



April 26, 2019

FILED

2019 APR 26 P 3:54

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 May 2019

Hawaiian Electric Company, Inc.'s ("Hawaiian Electric" or "Company") May 2019 Energy Cost Recovery Factor is 14.721 cents per kilowatt-hour ("kWh"), an increase of 0.383 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$163.56, an increase of \$5.14 compared to rates effective April 1, 2019. The increase in the residential typical bill is due to an increase in the Purchase Power Adjustment Clause rate (+\$2.72), an increase in the DSM Adjustment (+\$0.07), an increase in the Energy Cost Recovery Factor (+\$1.92), and the termination of the SolarSaver Adjustment Credit (+\$0.43).

The Company's fuel composite cost of major energy increased 25.22 cents per million BTU to 1,374.14 cents per million BTU. The Company's composite cost of minor energy increased 0.553 cents per kWh to 17.278 cents per kWh. The composite cost of purchased energy increased 0.144 cents per kWh to 9.994 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 May 1, 2019.

Also enclosed are pages 1 and 2 of Attachment 3 of the Hawaiian Electric's April 2019 Energy Cost Recovery Factor filing. The revised pages are notated with "Revised 4/26/2019" in the header. The revised pages correct the LSFO barrels to 964,862 and the LSFO \$/bbl to \$84.58. There is no change to the April 2019 energy cost recovery factor filed March 27, 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>04/01/19</u>	<u>05/01/19</u>	
Composite Cost Of Major Energy, ¢/mmbtu	1,348.92	1,374.14	25.22
Composite Cost Of Minor Energy, ¢/kwh	16.726	17.278	0.553
Composite Cost Of Purchased Energy, ¢/kWh	9.850	9.994	0.144
 <u>Residential, Schedule "R"</u>			
Energy Cost Recovery, ¢/kWh	14.338	14.721	0.383
 <u>Others, Schedules "G,J,DS,P,F"</u>			
Energy Cost Recovery, ¢/kWh	14.338	14.721	0.383
 <u>Residential Customer with:</u>			
500 kWh Consumption, \$/bill	158.42	163.56	5.14
600 kWh Consumption, \$/bill	188.34	194.50	6.16

Supersedes Sheet Effective:

April 1, 2019

Hawaiian Electric Company, Inc.
ENERGY COST RECOVERY FILING

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

Line		
1	Effective Date	- May 1, 2019
2	Supersedes Factor	- April 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	34.51	0.53%	0.1822
4	Kahe		1,374.22	32b CIP-Biodiesel	0.00	0.00%	0.0000
5	Waiau-Steam		1,373.90	32c CIP-Diesel	197.92	0.66%	1.3057
6	(Future Use)		0.00	32d SGS - Biodiesel	31.59	30.29%	9.5673
7	(Future Use)		0.00	32e SGS - ULSD	18.49	4.22%	0.7804
8	(Future Use)		0.00	32f Waiau-Diesel	35.79	15.21%	5.4428
9	Other		0	32g West Loch PV	0.00	49.10%	0.0000
	BTU MIX, %			32h COMPOSITE COST OF MINOR ENERGY, ¢/kWh			
10	Honolulu		0.00	33 % Input to System kWh Mix			17.278
11	Kahe		75.20				1.46
12	Waiau-Steam		24.80	34 WTD COMP MINOR ENERGY COST, ¢/kWh (Lines 32f x 33)			0.25226
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)			0.26462
15	(Future Use)		0.00	37 BASE MINOR ENERGY COMP COST			0.0000
16	Other		0.00	38 Base % Input to System kWh Mix			0.0000
			100.00	39 WTD BASE MINOR ENERGY COST, ¢/kWh (Line 37 x 38)			0.00000
17	COMPOSITE COST OF GENERATION, MAJOR ENERGY ¢/mmbtu		1,374.14	40 2017 TY Loss Factor			1.0490
18	% Input to system kWh Mix		43.96	41 WTD COMP MINOR ENERGY COST, ¢/kWh (Line 39 x 40)			0.00000
	EFFICIENCY FACTOR, mmbtu/kWh			42 Cost Less Base (Line 36 - 41)			0.264621
	(A)	(B)	(C)	43 Revenue Tax Adjustment (1 / (1-0.08885))			1.097514
			Percent of Centri Stn + Other	44 MINOR ENERGY FACTOR, ¢/kWh (Line 42 x 43)			0.29043
	Fuel Type	Eff Factor mmbtu/kWh	Weighted Eff Factor				
19	LSFO	0.011165	100.00				
20	(Future Use)	0.000000	0.00				
21	(Future Use)	0.000000	0.00				
22	Other	0.011165	0.00				
	(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)						6.74446
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)						6.74446
30	Revenue Tax Adjustment (1 / (1-0.08885))						1.097514
31	MAJOR ENERGY GENERATION FACTOR, ¢/KWH (Line 29 x 30)						7.40214

SUMMARY OF TOTAL GENERATION FACTOR, ¢/kWh	
45 MAJOR ENERGY (line 31)	7.40214
46 MINOR ENERGY (line 44)	- 0.29043
47 TOTAL GENERATION FACTOR, ¢/KWH (lines 45 + 46)	- 7.69257

Hawaiian Electric Company, Inc.
ENERGY COST RECOVERY FILING

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

Line		
1	Effective Date	- May 1, 2019
2	Supercedes Factor	- April 1, 2019

Line	PURCHASED ENERGY COMPONENT		
	PURCHASED ENERGY PRICE - FOSSIL - ¢/KWH		
48	PAR Hawaii	- On Peak	12.956
49	PAR Hawaii	- Off Peak	14.250
50	IES Downstream	- On Peak	12.956
51	IES Downstream	- Off Peak	14.250
52	Kalaeloa		13.043
53	AES-HI		3.318
	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	Kawaihoa		22.395
59	Kahuku Wind		21.013
60	Waianae Solar PV		14.500
61	As Available I		22.402
62	FIT		19.251
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	0.22
69	PAR Hawaii	- Off Peak	0.16
70	IES Downstream	- On Peak	0.01
71	IES Downstream	- Off Peak	0.01
72	Kalaeloa		34.89
73	AES-HI		42.14
73a	Subtotal Fossil %		77.43
	PURCHASED ENERGY KWH MIX - RENEWABLE - %		
74	HRRV	- On Peak	6.38
75		- Off Peak	2.43
76	HRRV	- On Peak (excess)	0.00
77		- Off Peak (excess)	2.05
78	Kawaihoa		3.92
79	Kahuku Wind		2.49
80	Waianae Solar PV		2.51
81	As Available I		0.72
82	FIT		1.76
83	CBRE PV		0.31
84	(Future IPP)		0.00
85	(Future IPP)		0.00
86	(Future IPP)		0.00
87	(Future IPP)		0.00
87a	Subtotal Renewable %		22.57
87b	Total Purchased Energy %		100.00
87c	Composite Cost of Purchased Energy, Fossil		7.75
87d	Composite Cost of Purchased Energy, Renewable		17.68
88	COMPOSITE COST OF PURCHASED ENERGY, ¢/KWH		9.994
89	% Input to System kWh Mix		54.58
90	WTD CMP PURCH ENRGY COST, ¢/KWH (lines 88 x 89)		5.45473
91	2017 TY Loss Factor		1.0490
92	WTD CMP PURCH ENRGY COST, ¢/KWH (lines 90 x 91)		5.72201
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)		5.72201
99	Revenue Tax Adjustment (1 / (1-0.08885))		1.097514
100	PURCHASED ENERGY FACTOR, ¢/KWH (lines 98 x 99)		6.27999

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	2,715,831
108	LSFO Cost, ¢/mmbtu	1,374.14
109	LSFO ECRC Fossil Cost	\$37,319,333
110	LSFO Base ECRC Recovery Target	\$36,312,394
111	LSFO differential	\$1,006,939
Month Diesel		
112	Diesel mmbtu, budget	36,632
113	Diesel Cost, ¢/mmbtu	1,712.46
114	Diesel ECRC Fossil Cost	\$627,301
115	Diesel Base ECRC Recovery Target	\$588,536
116	Diesel differential	\$38,764
117	Total Fossil	\$1,045,704
118	2% of above	\$20,914
118A	Total Monthly Fossil Fuel Cost Risk Sharing, Prior Months in Year	-\$218,493
118B	Maximum Annual Cap (bi-directional)	\$2,500,000
118C	Applicable Monthly Fossil Fuel Cost Risk Sharing	\$20,914
118D	Total Monthly Fossil Fuel Cost Risk Sharing, Including This Month	-\$197,579
119	Fossil Cost Risk Sharing before taxes	\$20,914
120	Revenue Tax Adjustment	1.097514
121	Fossil Cost Risk Sharing w/revenue tax	\$22,953
122	Forecasted Month MWh Sales	547,900
123	Fossil Fuel Cost Risk Sharing Component, ¢/kWh	-0.0042

Derivation of Non-Adjustable Component:		
80A	Fuel Handling Exp, \$000 Final Settlement, HECO-603, p1	\$7,604.5
80B	Revenue Tax Adjustment	1.097514
80C	Non-Adj Revenues, \$000	\$8,346.0
80D	2017 TY Sales, MWh HECO-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)		13.9726
125	(Future Use) Adjustment, ¢/kWh		0.0000
126	ECR Reconciliation Adjustment		0.6270
127	Non-Adjustable Component (line 80E)		0.1253
128	Fossil Fuel Cost Risk Sharing Component (line 123)		-0.0042
129	Monthly Energy Cost Recovery Factor (lines 124 + 125 + 126 + 127 + 128)		14.721

Hawaiian Electric Company, Inc.
FUEL OIL INVENTORY PRICES FOR 05-01-19

	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, ¢/Mbtu	1,373.90	1,373.90	1,373.90
Kahe Fuel Additive, ¢/Mbtu	-	0.32	-
Honolulu Trucking Cost, ¢/Mbtu	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, ¢/Mbtu	1,373.90	1,374.22	1,373.90
	Waiau	CIP Biodiesel	CIP Diesel
Average Diesel / Biodiesel Oil, ¢/Mbtu	1,737.09	-	1,495.29
Thruput Charges, ¢/Mbtu	-	-	0
Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu	1,737.09	-	1,495.29
	SGS ULSD	SGS Biodiesel	
Average Diesel / Biodiesel Oil, ¢/Mbtu	2,000.71	3,414.68	
Thruput Charges, ¢/Mbtu	-	-	
Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu	2,000.71	3,414.68	
	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, \$/bbl	85.95	85.95	85.95
Kahe Fuel Additive, \$/bbl	-	0.02	-
Honolulu Trucking Cost, \$/bbl	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, \$/bbl	85.95	85.97	85.95
	Waiau	CIP Biodiesel	CIP Diesel
Average Diesel / Biodiesel Oil, \$/bbl	99.63	-	85.65
Thruput Charges, ¢/Mbtu	-	-	-
Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl	99.63	-	85.65
	SGS ULSD	SGS Biodiesel	
Average Diesel / Biodiesel Oil, \$/bbl	115.96	180.11	
Thruput Charges, ¢/Mbtu	-	-	
Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl	115.96	180.11	
Distributed Generation Fuel Prices Used for Filing, ¢/kWh			34.510

FOAC May 2019

<u>LSFO</u>	<u>BARRELS</u>	<u>MBTU</u>	<u>AMOUNT</u>	<u>AVE \$/MBTU</u>
Per FOAC run	1,106,878	6,924,788.51	95,139,398.37	13.738961
Additional	-	-	-	-
Forecast Amt	1,106,878	6,924,788.51	95,139,398.37	13.738961
	-	6.20	-	ADD'L BBL
	6,924,789	1,106,878	6.2561	MBTU / BBL
	95,139,398	1,106,878	85.95	DOLLARS / BBL
<u>WAIU DIESEL</u>	28,201	161,746.21	2,809,676.09	17.370893
	2,809,676	28,201	99.63	DOLLARS / BBL
<u>CIP BIODIESEL</u>	-	-	-	-
	-	-	-	DOLLARS / BBL
<u>CIP DIESEL</u>	25,195	144,315.02	2,157,930.59	14.952918
	2,157,931	25,195	85.65	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>	11,361	59,922.88	2,046,176.41	34.14682829
	2,046,176	11,361	180.11	DOLLARS / BBL
KAHE FUEL ADDITIVE *				0.003194
Additional				
Forecast Amt	-	-		0.003194
\$ / BBL =	-	-	0.02	DOLLARS / BBL
HONOLULU TRUCKING COST				
Per FOAC run	-	-	-	-
Additional				
Forecast Amt	-	-	-	-
\$ / BBL =	-	-	-	DOLLARS / BBL

Hawaiian Electric Company, Inc.

CONTRACT PRICES EFFECTIVE 4-1-19

<u>TYPE OF OIL BURNED</u>	<u>\$/BBL</u>	<u>¢/MBTU</u>
LOW SULFUR FUEL OIL		
Tax *	5.2979	85.46
Ocean Transportation	0.0000	0.00
Land Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
DIESEL		
Tax *	6.3932	109.11
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 *	6.8039	118.73
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

<u>Line No.</u>	<u>Airport DG Biodiesel</u>	<u>Schofield Biodiesel</u>	<u>Schofield ULSD</u>	
(A)	\$ 30.73	\$ 34.15	\$ 20.01	Estimated Distributed Generation Fuel Cost (\$/MBTU)
(B)	494	23,347	3250	Estimated MBTU Consumption
(B1)	94	4,449	567	Estimated fuel consumption barrels
(C) = (A) x (B)	\$15,184	\$797,235	\$65,031	Estimated Distributed Generation Fuel Cost (\$)
(D)	44,000	2,523,492	351,665	Estimated Distributed Generation kWh
(E) = ((C) ÷ (D)) x 100	<u>34.510</u>	<u>31.590</u>	<u>18.490</u>	¢/kWh

Hawaiian Electric Company, Inc.
ECA RECONCILIATION ADJUSTMENT
May 2019

1.	Amount to be collected	\$	9,386,800
2.	Monthly Amount (Line 1 x 1/3)	\$	3,128,933
3.	Revenue Tax Divisor		0.91115
4.	Total (Line 2 / Line 3)	\$	3,434,049
5.	Estimated MWh Sales (May 2019)		547,900
6.	ECA Reconciliation Adjustment, ¢/kWh (Line 4 ÷ Line 5)		<u><u>0.627</u></u>

Hawaiian Electric Company, Inc.
FUEL OIL ADJUSTMENT RECONCILIATION SUMMARY
March 2019
(Thousand \$)

Line	Description	Info Only		Basis for Recon	
		W/O DeadBand March 2019 Cumulative YTD Total	collectn by company*	W/ DeadBand March 2019 Cumulative YTD Total	collectn by company*
ACTUAL COSTS:					
1	Generation / Major Fuels	\$97,938.7		\$97,938.7	
2	Distributed Generation / Minor Fuels	\$9,204.9		\$9,204.9	
3	Purch Power	\$66,481.0		\$66,481.0	
4	TOTAL	\$173,624.6		\$173,624.6	
FUEL FILING COST					
5	Generation / Major Fuels	\$98,642.6		\$97,935.8	
6	Distributed Generation / Minor Fuels	\$9,204.9		\$9,204.9	
7	Purch Power	\$66,481.0		\$66,481.0	
8	TOTAL	\$174,328.5		\$173,621.7	
BASE FUEL COST					
9	Generation / Major Fuels	-\$201.6		-\$201.6	
10	Distributed Generation / Minor Fuels	-\$7.7		-\$7.7	
11	Purch Power	-\$140.8		-\$140.8	
12	TOTAL	-\$350.0		-\$350.0	
13	FUEL-BASE COST (Line 8-12)	\$174,678.5		\$173,971.7	
14	ACTUAL FOA LESS TAX	\$173,070.4		\$173,070.4	
15	Less: FOA reconciliation adj for prior year	\$6,626.7		\$6,626.7	
15A	Less: Non-Adjustable Component Revenues Less Tax	\$1,625.6		\$1,625.6	
16	ADJUSTED FOA LESS TAX	\$164,818.1		\$164,818.1	
17	FOA-(FUEL-BASE) (Line 16-13)	-\$9,860.4	under	-\$9,153.6	under
ADJUSTMENTS:					
18	Current year FOA accrual reversal	\$0.0		\$0.0	
19	SGS test fuel removal	\$0.0		\$0.0	
20	Other	\$0.0		\$0.0	
21	QUARTERLY FOA RECONCILIATION (Line 17+18+19+20)	-\$9,860.4	under	-\$9,153.6	under
21A	YTD Fossil Fuel Cost Risk Sharing Adjustment	-\$233.2		-\$233.2	
21B	QUARTERLY FOA RECON w/Fossil Risk Adj (Line 21+Line 21A)	-\$10,093.6		-\$9,386.8	

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

Hawaiian Electric Company, Inc.
DEADBAND CALCULATION
2019

FOR PERIOD: JANUARY 1, 2019 TO MARCH 31, 2019

	Notes	YTD
<u>Industrial</u>		
Industrial Efficiency Factor (per D&O), BTU/kWh*	f	11,165
Industrial Deadband Definition, +/- BTU/kWh	d	125
Industrial Portion of Recorded Sales, kWh	a	732,374,884
Industrial Consumption (Recorded), MMBTU	b	8,118,664
Industrial Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	11,085
Lower limit of Industrial Deadband, BTU/kWh	e = f-d	11,040
Higher limit of Industrial Deadband, BTU/kWh	g = f+d	11,290
Industrial Efficiency Factor for cost-recovery, BTU/kWh	h = c, e or g	11,085
Recorded BTU/kWh vs. Deadband		Neutral

* 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.
FUEL FILING COST AND BASE FUEL COST, MAJOR FUELS, WITHOUT and WITH DEADBAND
March 2019 Year-to-Date

	Without Deadband	With Deadband AS FILED
<u>FUEL FILING COST, MAJOR FUELS</u>	<u>Jan 1-March 31</u>	<u>Jan 1-March 31</u>
LSFO Portion of Recorded Sales , MWH	732,374,884	732,374,884
LSFO Sales Efficiency Factor (mmbtu/kwh)	0.011165	0.011085
Mmbtu adjusted for Sales Efficiency Factor	8,176,965,580	8,118,375,589
\$/mmbtu	<u>\$12.0635</u>	<u>\$12.0635</u>
TOTAL LSFO \$ TO BE RECOVERED	\$98,642,621	\$97,935,822
<u>BASE FUEL COST, MAJOR FUELS</u>		
TOTAL BASE FUEL COST	-\$201,576	-\$201,576
TOTAL FUEL FILING COST, MAJOR FUELS \$ YTD	\$98,642,621	\$97,935,822
TOTAL BASE FUEL COST, MAJOR FUELS YTD	-\$201,576	-\$201,576

Hawaiian Electric Company, Inc.
 Fuel Oil Adjustment Reconciliation

ATTACHMENT 4
 PAGE 5 OF 5

Fossil Fuel Cost Risk Sharing Mechanism and Non-Adjustable Component, March 2019

LSFO Fossil Fuel Cost Risk Sharing

		Jan-19, Baseline	YTD
A	MMBtu	3,300,499 mmbtu	8,118,664 mmbtu
B	\$ cost, actuals	\$44,129,782	\$97,938,746
C = B / A (Jan Column)	Jan 2019 baseline \$/MMBtu	13.370640	13.370640
D	LSFO Gen kWh		760,704,081
E	Total kWh, Gen, Purch Pwr, DG		1,480,221,245
F	Sales kWh		1,423,724,759
G = (D / E) x F	LSFO kWh-sales		731,669,835
H	Target Heat Rate		11,165
I	Recovery heat rate		11,085
J = B/A (YTD Column)	Actual Cost \$/MMBtu		12.063407
K = C x H x G / 1,000,000	Base Cost Recovery w/Target Heat Rate		\$109,226,009
L = I x J x G / 1,000,000	Fuel Filing Cost Recovery		\$97,840,990
M = 2% x (L-K)	LSFO Cost Risk Sharing		-\$227,700

Diesel Fossil Fuel Cost Risk Sharing (w/o target heat rate)

AA	MMBtu	107,471 mmbtu	241,746 mmbtu
BB	Fuel Filing Cost Recovery (no heat rate)	\$1,726,670	\$3,609,615
CC = BB/AA (Jan Column)	Jan 2019 baseline \$/MMBtu	16.066354	16.066354
DD = AA x CC	Base Cost Recovery		\$3,883,978
EE = (BB - DD) x 2%	Diesel Cost Risk Sharing		-\$5,487

FF = M + EE, up to ±\$2.5MM **Total Fossil Fuel Cost Risk Sharing Adjustment, subject to ±\$2.5MM cap** **-\$233,188**

Non-Adjustable Component

AAA = F	YTD kWh		1,423,724,759
BBB	Non-Adjustable Component, c/kWh		0.12531
CCC = AAA x BBB	Non-Adjustable Component Revenues w/tax		\$1,784,069
DDD = CCC / (1/(1-.08885))	Non-Adjustable Component Revenues less tax		\$1,625,555

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>Variance</u>	<u>Less</u>	<u>Collect</u>	<u>Collect</u>	<u>Cumulative</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		
May	(9,386,800)	(1)	(614,547)	(8,772,253)	3,128,933		

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

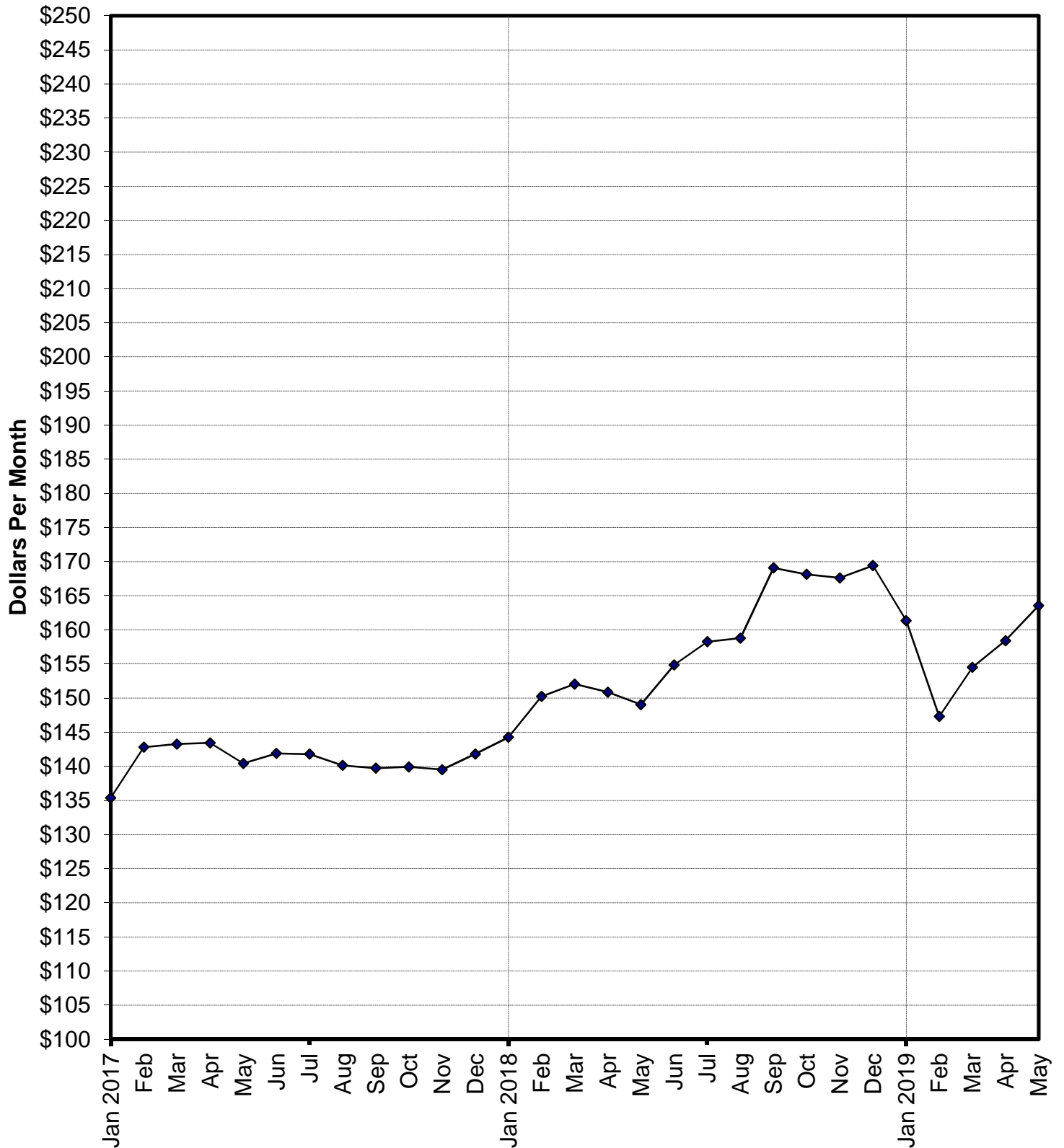
Hawaiian Electric Company, Inc.
RESIDENTIAL SURCHARGE DATA

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	3.2621 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
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	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	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	GREEN INFRASTRUCTURE FEE	1.35 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	PURCHASED POWER ADJUSTMENT CLAUSE	2.8780 CENTS/KWH
5/1/2019	SOLAR SAVER ADJUSTMENT	0.0000 CENTS/KWH
5/1/2019	RESIDENTIAL DSM ADJUSTMENT	0.0133 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		
	4/1/2019	5/1/2019	4/1/2019	5/1/2019	Difference
Base Rates	effective date:	01/01/19	01/01/19		
Base Fuel/Energy Charge	¢/kWh	-	-	0.00	0.00
Non-fuel Fuel Energy Charge					
First 350 kWhr per month	¢/kWh	10.6812	10.6812	37.38	37.38
Next 850 kWhr per month	¢/kWh	11.8347	11.8347	17.75	17.75
Customer Charge	\$	11.50	11.50	11.50	11.50
Total Base Charges			66.63	66.63	0.00
Purchase Power Adjustment	¢/kWh	2.3341	2.8780	11.67	14.39
RBA Rate Adjustment	¢/kWh	1.0350	1.0350	5.18	5.18
DSM Adjustment	¢/kWh	0.0000	0.0133	0.00	0.07
Interim Rate Increase (TY 2017)	% on base	0.000%	0.000%	0.00	0.00
Refund of 2011 Interim	% on base	0.000%	0.000%	0.00	0.00
PBF Surcharge	¢/kWh	0.4658	0.4658	2.33	2.33
Renewable Energy Infrastructure Cost Recovery Provision	¢/kWh	-	-	0.00	0.00
SolarSaver Adjustment	¢/kWh	-0.0857	0.0000	-0.43	0.00
Energy Cost Recovery	¢/kWh	14.338	14.721	71.69	73.61
Green Infrastructure Fee	\$	1.35	1.35	1.35	1.35
Avg Residential Bill at 500 kWh			158.42	163.56	

Increase / (Decrease -)	5.14
% Change	3.24%

	Rate		Charge (\$) at 600 kWh		
	4/1/2019	5/1/2019	4/1/2019	5/1/2019	Difference
Base Rates	effective date:	01/01/19	01/01/19		
Base Fuel/Energy Charge	¢/kWh	-	-	0.00	0.00
Non-fuel Fuel Energy Charge					
First 350 kWhr per month	¢/kWh	10.6812	10.6812	37.38	37.38
Next 850 kWhr per month	¢/kWh	11.8347	11.8347	29.59	29.59
Customer Charge	\$	11.50	11.50	11.50	11.50
Total Base Charges			78.47	78.47	0.00
Purchase Power Adjustment	¢/kWh	2.3341	2.8780	14.00	17.27
RBA Rate Adjustment	¢/kWh	1.0350	1.0350	6.21	6.21
DSM Adjustment	¢/kWh	0.0000	0.0133	0.00	0.08
Interim Rate Increase (TY 2017)	% on base	0.000%	0.000%	0.00	0.00
Refund of 2011 Interim	% on base	0.000%	0.000%	0.00	0.00
PBF Surcharge	¢/kWh	0.4658	0.4658	2.79	2.79
Renewable Energy Infrastructure Cost Recovery Provision	¢/kWh	-	-	0.00	0.00
SolarSaver Adjustment	¢/kWh	-0.0857	0.0000	-0.51	0.00
Energy Cost Recovery	¢/kWh	14.338	14.721	86.03	88.33
Green Infrastructure Fee	\$	1.35	1.35	1.35	1.35
Avg Residential Bill at 600 kWh			188.34	194.50	

Increase / (Decrease -)	6.16
% Change	3.27%

Hawaiian Electric Company, Inc.
FUEL OIL INVENTORY PRICES FOR 04-01-19

	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, ¢/Mbtu	1,348.72	1,348.72	1,348.72
Kahe Fuel Additive, ¢/Mbtu	-	0.32	-
Honolulu Trucking Cost, ¢/Mbtu	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, ¢/Mbtu	1,348.72	1,349.04	1,348.72

	Waiau	CIP Biodiesel	CIP Diesel
Average Diesel / Biodiesel Oil, ¢/Mbtu	1,737.09	-	1,420.02
Thruput Charges, ¢/Mbtu	-	-	0
Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu	1,737.09	-	1,420.02

	SGS ULSD	SGS Biodiesel
Average Diesel / Biodiesel Oil, ¢/Mbtu	2,000.71	2,730.98
Thruput Charges, ¢/Mbtu	-	-
Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu	2,000.71	2,730.98

	Honolulu	Kahe	Waiau
Average Low Sulfur Fuel Oil, \$/bbl	84.58	84.58	84.58
Kahe Fuel Additive, \$/bbl	-	0.02	-
Honolulu Trucking Cost, \$/bbl	-	-	-
Low Sulfur Fuel Oil Prices Used For Filing, \$/bbl	84.58	84.60	84.58

	Waiau	CIP Biodiesel	CIP Diesel
Average Diesel / Biodiesel Oil, \$/bbl	99.63	-	81.38
Thruput Charges, ¢/Mbtu	-	-	-
Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl	99.63	-	81.38

	SGS ULSD	SGS Biodiesel
Average Diesel / Biodiesel Oil, \$/bbl	115.96	143.91
Thruput Charges, ¢/Mbtu	-	-
Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl	115.96	143.91

Distributed Generation Fuel Prices Used for Filing, ¢/kWh 34.430

FOAC April 2019

<u>LSFO</u>	<u>BARRELS</u>	<u>MBTU</u>	<u>AMOUNT</u>	<u>AVE \$/MBTU</u>
Per FOAC run	964,862	6,050,793.49	81,608,321.83	13.487210
Additional	-	-	-	-
Forecast Amt	964,862	6,050,793.49	81,608,321.83	13.487210
	-	6.20	-	ADD'L BBL
	6,050,793	964,862	6.2711	MBTU / BBL
	81,608,322	964,862	84.58	DOLLARS / BBL
<u>WAIU DIESEL</u>	26,975	154,713.66	2,687,519.70	17.370927
	2,687,520	26,975	99.63	DOLLARS / BBL
<u>CIP BIODIESEL</u>	-	-	-	-
	-	-	-	DOLLARS / BBL
<u>CIP DIESEL</u>	56,884	326,003.37	4,629,309.04	14.200188
	4,629,309	56,884	81.38	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>	8,568	45,150.78	1,233,060.74	27.30984662
	1,233,061	8,568	143.91	DOLLARS / BBL
KAHE FUEL ADDITIVE *				0.003194
Additional				
Forecast Amt	-	-	-	0.003194
\$ / BBL =	-	-	0.02	DOLLARS / BBL
HONOLULU TRUCKING COST				
Per FOAC run	-	-	-	-
Additional				
Forecast Amt	-	-	-	-
\$ / BBL =	-	-	-	DOLLARS / BBL