



January 27, 2023

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

Dear Commissioners:

Subject: Maui Electric Energy Cost Recovery Factor for February 2023

Maui Electric Company, Limited's ("Maui Electric" or "Company") February 2023 Energy Cost Recovery factor for our Maui Division is 24.501 cents per kilowatt-hour ("kWh"), a decrease of 0.833 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$212.21, a decrease of \$3.61 compared to rates effective January 1, 2023. The decrease in the typical residential bill is due to the decrease in the Energy Cost Recovery factor (-\$4.17), partially offset by an increase in the Demand-Side Management Adjustment rate (+\$0.45) and increase in the Purchase Power Adjustment (+\$0.11).

The Company's Maui Division fuel composite cost of generation, central station and other decreased 80.570 cents per million BTU to 2,081.14 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy increased 0.158 cents per kWh to 20.304 cents per kWh.

Maui Electric has determined that the target sales heat rates for Maui Division's industrial fuel and diesel fuel sources will remain unchanged from the target sales heat rates of 0.015786 million BTU per kilowatt-hour for industrial fuel and 0.009938 million BTU per kilowatt-hour for diesel fuel that were in effect at the end of 2022. Attachment 24 provides a calculation of the applicable target sales heat rates for 2023 for each division. As shown in Attachment 24, the Maui Division actual sales heat rates for industrial and diesel fuel in 2022 were higher than the respective target sales heat rates in 2022, resulting in no adjustments to the respective target heat rates that were in effect at the end of 2022.

The Energy Cost Recovery factor for our Lāna'i Division for February 2023 is 36.012 cents per kWh, a decrease of 0.102 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$220.00, a decrease of \$0.41 compared to rates effective January 1, 2023. The decrease in the typical residential bill is due to the decrease in the Energy Cost Recovery factor.

The Company's Lāna'i Division fuel composite cost of generation, central station and other increased 23.44 cents per million BTU to 3,137.56 cents per million BTU. The composite cost

DG energy is 0.00 cents per kWh. The composite cost of purchased energy is 30.00 cents per kWh.

Maui Electric has determined that the target sales heat rate will change from the target sales heat rates of 0.010809 million BTU per kilowatt-hour to 0.010722 million BTU per kilowatt-hour for Lāna'i Division's diesel fuel. As shown in Attachment 24, the actual sales heat rate for Lāna'i Division's diesel in 2022 was lower than the target sales heat rate for Lāna'i Division's diesel fuel in 2022, resulting in an adjustment to the target heat rate for Lāna'i Division's diesel fuel that was in effect at the end of 2022 to establish the target heat rate for 2023 for diesel fuel. A revised Lāna'i Division ECRC tariff reflecting the revised target sales heat rate for 2023 is included as Attachment 25. A blackline of the Lāna'i Division ECRC tariff is included as Attachment 26. The Company files the Lāna'i Division ECRC tariff sheets in accordance with the Lāna'i Division ECRC tariff, which states:

2. The target heat rates for diesel may be reestablished each calendar year, beginning at January 1, 2020. If the prior year's actual sales heat rate for a fuel type is greater than or equal to the target sales heat rate applicable in that year, the target sales heat rate for that fuel type remains unchanged. If the prior year's actual sales heat rate for a fuel type is less than the target sales heat rate applicable in that year, the target sales heat rate for that fuel type shall be reduced by one-half of the difference between the prior year's actual sales heat rate and the target sales heat rate applicable in that year.¹

The Energy Cost Recovery factor for our Moloka'i Division for February 2023 is 31.231 cents per kWh, a decrease of 1.738 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$208.02, a decrease of \$6.96 compared to rates effective January 1, 2023. The decrease in the typical residential bill is due to the decrease in the Energy Cost Recovery.

The Company's Moloka'i Division fuel composite cost of generation, central station and other decreased 193.34 cents per million BTU to 2,552.04 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy is 21.80 cents per kWh.

Maui Electric has determined that the target sales heat rates for Moloka'i Division's diesel fuel source will remain unchanged from the target sales heat rate of 0.011127 million BTU per kilowatt-hour for diesel fuel that was in effect at the end of 2022. As shown in Attachment 24, the actual sales heat rate for diesel fuel in 2022 was higher than the target sales heat rate in 2022, resulting in no adjustments to the Moloka'i Division target heat rate for diesel fuel that was in effect at the end of 2022.

¹ See Maui Electric Lāna'i Division ECRC tariff, Revised Sheet No. 88B.

The Honorable Chair and Members
of the Hawai'i Public Utilities Commission
January 27, 2023
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The attached sheets set forth the fuel adjustment in cents per kWh for each rate schedule that is applicable for pro rata use beginning February 1, 2023.

Sincerely,

/s/ Dean K. Matsuura
Dean K. Matsuura
Director, Regulatory Rate Proceedings
Hawaiian Electric Company, Inc.

Attachments

cc: Division of Consumer Advocacy

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION**

ENERGY COST RECOVERY FACTOR

	EFFECTIVE DATES		<u>Change</u>
	<u>1/01/2023</u>	<u>2/01/2023</u>	
<u>COMPOSITE COSTS</u>			
Generation, Central Station & Other, ¢/mbtu	2,161.71	2,081.14	(80.570)
DG Energy, ¢/kWh	0.00	0.00	0.000
Purchased Energy, ¢/kWh	20.146	20.304	0.158
<u>Residential Schedule "R"</u>			
Energy Cost Recovery Factor, ¢/kWh	25.334	24.501	(0.833)
<u>Others - "G,J,P,F"</u>			
Energy Cost Recovery Factor, ¢/kWh	25.334	24.501	(0.833)
<u>Residential Customer with</u>			
500 KWH Consumption, \$/Bill	215.82	212.21	(3.61)
600 KWH Consumption, \$/Bill	258.03	253.70	(4.33)

Supersedes Sheet Effective:

1/01/2023

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION
ENERGY COST RECOVERY (ECR) FILING**

ENERGY COST RECOVERY (ECR) FILING - February 1, 2023 (page 1 of 2)

Line

1 Effective Date February 1, 2023
2 Supercedes Factors of January 1, 2023

GENERATION COMPONENT

CENTRAL STATION				DG ENERGY COMPONENT		
FUEL PRICES, ¢/mmbtu						
3	Industrial		1,423.90			
4	Diesel		2,321.52			
5	Other					
BTU MIX, %						
6	Industrial		26.78%	23 COMPOSITE COST OF DG		
7	Diesel		73.22%	ENERGY, ¢/kWh	0.000	
8	Other		0.00%	24 % Input to System kWh Mix	0.00%	
			100.00%			
9	COMPOSITE COST OF GENERATION, CENTRAL STATION + OTHER ¢/mmbtu (Lines (3 x 6) + (4 x 7) + (5 x 8))		2,081.14	25 WEIGHTED COMPOSITE DG ENERGY COST, ¢/kWh (Lines 23 x 24)	-	
10	% Input to System kWh Mix		72.52%	26 BASE DG ENERGY COMP COST	0.000	
	EFFICIENCY FACTOR, mmbtu/kWh			27 Base % Input to System kWh Mix	0.00	
	(A)	(B)	(C)	(D)	28 WEIGHTED BASE DG ENERGY COST, ¢/kWh (Line 26 x 27)	0.00000
			Percent of			
	Fuel Type	Eff Factor	Centrl Stn +	Weighted	29 Cost Less Base (Line 25 - 28)	0.00000
			Other	Eff Factor	30 Loss Factor	1.057
11	Industrial	0.015786	18.77	0.002963	31 Revenue Tax Req Multiplier	1.0975
12	Diesel	0.009938	81.23	0.008072	32 DG FACTOR, ¢/kWh (Line 29 x 30 x 31)	0.00000
13	Other	0.011072	0.00	-		
	(Lines 11, 12, 13): Col(B) x Col(C) = Col(D)					
14	Weighted Efficiency Factor, mmbtu/kWh [(lines 11(D) + 12(D) + 13(D))]		0.011035			
15	WEIGHTED COMPOSITE CENTRAL STATION + OTHER GENERATION COST, ¢/kWh (lines (9 x 10 x 14))		16.65449			
16	BASE CENTRAL STATION + OTHER GENERATION COST, ¢/mmbtu		0.00			
17	Base % Input to Sys kWh Mix		0.00			
18	Efficiency Factor, mmbtu/kwh		0.011072			
19	WEIGHTED BASE CENTRAL STATION + OTHER GENERATION COST ¢/kWh (lines (16 x 17 x 18))		-			
20	COST LESS BASE (line(15 - 19))		16.65449			
21	Revenue Tax Req Multiplier		1.0975			
22	CENTRAL STATION + OTHER GENERATION FACTOR, ¢/kWh (line (20 x 21))		18.27830			
				SUMMARY OF		
				TOTAL GENERATION FACTOR, ¢/kWh		
				33 CNTRL STN + OTHER (line 22)	18.27830	
				34 DG (line 32)	-	
				35 TOTAL GENERATION FACTOR, ¢/kWh (lines 33 + 34)	18.27830	

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION
ENERGY COST RECOVERY (ECR) FILING**

ENERGY COST RECOVERY (ECR) FILING - February 1, 2023 (page 2 of 2)

Line	Effective Date	February 1, 2023
1	Effective Date	February 1, 2023
2	Supercedes Factors of	January 1, 2023

Line	PURCHASED ENERGY COMPONENT	
	PURCHASED ENERGY PRICE - FOSSIL ¢/kWh	
	PURCHASED ENERGY PRICE - RENEWABLE, ¢/kWh	
36	Kaheawa Wind I - On Peak	14.000
37	- Off Peak	13.126
38	Kaheawa Wind II	26.462
39	Sempra Wind	23.559
40	Unused - On Peak	0.000
41	- Off Peak	0.000
42	South Maui RR	11.060
43	Ku'ia Solar	11.060
44	Unused	0.000
45	Unused	0.000
46	CBRE PV	16.500
47		
48	FIT	21.934
	PURCHASED ENERGY KWH MIX- FOSSIL, %	
48A	Subtotal Fossil %	0%
	PURCHASED ENERGY KWH MIX - RENEWABLE, %	
49	Kaheawa Wind I - On Peak	18.44%
50	- Off Peak	16.44%
51	Kaheawa Wind II	27.48%
52	Sempra Wind - On Peak	29.71%
53	Unused - On Peak	0.00%
54	- Off Peak	0.00%
55	South Maui RR	2.11%
56	Ku'ia Solar	1.99%
57	Unused	0.00%
58	Unused	0.00%
59	CBRE PV	0.00%
60		
61	FIT	3.83%
61A	Subtotal Renewable %	100.00%
61B	Total Purchased Energy %	100.00%
61C	Composite Cost of Purchased Energy, Fossil	N/A
61D	Composite Cost of Purchased Energy, Renewable	20.304
62	COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh	20.304
	(Lines (36 x 49) + (37 x 50) + (38 x 51) + (39 x 52) + (40 x 53) + (41 x 54) + (42 x 55) + (43 x 56) + (44 x 57) + (45 x 58) + (46 x 59) + (48 x 61))	
63	% Input to System kWh Mix	27.48%
64	WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (lines (62 x 63))	5.57954
65	BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh	0.000
66	Base % Input to Sys kWh Mix	0.00
67	WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (lines (65 x 66))	0.00000
68	COST LESS BASE (lines (64 - 67))	5.57954
69	Loss Factor	1.057
70	Revenue Tax Req Multiplier	1.0975
71	PURCHASED ENERGY FACTOR, ¢/kWh (lines (68 x 69 x 70))	6.47259

Line	Calculation of Monthly Fossil Fuel Cost Risk Sharing Component	
	Baseline IFO	
72	IFO \$, baseline month	\$2,277,052
73	IFO mmbtu, baseline	174,658
74	Baseline IFO, ¢/mmbtu	1303.72
	Baseline Diesel	
75	Diesel \$, baseline month	\$11,970,666
76	Diesel mmbtu, baseline	484,436
77	Baseline Diesel, ¢/mmbtu	2471.05
	Month IFO	
78	IFO mmbtu, budget	159,480
79	IFO Cost, ¢/mmbtu	1,423.90
80	IFO ECRC Fossil Cost	\$2,270,829
81	IFO Base ECRC Recovery Target	\$2,079,167
82	IFO differential	\$191,662
	Month Diesel	
83	Diesel mmbtu, budget	436,142
84	Diesel Cost, ¢/mmbtu	2,321.52
85	Diesel ECRC Fossil Cost	\$10,125,134
86	Diesel Base ECRC Recovery Target	\$10,777,298
87	Diesel differential	-\$652,164
88	Total Fossil	-\$460,501
89	2% of above	-\$9,210
90	Total Monthly Fossil Fuel Cost Risk Sharing, Prior Months in Year	\$0
91	Maximum Annual Cap (bi-directional)	\$570,000
92	Number of Days in year from implementation	365
93	Fossil Risk % Proration (based on 365 day year)	100.00%
94	Maximum Annual Cap (bi-directional) prorated	\$570,000
95	Applicable Monthly Fossil Fuel Cost Risk Sharing	-\$9,210
96	Total Monthly Fossil Fuel Cost Risk Sharing, Including This Month	-\$9,210
97	Fossil Cost Risk Sharing before taxes	-\$9,210
98	Revenue Tax Adjustment	1.097514
99	Fossil Cost Risk Sharing w/revenue tax	-\$10,108
100	Forecasted Month MWh Sales	73,497
101	Fossil Fuel Cost Risk Sharing Component, ¢/kWh	0.0138

Derivation of Non-Adjustable Component:		
102	Maalaea Biodiesel (\$000s)	\$511.3
103	Hana (\$000s)	\$19.2
104	Ignition Startup (\$000s)	\$37.6
	Total	\$568.1
	Final Settlement, MECO-602, p1 and MECO-603, p1	
105	Revenue Tax Adjustment	1.097514
106	Non-Adj Revenues, \$000	\$623.5
107	2018 TY Sales, MWh	1,017,968
	Final Tariffs submitted 4/17/2019, Docket No. 2017-0150, Exhibit 2, Att 1, p361	
108	Non-Adj Revenues, ¢/kWh	0.06125
109	Generation and Purchased Energy Factors	24.75089
110	ECR Reconciliation Adjustment	(0.325)
111	Non-Adjustable Component	0.0612
112	Fossil Fuel Cost Risk Sharing Component	0.0138
113	ECR FACTOR, ¢/kWh (lines (109 + 110 + 111 + 112))	24.501

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION**

Fuel Oil Inventory Prices for February 2023

<u>TYPE OF OIL BURNED</u>	<u>PRICES \$/BBL</u>	<u>CONVERSION FACTORS</u>		<u>PRICES ¢/MBTU</u>
INDUSTRIAL	89.7054	6.30	MBTU/BBL	1,423.90
DIESEL/ULSD	135.8589	5.85	MBTU/BBL	2,321.52

**Maui Electric Company, Ltd.
Maui Division**

Month End Fuel Oil Estimate

<u>Kahului</u>	<u>Barrels</u>	<u>MBTU</u>	<u>(\$)</u>
1/20/2023	53,526.03	337,213.99	4,693,462.00
Estimated Use	11,764.46	74,116.12	958,326.20
Estimated Received	0.00	0.00	11,103.84
Estimated Additional	0.00	0.00	0.00
Estimated End	<u>41,761.57</u>	<u>263,097.87</u>	<u>3,746,239.64</u>
Next month's expense (\$/bbl) =		\$ 89.7054	

<u>Maalaea</u>	<u>Barrels</u>	<u>MBTU</u>	<u>(\$)</u>
1/20/2023	105,473.17	617,246.17	14,605,631.99
Estimated Use	39,604.67	231,772.97	5,729,781.39
Estimated Received	0.00	0.00	23,494.79
Estimated Additional	12,545.23	73,515.04	1,753,858.66
Estimated End	<u>78,413.73</u>	<u>458,988.24</u>	<u>10,653,204.05</u>
Next month's expense (\$/bbl) =		\$ 135.8589	

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION**

PURCHASED POWER PRICE CALCULATIONS

KAHEAWA WIND POWER ENERGY RATE:

Kaheawa Wind - On Peak, ¢/kWh	14.000
- Off Peak, ¢/kWh	13.126

Kaheawa Wind Energy Rate Calculations:

Percent of Energy Payment Rate:

Fixed energy payment rate	70%
Flat payment rate	<u>30%</u>
	<u>100%</u>

Fixed Energy Payment Rate (Table D-1) for 2023:

On-peak, ¢/kwh	10.571
Off-peak, ¢/kwh	9.323

Flat Payment Rate Per Docket No. 2011-0192 D&O 30331:

On-peak, ¢/kwh	22.000
Off-peak, ¢/kwh	22.000

On-Peak Rate = $10.5710 \text{ ¢/kwh} \times 0.7 + 22.000 \text{ ¢/kwh} \times 0.3 = 14 \text{ ¢/kwh}$

Off-Peak Rate = $9.323 \text{ ¢/kwh} \times 0.7 + 22.000 \text{ ¢/kwh} \times 0.3 = 13.126 \text{ ¢/kwh}$

MAUI ELECTRIC COMPANY, LTD.
Maui Division
ECR Reconciliation Adjustment
February 2023

1. Amount to be Refunded	(\$653,600)
2. Monthly amount (1 / 3 X Line 1)	(\$217,867)
3. Revenue Tax Divisor	0.91115
4. Total (Line 2 / Line 3)	(\$239,112)
5. Estimated Sales (February 2023)	73,497 mwh
6. Adjustment (Line 4 ÷ Line 5)	(0.325) ¢/kwh

MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION
2022 FUEL OIL ADJUSTMENT RECONCILIATION SUMMARY
(Thousand \$)

<u>Line</u>	W/O Deadband 4th Quarter <u>YTD Total</u>	collection by <u>company*</u>	Basis for Recon With Deadband 4th Quarter <u>YTD Total</u>	collection by <u>company*</u>
ACTUAL COSTS:				
1	\$194,118.7		\$194,118.7	
2	\$34.8		\$34.8	
3	<u>\$48,108.3</u>		<u>\$48,108.3</u>	
4	\$242,261.8		\$242,261.8	
FUEL FILING COST				
5	\$193,262.1		\$193,743.8	
6	\$0.0		\$0.0	
7	<u>\$48,108.3</u>		<u>\$48,108.3</u>	
8	\$241,370.4		\$241,852.1	
BASE FUEL COST				
9	\$0.0		\$0.0	
10	\$0.0		\$0.0	
11	<u>\$0.0</u>		<u>\$0.0</u>	
12	\$0.0		\$0.0	
13	\$241,370.4		\$241,852.1	
14	\$242,772.3		\$242,772.3	
15	\$184.4		\$184.4	
15A	<u>\$572.6</u>		<u>\$572.6</u>	
16	\$242,015.3		\$242,015.3	
17	\$645.0	Over	\$163.2	Over
ADJUSTMENTS				
18	\$1,484.3		\$1,484.3	
19	\$0.0		\$0.0	
20	<u>\$0.0</u>		<u>\$0.0</u>	
21	\$2,129.3	Over	\$1,647.5	Over
21A	<u>\$570.0</u>		<u>\$570.0</u>	
21B	\$2,699.3		\$2,217.5	
22			<u>\$1,563.9</u>	Over
23			<u><u>-\$653.6</u></u>	To Be Refunded

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

MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION

Determination of Efficiency Factor to use for Cost-Recovery Purposes

Period: January 1, 2022 Through December 31, 2022

	<u>Notes</u>	<u>YTD</u>
<u>Industrial Fuel Oil</u>		
Industrial Fuel Oil Efficiency Factor, BTU/kWh	f	15,786
Industrial Fuel Oil Deadband Definition, - BTU/kWh	d	100
Industrial Fuel Oil Portion of Recorded Sales, MWh	a	150,646
Industrial Fuel Oil Consumption (Recorded), MMBTU	b	2,407,513
Industrial Fuel Oil Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	15,981
Lower limit of Industrial Fuel Oil Deadband, BTU/kWh	e = f-d	15,686
Higher limit of Industrial Fuel Oil Deadband, BTU/kWh	g = f+d	15,886
Industrial Fuel Oil Efficiency Factor for cost-recovery, BTU/kWh	h = c, e, or g	15,886
<u>Diesel</u>		
Diesel Efficiency Factor, BTU/kWh	f	9,938
Diesel Deadband Definition, - BTU/kWh	d	100
Diesel Portion of Recorded Sales, MWh	a	636,175
Diesel Consumption (Recorded), MMBTU	b	6,332,798
Diesel Efficiency Factor (Recorded), BTU/kWh	c = (b/a)*1000	9,954
Lower limit of Diesel Deadband, BTU/kWh	e = f-d	9,838
Higher limit of Diesel Deadband, BTU/kWh	g = f+d	10,038
Diesel Efficiency Factor for cost-recovery, BTU/kWh	h = c, e, or g	9,954

**MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION
GENERATION FUEL FILING COST AND GENERATION BASE FUEL COST, WITHOUT and WITH DEADBAND**

2022

	Without Deadband	With Deadband AS FILED
	<u>Jan 1 - Dec 31</u>	<u>Jan 1 - Dec 31</u>
<u>INDUSTRIAL</u>		
Industrial Portion of Recorded Sales , MWH	150,646	150,646
Industrial Sales Efficiency Factor (mmbtu/kwh)	0.015786	0.015886
Mmbtu adjusted for Sales Efficiency Factor	2,378,102	2,393,167
\$/mmbtu	<u>\$15.1836</u>	<u>\$15.1836</u>
TOTAL Industrial \$000s TO BE RECOVERED	\$36,108.0	\$36,336.8
<u>DIESEL FUEL FILING COST</u>		
Diesel Portion of Recorded Sales, MWH	636,175	636,175
Diesel Sales Efficiency Factor (mmbtu/kwh)	0.009938	0.009954
Mmbtu adjusted for Sales Efficiency Factor	6,322,306	6,332,485
\$/mmbtu	<u>\$24.8571</u>	<u>\$24.8571</u>
TOTAL DIESEL \$000s TO BE RECOVERED	\$157,154.0	\$157,407.1
TOTAL GENERATION FUEL FILING COST, \$000s	\$193,262.1	\$193,743.8
TOTAL GENERATION BASE FUEL COST , \$000s	\$0.0	\$0.0
TOTAL GENERATION FUEL FILING COST, \$000s YTD	\$193,262.1	\$193,743.8
TOTAL GENERATION BASE FUEL COST, \$000s YTD	\$0.0	\$0.0

Fossil Fuel Cost Risk Sharing Mechanism and Non-Adjustable Component, December 2022, Maui

		Jan-22, Baseline	YTD Subject to Fossil Risk
A	IFO Fossil Fuel Cost Risk Sharing		
	MMBtu	258043.0939	2,407,513
B	\$ cost, actuals	\$3,463,288	\$36,599,497
C = B / A (Baseline Column)	Jan 2022 baseline \$/mmbtu	13.421356	13.421356
D	IFO Gen kWh		159,023,379
E	Total kWh, Gen, Purch Pwr, DG		1,082,432,401
F	Sales kWh		1,025,929,804
G = (D / E) x F	IFO kWh-sales		150,722,414
H	Target Heat Rate		15,786
I1	Upper limit w/deadband		15,886
I2	Lower limit w/deadband		15,686
I3	Calculated Heat Rate (YTD subject to fossil risk, before deadband)		15,981
I	Recovery Heat Rate (YTD subject to fossil risk, after deadband)		15,886
J = B / A ytd	Actual Cost \$/MMbtu		15.2022034
K = C x H x G / 1,000,000	Base Cost Recovery w/Target Heat Rate		\$31,933,486
L = I x J x G / 1,000,000	Fuel Filing Cost Recovery		\$36,399,795
M = 2% x (L-K)	IFO Cost Risk Sharing		\$89,326
	Diesel Fossil Fuel Cost Risk Sharing		
AA	MMBtu	557,967	6,332,798
BB	\$ cost, actuals	\$10,115,419	\$157,519,175
CC = BB / AA (Baseline Column)	Jan 2022 baseline \$/mmbtu	18.1290779	18.1290779
DD	Diesel Gen kWh		671,350,240
EE	Total kWh, Gen, Purch Pwr, DG		1,082,432,401
FF	Sales kWh		1,025,929,804
GG = (DD / EE) x FF	Diesel kWh-sales		636,305,990
HH	Target Heat Rate		9,938
II1	Upper limit w/deadband		10,038
II2	Lower limit w/deadband		9,838
II3	Calculated Heat Rate (YTD subject to fossil risk, before deadband)		9,954
II	Recovery Heat Rate (YTD subject to fossil risk, after deadband)		9,954
JJ = BB/AA (YTD Column)	Actual Cost \$/MMbtu		24.8735513
KK = CC x HH x GG / 1,000,000	Base Cost Recovery w/Target Heat Rate		\$114,641,199
LL = II x JJ x GG / 1,000,000	Fuel Filing Cost Recovery		\$157,543,846
MM = 2% x (LL-KK)	Diesel Cost Risk Sharing		\$858,053
NN	Annual Cap (non-prorated)		\$570,000
OO	# Days		365
PP	Annual Cap (pro-rated)		\$570,000
QQ = M + MM, up to cap	Total Fossil Fuel Cost Risk Sharing Adjustment, subject to ±\$570000 cap		\$570,000
AAA = F	Non-Adjustable Component		1,025,929,804
BBB	YTD kWh under ECRC		0.06125
CCC	Non-Adjustable Component, cents/kWh		\$628,382
DDD	Non-Adjustable Component Revenues w/tax		\$572,550
	Non-Adjustable Component Revenues less tax		

MAUI ELECTRIC COMPANY, LTD.
MAUI DIVISION
2022 Cumulative Reconciliation Balance

<u>Month</u>	(1) <u>YTD FOA Reconciliation</u>	<u>Qtr</u>	(2) <u>FOA Rec Adjust Variance</u>	(3) <u>FOA Rec Less Variance</u>	(4) <u>Try to Collect</u>	(5) <u>Actual Collect</u>	(6) <u>Month-end Cumulative Balance</u>
December '21					(243,967)	(253,989)	224,074
January '22					(243,967)	(255,810)	(31,736)
February	(428,500)	(4)	(19,896)	(408,604)	142,833	139,468	(300,872)
March					142,833	163,965	(136,907)
April					142,833	157,268	20,361
May	1,081,500	(1)	5,924	1,075,576	(360,500)	(408,035)	687,902
June					(360,500)	(403,811)	284,091
July					(360,500)	(391,575)	(107,484)
August	243,600	(2)	(76,411)	320,011	(81,200)	(88,227)	124,300
September					(81,200)	(91,938)	32,362
October					(81,200)	(90,765)	(58,403)
November	238,800	(3)	(48,840)	287,640	(79,600)	(83,469)	145,768
December					(79,600)	(81,834)	63,934
January '23					(79,600)		
February	653,600	(4)	(15,668)	669,268	(217,867)		

NOTES:

- Col(1): Quarterly FOA reconciliation amounts. (Refer to Attachment 5)
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))

Maui Electric Company, Ltd.
Maui Division
Calculations of the Average Residential Customer Bill

	Rate		Charge (\$) at 500 Kwh		
	1/01/23	2/01/23	1/01/23	2/01/23	Difference
Base Rates	effective date:	09/01/19	09/01/19		
Base Fuel/Energy Charge	¢/kWh	0.0000	0.0000	0.00	0.00
Non-fuel Energy Charge					
First 350 kWh per month	¢/kWh	12.1240	12.1240	42.43	42.43
Next 850 kWh per month	¢/kWh	14.3840	14.3840	21.58	21.58
Customer Charge	\$	11.50	11.50	11.50	11.50
Total Base Charges				75.51	75.51
RBA Rate Adjustment	¢/kWh	1.9048	1.9048	9.52	9.52
PBF Surcharge	¢/kWh	0.6488	0.6488	3.24	3.24
SolarSaver Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00
Refund of 2018 Interim	% on Base	0.00	0.00	0.00	0.00
Purchased Power Adjustment	¢/kWh	-0.0120	0.0092	-0.06	0.05
Energy Cost Recovery	¢/kWh	25.334	24.501	126.67	122.50
DSM Adjustment	¢/kWh	-0.0584	0.0323	-0.29	0.16
Green Infrastructure Fee	\$	1.23	1.23	1.23	1.23
Avg Residential Bill at 500 kwh				215.82	212.21
				Increase (Decrease -)	-3.61
				% Change	-1.67%

	Rate		Charge (\$) at 600 Kwh		
	1/01/23	2/01/23	1/01/23	2/01/23	Difference
Base Rates	effective date:	09/01/19	09/01/19		
Base Fuel/Energy Charge	¢/kWh	0.0000	0.0000	0.00	0.00
Non-fuel Energy Charge					
First 350 kWh per month	¢/kWh	12.1240	12.1240	42.43	42.43
Next 850 kWh per month	¢/kWh	14.3840	14.3840	35.96	35.96
Customer Charge	\$	11.50	11.50	11.50	11.50
Total Base Charges				89.89	89.89
RBA Rate Adjustment	¢/kWh	1.9048	1.9048	11.43	11.43
PBF Surcharge	¢/kWh	0.6488	0.6488	3.89	3.89
Renewable Energy Infrastructure Cost Recovery Provision	¢/kWh	0.0000	0.0000	0.00	0.00
SolarSaver Adjustment	¢/kWh	0.0000	0.0000	0.00	0.00
Refund of 2018 Interim	% on Base	0.00	0.00	0.00	0.00
Purchased Power Adjustment	¢/kWh	-0.0120	0.0092	-0.07	0.06
Energy Cost Recovery	¢/kWh	25.334	24.501	152.01	147.01
DSM Adjustment	¢/kWh	-0.0584	0.0323	-0.35	0.19
Green Infrastructure Fee	\$	1.23	1.23	1.23	1.23
Avg Residential Bill at 600 kwh				258.03	253.70
				Increase (Decrease -)	-4.33
				% Change	-1.68%

**MAUI ELECTRIC COMPANY, LTD. -- Maui Division
FUEL OIL ADJUSTMENT FACTOR DATA**

<u>EFFECTIVE DATE</u>	<u>FUEL FACTOR CENTS / KWH</u>		
	<u>RESIDENTIAL & COMMERCIAL</u>	<u>RESIDENTIAL BILL (\$) @ 500 KWH</u>	<u>@ 600 KWH</u>
January 1, 2020	16.751	168.57	201.30
February 1, 2020	17.482	172.82	206.40
March 1, 2020	17.800	174.41	208.31
April 1, 2020	17.503	172.62	206.17
May 1, 2020	16.260	166.06	198.28
June 1, 2020	15.145	157.82	188.40
July 1, 2020	14.702	154.77	184.77
August 1, 2020	13.780	149.70	178.68
September 1, 2020	13.659	149.08	177.94
October 1, 2020	13.390	147.74	176.34
November 1, 2020	13.830	150.47	179.61
December 1, 2020	14.923	155.93	186.17
January 1, 2021	14.967	156.21	186.48
February 1, 2021	14.338	153.34	183.04
March 1, 2021	16.168	162.49	194.03
April 1, 2021	16.378	163.32	195.01
May 1, 2021	17.615	170.84	204.05
June 1, 2021	17.873	175.55	209.70
July 1, 2021	19.391	183.27	218.98
August 1, 2021	18.648	178.15	212.83
September 1, 2021	18.578	177.77	212.38
October 1, 2021	18.225	176.02	210.28
November 1, 2021	19.019	180.07	215.12
December 1, 2021	17.109	170.52	203.66
January 1, 2022	20.790	193.72	231.49
February 1, 2022	20.593	192.83	230.42
March 1, 2022	22.118	200.46	239.58
April 1, 2022	24.483	212.12	253.57
May 1, 2022	26.433	223.53	267.26
June 1, 2022	28.248	230.80	276.00
July 1, 2022	27.953	229.02	273.87
August 1, 2022	30.202	239.45	286.38
September 1, 2022	27.993	228.34	273.06
October 1, 2022	28.147	229.16	274.04
November 1, 2022	24.488	210.08	251.14
December 1, 2022	24.119	208.25	248.95
January 1, 2023	25.334	215.82	258.03
February 1, 2023	24.501	212.21	253.70

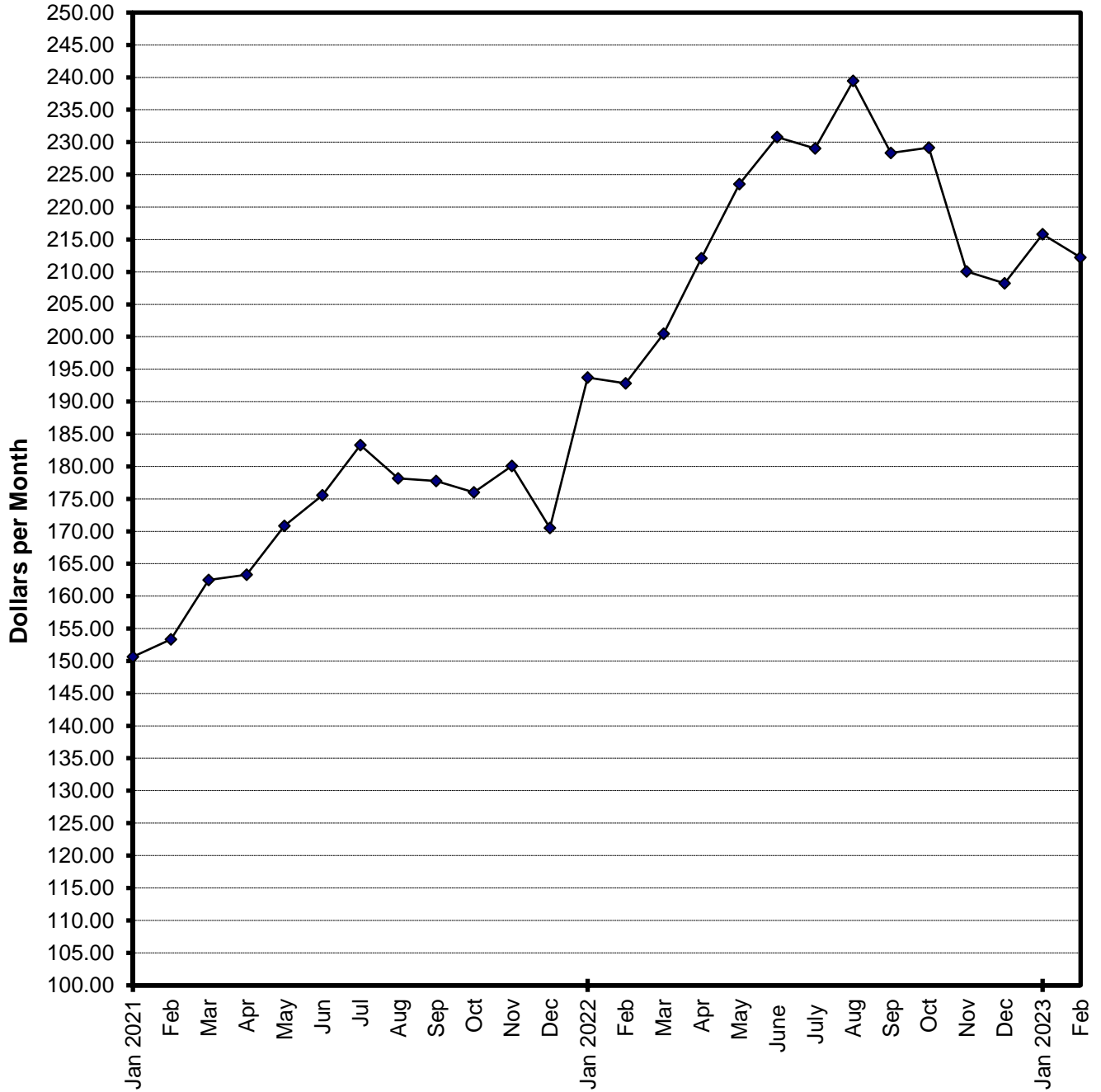
**MAUI ELECTRIC COMPANY, LTD. -- Maui Division
RESIDENTIAL SURCHARGE DATA**

EFFECTIVE DATE	DESCRIPTION OF SURCHARGE	RATE
06/01/11	IRP RECOVERY REFUND	0.000 PERCENT ON BASE
08/17/17	RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION	0.0000 CENTS/KWH
06/01/19	FINAL RATE INCREASE (3.74%), DOCKET NO. 2017-0150 (2018 TEST YEAR)	
05/01/20 - 03/31/21	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
06/01/20 - 05/31/21	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.3383 CENTS/KWH
07/01/20 - 06/30/21	RESID. PBF SURCHARGE ADJUSTMENT	0.5882 CENTS/KWH
11/01/20 - 01/31/21	RESID. DSM ADJUSTMENT	-0.0022 CENTS/KWH
01/01/21 - 01/31/21	PURCHASED POWER ADJUSTMENT	-0.0013 CENTS/KWH
01/01/21 - 06/30/21	GREEN INFRASTRUCTURE FEE	1.25 DOLLARS/MONTH
02/01/21	RESID. DSM ADJUSTMENT	0.0563 CENTS/KWH
02/01/21 - 02/28/21	PURCHASED POWER ADJUSTMENT	-0.0042 CENTS/KWH
03/01/21 - 03/31/21	PURCHASED POWER ADJUSTMENT	-0.0030 CENTS/KWH
04/01/21 - 04/30/21	PURCHASED POWER ADJUSTMENT	-0.0044 CENTS/KWH
04/01/21 - 04/30/21	SOLARSAVER ADJUSTMENT	-0.0445 CENTS/KWH
05/01/21 - 07/31/21	RESID. DSM ADJUSTMENT	0.0658 CENTS/KWH
05/01/21 - 03/31/22	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
05/01/21 - 05/31/21	PURCHASED POWER ADJUSTMENT	0.2109 CENTS/KWH
06/01/21 - 06/30/21	PURCHASED POWER ADJUSTMENT	0.2076 CENTS/KWH
6/1/2021 - 12/31/21	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.0242 CENTS/KWH
07/01/21 - 12/31/21	GREEN INFRASTRUCTURE FEE	1.19 DOLLARS/MONTH
07/01/21 - 06/30/22	RESID. PBF SURCHARGE ADJUSTMENT	0.6478 CENTS/KWH
07/01/21 - 07/31/21	PURCHASED POWER ADJUSTMENT	0.1862 CENTS/KWH
08/01/21 - 08/31/21	PURCHASED POWER ADJUSTMENT	-0.0296 CENTS/KWH
08/01/21 - 10/31/21	RESID. DSM ADJUSTMENT	0.0003 CENTS/KWH
09/01/21 - 09/30/21	PURCHASED POWER ADJUSTMENT	-0.0350 CENTS/KWH
10/01/21 - 10/31/21	PURCHASED POWER ADJUSTMENT	-0.0314 CENTS/KWH
11/01/21 - 11/30/21	PURCHASED POWER ADJUSTMENT	-0.0107 CENTS/KWH
11/01/21 - 01/31/22	RESID. DSM ADJUSTMENT	-0.0084 CENTS/KWH
12/01/21 - 12/31/21	PURCHASED POWER ADJUSTMENT	-0.0096 CENTS/KWH
01/01/22 - 05/31/22	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.9714 CENTS/KWH
01/01/22 - 06/30/22	GREEN INFRASTRUCTURE FEE	1.25 DOLLARS/MONTH
01/01/22 - 01/31/22	PURCHASED POWER ADJUSTMENT	-0.0100 CENTS/KWH
02/01/22 - 02/28/22	PURCHASED POWER ADJUSTMENT	-0.0009 CENTS/KWH
02/01/22 - 04/30/22	RESID. DSM ADJUSTMENT	0.0022 CENTS/KWH
03/01/22 - 03/31/22	PURCHASED POWER ADJUSTMENT	0.0002 CENTS/KWH
04/01/22 - 04/30/22	SOLARSAVER ADJUSTMENT	-0.0315 CENTS/KWH
04/01/22 - 04/30/22	PURCHASED POWER ADJUSTMENT	-0.0011 CENTS/KWH
05/01/22 - 07/31/22	RESID. DSM ADJUSTMENT	-0.1288 CENTS/KWH
05/01/22	SOLARSAVER ADJUSTMENT	0.0000 CENTS/KWH
05/01/22 - 05/31/22	PURCHASED POWER ADJUSTMENT	0.4283 CENTS/KWH
06/01/22 - 06/30/22	PURCHASED POWER ADJUSTMENT	0.4226 CENTS/KWH
06/01/22 - 12/31/22	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.6175 CENTS/KWH
07/01/22	RESID. PBF SURCHARGE ADJUSTMENT	0.6488 CENTS/KWH
07/01/22 - 12/31/22	GREEN INFRASTRUCTURE FEE	1.1800 DOLLARS/MONTH
07/01/22 - 07/31/22	PURCHASED POWER ADJUSTMENT	0.3747 CENTS/KWH
08/01/22 - 08/31/22	PURCHASED POWER ADJUSTMENT	-0.0742 CENTS/KWH
08/01/22 - 10/31/22	RESID. DSM ADJUSTMENT	0.1587 CENTS/KWH
09/01/22 - 09/30/22	PURCHASED POWER ADJUSTMENT	-0.0862 CENTS/KWH
10/01/22 - 10/31/22	PURCHASED POWER ADJUSTMENT	-0.0772 CENTS/KWH
11/01/22 - 01/31/23	RESID. DSM ADJUSTMENT	-0.0584 CENTS/KWH
11/01/22 - 11/30/22	PURCHASED POWER ADJUSTMENT	-0.0177 CENTS/KWH
12/01/22 - 12/31/22	PURCHASED POWER ADJUSTMENT	-0.0155 CENTS/KWH
01/01/23 - 01/31/23	PURCHASED POWER ADJUSTMENT	-0.0120 CENTS/KWH
01/01/23	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.9048 CENTS/KWH
01/01/23	GREEN INFRASTRUCTURE FEE	1.23 DOLLARS/MONTH
02/01/23	RESID. DSM ADJUSTMENT	0.0323 CENTS/KWH
02/01/23	PURCHASED POWER ADJUSTMENT	0.0092 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.

Maui Electric Company, Ltd. - Maui Division Residential Bill at 500 kWh/Month Consumption



Maui Annual ECRC Adjustment, Based on Recorded Statistics for : 2022

	Industrial A	Diesel B	Notes
1 Target Heat Rate, 2022	0.015786	0.009938	MBTU/kWh Sales
2 Fuel consumed during 2022	2,407,513	6,332,798	MBTU
3 Allocated Sales during 2022	150,646,296	636,174,879	kWh
4 2022 Sales Heat Rate, Recorded	0.015981	0.009954	MBTU/kWh Sales
5 Difference: 2022 Recorded less Start of Year	0.000195	0.000016	MBTU/kWh Sales
6 Adjustment: One-half the difference, downward only	0.000000	0.000000	MBTU/kWh Sales
7 Target Heat Rate, Start of 2023	0.015786	0.009938	MBTU/kWh Sales