

JAY IGNACIO, P. E. President

November 28, 2018

2018 NOV 28 P 3: 34

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: Hawai'i Electric Light Energy Cost Adjustment Factor for December 2018

Hawai'i Electric Light Company, Inc.'s ("Hawai'i Electric Light") Energy Cost Adjustment factor for December 2018 is 9.292 cents per kilowatt-hour ("kWh"), an increase of 0.38 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$199.86, an increase of \$1.87 compared to rates effective November 1, 2018. The increase in the typical residential bill is due to the increase in the Energy Cost Adjustment (+\$1.89) and the decrease in the Purchase Power Adjustment Clause rate (-\$0.02).

Hawai'i Electric Light's fuel composite cost of generation increased 94.98 cents per million BTU to 1,625.59 cents per million BTU. The distributed generation increased 0.62 cents per kWh to 17.174 cents per kWh. The composite cost of purchased energy decreased 0.64 cents per kWh to 14.883 cents per kWh.

The attached sheets set forth the energy cost adjustment in cents per kWh for each rate schedule that is applicable for pro rata use beginning December 1, 2018.

Sincerely,

Attachments

cc: Division of Consumer Advocacy

### **ENERGY COST ADJUSTMENT FACTOR**

#### **EFFECTIVE DATES** 11/01/18 Change 12/01/18 **Composite Cost** Generation, ¢/mmbtu 1,530.61 1,625.59 94.98 Dispersed Generation Energy, ¢/kWh 17.174 16.549 0.62 Purchased Energy, ¢/kWh 15.525 14.883 (0.64)Residential Schedule "R" Energy Cost Adjustment - ¢/kWh 8.913 9.292 0.38 Others - "G,J,P,F" Energy Cost Adjustment - ¢/kWh 8.913 9.292 0.38 Residential Customer with:

\$197.99

\$237.04

\$199.86

\$239.29

\$1.87

\$2.25

500 KWH Consumption - \$/Bill

600 KWH Consumption - \$/Bill

### HAWAII ELECTRIC LIGHT COMPANY, INC. ENERGY COST ADJUSTMENT (ECA) FILING

ENERGY COST ADJUSTMENT (ECA) FILING - December 1, 2018 (Page 1 of 2)

Line

1 Effective Date December 1, 2018 2 Supercedes Factors of November 1, 2018

### **GENERATION COMPONENT**

CF	NTRAL STATION WITH WIND/HYDRO CO	MPONENT	
<u> </u>	FUEL PRICES, ¢/mmbtu	WII ONLINI	
3			
4		1,361.68	
5		1,381.42	
6		1,941.61	
	a Keahole ULSD	1,735.71	
	Waimea ULSD Diesel	1,727.50	
8		· ·	
	4	1,909.00	
	Hilo (Kanoelehua) ULSD Diesel	1,713.73	
9		1,912.64	DG ENERGY COMPONENT
10	Wind	0.00	35 COMPOSITE COST OF DG
11	Hydro	0.00	ENERGY, ¢/kWh
			36 % Input to System kWh Mix
	BTU MIX, %		
12			37 WEIGHTED COMPOSITE DG ENERGY COST,
13	Hill Industrial	37.162	¢/kWh (Lines 35 x 36)
14	Puna Industrial	6.530	
15	Keahole Diesel	48.517	38 BASE DG ENERGY COMPOSITE COS
	Keahole ULSD	0.830	
16		0.152	39 Base % Input to System kWh Mix
17	Hilo Diesel	0.000	40 WEIGHTED BASE DG ENERGY COST,
	Hilo (Kanoelehua) ULSD Diesel <sup>1</sup>	0.019	
18	,	3.659	¢/kWh (Line 38 x 39)
19		0.000	φ/κνντι (Line 30 x 39)
20		3.131	41 Cost Loss Base (Line 27 40)
20	Hydro		41 Cost Less Base (Line 37 - 40) 42 Loss Factor
21	COMPOSITE COST OF CENERATION	100.000	
21	COMPOSITE COST OF GENERATION,	amb 4 005 50	43 Revenue Tax Req Multiplier
20	CENTRAL STATION + WIND/HYDRO ¢/r		44 DG FACTOR, ¢/kWh
22	% Input to System kWh Mix	53.973	(Line 41 x 42 x 43)
	EFFICIENCY FACTOR, mmbtu/kWh		
	(A) (B) (C)	(D)	
	Percent		
	Eff Factor Centrl St		
	Fuel Type mmbtu/kwh Wind/Hy	•	
23			
24			
25		0.000387	
20	(Lines 23, 2	0.000307	
26	Weighted Efficiency Factor, mmbtu/kWh		
20	[Lines 23(D) + 24(D) + 25(D)]	0.0122870	
	[Lines 23(D) + 24(D) + 25(D)]	0.0122070	
27	WEIGHTED COMPOSITE CENTRAL STA	TION ≠	
21	WIND/HYDRO GENERATION COST, ¢/k		
		10.78036	
	(Lines (21 x 22 x 26))	10.76030	
20	BASE CENTRAL STATION + WIND/HYDR	^	
20		-	
20	GENERATION COST, ¢/mmbtu	661.02	
	Base % Input to Sys kWh Mix	53.67	
	Efficiency Factor, mmbtu/kwh	0.012451	
31	WEIGHTED BASE CENTRAL STATION +	.,,	
	WIND/HYDRO GENERATION COST ¢/k\		
	(Lines (28 x 29 x 30))	4.41723	011111111111111111111111111111111111111
. ــ ـ			SUMMARY OF
	COST LESS BASE (Line 27 - 31)	6.36313	TOTAL GENERATION FACTOR, ¢/kWh
	Revenue Tax Req Multiplier	1.0975	45 Cntrl Stn+Wind/Hydro (line 34)
0.4	CENTRAL STATION + WIND/HYDRO		46 DG (line 44)
34			
34	GENERATION FACTOR, ¢/kWh (Line (32 x 33))	6.98354	47 TOTAL GENERATION FACTOR, ¢/kWh (lines 45 + 46)

<sup>&</sup>lt;sup>1</sup> Hilo ULSD same location as Kanoelehua ULSD

### HAWAII ELECTRIC LIGHT COMPANY, INC. ENERGY COST ADJUSTMENT (ECA) FILING

ENERGY COST ADJUSTMENT (ECA) FILING - December 1, 2018 (Page 2 of 2)

PURCHASED ENERGY PRICE, ¢/kWh  48 HEP 15.200  49 PGV On Peak 17.200  50 PGV Off Peak 16.824  51 PGV - Add'l 5 MW On Peak 12.860  52 PGV - Add'l 5 MW Off Peak 6.540  53 PGV - Add'l 8 MW On Peak 6.540  54 PGV - Add'l 8 MW Off Peak 6.540  55 Wailuku Hydro On Peak 17.200  56 Wailuku Hydro On Peak 17.200  57 Hawi Renewable Dev. On Peak 16.824  58 Tawhiri (Pakini Nui) On Peak 11.510  60 Tawhiri (Pakini Nui) Off Peak 16.824  53 Small Hydro (>100 KW) Off Peak 17.200  63 Small Hydro (>100 KW) Off Peak 16.824  64 Sch Q Hydro (>100 KW) Off Peak 16.824  65 FIT 23.800  PURCHASED ENERGY KWH MIX, %  66 HEP 60.980  67 PGV On Peak 0.000  68 PGV - Add'l On Peak 0.000  69 PGV - Add'l On Peak 0.000  70 PGV - Add'l On Peak 0.000  71 PGV - Add'l On Peak 0.000  72 PGV - Add'l On Peak 0.000  73 Wailuku Hydro On Peak 0.000  74 PGV - Add'l On Peak 0.000  75 PGV - Add'l On Peak 0.000  76 PGV - Add'l On Peak 0.000  77 PGV - Add'l On Peak 0.000  78 Wailuku Hydro On Peak 0.000  79 PGV - Add'l On Peak 0.000  70 PGV - Add'l On Peak 0.000  71 PGW - Add'l On Peak 0.000  72 PGV - Add'l On Peak 0.000  73 Wailuku Hydro On Peak 0.000  74 PGW - Add'l On Peak 0.000  75 Hawi Renewable Dev. On Peak 0.000  76 Hawi Renewable Dev. On Peak 0.000  77 Hawi Renewable Dev. On Peak 0.000  78 Hawi Renewable Dev. On Peak 0.000  79 Small Hydro (>100 KW) On Peak 0.000  81 Small Hydro (>100 KW) On Peak 0.000  82 Sch Q Hydro (<100 KW) On Peak 0.000  83 Small Hydro (>100 KW) On Peak 0.000  84 COMPOSITE COST OF PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626  91 Loss Factor 1.072  92 Revenue Tax * 1.0975  93 PURCHASED ENERGY FACTOR, ¢/kWh (Lines (90 x 91 x 92)) 92.56388  (Lines (90 x 91 x 92)) 92.56388	<u>Line</u>	PURCHASED E	NERGY COMPON	<u>ENT</u>
48 HEP 49 PGV APGV On Peak 17.200 50 PGV Off Peak 18.824 51 PGV - Add'l 5 MW On Peak 12.860 53 PGV - Add'l 8 MW On Peak 54 PGV - Add'l 8 MW On Peak 55 Wailuku Hydro On Peak 17.200 66 Wailuku Hydro On Peak 17.200 67 Wailuku Hydro On Peak 17.200 68 Wailuku Hydro On Peak 17.200 69 Wailuku Hydro Off Peak 17.200 60 Wailuku Hydro Off Peak 17.200 61 Wailuku Hydro Off Peak 17.200 62 Wailuku Hydro Off Peak 17.200 63 Hawi Renewable Dev. Off Peak 18.824 65 Tawhiri (Pakini Nui) Off Peak 11.510 60 Tawhiri (Pakini Nui) Off Peak 11.630 61 62 Small Hydro (>100 KW) Off Peak 17.200 63 Small Hydro (>100 KW) Off Peak 18.824 64 Sch Q Hydro (<100 KW) Off Peak 18.824 65 FIT 23.800  PURCHASED ENERGY KWH MIX, % 66 HEP 60.980 67 PGV On Peak 0.000 68 PGV - Add'l On Peak 0.000 69 PGV - Add'l On Peak 0.000 70 PGV - Add'l On Peak 0.000 71 PGV - Add'l On Peak 0.000 72 PGV - Add'l Off Peak 0.000 73 Wailuku Hydro On Peak 4.218 74 Wailuku Hydro On Peak 4.218 74 Wailuku Hydro On Peak 4.229 75 Hawi Renewable Dev. On Peak 4.229 76 Hawi Renewable Dev. On Peak 4.229 77 Hawiri (Pakini Nui) On Peak 1.520 78 Small Hydro (>100 KW) On Peak 1.520 79 Small Hydro (>100 KW) On Peak 1.520 70 Peak 1.000 71 PGV - Add'l 8 MW Off Peak 2.923 75 Hawi Renewable Dev. On Peak 1.220 76 Hawi Renewable Dev. On Peak 1.220 77 Tawhiri (Pakini Nui) On Peak 1.304 77 Tawhiri (Pakini Nui) On Peak 1.304 78 Tawhiri (Pakini Nui) Off Peak 2.682 79 Small Hydro (>100 KW) Off Peak 2.682 70 COST, ¢/kWh (Lines (84 x 85))  87 BASE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85))  88 Base % Input to System kWh Mix 45.284 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax 9 URCHASED ENERGY FACTOR, ¢/kWh 2.53688		DUDCHACED ENERGY		
49 PGV On Peak 17.200 50 PGV Off Peak 16.824 51 PGV - Add'l 5 MW On Peak 12.860 52 PGV - Add'l 5 MW Off Peak 12.860 53 PGV - Add'l 8 MW On Peak 6.540 54 PGV - Add'l 8 MW Off Peak 6.540 55 Wailuku Hydro On Peak 17.200 56 Wailuku Hydro Off Peak 16.824 57 Hawi Renewable Dev. Off Peak 16.824 58 Hawi Renewable Dev. Off Peak 16.824 59 Tawhiri (Pakini Nui) On Peak 17.200 60 Tawhiri (Pakini Nui) Off Peak 11.630 61 Small Hydro (>100 KW) On Peak 17.200 63 Small Hydro (>100 KW) Off Peak 16.824 64 Sch Q Hydro (<100 KW) Off Peak 16.824 65 FIT 23.800  PURCHASED ENERGY KWH MIX, % 66 HEP 60.980 67 PGV On Peak 0.000 68 PGV Off Peak 0.000 70 PGV - Add'l On Peak 0.000 71 PGV - Add'l Off Peak 0.000 72 PGV - Add'l Off Peak 0.000 73 Wailuku Hydro Off Peak 0.000 74 PGV - Add'l Off Peak 0.000 75 Hawi Renewable Dev. Off Peak 0.000 76 PGV - Add'l Off Peak 0.000 77 PGV - Add'l 8 MW On Peak 0.000 78 Wailuku Hydro Off Peak 0.000 79 PGV - Add'l 8 MW On Peak 0.000 71 PGV - Add'l 8 MW On Peak 0.000 73 Wailuku Hydro Off Peak 0.000 74 Wailuku Hydro Off Peak 0.000 75 Hawi Renewable Dev. Off Peak 0.000 76 Hawi Renewable Dev. Off Peak 0.000 77 Hawi Renewable Dev. Off Peak 0.000 78 Maill Hydro (>100 KW) Off Peak 0.000 81 Small Hydro (>100 KW) Off Peak 0.000 82 Sch Q Hydro (<100 KW) Off Peak 0.000 83 Small Hydro (>100 KW) Off Peak 0.000 84 COMPOSITE COST OF PURCHASED ENERGY COST, ¢/kWh 14.883 85 % Input to System kWh Mix 45.284 86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962 87 BASE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 4.5836 80 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688	48		PRICE, ¢/kvvn	15 200
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52         PGV - Add'l 8 MW         On Peak         6.540           53         PGV - Add'l 8 MW         Off Peak         6.540           54         PGV - Add'l 8 MW         Off Peak         6.540           55         Wailuku Hydro         On Peak         17.200           56         Wailuku Hydro         Off Peak         16.824           57         Hawi Renewable Dev.         Off Peak         16.824           58         Hawi Renewable Dev.         Off Peak         16.824           59         Tawhiri (Pakini Nui)         On Peak         11.510           60         Tawhiri (Pakini Nui)         Off Peak         11.630           61         Gasmall Hydro (>100 KW)         Off Peak         16.824           62         Small Hydro (>100 KW)         Off Peak         16.830           65         FIT         23.800           PURCHASED ENERGY KWH MIX, %           66         HEP         60.980           67         PGV         On Peak         0.000           68         PGV         Off Peak         0.000           69         PGV - Add'l         Off Peak         0.000           71         PGV - Add'l         MY         Off Peak<	50	PGV	Off Peak	
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83 FIT 2.682 100.000  84 COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh 14.883 85 % Input to System kWh Mix 45.284 86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				
84 COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh 14.883 85 % Input to System kWh Mix 45.284 86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962 87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336 90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688		,		2.682
ENERGY, ¢/kWh 14.883 85 % Input to System kWh Mix 45.284 86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				100.000
ENERGY, ¢/kWh 14.883 85 % Input to System kWh Mix 45.284 86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688	0.4	COMPOSITE COST OF 5	NIDOLIACED	
85       % Input to System kWh Mix       45.284         86       WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85))       6.73962         87       BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh       9.895         88       Base % Input to Sys kWh Mix       46.32         89       WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88))       4.58336         90       COST LESS BASE (Lines (86 - 89))       2.15626         91       Loss Factor Loss Factor Loss Factor       1.072         92       Revenue Tax *       1.0975         93       PURCHASED ENERGY FACTOR, ¢/kWh       2.53688	84		UKCHASED	14 883
86 WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688	85		lix	
COST, ¢/kWh (Lines (84 x 85)) 6.73962  87 BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh 9.895  88 Base % Input to Sys kWh Mix 46.32  89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				
COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				
COMPOSITE COST, ¢/kWh 9.895 88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688		DAGE BURGUAGES TO	TPOV	
88 Base % Input to Sys kWh Mix 46.32 89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688	87			0 805
89 WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626 91 Loss Factor 1.072 92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688	ន្តន			
COST, ¢/kWh (Lines (87 x 88)) 4.58336  90 COST LESS BASE (Lines (86 - 89)) 2.15626  91 Loss Factor 1.072  92 Revenue Tax * 1.0975  93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				70.02
91 Loss Factor       1.072         92 Revenue Tax *       1.0975         93 PURCHASED ENERGY FACTOR, ¢/kWh       2.53688				4.58336
91 Loss Factor       1.072         92 Revenue Tax *       1.0975         93 PURCHASED ENERGY FACTOR, ¢/kWh       2.53688	90	COST LESS BASE /Linco	: (86 - 80))	2 15626
92 Revenue Tax * 1.0975 93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688		•	(00 - 00))	
93 PURCHASED ENERGY FACTOR, ¢/kWh 2.53688				
			ACTOR, ¢/kWh	
(===== (00 × 0 · × 02//		(Lines (90 x 91 x 92))	- / /:	

<u>Line</u> <u>SYSTEM COMPOSITE</u>

94	GENERATION AND PURCHASED ENERGY	
	FACTOR, ¢/kWh (Lines (47 + 93))	9.66891
95	Not Used	0.000
96	Not Used	0.000
97	ECA Reconciliation Adjustment	(0.377)
98	ECA FACTOR, ¢/kWh	9.292
	(Lines (94 + 95+ 96 + 97))	

### Hawaii Electric Light Company, Inc.

FUEL OIL INVENTORY PRICES FOR December 1, 2018

INDUSTRIAL FUEL COSTS: Average Industrial Fuel Cost - \$/BBL Land Transportation Cost - \$/BBL	<u>HILO</u> 85.7858 	<u>PUNA</u> 85.7858 1.2434		
Industrial Costs For Filing - \$/BBL Conversion Factors - mmbtu/BBL	85.7858 6.30	87.0292 6.30		
Industrial Costs For Filing - ¢/mmbtu	1,361.68	1,381.42		
DIESEL FUEL COSTS: Average Diesel Fuel Cost - \$/BBL Land Transportation Cost - \$/BBL	KEAHOLE 110.9500 2.8285	PUNA CT-3 110.9500 1.1305	HILO 110.9500 0.9172	
Diesel Costs For Filing - \$/BBL Conversion Factors - mmbtu/BBL	113.7785 5.86	112.0805 5.86	111.8672 5.86	
Diesel Costs For Filing - ¢/mmbtu	1,941.61	1,912.64	1,909.00	:
ULSD FUEL COSTS: Average ULSD Fuel Cost - \$/BBL Land Transportation Cost - \$/BBL	KEAHOLE 96.6391 2.8170	WAIMEA 96.6391 2.3468	HILO 96.6391 1.5577	DISPERSED GENERATION 96.6391
ULSD Costs For Filing - \$/BBL Conversion Factors - mmbtu/BBL	99.4560 5.73	98.9858 5.73	98.1968 5.73	96.6391 5.73
ULSD Costs For Filing - ¢/mmbtu	1,735.71	1,727.50	1,713.73	1,686.55

COMPOSITE COST

### Dispersed Generation, cents per kWh

	OF DISP. GEN.
BBIs Fuel:	1263.5159
\$/BBI Inv Cost:	96.6391
Fuel \$ (Prod Sim Consumption x Unit Cost)	122,105.00
Net kWh (from Prod Sim)	711,000
cents/kWh:	17.174

Estimated Weighted Average November 2018

SHIPMAN INDUSTRIAL HILL INDUSTRIAL

01111111111111	SHIPIVIAN INDUSTRIAL		JSTRIAL					
				COST PER BARREL				
BBL	COST	BBL	COST	EXCL LT	LT Total			
0	0.00	32.691	2.475.240.32					
		, , ,	, -, -					
		0	0.00					
xxxxxx xxxx	xxxxxxxxxx	xxxxxxxx	xxxxxxxxxxxx					
XXXXXX XXXX	XXXXXXXXXX	XXXXXXXX	xxxxxxxxxxxx					
xxxxxx xxxx	xxxxxxxxxx	xxxxxxx	xxxxxxxxxxxx					
XXXXXX XXXX	xxxxxxxxxx	xxxxxxx	xxxxxxxxxxx					
0	0.00	(32,972)	(2,467,819.69)					
0	0.00	38,429	3,088,487.49					
0	0.00	34,633	2,637,819.59					
0	0.00	(31,155)	(2,372,918.01)					
0	0.00	41,626	3,360,809.70					
xxxxxx xxxx	xxxxxxxxxx	xxxxxxx	xxxxxxxxxxxx					
xxxxxx xxxx	xxxxxxxxxx	xxxxxxx	xxxxxxx xxxxxxxxxxxxx					
0	0.00	23,641	1,934,506.14					
0	0.00	(30,845)	(2,359,508.88)	106.5901	0.0000	106.5901		
0	0.00	34,422	2,935,806.97					
0	0.00	0	0.00					
0	0.00	0	0.00					
0	0.00	34,422	2,935,806.97					
xxxxxx	0.00	********	(2 935 806 97)					
XXXXXX	0.00	XXXXXXXX	2,952,917.43					
	0.00	34.422	2.952.917.43					
	0  xxxxxx xxxx  xxxxxx xxxx  0 0 0 0 0  xxxxxx xxxx  0 0 0 0	0 0.00  XXXXXX XXXXXXXXXXXXXX  XXXXXX XXXXXXXX	0       0.00       32,691         0       0       0         XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	0       0.00       32,691       2,475,240.32         0       0.00         XXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX	BBL COST BBL COST EXCLLT  0 0.00  XXXXXXX XXXXXXXXXXXXXXXXXXXXXX	BBL   COST   BBL   COST   EXCLLT   LT Total		

Weighted Avg Cost/BBL by Location #DIV/0! 85.2887
Weighted Avg Cost/BBL @ Avg Cost #DIV/0! 85.7858

Estimated Weighted Average November 2018

### PUNA INDUSTRIAL

		NIAL .				
			LAND	COST PER BA		
	BBL	COST	TRANSP	EXCLUDE LT	LT	TOTAL
Balance at 10/312018	7,124	584,552.32	9,220.29			
Less: Est'd Inventory Addition	0	0.00	0.00			
•						
Purchases: Estimate	xxxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxxxx			
Actual	xxxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxxxx			
Transfers out: Estimate	xxxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxxx			
Actual	xxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxxx			
Transfers in: Estimate	(1,309)	(103,225.59)	(1,565.22)	)		
Actual	1,959	166,070.13	2,481.16			
Consumed: Estimate	706	53,772.43	852.30			
Actual	(1,982)	(150,958.87)		)		
Balance Per G/L 10/31/2018	6,498	550,210.43	8,595.81	_		
Purchases	xxxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxx			
Transfer out	xxxxxxxxxx x	xxxxxxxxxxx	xxxxxxxxxxxxxxxxx			
Transfer in	4,742	400,813	5,670.20			
Consumed	(5,705)	(436,407.79)	(7,383.74)	76.4957	1.2943	77.7899
Balance @ 11/30/2018	5,535	514,615.33	6,882.27			
Inventory From Offsite/Transfers	0	0.00	0.00			
Est'd Inventory Addition	0	0.00	0.00			
Fuel Bal @ Avg Price	5,535	514,615.33	6,882.27		1.2434	
Doverso Fuel Palance		(514 615 22)				
Reverse Fuel Balance Fuel Balance @ Avg Price	XXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			
ruei Balance @ Avg Frice	XXXXXXXXXXX	4/4,024.10	*******			
Total @ 12/01/2018 Avg Price	5,535	474,824.18	6,882.27	_		
Weighted Avg Cost/BBL by Location		92.9748	1.2434			
Weighted Avg Cost/BBL @ Avg Cost		85.7858	1.2434			

Estimated Weighted Average November 2018

### KEAHOLE CT

		REARIOLE CI					
			COST	LAND	COST PER I	BARREL	
HS Diesel	BBL	GALLONS	EXCLUDE LT	TRANSP	EXCLUD LT	LT	TOTAL
Balance at 10/312018	46,350.9	1,946,737.0	5,064,323.8	129,998.8			
Less: Est'd Inventory Addition	0.0	0.0	0.0	0.0			
Purchases: Estimate	0.0	0.0	0.0	0.0			
Actual	0.0	0.0	0.0	0.0			
Transfers out: Estimate		xxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxxx			
Actual		XXXXXXXXXXXXXX	XXXXXXXXXXXXXXXX	xxxxxxxxxxxxxx			
Transfers in: Estimate	(52,434.8)	(2,202,260.0)	(5,481,365.9)	(149,093.0)			
Actual	53,296.2	2,238,440.0	5,755,211.6	150,487.76			
Consumed: Estimate	55,084.2	2,313,536.0	5,714,291.6	155,767.16			
Actual	(54,865.6)	(2,304,355.0)	(5,691,615.1)	(155,149.0)	103.7374		
Balance Per G/L 10/31/2018	47,430.9	1,992,098	5,360,845.96	132,011.71	113.0243		
Purchases	xxxxxxxxxxx	· xxxxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxxx			
Transfer out	xxxxxxxxxxx	· xxxxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxxxx			
Transfer in	53,853.4	2,261,843.0	5,701,837.8	153,126.8	105.8770		
Consumed	(56,482.4)	(2,372,261.0)	(6,129,950.7)	(158,416.20)	108.5285	2.8047	111.3332
Balance @ 11/30/2018	44,801.9	1,881,680	4,932,733.13	126,722.28	110.1010		
Inventory From Offsite/Transfers	0.0	0.0	0.0	0.00			
Est'd Inventory Addition	0.0	0	0.0	0.00			
Fuel Balance @ Avg Price	44,801.9	1,881,680	4,932,733.13	126,722.28	110.1010		
Reverse Fuel Balance	xxxxxxxxxxx	( XXXXXXXXXXXXXXX	(4.932.733.1)	xxxxxxxxxxxxxxx			
Fuel Balance @ Avg Price		( XXXXXXXXXXXXXXX	. , , ,	xxxxxxxxxxxxxxx			
Total @ 12/01/2018 Avg Price	44,801.9	1,881,680	4,970,772.87	126,722.28	110.9500		
Weighted Avg Cost/BBL by Location			110.1010	2.8285			
Weighted Avg Cost/BBL @ Avg Cost			110.9500	2.8285			

### Estimated Weighted Average November 2018

### PUNA CT-3

		01171 01					
			COST	LAND	COST PER B	ARREL	
HS Diesel	BBL	GALLONS	EXCLUD LT	TRANSP	EXCL LT	LT	TOTAL
Balance at 10/312018	3,577.1	150,240.0	434,287.7	3,636.0			
Less: Est'd Inven Addition	0.0	0.0	0.0	0.0			
Purchases: Estimate		xxxxxxxxxxxxx					
Actual	)	xxxxxxxxxxxxx	xxxxxxxxxxx	x xxxxxxxxxxx			
Transfers out Estimate				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Transfers out: Estimate		xxxxxxxxxxxxxx					
Actual	,	xxxxxxxxxxxxx	xxxxxxxxxxx	x xxxxxxxxxxx			
Transfers in: Estimate	(6,528.5)	(274 107 0)	(681,163.5)	\			
Actual		(274,197.0)					
Actual	8,574.1	360,113.0	939,138.6	9,592.6			
Consumed: Estimate	7,199.7	302,387.0	746,877.3	8,471.5			
Actual	(8,983.8)	(377,321.0)					
Actual	(0,903.0)	(377,321.0)	(931,959.7)	(10,570.8)			
Balance Per G/L 10/31/2018	3,838.6	161,222	507,180.45	3,890.46			
Balance Fel G/L 10/31/2018	3,030.0	101,222	307,100.43	3,830.40			
Purchases	xxxxxxxxxxxx	xxxxxxxxxxxxxx	xxxxxxxxxxxx	x xxxxxxxxxxx			
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Transfer out	xxxxxxxxxxxx	xxxxxxxxxxxxx	xxxxxxxxxxxx	x xxxxxxxxxxx			
Transfer in	6,075.7	255,181.0	645,086.8	6,736.8	106.1742		
	,	,	,	•			
Consumed	(5,091.6)	(213,849)	(552,588.36)	(5,175.15)	108.5285	1.0164	109.5449
		•	· · · · · · · · · · · · · · · · · · ·	,			
Balance @ 11/30/2018	4,822.7	202,554	599,678.92	5,452.09	124.3447		
Inven From Offsite/Transfers	0.0	0	0.00	0.00			
Est'd Inventory Addition	0.0	0	0.00	0.00			
	-						
Fuel Balance @ 11/30/2018	4,822.7	202,554	599,678.92	5,452.09	124.3447		
Reverse Fuel Balance	xxxxxxxxxxx	xxxxxxxxxxxxx	(599,678.92)	) xxxxxxxxxxx			
Fuel Balance @ Avg Price		xxxxxxxxxxxxx					
	-						
Total @ 12/01/2018 Avg Price	4,822.7	202,554	535,080.32	5,452.09	110.9500		
		<u> </u>					
Weighted Avg Cost/BBL by Location			124.3447	1.1305			
, , ,							
Weighted Avg Cost/BBL @ Avg Cost			110.9500	1.1305			
5 5 , 5 3							

Estimated Weighted Average November 2018

#### TOTAL HILO HS-DIESEL

		TOTAL HILO	H3-DIESEL				
			COST	LAND	COST PER	BARREL	
HS Diesel	BBL	GALLONS	EXCLUDE LT	TRANSP	EXCL LT	LT	TOTAL
Balance at 10/312018	1542.8	64,796	162,098	1,265			
Less: Est'd Inven Addition	0.0	0	0	0			
Purchases: Estimate	:	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx			
Actual	;	xxxxxxxxxx	XXXXXXXXXXX	xxxxxxxxxx			
Transfers out: Estimate	2	×××××××××	xxxxxxxxxx	xxxxxxxxxx			
Actub	:	xxxxxxxxxx	XXXXXXXXXXX	xxxxxxxxxx			
Transfers in: Estimate	-185.4	-7786.0		-181.4			
Actual	185.4	7786.0	20341.0	183.4			
Consumed: Estimate	74.8	3140.0	7755.6	63.6			
Actual	-108.4	-4553.0	-11245.6	-92.2			
Balance Per G/L 10/31/2018	1509.1	63,383	159,375.68	1,238.65	105.6084		
Purchases	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx			
Transfer out	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx	xxxxxxxxxx			
Transfer in	933.2	39193.0	100745.1	913.2	#DIV/0!		
Consumed	-908.8	-38169.0	-98629.2	-745.4	108.5285	0.8202	109.3487
Balance @ 11/30/2018	1,533.5	64,407	161,491.61	1,406.46	105.3092		
Inven From Offsite/Transfers	0.0	0.0	0.0	0.0			
Est'd Inventory Addition	0.0	0.0	0.0	0.0			
Fuel Balance @ Avg Price	1,533.5	64,407	161,491.61	1,406.46	105.3092		
Reverse Fuel Balance	xxxxxxxxxxx	xxxxxxxxxx	-161,491.61	xxxxxxxxxx			
Fuel Balance @ Avg Price			170,141.88				
Total @ 12/01/2018 Avg Price	1,533.5	64,407	170,141.88	1,406.46	110.9500		
Weighted Avg Cost/BBL by Location			105.3092	0.9172			

110.9500

0.9172

Weighted Avg Cost/BBL @ Avg Cost

### Estimated Weighted Average November 2018

### KEAHOLE DIESEL

		NEAHOLE DIES					
			COST	LAND	COST PER BARREL		
ULSD	BBL	GALLONS	EXCLUDE LT	TRANSP	EXCLUD LT	LT	TOTAL
Balance at 10/312018	2,071.1	86,986	189,863.63	5,842.02			
Balance at 10,512015	2,071.1	00,500	105,005.05	3,042.02			
Less: Est'd Inventory Addition	0.0						
D who so Edinal	(275.0)	(45.700)	(20.004.60)	(4.050.03)			
Purchases: Estimate	(375.9)	(15,789)	(39,981.69)				
Actual	375.0	15,748	41,487.31	0.00			
Transfers out: Estimate	:	xxxxxxxxxxx	xxxxxxxxxxxx	xxxxxxxxxx			
Actual			xxxxxxxxxxxx				
7.000				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Transfers in: Estimate		(176)	0.00	(11.92)			
Actual		176	0.00	1,066.14			
Consumed: Estimate	222.7	9,352	20,547.31	625.91			
Actual	(256.1)	(10,755)	(23,629.84)	(719.81)	92.2783		
	, ,		,	, ,			
Balance Per G/L 10/31/2018	2,036.7	85,542	188,286.72	5,733.42	92.4463		
Purchases	0.0	0	0.00	0.00	0.0000		
Estimated Purchases	190.0	7,980	20,189.40	540.25			
Transfer in	1.7	72	0.00	4.87	0.00		
C	(204.4)	(42.774)	(20.240.04)	(057.60)	02 2245	2.0207	06.0533
Consumed	(304.1)	(12,771)	(28,349.04)	(857.69)	93.2315	2.8207	96.0522
Balance @ 11/30/2018	1,924.4	80,823	180,127.08	5,420.85	93.6038		
Inventory From Offsite/Transfers	0.0	00,029	0.00	0.00	33.0030		
Est'd Inventory Addition	0.0	0	0.00	0.00			
est a inventory Addition	0.0	U	0.00	0.00			
Fuel Balance @ Avg Price	1,924.4	80,823	180,127.08	5,420.85	93.6038		
Tuel Balance & Avg Thee	1,324.4	00,023	100,127.00	3,420.03	33.0030		
Reverse Fuel Balance	XXXXXXXXXXXX	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(190 127 09)	xxxxxxxxxx			
				XXXXXXXXXXXX			
Fuel Balance @ Avg Price	XXXXXXXXXXX	*****	165,966.09	XXXXXXXXXXX			
Total @ 12/01/2018 Avg Price	1,924.4	80,823	185,968.09	5,420.85	96.6391		
12/01/2010 AVE FILE	1,324.4	00,023	103,300.03	3,720.03	30.0331		
Weighted Avg Cost/BBL by Location			93.6038	2.8170			
Weignted Avg Cost/ DDL by Location			33.0038	2.01/0			
Woighted Avg Cost/PPL @ Avg Cost			06 6201	2 0170			
Weighted Avg Cost/BBL @ Avg Cost			96.6391	2.8170			

## HAWAII ELECTRIC LIGHT CO., INC. Estimated Weighted Average November 2018

### WAIMEA DIESEL

		WAIIVIEA DIES	LL				
			COST	LAND	COST PER BARREL		
ULSD	BBL	GALLONS	EXCLUDE LT	TRANSP		LT	TOTAL
Dalamas at 10/212019	1 500 5	62.022.0	126 420 0	2 507 01			
Balance at 10/312018	1,500.5	63,023.0	136,429.0	3,507.01			
Less: Est'd Inven Addition	0.0	0.0	0.00	0.00			
Purchases: Estimate		(7,980)	(20,189.40)	(450.07)			
Actual		7,936.0	20,907.8	0.00			
Transfers out: Estimate		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
			XXXXXXXXXXXXXXX				
Actual		XXXXXXXXXXXX	XXXXXXXXXXXXXXX	XXXXXXXXXXXX			
Transfers in: Estimate	1.5	63	0.00	0.00			
Actual	0.0	0	0.00	447.59			
Consumed: Estimate	228.9	9,614	21,122.95	536.14			
Actual	(256.2)	(10,759)	(23,638.63)	(599.99)			
Balanca Bar C/L 10/21/2010	1 472 7	C1 007	124 621 75	2.440.60	01 2520		
Balance Per G/L 10/31/2018	1,473.7	61,897	134,631.75	3,440.68	91.3539		
ULSD Purchases	0.0	0	0.00	0.00	#DIV/0!		
					,		
Estimated Purchases	190.0	7,980	20,189.40	450.07			
Transfer in	XXXXXXXXXXXX	(188)	0.00	0.00	#DIV/0!		
Consumed	(327.9)	(13,773)	(30,573.28)	(766.43)	93.2315	2.3372	95.5687
Consumed	(327.3)	(13,773)	(30,373.28)	(700.43)	93.2313	2.3372	33.3087
Balance @ 11/30/2018	1,331.3	55,916	124,247.87	3,124.32	93.3259		
Inven From Offsite/Transfers	0.0	0	0.00	0.00			
Est'd Inventory Addition	0.0	0	0.00	0.00			
Fuel Balance @ Avg Price	1,331.3	55,916	124,247.87	3,124.32	93.3259		
Reverse Fuel Balance	XXXXXXXXXXX	xxxxxxxxxxx		xxxxxxxxxx			
Fuel Balance @ Avg Price	XXXXXXXXXXX	xxxxxxxxxxx	128,658.82	XXXXXXXXXXX			
Total @ 12/01/2018 Avg Price	1,331.3	55,916	128,658.82	3,124.32	96.6391		
12/01/2010 AVE FILE	1,331.3	33,310	120,030.02	3,124.32	30.0331		
Weighted Avg Cost/BBL by Location			93.3259	2.3468			
- 0			30.0233	_,0 .00			
Weighted Avg Cost/BBL @ Avg Cost			96.6391	2.3468			
,							

### Estimated Weighted Average November 2018

### KANOELEHUA DIESEL

			COST	LAND	1	
ULSD	BBL	GALLONS	EXCLUDE LT	TRANSP		
Balance at 10/312018	1,492.8	62,697.0	144,163.8	2,134.4		
Less: Est'd Inventory Addition	0.0	0	0.00	0.00		
Purchases: Estimate Actula	(190.0) 12.0	(7,980) 502	(20,189.40) 1,322.12	(185.93) 0.00		
Transfers out: Estimate		х		x		
Actua		x	x	x		
Transfers in: Estimate		0	0.00	0.00		
Actula		(45)	0.00	11.70		
Consumed: Estimate Actula	90.6 (90.6)	3,807 (3,806)	967.04 (8,362.16)	26.58 (131.41)		
Balance Per G/L 10/31/2018	1,313.7	55,175	117,901.41	1,855.34		
ULSD Purchases	0	0	0.00	0.00	#DIV/0!	
Estimated Purchases	190	-	-	-		
Transfer in	0	0	0.00	0.00		
Consumed	(210.3)	(8,834)	(967.04)	(26.58)	93.23150978	1.4298
Balance @ 11/30/2018	1,293.4	54,321	137,123.77	2,014.69		
Inventory From Offsite/Transfers	0.0	0	0.00	0.00		
Est'd Inventory Addition	0.0	0	0.00	0.00		
Fuel Balance @ Avg Price =	1,293.4	54,321	137,123.77	2,014.69		
Reverse Fuel Balance	x	x	(137,123.77)	x		
Fuel Balance @ Avg Price	x	x	124,988.83	х		
Total @ 12/01/2018 Avg Price	1,293.4	54,321	124,988.83	2,014.69		
Weighted Avg Cost/BBL by Location			106.0216	1.5577		
Weighted Avg Cost/BBL @ Avg Cost			96.6391	1.5577		

Estimated Weighted Average November 2018

### **DISPERSED GENERATION**

	ISPERSED G	EITEI OTTIOIT		
	BBL	GALLONS	COST	COST/BBL
Balance at 10/312018	87.5	3,675	9,865.61	
Less: Est'd Inven Addition	0.0	xxxxxxx	xxxxxxxx	
Purchases: Estimate Actual	,	(1,188) 3,630	,	
Consumed: Estimate Actual		189 (268)		
		xxxxxxxxxx xxxxxxxxxx		
		xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx		
Balance Per G/L 10/31/2018	143.76	6,038	11,963.13	83.2149
Purchases	0.0	0	0.00	0.0000
Transfer out	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	
Transfer in	xxxxxxxxx	xxxxxxxxx	xxxxxxxxxx	
Consumed	(13.8)	(578)	(1,283.04)	93.2315
Balance @ 11/30/2018	130.0	5,460	10,680.09	82.1545
Est'd Inventory Addition	0.0	0	0.00	
Fuel Balance @ 11/30/2018	130.0	5,460	10,680.09	
Reverse Fuel Balance Fuel Balance @ Avg Price		xxxxxxxxxxx xxxxxxxxxxxx	(10,680.09) x 12,563.08 x	
Total @ 12/01/2018 Avg Price	130.0	5,460	12,563.08	96.6391

## **HAWAII ELECTRIC LIGHT COMPANY, INC.**CONTRACT PRICES EFFECTIVE November 1, 2018

### TYPE OF OIL BURNED

TTPE OF OIL BURNED	Hill Industrial		Puna Industrial	
INDUSTRIAL *	¢/MBTU	\$/BBL	¢/MBTU	\$/BBL
Tax 1	71.70	4.5168	71.70	4.5168
Ocean Transportation	38.00	2.3073	36.62	2.3073
Storage	29.89 6.43	2.0521 0.3900	32.57 6.19	2.0521 0.3900
Wharfage Fees <sup>2</sup>	2.26	0.3900	2.26	0.3900
1 663	2.20	0.1425	2.20	0.1423
	Hilo Die	esel	Waimea [	Diesel
DIESEL *	¢/MBTU	\$/BBL	¢/MBTU	\$/BBL
Tax ¹	103.10	6.0411	103.10	6.0411
Ocean Transportation	39.37	2.3073	39.37	2.3073
Storage	27.20	1.5937	27.20	1.5937
Wharfage	6.66	0.3900	6.66	0.3900
Fees <sup>2</sup>	3.33	0.1950	3.33	0.1950
	Kona Di	esel	CT3 Die	esel
	¢/MBTU	\$/BBL	¢/MBTU	\$/BBL
Tax ¹	103.10	6.0411	103.10	6.0411
Ocean Transportation	39.37	2.3073	39.37	2.3073
Storage	27.20	1.5937	27.20	1.5937
Wharfage	6.66	0.3900	6.66	0.3900
Fees <sup>2</sup>	3.33	0.1950	3.33	0.1950
	ULSI	)		
ULSD **	¢/MBTU	\$/BBL		
Tax <sup>1</sup>	26.38	2.0483		
Ocean Transportation	0.00	0.0000		
Storage .	0.00	0.0000		
Wharfage	0.00	0.0000		
Fees <sup>2</sup>	0.00	0.000		

<sup>&</sup>lt;sup>1</sup> Tax includes HGET, Hawaii Use Tax, Liquid Fuel Tax, LUST Tax and Environmental Response Tax.

inventory, contract prices for the current month are being provided. Contract prices are considered accurate pending actual delivery of fuel.

Reference: Decision and Order No. 16134, Docket No. 96-0040.

<sup>&</sup>lt;sup>2</sup> Fees include Custom Duty and Fed Oil Spill Recovery

<sup>\*</sup> Land Transportation Costs are shown in Attachment 3, Sheet 1.

<sup>\*\*</sup> ULSD includes Waimea, Kanoelehua, and Keahole.

## Hawaii Electric Light Company, Inc. PURCHASED POWER PRICES FOR December 1, 2018

		December 1, 2018 (¢/kWh)	Floor Rates (¢/kWh)
PGV (25 MW)	- on peak	17.200	6.560
PGV (22 MW)	- off peak	16.824	5.430
WAILUKU HYDRO	- on peak	17.200	7.240
	off peak	16.824	5.970
Other: (<100 KW)	Sch Q Rate	16.630	
		December 1, 2018 (¢/kWh)	Floor Rates (¢/kWh)
HEP		15.200	
PGV Addtl 5 MW	- on peak	12.8600	0.0000
	- off peak	12.8600	0.0000
PGV Addtl 8 MW	- on peak	6.5400	0.0000
	- off peak	6.5400	0.0000

### Hawaii Electric Light Company, Inc. Energy Cost Reconciliation Adjustment

December 1, 2018

Line No.	<u>Description</u>	<u>Amount</u>
1	Amount to be (returned) or collected	(\$917,000)
2	Monthly Amount ( <sup>1</sup> / <sub>3</sub> x Line 1)	(\$305,667)
3	Revenue Tax Divisor	0.91115
4	Total (Line 2 / Line 3)	(\$335,473)
5	Estimated MWh Sales (December 1, 2018)	88,880 mwh
6	Adjustment (Line 4 / Line 5)	(0.377) ¢/kwh

2018 Cumulative Reconciliation Balance

	(1)		(2)	(3)	(4)	(5)	(6)
	( )		FOA Rec	FOA Rec	( )	(-)	Month-end
	YTD FOA		Adjust	Less	Try to	Actual	Cumulative
Month	Reconciliation	Qtr	Variance	Variance	Collect	Collect	Balance
·							
November	785,400	[3]	(82,548)	867,948	(261,800)	(268,646)	534,241
December	16				(261,800)	(283,626)	250,615
January 17					(261,800)	(265,764)	(15,149)
February	1,366,400	[4]	(46,589)	1,412,989	(455,467)	(473,124)	924,716
March					(455,467)	(479,559)	445,157
April					(455,467)	(478,693)	(33,536)
May	445,100	(1)	(45,713)	490,813	(148,367)	(154,562)	302,715
June					(148,367)	(151,295)	151,420
July					(148,367)	(157,548)	(6,128)
August	500,800	[2]	(32,349)	533,149	(166,933)	(180,924)	346,097
September					(166,933)	(178,788)	167,309
October					(166,933)	(178,629)	(11,320)
November	714,200	[3]	(35,027)	749,227	(238,067)	(250,818)	487,089
December					(238,067)	(243,403)	243,686
January 18					(238,067)	(242,224)	1,462
February	825,100	[4]	(29,783)	854,883	(275,033)	(279,869)	576,476
March					(275,033)	(283,895)	292,581
April					(275,033)	(291,829)	752
May	1,153,900	(1)	(17,855)	1,171,755	(384,633)	(398,709)	773,798
June					(384,633)	(387,715)	386,083
July					(384,633)	(399,033)	(12,950)
August	699,900	[2]	(33,954)	733,854	(233,300)	(244,658)	476,246
September					(233,300)	(240,110)	236,136
October					(233,300)	(241,346)	(5,210)
Novenber	917,000	[3]	(32,568)	949,568	(305,667)		
December					(305,667)		
NOTES:							
Col(1):	Quarterly FOA	recoi	nciliation am	ounts. (Refer	to Attachment	6)	
` '	A positive num			•		•	ollection.
Col(2):	FOA reconcilia				•		

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))

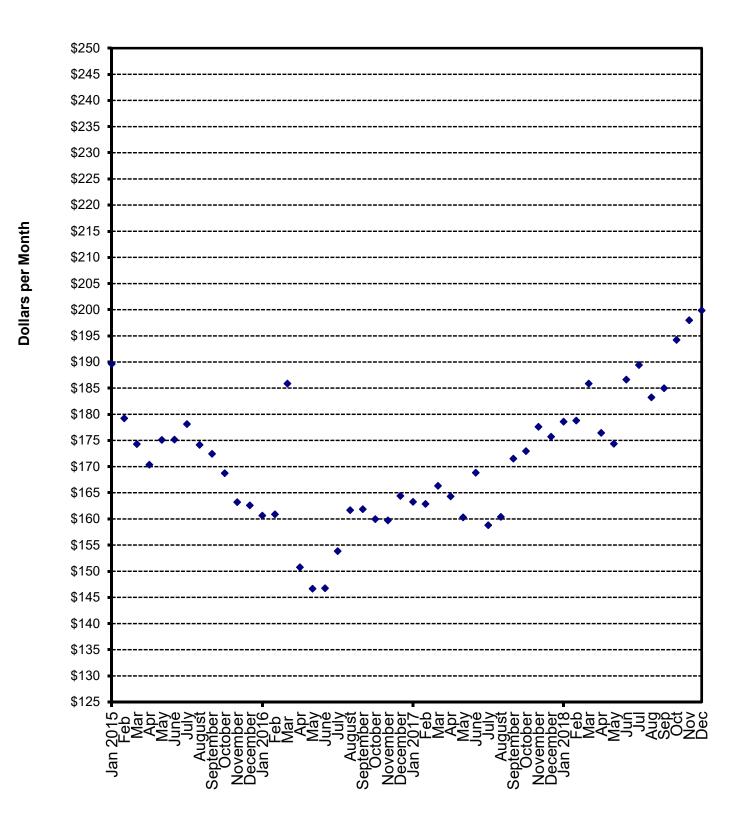
Col(3): FOA reconciliation generated in the current quarter. The YTD FOA reconciliation difference minus the adjustment variance. Col(1)-Col(2)

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))

## Hawaii Electric Light Company, Inc. Residential Bill at 500 KWH/Month Consumption



## HAWAII ELECTRIC LIGHT COMPANY, INC. FUEL OIL ADJUSTMENT FACTOR DATA

# FUEL FACTOR CENTS / KWH RESIDENTIAL & RESIDENTIAL BILL (\$) EFFECTIVE DATE COMMERCIAL @ 500 KWH @ 600 KWH

January 1, 2015 February 1, 2015 March 1, 2015 April 1, 2015 May 1, 2015 June 8, 2015 July 1, 2015 August 1, 2015 September 1, 2015 October 1, 2015 November 1, 2015	2.369 0.485 -0.519 -0.990 -0.420 -0.579 0.264 -0.586 -0.927 -1.671 -2.727 -2.859	189.62 179.22 174.32 170.37 175.10 175.16 178.14 174.16 172.43 168.73 163.20 162.59	227.20 214.71 208.85 204.10 209.79 209.85 213.38 208.61 206.54 202.10 195.47 194.74
January 1, 2016 February 1, 2016 March 1, 2016 April 1, 2016 May 1, 2016 June 1, 2016 July 1, 2016 August 1, 2016 September 1, 2016 October 1, 2016 November 1, 2016	-3.223 -2.962 -4.311 -4.715 -5.554 -5.546 -4.248 -3.094 -3.040 -3.427 -3.514 -2.584	160.63 160.87 154.26 150.76 146.66 146.74 153.85 161.67 161.85 159.97 159.72 164.41	192.41 192.69 184.76 180.57 175.64 175.74 184.31 193.69 193.90 191.65 191.35 196.97
January 1, 2017 February 1, 2017 March 1, 2017 April 1, 2017 May 1, 2017 June 1, 2017 July 1, 2017 August 1, 2017 September 1, 2017 October 1, 2017 November 1, 2017	-2.842 -2.956 -2.274 -2.425 -3.035 -1.343 -3.220 -3.643 -2.447 -2.131 -0.885 -1.405	163.27 162.87 166.31 164.31 160.30 168.82 158.79 160.39 171.52 172.97 177.60 175.02	195.58 195.09 199.24 196.83 192.02 202.25 190.22 192.15 205.50 207.23 212.80 209.69
January 1, 2018 February 1, 2018 March 1, 2018 April 1, 2018 May 1, 2018 June 1, 2018 July 1, 2018 August 1, 2018 September 1, 2018 October 1, 2018 November 1, 2018 December 1, 2018	-0.723 -0.579 0.816 -0.912 -0.452 2.301 2.831 1.665 2.027 8.359 8.913 9.292	178.59 178.81 185.87 176.46 174.38 186.65 189.43 183.25 184.98 194.21 197.99 199.86	213.95 214.22 222.68 211.39 208.90 223.63 226.97 219.55 221.62 232.50 237.04 239.29

## HAWAII ELECTRIC LIGHT COMPANY, INC. RESIDENTIAL SURCHARGE DATA

EFFECTIVE DATE	DESCRIPTION OF SURCHARGE	RATE
04/09/12	FINAL RATE INCREASE (1.28%), DOCKET NO. 2009-016-	4 (2010 TEST YEAR)
1/1/2016-1/31/2016	PURCHASED POWER ADJUSTMENT CLAUSE	2.3260 CENTS/KWH
1/1/2016-06/30/16	GREEN INFRASTRUCTURE FEE	1.3000 DOLLARS/MONTH
2/1/2016 - 2/29/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.1114 CENTS/KWH
3/1/2016 - 3/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.1401 CENTS/KWH
4/1/2016 - 4/30/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.1228 CENTS/KWH
4/1/2016 - 4/30/16	SOLARSAVER ADJUSTMENT	-0.2779 CENTS/KWH
5/1/2016 - 5/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	1.8623 CENTS/KWH
5/1/2016	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
6/1/2016 - 6/30/16	PURCHASED POWER ADJUSTMENT CLAUSE	1.8442 CENTS/KWH
6/1/2016	RBA RATE ADJUSTMENT	1.4241 CENTS/KWH
7/1/2016-7/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	1.8909 CENTS/KWH
7/1/2016	GREEN INFRASTRUCTURE FEE	1.1300 DOLLARS/MONTH
7/1/2016	RESIDENTIAL PBF SURCHARGE ADJUSTMENT	0.5865 CENTS/KWH
8/1/2016-8/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.3000 CENTS/KWH
9/1/2016-9/30/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.2824 CENTS/KWH
10/1/2016-10/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.2930 CENTS/KWH
11/1/2016-11/30/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.3298 CENTS/KWH
12/1/2016-12/31/16	PURCHASED POWER ADJUSTMENT CLAUSE	2.3371 CENTS/KWH
1/1/2017-1/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	2.3400 CENTS/KWH
1/1/2017	GREEN INFRASTRUCTURE FEE	1.2700 DOLLARS/MONTH
2/1/2017 - 2/28/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.3737 CENTS/KWH
3/1/2017 - 3/31/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.3809 CENTS/KWH
4/1/2017-4/30/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.3781 CENTS/KWH
4/1/2017-4/30/17	SOLARSAVER ADJUSTMENT	-0.2462 CENTS/KWH
5/1/2017-5/31/17	PURCHASED POWER ADJUSTMENT CLAUSE	1.9396 CENTS/KWH
5/1/2017	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
6/1/2017-6/30/17	PURCHASED POWER ADJUSTMENT CLAUSE	1.9225 CENTS/KWH
6/1/2017	RBA RATE ADJUSTMENT	1.4533 CENTS/KWH
7/1/2017 - 7/31/2017	PURCHASED POWER ADJUSTMENT CLAUSE	1.9710 CENTS/KWH
7/1/2017- 12/31/17 7/1/2017	GREEN INFRASTRUCTURE FEE RESIDENTIAL PBF SURCHARGE ADJUSTMENT	1.1800 DOLLARS/MONTH 0.4244 CENTS/KWH
8/1/2017-8/31/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.7161 CENTS/KWH
9/1/2017-9/30/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.7515 CENTS/KWH
8/31/2017-4/3018	INTERIM RATE INCREASE 2016	5.8800 PERCENT ON BASE
8/31/2017	RBA RATE ADJUSTMENT	0.6313 CENTS/KWH
10/1/2017 - 10/31/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.7257 CENTS/KWH
11/1/2017 - 11/30/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.4067 CENTS/KWH
12/1/2017 - 12/31/17	PURCHASED POWER ADJUSTMENT CLAUSE	2.4090 CENTS/KWH
1/1/2018 - 1/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.4105 CENTS/KWH
1/1/18-6/30/18	GREEN INFRASTRUCTURE FEE	1.3400 DOLLARS/MONTH
2/1/18-2/28/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.3101 CENTS/KWH
3/1/18 - 3/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.3258 CENTS/KWH
04/1/18-04/30/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.3184 CENTS/KWH
04/1/18-04/30/18	SOLARSAVER ADJUSTMENT	-0.1464 CENTS/KWH
05/1/18-05/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.3395 CENTS/KWH
05/1/18-05/31/18	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
5/1/2018	INTERIM RATE INCREASE 2016	2.5000 PERCENT ON BASE
06/01/18-06/30/18	PURCHASED POWER ADJUSTMENT CLAUSE	1.6729 CENTS/KWH
6/1/2018	RBA RATE ADJUSTMENT	1.0006 CENTS/KWH
07/01/18-07/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	1.6811 CENTS/KWH
7/1/2018- 12/31/18	GREEN INFRASTRUCTURE FEE	1.2100 DOLLARS/MONTH
7/1/2018	RESIDENTIAL PBF SURCHARGE ADJUSTMENT	0.4658 CENTS/KWH
08/01/18-08/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	1.6110 CENTS/KWH
09/01/18-09/30/18	PURCHASED POWER ADJUSTMENT CLAUSE	1.5950 CENTS/KWH
10/01/18-10/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	1.8602 CENTS/KWH
10/1/2018	INTERIM RATE INCREASE 2016	0.0000 PERCENT ON BASE
<b>10/1/2018</b> 11/1/2018-11/30/18	FINAL RATE INCREASE (TY 2016) 0.53% EFFECTIVE 10 PURCHASED POWER ADJUSTMENT CLAUSE	2.0617 CENTS/KWH
12/1/2018-12/31/18	PURCHASED POWER ADJUSTMENT CLAUSE	2.0577 CENTS/KWH
.2.1.2010-12/31/10	. S.CO.LAGED I STIELL ADVOORMENT GEAGGE	2.0077 021110/10/11

<sup>\*\*</sup>Base charges include customer charge, demand charge, energy charge, power factor adjustment, voltage discount, and minimum charge.

## Hawaii Electric Light Company, Inc. Calculations of the Average Residential Customer Bill

#### **Base Rates**

Base Fuel Energy Charge Non-fuel Fuel Energy Charge First 300 kWh per month Next 700 kWh per month Customer Charge Total Base Charges

Interim Rate Increase 2016 TY RBA Rate Adjustment Purchased Power Adj. Clause PBF Surcharge DSM Adjustment SolarSaver Adjustment Energy Cost Adjustment Green Infrastructure Fee

Avg Residential Bill at 500 kwh

Rate					
	11/01/18	12/01/18			
effective date:	10/1/2018	10/1/2018			
¢/kwh	10.244	10.2440			
¢/kwh					
¢/kwh	13.0289	13.0289			
¢/kwh	16.3807	16.3807			
\$	11.50	11.50			
% on base	0.0000%	0.0000%			
¢/kwh	1.0006	1.0006			
¢/kwh	2.0617	2.0577			
¢/kwh	0.4658	0.4658			
¢/kwh	0.0000	0.0000			
¢/kwh	0.0000	0.0000			
¢/kwh	8.9130	9.2920			
\$	1.2100	1.2100			

Charge (\$) at 500 Kwh					
11/01/18	12/01/18	Difference			
\$51.22	\$51.22	\$0.00			
\$71.85	\$71.85	\$0.00			
\$39.09	\$39.09	\$0.00			
\$32.76	\$32.76	\$0.00			
\$11.50	\$11.50	\$0.00			
\$134.57	\$134.57	\$0.00			
\$0.00	\$0.00	\$0.00			
\$5.00	\$5.00	\$0.00			
\$10.31	\$10.29	-\$0.02			
\$2.33	\$2.33	\$0.00			
\$0.00	\$0.00	\$0.00			
\$0.00	\$0.00	\$0.00			
\$44.57	\$46.46	\$1.89			
\$1.21	\$1.21	\$0.00			
\$197.99	\$199.86				

Increase (Decrease -) % Change

\$1.87 0.94%

### **Base Rates**

Base Fuel/Energy Charge Non-fuel Fuel Energy Charge First 300 kWh per month Next 700 kWh per month Customer Charge Total Base Charges

Interim Rate Increase 2016 TY RBA Rate Adjustment Purchased Power Adj. Clause PBF Surcharge DSM Adjustment SolarSaver Adjustment Energy Cost Adjustment Green Infrastructure Fee

Avg Residential Bill at 600 kwh

Rate					
	11/01/18	12/01/18			
effective date:	10/1/2018	10/1/2018			
¢/kwh	10.244	10.2440			
¢/kwh					
¢/kwh	13.0289	13.0289			
¢/kwh	16.3807	16.3807			
\$	11.50	11.50			
% on base	0.0000%	0.0000%			
¢/kwh	1.0006	1.0006			
¢/kwh	2.0617	2.0577			
¢/kwh	0.4658	0.4658			
¢/kwh	0.0000	0.0000			
¢/kwh	0.0000	0.0000			
¢/kwh	8.9130	9.2920			
\$	1.2100	1.2100			

Charge (\$) at 600 Kwh					
11/01/18	12/01/18	Difference			
\$61.46	\$61.46	\$0.00			
\$88.23	\$88.23	\$0.00			
\$39.09	\$39.09	\$0.00			
\$49.14	\$49.14	\$0.00			
\$11.50	\$11.50	\$0.00			
\$161.19	\$161.19	\$0.00			
\$0.00	\$0.00	\$0.00			
\$6.00	\$6.00	\$0.00			
\$12.37	\$12.35	-\$0.02			
\$2.79	\$2.79	\$0.00			
\$0.00	\$0.00	\$0.00			
\$0.00	\$0.00	\$0.00			
\$53.48	\$55.75	\$2.27			
\$1.21	\$1.21	\$0.00			
\$237.04	\$239.29				

Increase (Decrease -) % Change

\$2.25 0.95%