



September 26, 2019

FILED

2019 SEP 26 P 3:17

PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

Subject: Hawaiian Electric Energy Cost Recovery Factor for October 2019

Hawaiian Electric Company, Inc.'s ("Hawaiian Electric" or "Company") October 2019 Energy Cost Recovery Factor is 12.951 cents per kilowatt-hour ("kWh"), a decrease of 0.289 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$153.64, a decrease of \$1.47 compared to rates effective September 1, 2019. The decrease in the residential typical bill is due to the decrease in the Energy Cost Recovery Factor (-\$1.44) and decrease in the Purchase Power Adjustment Clause rate (-\$0.03).

The Company's fuel composite cost of major energy decreased 50.77 cents per million BTU to 1,188.27 cents per million BTU. The Company's composite cost of minor energy increased 0.731 cents per kWh to 18.877 cents per kWh. The composite cost of purchased energy increased 0.192 cents per kWh to 9.180 cents per kWh.

The attached sheets set forth the energy cost recovery factor in cents per kWh for each rate schedule that is applicable for *pro rata* use beginning October 1, 2019.

Very truly yours,

Dean K. Matsuura
Director, Regulatory Rate Proceedings

Enclosures

cc: Division of Consumer Advocacy

Hawaiian Electric Company, Inc.
ENERGY COST RECOVERY FACTOR

	<u>Effective Dates</u>		<u>Change</u>
	<u>09/01/19</u>	<u>10/01/19</u>	
Composite Cost Of Major Energy, ¢/mmbtu	1,239.04	1,188.27	(50.77)
Composite Cost Of Minor Energy, ¢/kwh	18.147	18.877	0.731
Composite Cost Of Purchased Energy, ¢/kWh	8.988	9.180	0.192
 <u>Residential, Schedule "R"</u>			
Energy Cost Recovery, ¢/kWh	13.240	12.951	(0.289)
 <u>Others, Schedules "G,J,DS,P,F"</u>			
Energy Cost Recovery, ¢/kWh	13.240	12.951	(0.289)
 <u>Residential Customer with:</u>			
500 kWh Consumption, \$/bill	155.11	153.64	(1.47)
600 kWh Consumption, \$/bill	184.42	182.65	(1.77)

Supersedes Sheet Effective:

September 1, 2019

Hawaiian Electric Company, Inc.
ENERGY COST RECOVERY FILING

ENERGY COST RECOVERY (ECR) FILING - October 1, 2019 (page 1 of 2)

Line		
1	Effective Date	- October 1, 2019
2	Supersedes Factor	- September 1, 2019

GENERATION COMPONENT

MAJOR ENERGY COMPONENT				MINOR ENERGY COMPONENT			
FUEL PRICES, ¢/mmbtu				Fuel Type	Gen Cost ¢/KWH	Percent of Minor Energy	Weighted Gen Cost ¢/KWH
3	Honolulu		0.00	32a Airport DG	42.03	0.84%	0.3519
4	Kahe		1,188.27	32b CIP-Biodiesel	0.00	0.00%	0.0000
5	Waiau-Steam		1,188.27	32c CIP-Diesel	64.16	3.49%	2.2400
6	(Future Use)		0.00	32d SGS - Biodiesel	32.28	33.02%	10.6604
7	(Future Use)		0.00	32e SGS - ULSD	18.49	0.78%	0.1451
8	(Future Use)		0.00	32f Waiau-Diesel	34.99	15.66%	5.4798
9	Other		0	32g West Loch PV	0.00	46.20%	0.0000
				32h COMPOSITE COST OF MINOR ENERGY, ¢/kWh			18.877
10	Honolulu		0.00	33 % Input to System kWh Mix			1.26
11	Kahe		73.08				
12	Waiau-Steam		26.92	34 WTD COMP MINOR ENERGY COST, ¢/kWh (Lines 32f x 33)			0.23785
13	(Future Use)		0.00	35 2017 TY Loss Factor			1.0490
14	(Future Use)		0.00	36 WTD COMP MINOR ENERGY COST, ¢/kWh (Line 34 x 35)			0.24950
15	(Future Use)		0.00				
16	Other		0.00	37 BASE MINOR ENERGY COMP COST			0.0000
			100.00	38 Base % Input to System kWh Mix			0.0000
17	COMPOSITE COST OF GENERATION, MAJOR ENERGY ¢/mmbtu			1,188.27	39 WTD BASE MINOR ENERGY COST, ¢/kWh (Line 37 x 38)		0.00000
18	% Input to system kWh Mix			42.76	40 2017 TY Loss Factor		1.0490
	EFFICIENCY FACTOR, mmbtu/kWh				41 WTD COMP MINOR ENERGY COST, ¢/kWh (Line 39 x 40)		0.00000
	(A)	(B)	(C)	(D)	42 Cost Less Base (Line 36 - 41)		0.249505
			Percent of Centri Stn + Other	Weighted Eff Factor	43 Revenue Tax Adjustment (1 / (1-0.08885))		1.097514
19	LSFO	0.011165	100.00	0.011165	44 MINOR ENERGY FACTOR, ¢/kWh (Line 42 x 43)		0.27383
20	(Future Use)	0.000000	0.00	0.000000			
21	(Future Use)	0.000000	0.00	0.000000			
22	Other	0.011165	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)]			0.011165			
24	WEIGHTED MAJOR ENERGY COST, ¢/kWh Sales (lines 17 x 18 x 23)			5.67298			
25	BASE MAJOR ENERGY COST, ¢/mmbtu			0.00			
26	Base % Input to System kWh Mix			0.0000			
27	Efficiency Factor, Mbtu/kWh			0.000000			
28	WEIGHTED BASE MAJOR ENERGY COST ¢/KWH Sales (lines 25 x 26 x 27)			0.00000			
29	Cost Less Base (Line 24 - 28)			5.67298			
30	Revenue Tax Adjustment (1 / (1-0.08885))			1.097514			
31	MAJOR ENERGY GENERATION FACTOR, ¢/KWH (Line 29 x 30)			6.22618			

SUMMARY OF TOTAL GENERATION FACTOR, ¢/kWh	
45 MAJOR ENERGY (line 31)	6.22618
46 MINOR ENERGY (line 44)	- 0.27383
47 TOTAL GENERATION FACTOR, ¢/KWH (lines 45 + 46)	- 6.50001

Hawaiian Electric Company, Inc.
ENERGY COST RECOVERY FILING

ENERGY COST RECOVERY (ECR) FILING - October 1, 2019 (page 2 of 2)

Line		
1	Effective Date	- October 1, 2019
2	Supersedes Factor	- September 1, 2019

Line	PURCHASED ENERGY COMPONENT		
	PURCHASED ENERGY PRICE - FOSSIL - ¢/KWH		
48	PAR Hawaii	- On Peak	12.029
49	PAR Hawaii	- Off Peak	13.155
50	IES Downstream	- On Peak	12.029
51	IES Downstream	- Off Peak	13.155
52	Kalaeloa		13.048
53	AES-HI		3.350
	PURCHASED ENERGY PRICE - RENEWABLE - ¢/KWH		
54	HRRV	- On Peak	17.63
55		- Off Peak	17.13
56	HRRV	- On Peak (excess)	11.23
57		- Off Peak (excess)	6.74
58	Kawailoa		22.395
59	Kahuku Wind		21.013
60	Waianae Solar PV		14.500
61	As Available I		22.399
62	FIT		19.371
63	CBRE PV		15.000
64	(Future IPP)		0.000
65	(Future IPP)		0.000
66	(Future IPP)		0.000
67	(Future IPP)		0.000
	PURCHASED ENERGY KWH MIX - FOSSIL - %		
68	PAR Hawaii	- On Peak	0.21
69	PAR Hawaii	- Off Peak	0.15
70	IES Downstream	- On Peak	0.01
71	IES Downstream	- Off Peak	0.01
72	Kalaeloa		33.47
73	AES-HI		37.40
73a	Subtotal Fossil %		71.25
	PURCHASED ENERGY KWH MIX - RENEWABLE - %		
74	HRRV	- On Peak	6.30
75		- Off Peak	2.24
76	HRRV	- On Peak (excess)	0.00
77		- Off Peak (excess)	2.26
78	Kawailoa		3.16
79	Kahuku Wind		2.00
80	Waianae Solar PV		1.76
81	As Available I		0.51
82	FIT		1.73
83	CBRE PV		0.22
84	(Future IPP)		2.76
85	(Future IPP)		0.81
86	(Future IPP)		2.67
87	(Future IPP)		2.33
87a	Subtotal Renewable %		28.75
87b	Total Purchased Energy %		100.00
87c	Composite Cost of Purchased Energy, Fossil		7.95
87d	Composite Cost of Purchased Energy, Renewable		12.22
88	COMPOSITE COST OF PURCHASED ENERGY, ¢/KWH		9.180
89	% Input to System kWh Mix		55.98
90	WTD CMP PURCH ENRGY COST, ¢/KWH (lines 88 x 89)		5.13915
91	2017 TY Loss Factor		1.0490
92	WTD CMP PURCH ENRGY COST, ¢/KWH (lines 90 x 91)		5.39097
93	BASE PURCHASED ENERGY COMPOSITE COST, ¢/KWH		0.000
94	Base % Input to System kWh Mix		0.0000
95	WEIGHTED BASE PURCHASED ENERGY COST, ¢/KWH SALES (lines 93 x 94)		0.00000
96	2017 TY Loss Factor		1.049
97	WTD CMP PURCH ENRGY COST, ¢/KWH sales (lines 95 x 96)		0.00000
98	Cost Less Base (Line 92 - 97)		5.39097
99	Revenue Tax Adjustment (1 / (1-0.08885))		1.097514
100	PURCHASED ENERGY FACTOR, ¢/KWH (lines 98 x 99)		5.91666

Calculation of Monthly Fossil Fuel Cost Risk Sharing Component		
Baseline LSFO (Actual)		
101	LSFO \$, baseline month	\$44,129,782
102	LSFO mmbtu, baseline	3,300,499
103	Baseline LSFO, ¢/mmbtu	1337.06
Baseline Diesel (Actual)		
104	Diesel \$, baseline month	\$1,726,670
105	Diesel mmbtu, baseline	107,471
106	Baseline Diesel, ¢/mmbtu	1,606.64
Month LSFO		
107	LSFO mmbtu, budget	2,805,212
108	LSFO Cost, ¢/mmbtu	1,188.27
109	LSFO ECRC Fossil Cost	\$33,333,491
110	LSFO Base ECRC Recovery Target	\$37,507,477
111	LSFO differential	-\$4,173,986
Month Diesel		
112	Diesel mmbtu, budget	39,692
113	Diesel Cost, ¢/mmbtu	1,514.70
114	Diesel ECRC Fossil Cost	\$601,219
115	Diesel Base ECRC Recovery Target	\$637,712
116	Diesel differential	-\$36,493
117	Total Fossil	-\$4,210,479
118	2% of above	-\$84,210
118A	Total Monthly Fossil Fuel Cost Risk Sharing, Prior Months in Year	-\$346,397
118B	Maximum Annual Cap (bi-directional)	\$2,500,000
118C	Applicable Monthly Fossil Fuel Cost Risk Sharing	-\$84,210
118D	Total Monthly Fossil Fuel Cost Risk Sharing, Including This Month	-\$430,606
119	Fossil Cost Risk Sharing before taxes	-\$84,210
120	Revenue Tax Adjustment	1.097514
121	Fossil Cost Risk Sharing w/revenue tax	-\$92,421
122	Forecasted Month MWh Sales	579,800
123	Fossil Fuel Cost Risk Sharing Component, ¢/kWh	0.0159
Derivation of Non-Adjustable Component:		
80A	Fuel Handling Exp, \$000 Final Settlement, HECCO-603, p1	\$7,604.5
80B	Revenue Tax Adjustment	1.097514
80C	Non-Adj Revenues, \$000	\$8,346.0
80D	2017 TY Sales, MWh HECCO-301, p1	6,660,200
80E	Non-Adj Revenues, ¢/kWh	0.12531
Line SYSTEM COMPOSITE		
124	GEN AND PURCHASED ENERGY FACTOR, ¢/kWh (lines 47 + 100)	12.4167
125	(Future Use) Adjustment, ¢/kWh	0.0000
126	ECR Reconciliation Adjustment	0.3930
127	Non-Adjustable Component (line 80E)	0.1253
128	Fossil Fuel Cost Risk Sharing Component (line 123)	0.0159
129	Monthly Energy Cost Recovery Factor (lines 124 + 125 + 126 + 127 + 128)	12.951

Hawaiian Electric Company, Inc.
FUEL OIL INVENTORY PRICES FOR 10-01-19

	<u>Honolulu</u>	<u>Kahe</u>	<u>Waiau</u>
Average Low Sulfur Fuel Oil, ϕ /Mbtu	1,186.97	1,186.97	1,186.97
Fuel Additive, ϕ /Mbtu	-	1.30	1.30
Honolulu Trucking Cost, ϕ /Mbtu	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, ϕ /Mbtu	1,186.97	1,188.27	1,188.27

	<u>Waiau</u>	<u>CIP Biodiesel</u>	<u>CIP Diesel</u>
Average Diesel / Biodiesel Oil, ϕ /Mbtu	1,491.15	-	1,550.19
Thruput Charges, ϕ /Mbtu	-	-	0
Diesel / Biodiesel Oil Prices Used for Filing, ϕ /Mbtu	1,491.15	-	1,550.19

	<u>SGS ULSD</u>	<u>SGS Biodiesel</u>
Average Diesel / Biodiesel Oil, ϕ /Mbtu	2,000.71	3,491.10
Thruput Charges, ϕ /Mbtu	-	-
Diesel / Biodiesel Oil Prices Used for Filing, ϕ /Mbtu	2,000.71	3,491.10

	<u>Honolulu</u>	<u>Kahe</u>	<u>Waiau</u>
Average Low Sulfur Fuel Oil, $\$/$ bbbl	73.85	73.85	73.85
Fuel Additive, $\$/$ bbbl	-	0.08	0.08
Honolulu Trucking Cost, $\$/$ bbbl	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, $\$/$ bbbl	73.85	73.93	73.93

	<u>Waiau</u>	<u>CIP Biodiesel</u>	<u>CIP Diesel</u>
Average Diesel / Biodiesel Oil, $\$/$ bbbl	86.57	-	88.54
Thruput Charges, ϕ /Mbtu	-	-	-
Diesel / Biodiesel Oil Prices Used for Filing, $\$/$ bbbl	86.57	-	88.54

	<u>SGS ULSD</u>	<u>SGS Biodiesel</u>
Average Diesel / Biodiesel Oil, $\$/$ bbbl	115.96	181.32
Thruput Charges, ϕ /Mbtu	-	-
Diesel / Biodiesel Oil Prices Used for Filing, $\$/$ bbbl	115.96	181.32

Distributed Generation Fuel Prices Used for Filing, ϕ /kWh 42.030

FOAC October 2019

<u>LSFO</u>	BARRELS	MBTU	AMOUNT	AVE \$/MBTU
Per FOAC run	777,046	4,834,742.29	57,386,818.67	11.869675
Additional	-	-	-	-
Forecast Amt	777,046	4,834,742.29	57,386,818.67	11.869675
	-	6.20	-	ADD'L BBL
	4,834,742	777,046	6.2220	MBTU / BBL
	57,386,819	777,046	73.85	DOLLARS / BBL
<u>WAIU DIESEL</u>	17,781	103,233.68	1,539,373.12	14.911540
	1,539,373	17,781	86.57	DOLLARS / BBL
<u>CIP BIODIESEL</u>	-	-	-	-
	-	-	-	DOLLARS / BBL
<u>CIP DIESEL</u>	47,262	269,937.16	4,184,542.23	15.501912
	4,184,542	47,262	88.54	DOLLARS / BBL
<u>SGS ULSD</u>	426	2,469	49,399.63	20.00714025
	49,399.63	426	115.96	DOLLARS / BBL
<u>SGS BIODIESEL</u>	9,694	50,347.37	1,757,678.89	34.91103867
	1,757,679	9,694	181.32	DOLLARS / BBL
FUEL ADDITIVE				0.013019
Additional				
Forecast Amt	-	-	-	0.013019
\$ / BBL =	-	-	0.08	DOLLARS / BBL
HONOLULU TRUCKING COST				
Per FOAC run	-	-	-	-
Additional				
Forecast Amt	-	-	-	-
\$ / BBL =	-	-	-	DOLLARS / BBL

Hawaiian Electric Company, Inc.

CONTRACT PRICES EFFECTIVE 9-1-19

<u>TYPE OF OIL BURNED</u>	<u>\$/BBL</u>	<u>¢/MBTU</u>
LOW SULFUR FUEL OIL		
Tax *	4.2603	68.72
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
DIESEL		
Tax *	4.2603	68.72
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
ULTRA LOW SULFUR DIESEL		
Tax *	5.3095	92.65
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
BIODIESEL		
Tax *	7.9800	152.06
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.		<u>Airport DG</u> <u>Biodiesel</u>	<u>Schofield</u> <u>Biodiesel</u>	<u>Schofield</u> <u>ULSD</u>			
(A)	\$	37.42	\$	34.91	\$	20.01	Estimated Distributed Generation Fuel Cost (\$/MBTU)
(B)		719		23,347		554	Estimated MBTU Consumption
(B1)		137		4,449		97	Estimated fuel consumption barrels
(C) = (A) x (B)		\$26,897		\$815,077		\$11,090	Estimated Distributed Generation Fuel Cost (\$)
(D)		64,000		2,524,724		59,985	Estimated Distributed Generation kWh
(E) = ((C) ÷ (D)) x 100		42.030		32.280		18.490	¢/kWh

Hawaiian Electric Company, Inc.
ECA RECONCILIATION ADJUSTMENT
October 2019

1.	Amount to be collected	\$	6,233,900
2.	Monthly Amount (Line 1 x 1/3)	\$	2,077,967
3.	Revenue Tax Divisor		0.91115
4.	Total (Line 2 / Line 3)	\$	2,280,598
5.	Estimated MWh Sales (October 2019)		579,800
6.	ECA Reconciliation Adjustment, ¢/kWh (Line 4 ÷ Line 5)		<u>0.393</u>

HAWAIIAN ELECTRIC COMPANY, INC.
2019 Cumulative Reconciliation Balance

	(1)		(2)	(3)	(4)	(5)	(6)
	YTD FOA		FOA Rec	FOA Rec	Try to	Actual	Month-end
<u>Month</u>	<u>Reconciliation</u>	<u>Qtr</u>	<u>Adjust</u>	<u>Less</u>	<u>Collect</u>	<u>Collect</u>	<u>Cumulative</u>
			<u>Variance</u>	<u>Variance</u>			<u>Balance</u>
November '18	(3,451,000)	(3)	46,479	(3,497,479)	1,150,333	1,163,303	(2,284,162)
December					1,150,333	1,102,163	(1,181,999)
January '19					1,150,333	1,121,708	(60,291)
February	(8,214,600)	(4)	(31,672)	(8,182,928)	2,738,200	2,387,566	(5,855,653)
March					2,738,200	2,502,912	(3,352,741)
April					2,738,200	2,610,703	(742,038)
May	(9,386,800)	(1)	(614,547)	(8,772,253)	3,128,933	3,065,471	(6,448,820)
June					3,128,933	3,272,756	(3,176,064)
July					3,128,933	3,238,171	62,107
August	(6,233,900)	(2)	(47,137)	(6,186,763)	2,077,967	2,162,647	(3,962,009)
September					2,077,967		
October					2,077,967		

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.
ENERGY COST RECOVERY FACTOR DATA

<u>EFFECTIVE DATE</u>	ENERGY COST FACTOR CENTS / KWH <u>RESIDENTIAL & COMMERCIAL</u>	RESIDENTIAL BILL (\$)	
		<u>@ 500 KWH</u>	<u>@ 600 KWH</u>
January 1, 2017	-2.091	135.39	161.22
February 1, 2017	-1.863	142.81	170.13
March 1, 2017	-1.730	143.26	170.66
April 1, 2017	-1.608	143.43	170.86
May 1, 2017	-2.347	140.42	167.26
June 1, 2017	-2.215	141.89	169.01
July 1, 2017	-2.003	141.79	168.91
August 1, 2017	-2.180	140.14	166.92
September 1, 2017	-2.288	139.74	166.45
October 1, 2017	-2.216	139.91	166.65
November 1, 2017	-2.109	139.52	166.18
December 1, 2017	-1.629	141.82	168.96
January 1, 2018	-1.145	144.26	171.84
February 1, 2018	-0.261	150.24	179.01
March 1, 2018	-0.389	152.06	181.14
April 1, 2018	-0.483	152.06	181.14
May 1, 2018	0.923	149.05	177.53
June 1, 2018	1.529	154.86	184.50
July 1, 2018	1.204	158.27	188.61
August 1, 2018	0.802	158.79	189.22
September 1, 2018	4.201	169.09	201.16
October 1, 2018	4.008	168.13	200.01
November 1, 2018	5.151	167.62	199.40
December 1, 2018	5.553	169.64	201.82
January 1, 2019	14.095	161.36	191.85
February 1, 2019	12.044	147.31	175.01
March 1, 2019	13.449	154.51	183.63
April 1, 2019	14.338	158.42	188.34
May 1, 2019	14.721	163.56	194.50
June 1, 2019	15.199	163.47	194.39
July 1, 2019	14.545	160.95	191.42
August 1, 2019	14.297	160.45	190.82
September 1, 2019	13.240	155.11	184.42
October 1, 2019	12.951	153.64	182.65

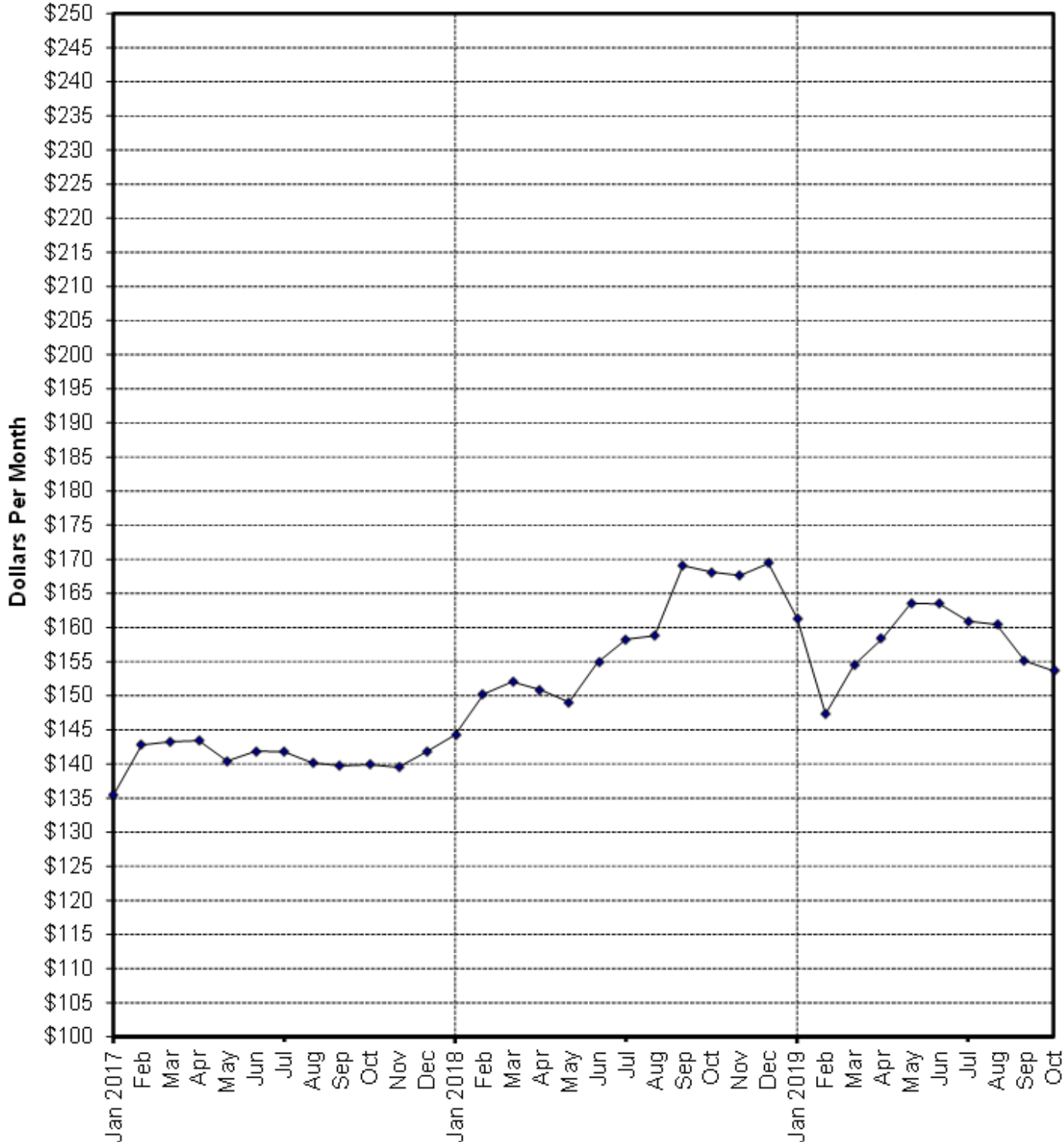
Hawaiian Electric Company, Inc.
RESIDENTIAL SURCHARGE DATA

EFFECTIVE DATE	DESCRIPTION OF SURCHARGE	RATE
09/01/12 - 8/31/2018	FINAL RATE INCREASE (TY2011) 3.39% EFFECTIVE 09/01/12, DOCKET NO. 2010-0080	
2/1/2013	REFUND OF 2011 INTERIM RATE INCREASE	0.00 PERCENT ON BASE
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 - 3/31/2017	RESIDENTIAL DSM ADJUSTMENT	0.0811 CENTS/KWH
5/1/2016 - 3/31/2017	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 - 5/31/2017	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 - 6/30/2017	RESID. PBF SURCHARGE ADJUSTMENT	0.5865 CENTS/KWH
08/1/2016 - 08/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.2821 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
12/1/2016 - 12/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	3.1815 CENTS/KWH
01/1/2017 - 01/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	2.2812 CENTS/KWH
1/01/2017 - 06/30/2017	GREEN INFRASTRUCTURE FEE	1.2700 DOLLARS/MONTH
02/1/2017 - 02/28/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.5384 CENTS/KWH
03/1/2017 - 03/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.4937 CENTS/KWH
04/1/2017 - 04/30/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.5276 CENTS/KWH
4/1/2017 - 02/15/2018	RESIDENTIAL DSM ADJUSTMENT	0.0774 CENTS/KWH
4/1/2017 - 4/30/2017	SOLAR SAVER ADJUSTMENT	-0.1187 CENTS/KWH
5/1/2017-3/31/2018	SOLAR SAVER ADJUSTMENT	0.0000 CENTS/KWH
05/1/2017 - 05/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.5484 CENTS/KWH
06/1/2017 - 06/30/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.5894 CENTS/KWH
6/1/2017 - 2/15/2018	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	2.2291 CENTS/KWH
7/1/2017 - 12/31/2017	GREEN INFRASTRUCTURE FEE	1.1800 DOLLARS/MONTH
7/1/2017 - 7/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.5388 CENTS/KWH
7/1/2017 - 6/30/2018	RESID. PBF SURCHARGE ADJUSTMENT	0.4244 CENTS/KWH
8/1/2017 - 8/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.3840 CENTS/KWH
9/1/2017 - 9/30/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.4128 CENTS/KWH
10/1/2017 - 10/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.3748 CENTS/KWH
11/1/2017 - 11/30/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.1890 CENTS/KWH
12/1/2017 - 12/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	3.1709 CENTS/KWH
1/1/2018 - 1/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.1422 CENTS/KWH
1/1/2018 - 6/30/2018	GREEN INFRASTRUCTURE FEE	1.3400 DOLLARS/MONTH
2/1/2018 - 2/28/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.4536 CENTS/KWH
2/16/2018 - 04/12/018	INTERIM RATE INCREASE 2017 TEST YEAR	8.8700 PERCENT ON BASE
2/16/2018 - 5/31/2018	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.7116 CENTS/KWH
2/16/2018 - 3/31/2018	RESIDENTIAL DSM ADJUSTMENT	0.0000 CENTS/KWH
3/1/2018 - 3/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.4266 CENTS/KWH
4/1/2018 - 4/30/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.4413 CENTS/KWH
4/1/2018 - 4/30/2018	SOLAR SAVER ADJUSTMENT	-0.1063 CENTS/KWH
4/1/2018 - 7/31/2018	RESIDENTIAL DSM ADJUSTMENT	-0.0513 CENTS/KWH
4/13/2018 - 8/31/2018	INTERIM RATE INCREASE 2017 TEST YEAR	5.8900 PERCENT ON BASE
5/1/2018 - 3/31/19	SOLAR SAVER ADJUSTMENT	0.0000 CENTS/KWH
5/1/2018 - 5/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	2.2718 CENTS/KWH
6/1/2018 - 6/30/2018	PURCHASED POWER ADJUSTMENT CLAUSE	2.5042 CENTS/KWH
6/1/2018 - 5/31/2019	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.0350 CENTS/KWH
7/1/2018 - 12/31/2018	GREEN INFRASTRUCTURE FEE	1.2100 DOLLARS/MONTH
7/1/2018 - 6/30/2019	RESID. PBF SURCHARGE ADJUSTMENT	0.4658 CENTS/KWH
7/1/2018 - 7/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.4959 CENTS/KWH
8/1/2018 - 8/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.9557 CENTS/KWH
8/1/2018 - 10/31/2018	RESIDENTIAL DSM ADJUSTMENT	-0.0064 CENTS/KWH
9/1/2018 - 9/30/2018	PURCHASED POWER ADJUSTMENT CLAUSE	4.3234 CENTS/KWH
9/1/2018	INTERIM RATE INCREASE 2017 TEST YEAR	0.0000 PERCENT ON BASE
9/1/2018	FINAL RATE INCREASE (TY2017) -0.039% EFFECTIVE 09/01/18, DOCKET NO. 2016-0328	
10/1/2018 - 10/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	4.3252 CENTS/KWH
11/1/2018 - 11/1/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.0539 CENTS/KWH
11/1/2018 - 1/31/2019	RESIDENTIAL DSM ADJUSTMENT	0.0203 CENTS/KWH
12/1/2018 - 12/31/2018	PURCHASED POWER ADJUSTMENT CLAUSE	3.0553 CENTS/KWH
1/1/2019 - 1/31/2019	PURCHASED POWER ADJUSTMENT CLAUSE	3.0574 CENTS/KWH
1/1/2019 - 6/30/2019	GREEN INFRASTRUCTURE FEE	1.3500 DOLLARS/MONTH
2/1/2019 - 4/30/2019	RESIDENTIAL DSM ADJUSTMENT	0.0000 CENTS/KWH
2/1/2019 - 2/28/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.3209 CENTS/KWH
3/1/2019 - 3/31/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.3532 CENTS/KWH
4/1/2019 - 4/30/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.3341 CENTS/KWH
4/1/2019 - 4/30/2019	SOLAR SAVER ADJUSTMENT	-0.0857 CENTS/KWH
5/1/2019 - 5/31/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.8780 CENTS/KWH
5/1/2019	SOLAR SAVER ADJUSTMENT	0.0000 CENTS/KWH
5/1/2019 - 7/31/2019	RESIDENTIAL DSM ADJUSTMENT	0.0133 CENTS/KWH
6/1/2019 - 6/30/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.4806 CENTS/KWH
6/1/2019	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.9376 CENTS/KWH
7/1/2019 - 7/31/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.6543 CENTS/KWH
7/1/2019	GREEN INFRASTRUCTURE FEE	1.17 DOLLARS/MONTH
7/1/2019	RESID. PBF SURCHARGE ADJUSTMENT	0.4658 CENTS/KWH
8/1/2019 - 8/31/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.8165 CENTS/KWH
8/1/2019	RESIDENTIAL DSM ADJUSTMENT	0.0000 CENTS/KWH
9/1/2019 - 9/30/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.8061 CENTS/KWH
10/1/2019	PURCHASED POWER ADJUSTMENT CLAUSE	2.8008 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			
	9/1/2019	10/1/2019	9/1/2019	10/1/2019	Difference	
Base Rates	effective date:	01/01/19	01/01/19			
Base Fuel/Energy Charge	¢/kWh	-	-	0.00	0.00	0.00
Non-fuel Fuel Energy Charge						
First 350 kWhr per month	¢/kWh	10.6812	10.6812	37.38	37.38	0.00
Next 850 kWhr per month	¢/kWh	11.8347	11.8347	17.75	17.75	0.00
Customer Charge	\$	11.50	11.50	11.50	11.50	0.00
Total Base Charges				66.63	66.63	0.00
Purchase Power Adjustment	¢/kWh	2.8061	2.8008	14.03	14.00	-0.03
RBA Rate Adjustment	¢/kWh	0.9376	0.9376	4.69	4.69	0.00
DSM Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00	0.00
Interim Rate Increase (TY 2017)	% 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	0.4775	0.4775	2.39	2.39	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 Recovery	¢/kWh	13.240	12.951	66.20	64.76	-1.44
Green Infrastructure Fee	\$	1.17	1.17	1.17	1.17	0.00
Avg Residential Bill at 500 kWh				155.11	153.64	

Increase / (Decrease -) -1.47
% Change -0.95%

	Rate		Charge (\$) at 600 kWh			
	9/1/2019	10/1/2019	9/1/2019	10/1/2019	Difference	
Base Rates	effective date:	01/01/19	01/01/19			
Base Fuel/Energy Charge	¢/kWh	-	-	0.00	0.00	0.00
Non-fuel Fuel Energy Charge						
First 350 kWhr per month	¢/kWh	10.6812	10.6812	37.38	37.38	0.00
Next 850 kWhr per month	¢/kWh	11.8347	11.8347	29.59	29.59	0.00
Customer Charge	\$	11.50	11.50	11.50	11.50	0.00
Total Base Charges				78.47	78.47	0.00
Purchase Power Adjustment	¢/kWh	2.8061	2.8008	16.84	16.80	-0.04
RBA Rate Adjustment	¢/kWh	0.9376	0.9376	5.63	5.63	0.00
DSM Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00	0.00
Interim Rate Increase (TY 2017)	% 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	0.4775	0.4775	2.87	2.87	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 Recovery	¢/kWh	13.240	12.951	79.44	77.71	-1.73
Green Infrastructure Fee	\$	1.17	1.17	1.17	1.17	0.00
Avg Residential Bill at 600 kWh				184.42	182.65	

Increase / (Decrease -) -1.77
% Change -0.96%