

SHARON M. SUZUKI President Actual Princes Comments

November 28, 2016 NOV 28 P 3: 54

PUDLIC UTILITIES
COMMISSION

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 Adjustment Factor for December 2016

Maui Electric Company, Limited's ("Maui Electric" or "Company") December 2016 energy cost adjustment factor for our Maui Division is -9.069 cents per kilowatt-hour ("kWh"), an increase of 0.713 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$139.41, an increase of \$3.57 compared to rates effective November 1, 2016.

The Company's Maui Division fuel composite cost of generation, central station and other increased 96.30 cents per million BTU to 1,200.31 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy decreased 0.244 cents per kWh to 13.116 cents per kWh.

The energy cost adjustment factor for our Lāna'i Division for December 2016 is -11.160 cents per kWh, an increase of 1.435 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$142.33, an increase of \$5.74 compared to rates effective November 1, 2016.

The Company's Lāna'i Division fuel composite cost of generation, central station and other increased 127.21 cents per million BTU to 1,674.34 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy is 27.000 cents per kWh.

The energy cost adjustment factor for our Moloka'i Division for December 2016 is -9.244 cents per kWh, an increase of 0.726 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$135.75, an increase of \$2.90 compared to rates effective November 1, 2016.

The Company's Moloka'i Division fuel composite cost of generation, central station and other increased 59.26 cents per million BTU to 1,354.23 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.

The Honorable Chair and Members of the Hawai'i Public Utilities Commission November 28, 2016 Page 2

The attached sheets set forth the fuel adjustment in cents per kWh for each rate schedule that is applicable for pro rata use beginning December 1, 2016.

Sincerely,

Sharon M. Suzuki

President

Attachments

cc: Division of Consumer Advocacy

ENERGY COST ADJUSTMENT FACTOR

	EFFECTIVE DATES		
	<u>11-01-16</u>	<u>12-01-16</u>	<u>Change</u>
COMPOSITE COSTS Generation, Central Station & Other, ¢/mbtu DG Energy, ¢/kWh Purchased Energy, ¢/kWh	1,547.13 0.00 27.00	1,674.34 0.00 27.00	127.21 0.00 0.00
Residential Schedule "R"			
Energy Cost Adjustment, ¢/kWh	(12.595)	(11.160)	1.435
Others - "G,P,F"			
Energy Cost Adjustment, ¢/kWh	(12.595)	(11.160)	1.435
Residential Customer with			
400 KWH Consumption, \$/Bill	136.59	142.33	5.74
500 KWH Consumption, \$/Bill	169.87	177.05	7.18

Supersedes Sheet Effective: November 1, 2016

ENERGY COST ADJUSTMENT (ECA) FILING

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

Line 1 Effective Date December 1, 2016 2 Supercedes Factors of November 1, 2016

GENERATION COMPONENT

	CENTRAL STATION			
	FUEL PRICES, ¢/mmbtu			
3	Industrial	0.00		
4	Diesel - Miki Basin	1,674.34		
5	Diesel - Manele Bay	0.00		
	Other	0.00		
	BTU MIX. %	-	DG ENERGY COMPONENT	
7	Industrial	0.00%	25 COMPOSITE COST OF DG	
	Diesel - Miki Basin	100.00%	ENERGY, ¢/kWh	0.000
			ENERGY, CKYVII	0.000
	Diesel - Manele Bay ¹	0.00%		
10	Other	0.00%	26 % Input to System kWh Mix	0.00%
		100.00%		-
	and the second second second		27 WEIGHTED COMPOSITE DG ENERGY	
11	COMPOSITE COST OF GENERATION,		COST, ¢/kWh (Lines 25 x 26)	0,00000
	CENTRAL STATION + OTHER ¢/mmbtu	1,674.34		0.000
	(Lines $(3 \times 7) + (4 \times 8) + (5 \times 9) + (6 \times 10)$)	and the second second second		
12	% Input to System kWh Mix	92.46%	28 BASE DG ENERGY COMP COST	0.000
			29 Base % Input to System kWh Mix	0.00%
	EFFICIENCY FACTOR, mmbtu/kWh		30 WEIGHTED BASE DG ENERGY COST,	
	(A) (B) (C)	(D)	¢/kWh (Line 28 x 29)	0,00000
	Percent of			
	Eff Factor Centri Stn +	Weighted	31 Cost Less Base (Line 27 - 30)	0,00000
	Fuel Type mmbtu/kwh Other	Eff Factor	32 Loss Factor	1.0510
13	Industrial 0.000000 0.00	0.000000	33 Revenue Tax Reg Multiplier	1.0975
14	Diesel 0.011151 100.00	0.011151	34 DG FACTOR,	
15	Other 0.011151 0.00	0.000000	¢/kWh (Line 31 x 32 x 33)	0.00000
	(Lines 13, 14, 15); Col(B) x Col(C) = Col(D)		
16	Weighted Efficiency Factor, mmbtu/kWh	,		
	[lines 13(D) + 14(D) + 15(D)]	0.011151		
	[0.07.1.07		
17	WEIGHTED COMPOSITE CENTRAL STAT	ION +		
	OTHER GEN COST, ¢/kWh			
	(lines (11 x 12 x 16))	17.26280		
18	BASE CENTRAL STATION + OTHER GEN	FRATION		
10	COST, ¢/mmbtu	2,647.15		
10	Base % Input to Sys kWh Mix	89.65%		
	Efficiency Factor, mmbtu/kwh	0.011151		
	WEIGHTED BASE CENTRAL STATION +	0.011101		
21	OTHER GENERATION COST ¢/kWh			
	(lines (18 x 19 x 20))	26.46322		
	(Intes (10 x 19 x 20))	20,40322	CLIMMA DV OF	
22	COST LESS BASE (line/17 21))	(0.20042)	SUMMARY OF	
	COST LESS BASE (line(17 - 21))	(9.20042) 1.0975	TOTAL GENERATION FACTOR, ¢/kWh	
	Revenue Tax Req Multiplier	100000000000000000000000000000000000000		10.09746)
24	CENTRAL STATION + OTHER GENERATI		36 DG (line 34)	
	FACTOR, ¢/kWh (line (22 x 23))	-10.09746	37 TOTAL GENERATION FACTOR,	10 007 10
			¢/kWh (lines 35 + 36) (10.09746)

¹ The Manele CHP experienced a catastrophic fire on March 6, 2015. Its return to service is undetermined at this time.

ENERGY COST ADJUSTMENT (ECA) FILING

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

Line
1 Effective Date December 1, 2016 2 Supercedes Factors of November 1, 2016

<u>Line</u>	PURCHASED ENERGY COMPOR	<u>NENT</u>
38 39	PURCHASED ENERGY PRICE, ¢/kWh LANAI SOLAR RESEARCH - On Peak - Off Peak	27 .000 27 .000
40	Sch Q	0.000
41 42	PURCHASED ENERGY KWH MIX, % LANAI SOLAR RESEARCH - On Peak - Off Peak	100.00% 0.00%
43	Sch Q	0.00%
45	COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh (Lines (38 x 41) + (39 x 42) + (40 x 43)) % Input to System kWh Mix WEIGHTED COMP. PURCH. ENERGY COST, ¢/kWh (lines (44 x 45))	27 .000 7 .54% 2 .03580
48	BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh Base % Input to Sys kWh Mix WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (lines (47 x 48))	27.000 10.35 2.79450
51 5 2	COST LESS BASE(lines (46 - 49)) Loss Factor Revenue Tax Req Multiplier PURCHASED ENERGY FACTOR, ¢/kWh (lines (50 x 51 x 52))	(0.75870) 1.051 1.0975 (0.87514)

SYSTEM COMPOSITE CALCULATIONS <u>Line</u>

54 GENERATION AND PURCHASED EI	NERGY
FACTOR, ¢/kWh	(10.97260)
(lines (37 + 53))	
55 Adjustment, ¢/kWh	0.000
56 ECA Reconciliation Adjustment	(0.187)
57 ECA FACTOR, ¢/kWh	(11.160)
(lines (54 + 55 + 56))	

Maui Electric Company, Ltd. Lanai Division

MONTH END FUEL OIL ESTIMATE

Miki Basin - ULSD	Barrels		MBTU	\$
11/21/2016	4,152.86		23,795.83	389,959.24
Estimated Use	1,351.12		7,741.92	119,777.53
Estimated Received	2,142.86		12,278.59	204,200.42
Estimated Additional	-			
Estimated End	4,944.60		28,332.50	474,382.13
Next Month's Combined Miki	Expense (\$/bbl)	=	\$ 95.9394 /bbl	

FUEL OIL INVENTORY PRICE USED FOR FILING

Type of Oil Burned	<u>Price</u>	Conversion Factor	Prices ¢/MBTU
Diesel - Miki Basin	\$ 95.9394	5.73 BTU/BBL	1,674.34

Contract Prices effective November 1, 2016

TYPE OF OIL BURNED	\$/BBL	¢/MBTU
MIKI BASIN - ULTRA LOW	SULFUR DIESE	L (DYED)
Tax *	1.5120	26.39
Ocean Transportation	0.0000	0.00
Storage	0.0000	0.00
Wharfage	0.0000	0.00
MIKI BASIN - ULTRA LOW	SIII EIID DIESE	•
lax	1.5120	26.39
Ocean 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 tax and Environmental Response 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.

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

MAUI ELECTRIC COMPANY, LTD. Lanai Division ECA Reconciliation Adjustment

December 2016

Amount to be refunded	(\$11,300)
2. Monthly amount (1 / 3 X Line 1)	(\$3,767)
3. Revenue Tax Divisor	0.91115
4. Total (Line 2 / Line 3)	(\$4,134)
5. Estimated Sales (December 2016)	2,215 mwh
6. Adjustment (Line 4 ÷ Line 5)	-0.187 ¢/kwh

MAUI ELECTRIC COMPANY, LTD. **LANAI DIVISION** 2016 Cumulative Reconciliation Balance

	(1)		(2) FOA Rec	(3) FOA Rec	(4)	(5)	(6) Month-end
	YTD FOA		Adjust	Less	Try to	Actual	Cumulative
<u>Month</u>	Reconciliation	Qtr		<u>Variance</u>	Collect	Collect	Balance
December '15					(2,067)	(2,151)	1,855
January '16					(2,067)	(2,194)	(339)
February	(13,300)	(4)	(208)	(13,092)	4,433	4,591	(8,840)
March					4,433	4,930	(3,910)
April					4,433	5,061	1,151
May	14,900	(1)	528	14,372	(4,967)	(5,627)	9,896
June					(4,967)	(5,492)	4,404
July					(4,967)	(5,749)	(1,345)
August	21,600	(2)	(557)	22,157	(7,200)	(8,334)	12,478
September					(7,200)	(8,147)	4,331
October					(7,200)	(8,674)	(4,343)
November	11,300	(3)	(2,863)	14,163	(3,767)		
December					(3,767)		
NOTES:							
Col(1):	Quarterly FOA A positive num					•	r-collection
0 1(0)	TO 4	C	is an over-c	·	ogulivo numb	or is all ande	dolloodor.

Col(1):	Quarterly FOA reconciliation amounts. (Refer to Attachment 13)
	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))
Cal(3):	, , , , , , , , , , , , , , , , , , , ,
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))
	Carried Data to C. S.

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

Base Rates
Base Fuel/Energy Charge
Non-fuel Fuel Energy Charge
First 250 kWhr per month
Next 500 kWhr per month
Customer Charge
Total Base Charges
· ·
IRP Refund
Revenue Balancing Rate Adjustment PBF Surcharge
· ·
PBF Surcharge
PBF Surcharge Renewable Energy Infrastructure Cost
PBF Surcharge Renewable Energy Infrastructure Cost Recovery Provision SolarSaver Adjustment
PBF Surcharge Renewable Energy Infrastructure Cost Recovery Provision
PBF Surcharge Renewable Energy Infrastructure Cost Recovery Provision SolarSaver Adjustment Energy Cost Adjustment

Rate					
	11-01-16	12-01-16			
	77.77				
effective date:	08/01/13	08/01/13			
¢/kWh	32.2668	32.2668			
¢/kWh	9.1240	9.1240			
¢/kWh	11.6240	11.6240			
\$	8.50	8.50			
% on base	0.0000	0.0000			
¢/kWh	1.4082	1.4082			
¢/kWh	0.5865	0.5865			
¢/kWh	0.0099	0.0099			
¢/kWh	0.0000	0.0000			
271.5475	42.505	44.400			
¢/kWh	-12.595	-11.160			
\$	1.13	1.13			

	Charge (\$) at 400 Kwh			
11-01-16	12-01-16	Difference		
129.07	129.07	0.00		
22.81	22.81	0.00		
17.44	17.44	0.00		
8.50	8.50	0.00		
177.82	177.82	0.00		
0.00	0.00	0.00		
5.63	5.63	0.00		
2.35	2.35	0.00		
0.04	0.04	0.00		
0.00	0.00	0.00		
-50.38	-44.64	5.74		
1.13	1.13	0.00		
136.59	142.33			

Increase (Decrease -) % Change

5.74 4.20%

Base Rates Base Fuel/Energy Charge Non-fuel Fuel Energy Charge First 250 kWhr per month Next 500 kWhr per month Customer Charge Total Base Charges
IRP Refund
Revenue Balancing Rate Adjustment PBF Surcharge Renewable Energy Infrastructure Cost Recovery Provision SolarSaver Adjustment
Energy Cost Adjustment Green Infrastructure Fee
Avg Residential Bill at 500 kwh

Rate				
	11-01-16	12-01-16		
effective date:	08/01/13	08/01/13		
¢/kWh	32.2668	32.2668		
¢/kWh	9.1240	9.1240		
¢/kWh	11.6240	11.6240		
\$	8.50	8.50		
% on base	0.0000	0.0000		
¢/kWh	1.4082	1.4082		
¢/kWh	0.5865	0.5865		
¢/kWh	0.0099	0.0099		
•				
¢/kWh	0.0000	0.0000		
¢/kWh	-12.595	-11.160		
\$	1.13	1.13		

Charge (\$) at 500 Kwh			
11-01-16	12-01-16	Difference	
161.33	161.33	0.00	
22.81	22.81	0.00	
29.06	29.06	0.00	
8.50	8.50	0.00	
221.70	221.70	0.00	
0.00	0.00	0.00	
7.04	7.04	0.00	
2.93	2.93	0.00	
0.05	0.05	0.00	
0.00	0.00	0.00	
-62.98	-55.80	7.18	
1.13	1.13	0.00	
400.07	477.05		
169.87	177.05		

Increase (Decrease -) % Change

7.18	
4.23%	

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

FUEL FACTOR CENTS / KWH

	CENTS / KWH		
	RESIDENTIAL &	RESIDENT	IAL BILL (\$)
EFFECTIVE DATE	COMMERCIAL		
January 1, 2014	0.693	187.14	233.37
February 1, 2014	1.420	190.05	237.00
March 1, 2014	1.370 1.854	189.85 190.81	236.75 237.94
April 1, 2014 May 1, 2014	-1.036	180.23	237.94
June 1, 2014	0.013	187.69	234.05
July 1, 2014	0.208	189.21	235.94
August 1, 2014	-0.179	187.66	234.00
September 1, 2014	-0.244	187.40	233.68
October 1, 2014	-3.591	174.02	216.94
November 1, 2014	-1.766	181.32	226.07
December 1, 2014	-3.365	175.18	218.07
January 1, 2015	-4.698	169.85	211.41
February 1, 2015	-7.361	159.20	198.09
March 1, 2015	-8.793	153.47	190.93
·			
April 1, 2015	-6.831	160.22	199.37
May 1, 2015	-9.750	149.64	186.15
June 8, 2015	-8.842	153.16	190.56
July 1, 2015	-7.314	158.27	196.91
August 1, 2015	-8.457	153.70	191.19
September 1, 2015	-10.465	145.71	181.20
October 1, 2015	-12.259	138.53	172.23
November 1, 2015	-12.177	138.86	172.64
December 1, 2015	-11.304	142.35	177.01
January 1, 2016	-12.957	135.62	168.62
February 1, 2016	-14.236	130.51	162.23
March 1, 2016	-15.833	124.12	154.24
April 1, 2016	-15.204	125.90	156.47
May 1, 2016	-13.856	132.03	164.13
June 1, 2016	-12.617	136.22	169.37
July 1, 2016	-11.833	139.64	173.68
August 1, 2016	-12.201	138.17	171.84
September 1, 2016	-12.634	136.43	169.68
October 1, 2016	-12.723	136.08	169.23
November 1, 2016	-12.595	136.59	169.87
December 1, 2016	-11.160	142.33	177.05

MAUI ELECTRIC COMPANY, LTD. -- Lanai Division RESIDENTIAL SURCHARGE DATA

EFFECTIVE DATE	DESCRIPTION OF SURCHARGE		RATE
01/01/11 - 12/31/11	RESID. PBF SURCHARGE ADJUSTMENT	0.5944	CENTS/KWH
01/12/11 - 05/03/12	FINAL RATE INCREASE (3.65%), DOCKET NO. 2006-0387 (20		
01/12/11 - 05/03/12	INTERIM RATE INCREASE 2010 TEST YEAR		PERCENT ON BASE
02/01/11 - 02/28/11	IRP RECOVERY REFUND		PERCENT ON BASE
03/01/11 - 04/30/11	IRP RECOVERY REFUND		PERCENT ON BASE
04/01/11 - 04/30/11	SOLARSAVER ADJUSTMENT	-0.0888	CENTS/KWH
05/01/11 - 03/31/12	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
05/01/11 - 05/31/11	IRP RECOVERY REFUND	-0.356	PERCENT ON BASE
06/01/11	IRP RECOVERY REFUND	0.000	PERCENT ON BASE
01/01/12 - 12/31/12	RESID. PBF SURCHARGE ADJUSTMENT	0.6766	CENTS/KWH
04/01/12 - 04/30/12	SOLARSAVER ADJUSTMENT	-0.2392	CENTS/KWH
05/01/12 - 03/31/13	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
5/4/2012 - 07/31/13	FINAL RATE INCREASE (1.51%), DOCKET NO. 2009-0163 (20	010 TEST YI	EAR)
6/1/2012 - 07/31/13	INTERIM RATE INCREASE 2012 TEST YEAR	4.02	PERCENT ON BASE
01/01/13 - 06/30/13	RESID. PBF SURCHARGE ADJUSTMENT	0.7850	CENTS/KWH
04/01/13 - 04/30/13	SOLARSAVER ADJUSTMENT	-0.2053	CENTS/KWH
05/01/13 - 03/31/14	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
06/01/13 - 05/31/14	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.8071	CENTS/KWH
07/01/13 - 06/30/14	RESID. PBF SURCHARGE ADJUSTMENT	0.8312	CENTS/KWH
08/01/13	FINAL RATE INCREASE (1.25%), DOCKET NO. 2011-0092 (2	012 TEST Y	EAR
04/01/14 - 04/30/14	SOLARSAVER ADJUSTMENT		CENTS/KWH
05/01/14 - 03/31/15	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
06/01/14 - 05/31/15	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.6239	CENTS/KWH
07/01/14 -11/30/14	RESID. PBF SURCHARGE ADJUSTMENT	1.0157	CENTS/KWH
12/01/14 - 06/30/15	RESID. PBF SURCHARGE ADJUSTMENT	0.7583	CENTS/KWH
12/01/14 - 06/30/15	GREEN INFRASTRUCTURE FEE	1.29	DOLLARS/MONTH
04/01/15 - 04/30/15	SOLARSAVER ADJUSTMENT	-0.2744	CENTS/KWH
05/01/15 - 03/31/16	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
06/01/15 - 06/07/15	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	0.0000	CENTS/KWH
06/08/15 - 05/31/16	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.5987	CENTS/KWH
07/01/15 - 06/30/16	RESID. PBF SURCHARGE ADJUSTMENT	0.4749	CENTS/KWH
07/01/15 - 12/31/15	GREEN INFRASTRUCTURE FEE		DOLLARS/MONTH
08/17/15 - 02/29/16	RENEWABLE ENERGY INFRASTRUCTURE COST	0.0103	CENTS/KWH
	RECOVERY PROVISION		
01/01/16 - 06/30/16	GREEN INFRASTRUCTURE FEE	1.3000	DOLLARS/MONTH
03/01/16	RENEWABLE ENERGY INFRASTRUCTURE COST	0.0099	CENTS/KWH
	RECOVERY PROVISION		
04/01/16 - 04/30/16	SOLARSAVER ADJUSTMENT	-0.1835	CENTS/KWH
05/01/16	SOLARSAVER ADJUSTMENT	0.0000	CENTS/KWH
06/01/16	REVENUE BALANCING ACCOUNT RATE ADJUSTMENT	1.4082	CENTS/KWH
07/01/16	RESID. PBF SURCHARGE ADJUSTMENT	0.5865	CENTS/KWH
07/01/16	GREEN INFRASTRUCTURE FEE	1.13	DOLLARS/MONTH

[~] Surcharges currently in effect are in bold.

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