500 kWh			
	10/1/2016	11/1/2016	10/1/2016	11/1/2016	Difference	
Base Rates	effective date:	09/01/12	09/01/12			
Base Fuel/Energy Charge	¢/kWh	13.6062	13.6062	68.03	68.03	0.00
Non-fuel Fuel Energy Charge						
First 350 kWh per month	¢/kWh	8.1034	8.1034	28.36	28.36	0.00
Next 850 kWh per month	¢/kWh	9.2569	9.2569	13.89	13.89	0.00
Customer Charge	\$	9.00	9.00	9.00	9.00	0.00
Total Base Charges				119.28	119.28	0.00
Purchase Power Adjustment	¢/kWh	3.2576	3.1959	16.29	15.98	-0.31
RBA Rate Adjustment	¢/kWh	2.1098	2.1098	10.55	10.55	0.00
DSM Adjustment	¢/kWh	0.0811	0.0811	0.41	0.41	0.00
Interim Rate Increase (TY 2011)	% on base	0.000%	0.000%	0.00	0.00	0.00
Refund of 2011 Interim	% on base	0.000%	0.000%	0.00	0.00	0.00
PBF Surcharge	¢/kWh	0.5865	0.5865	2.93	2.93	0.00
Renewable Energy Infrastructure Cost Recovery Provision	¢/kWh	-	-	0.00	0.00	0.00
SolarSaver Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00	0.00
Energy Cost Adjustment	¢/kWh	-3.964	-3.848	-19.82	-19.24	0.58
Green Infrastructure Fee	\$	1.13	1.13	1.13	1.13	0.00
Avg Residential Bill at 500 kWh				130.77	131.04	

Increase / (Decrease -) 0.27
% Change 0.21%

	Rate		Charge (\$) at 600 kWh			
	10/1/2016	11/1/2016	10/1/2016	11/1/2016	Difference	
Base Rates	effective date:	09/01/12	09/01/12			
Base Fuel/Energy Charge	¢/kWh	13.6062	13.6062	81.64	81.64	0.00
Non-fuel Fuel Energy Charge						
First 350 kWh per month	¢/kWh	8.1034	8.1034	28.36	28.36	0.00
Next 850 kWh per month	¢/kWh	9.2569	9.2569	23.14	23.14	0.00
Customer Charge	\$	9.00	9.00	9.00	9.00	0.00
Total Base Charges				142.14	142.14	0.00
Purchase Power Adjustment	¢/kWh	3.2576	3.1959	19.55	19.18	-0.37
RBA Rate Adjustment	¢/kWh	2.1098	2.1098	12.66	12.66	0.00
DSM Adjustment	¢/kWh	0.0811	0.0811	0.49	0.49	0.00
Interim Rate Increase (TY 2011)	% on base	0.000%	0.000%	0.00	0.00	0.00
Refund of 2011 Interim	% on base	0.000%	0.000%	0.00	0.00	0.00
PBF Surcharge	¢/kWh	0.5865	0.5865	3.52	3.52	0.00
Renewable Energy Infrastructure Cost Recovery Provision	¢/kWh	-	-	0.00	0.00	0.00
SolarSaver Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00	0.00
Energy Cost Adjustment	¢/kWh	-3.964	-3.848	-23.78	-23.09	0.69
Green Infrastructure Fee	\$	1.13	1.13	1.13	1.13	0.00
Avg Residential Bill at 600 kWh				155.71	156.03	

Increase / (Decrease -) 0.32
% Change 0.21%