



FILED

April 26, 2019

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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

PUBLIC UTILITIES  
COMMISSION

Dear Commissioners:

Subject: Maui Electric Energy Cost Adjustment Factor for May 2019

Maui Electric Company, Limited's ("Maui Electric" or "Company") May 2019 Energy Cost Adjustment factor for our Maui Division is -4.041 cents per kilowatt-hour ("kWh"), an increase of 1.400 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$171.40, an increase of \$7.41 compared to rates effective April 1, 2019. The increase in the typical residential bill is due to the increase in the Energy Cost Adjustment factor (+\$7.00) and termination of the Solar Saver Adjustment credit (+\$0.43), partially offset by the decrease in the Purchase Power Adjustment (-\$0.02).

The Company's Maui Division fuel composite cost of generation, central station and other increased 69.51 cents per million BTU to 1,471.92 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy decreased 0.426 cents per kWh to 19.405 cents per kWh.

The Energy Cost Adjustment factor for our Lāna'i Division for May 2019 is -7.864 cents per kWh, a decrease of 1.063 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$162.15, a decrease of \$3.92 compared to rates effective April 1, 2019. The decrease in the typical residential bill is due to the decrease in the Energy Cost Adjustment factor (-\$4.26), partially offset by the termination of the Solar Saver Adjustment credit (+\$0.34).

The Company's Lāna'i Division fuel composite cost of generation, central station and other increased 7.34 cents per million BTU to 2039.71 cents per million BTU. The composite cost of DG energy is 0.00 cents per kWh. The composite cost of purchased energy is 30.00 cents per kWh.

The Energy Cost Adjustment factor for our Moloka'i Division for May 2019 is -3.503 cents per kWh, an increase of 1.531 cents per kWh from last month. A residential customer consuming 400 kWh of electricity will be paying \$164.98, an increase of \$6.47 compared to rates effective April 1, 2019. The increase in the typical residential bill is due to the

The Honorable Chair and Members  
of the Hawai'i Public Utilities Commission  
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increase in the Energy Cost Adjustment factor (+\$6.13) and termination of the Solar Saver Adjustment credit (+\$0.34).

The Company's Moloka'i Division fuel composite cost of generation, central station and other increased 131.12 cents per million BTU to 1,854.36 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 attached sheets set forth the fuel adjustment in cents per kWh for each rate schedule that is applicable for pro rata use beginning May 1, 2019.

Sincerely,



Sharon M. Suzuki  
President

Attachments

cc: Division of Consumer Advocacy

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION

ENERGY COST ADJUSTMENT FACTOR

|   | EFFECTIVE DATES   |                   | <u>Change</u> |
|---|-------------------|-------------------|---------------|
|   | <u>04/01/2019</u> | <u>05/01/2019</u> |               |
| <u>COMPOSITE COSTS</u>                      |                   |                   |               |
| Generation, Central Station & Other, ¢/mbtu | 1,402.41          | 1,471.92          | 69.51         |
| DG Energy, ¢/kWh                            | 0.00              | 0.00              | 0.000         |
| Purchased Energy, ¢/kWh                     | 19.831            | 19.405            | (0.426)       |
| <u>Residential Schedule "R"</u>             |                   |                   |               |
| Energy Cost Adjustment, ¢/kWh               | (5.441)           | (4.041)           | 1.400         |
| <u>Others - "G,H,P,F"</u>                   |                   |                   |               |
| Energy Cost Adjustment, ¢/kWh               | (5.441)           | (4.041)           | 1.400         |
| <u>Residential Customer with</u>            |                   |                   |               |
| 500 KWH Consumption, \$/Bill                | 163.99            | 171.40            | 7.41          |
| 600 KWH Consumption, \$/Bill                | 196.39            | 205.29            | 8.90          |

Supersedes Sheet Effective:

April 1, 2019

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION  
ENERGY COST ADJUSTMENT (ECA) FILING

ENERGY COST ADJUSTMENT (ECA) FILING - May 1, 2019 (page 1 of 2)

Line

1 Effective Date May 1, 2019  
2 Supercedes Factors of April 1, 2019

GENERATION COMPONENT

| <u>CENTRAL STATION</u>       |   |            |                    |            |                                |  |           |
|------------------------------|---|------------|--------------------|------------|--------------------------------|--|-----------|
| FUEL PRICES, ¢/mmbtu         |   |            |                    |            |                                |  |           |
| 3                            | Industrial  |            |                    | 1,104.61   |                                |  |           |
| 4                            | Diesel  |            |                    | 1,621.66   |                                |  |           |
| 5                            | Other   |            |                    |            |                                |  |           |
| BTU MIX, %                   |   |            |                    |            |                                |  |           |
| 6                            | Industrial  |            |                    | 28.96%     |                                |  |           |
| 7                            | Diesel  |            |                    | 71.04%     |                                |  |           |
| 8                            | Other   |            |                    | 0.00%      |                                |  |           |
|                              |   |            |                    | 100.00%    |                                |  |           |
| 9                            | COMPOSITE COST OF GENERATION, CENTRAL STATION + OTHER ¢/mmbtu (Lines (3 x 6) + (4 x 7) + (5 x 8)) |            |                    | 1,471.92   |                                |  |           |
| 10                           | % Input to System kWh Mix   |            |                    | 62.89%     |                                |  |           |
| EFFICIENCY FACTOR, mmbtu/kWh |   |            |                    |            |                                |  |           |
|                              | (A)   | (B)        | (C)                | (D)        |                                |  |           |
|                              |   | Eff Factor | Percent of         | Weighted   |                                |  |           |
|                              | Fuel Type   | mmbtu/kwh  | Centrl Stn + Other | Eff Factor |                                |  |           |
| 11                           | Industrial  | 0.015126   | 20.63              | 0.003120   |                                |  |           |
| 12                           | Diesel  | 0.010026   | 79.37              | 0.007958   |                                |  |           |
| 13                           | Other   | 0.010951   | 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)]                               |            |                    | 0.011078   |                                |  |           |
| 15                           | WEIGHTED COMPOSITE CENTRAL STATION + OTHER GENERATION COST, ¢/kWh (lines (9 x 10 x 14))           |            |                    | 10.25480   |                                |  |           |
| 16                           | BASE CENTRAL STATION + OTHER GENERATION COST, ¢/mmbtu   |            |                    | 2,019.39   |                                |  |           |
| 17                           | Base % Input to Sys kWh Mix   |            |                    | 78.09      |                                |  |           |
| 18                           | Efficiency Factor, mmbtu/kwh  |            |                    | 0.010951   |                                |  |           |
| 19                           | WEIGHTED BASE CENTRAL STATION + OTHER GENERATION COST ¢/kWh (lines (16 x 17 x 18))                |            |                    | 17.26909   |                                |  |           |
| 20                           | COST LESS BASE (line(15 - 19))  |            |                    | (7.01429)  |                                |  |           |
| 21                           | Revenue Tax Req Multiplier  |            |                    | 1.0975     |                                |  |           |
| 22                           | CENTRAL STATION + OTHER GENERATION FACTOR, ¢/kWh (line (20 x 21))                                 |            |                    | (7.69818)  |                                |  |           |
|                              |   |            |                    |            | <u>DG ENERGY COMPONENT</u>     |  |           |
|                              |   |            |                    |            | 23                             | COMPOSITE COST OF DG ENERGY, ¢/kWh                       | 0.000     |
|                              |   |            |                    |            | 24                             | % Input to System kWh Mix                                | 0.00%     |
|                              |   |            |                    |            | 25                             | WEIGHTED COMPOSITE DG ENERGY COST, ¢/kWh (Lines 23 x 24) | -         |
|                              |   |            |                    |            | 26                             | BASE DG ENERGY COMP COST                                 | 0.000     |
|                              |   |            |                    |            | 27                             | Base % Input to System kWh Mix                           | 0.01      |
|                              |   |            |                    |            | 28                             | WEIGHTED BASE DG ENERGY COST, ¢/kWh (Line 26 x 27)       | 0.00000   |
|                              |   |            |                    |            | 29                             | Cost Less Base (Line 25 - 28)                            | 0.00000   |
|                              |   |            |                    |            | 30                             | Loss Factor  | 1.063     |
|                              |   |            |                    |            | 31                             | Revenue Tax Req Multiplier                               | 1.0975    |
|                              |   |            |                    |            | 32                             | DG FACTOR, ¢/kWh (Line 29 x 30 x 31)                     | 0.00000   |
|                              |   |            |                    |            | SUMMARY OF                     |  |           |
|                              |   |            |                    |            | TOTAL GENERATION FACTOR, ¢/kWh |  |           |
|                              |   |            |                    |            | 33                             | CNTRL STN + OTHER (line 22)                              | (7.69818) |
|                              |   |            |                    |            | 34                             | DG (line 32)   | -         |
|                              |   |            |                    |            | 35                             | TOTAL GENERATION FACTOR, ¢/kWh (lines 33 + 34)           | (7.69818) |

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION  
ENERGY COST ADJUSTMENT (ECA) FILING

ENERGY COST ADJUSTMENT (ECA) FILING - May 1, 2019 (page 2 of 2)

Line

1 Effective Date May 1, 2019  
2 Supercedes Factors of April 1, 2019

| <u>Line</u> | <u>PURCHASED ENERGY COMPONENT</u>   |            |                |
|-------------|---|------------|----------------|
|             | PURCHASED ENERGY PRICE, ¢/kWh   |            |                |
| 36          | Kaheawa Wind I  | - On Peak  | 13.783         |
| 37          |   | - Off Peak | 12.935         |
| 38          | Kaheawa Wind II   |            | 25.684         |
| 39          | Sempra Wind   |            | 22.197         |
| 40          | Hydro & Other   | - On Peak  | 15.072         |
| 41          |   | - Off Peak | 14.509         |
| 42          | South Maui RR   |            | 11.060         |
| 43          | Ku'ia Solar   |            | 11.060         |
| 44          | CBRE PV   |            | 16.500         |
| 45          |   |            |                |
| 46          | FIT   |            | 21.458         |
|             | PURCHASED ENERGY KWH MIX, %   |            |                |
| 47          | Kaheawa Wind I  | - On Peak  | 20.71%         |
| 48          |   | - Off Peak | 16.19%         |
| 49          | Kaheawa Wind II   |            | 24.43%         |
| 50          | Sempra Wind   | - On Peak  | 31.65%         |
| 51          | Hydro & Other   | - On Peak  | 0.19%          |
| 52          |   | - Off Peak | 0.12%          |
| 53          | South Maui RR   |            | 1.48%          |
| 54          | Ku'ia Solar   |            | 1.45%          |
| 55          | CBRE PV   |            | 0.51%          |
| 56          |   |            |                |
| 57          | FIT   |            | 3.27%          |
|             |   |            | <u>100.00%</u> |
| 58          | COMPOSITE COST OF PURCHASED ENERGY, ¢/kWh   |            | 19.405         |
|             | (Lines (36 x 47) + (37 x 48) + (38 x 49) + (39 x 50) + (40 x 51) + (41 x 52) + (42 x 53) + (43 x 54) + (44 x 55) + (46 x 57)) |            |                |
| 59          | % Input to System kWh Mix   |            | 37.11%         |
| 60          | WEIGHTED COMPOSITE PURCHASED ENERGY COST, ¢/kWh (lines (58 x 59))   |            | 7.20120        |
| 61          | BASE PURCHASED ENERGY COMPOSITE COST, ¢/kWh   |            | 15.847         |
| 62          | Base % Input to Sys kWh Mix   |            | 21.90          |
| 63          | WEIGHTED BASE PURCHASED ENERGY COST, ¢/kWh (lines (61 x 62))  |            | 3.47049        |
| 64          | COST LESS BASE (lines (60 - 63))  |            | 3.73071        |
| 65          | Loss Factor   |            | 1.063          |
| 66          | Revenue Tax Req Multiplier  |            | 1.0975         |
| 67          | PURCHASED ENERGY FACTOR, ¢/kWh (lines (64 x 65 x 66))   |            | 4.35240        |

Line

SYSTEM COMPOSITE CALCULATIONS

68 GENERATION AND PURCHASED ENERGY FACTOR, ¢/kWh (3.34578)  
(lines (35 + 67))  
69 ADJUSTMENT, ¢/kWh  
70 ECA Reconciliation Adjustment (0.695)  
71 ECA FACTOR, ¢/kWh (4.041)  
(lines (68 + 69 + 70))

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION

Fuel Oil Inventory Prices for May 2019

| <u>TYPE OF OIL<br/>BURNED</u> | <u>PRICES<br/>\$/BBL</u> | <u>CONVERSION<br/>FACTORS</u> |          | <u>PRICES<br/>¢/MBTU</u> |
|-------------------------------|--------------------------|-------------------------------|----------|--------------------------|
| INDUSTRIAL                    | 69.5904                  | 6.30                          | MBTU/BBL | 1,104.61                 |
| DIESEL/ULSD                   | 94.9441                  | 5.85                          | MBTU/BBL | 1,621.66                 |

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

**Month End Fuel Oil Estimate**

| <u>Kahului</u>       | <u>Barrels</u>   | <u>MBTU</u>       | <u>(\$)</u>         |
|----------------------|------------------|-------------------|---------------------|
| 4/18/2019            | 51,315.52        | 323,287.78        | 3,485,132.86        |
| Estimated Use        | 11,712.74        | 73,790.25         | 767,216.67          |
| Estimated Received   | 16,352.15        | 103,018.55        | 1,176,010.69        |
| Estimated Additional | 0.00             | 0.00              | 0.00                |
| Estimated End        | <u>55,954.93</u> | <u>352,516.08</u> | <u>3,893,926.88</u> |

**Next month's expense (\$/bbl) = \$ 69.5904**

| <u>Maalaea</u>       | <u>Barrels</u>    | <u>MBTU</u>       | <u>(\$)</u>          |
|----------------------|-------------------|-------------------|----------------------|
| 4/18/2019            | 112,481.40        | 658,549.33        | 10,580,928.20        |
| Estimated Use        | 24,697.01         | 144,594.57        | 2,208,033.76         |
| Estimated Received   | 20,063.69         | 117,467.68        | 1,866,647.53         |
| Estimated Additional | 0.00              | 0.00              | 0.00                 |
| Estimated End        | <u>107,848.08</u> | <u>631,422.44</u> | <u>10,239,541.97</u> |

**Next month's expense (\$/bbl) = \$ 94.9441**

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION

Contract Prices effective April 1, 2019

| <u>TYPE OF OIL BURNED</u> | <u>\$/BBL</u> | <u>¢/MBTU</u> |
|---------------------------|---------------|---------------|
| <b>INDUSTRIAL</b>         |               |               |
| Tax *                     | 4.1605        | 66.04         |
| Ocean Transportation      | 1.9430        | 30.84         |
| Land Transportation       | 0.0000        | 0.00          |
| Storage                   | 0.0000        | 0.00          |
| Wharfage                  | 0.3900        | 6.19          |
| <b>DIESEL</b>             |               |               |
| Tax *                     | 5.5013        | 93.88         |
| Ocean Transportation      | 1.9430        | 33.16         |
| Land Transportation       | 0.9782        | 16.69         |
| Storage                   | 2.8489        | 48.62         |
| Wharfage                  | 0.3900        | 6.66          |

\* Tax includes HGET, Hawaii Use Tax, Liquid Fuel Tax, LUST tax, Environmental Response Tax, Customs Duty Fee, and Fed Oil Spill Recovery Fee

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.  
MAUI DIVISION**

**PURCHASED POWER PRICE CALCULATIONS**

KAHEAWA WIND POWER ENERGY RATE:

|                               |        |
|-------------------------------|--------|
| Kaheawa Wind - On Peak, ¢/kWh | 13.783 |
| - Off Peak, ¢/kWh             | 12.935 |

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 2019:

|                 |        |
|-----------------|--------|
| On-peak, ¢/kwh  | 10.261 |
| Off-peak, ¢/kwh | 9.050  |

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

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

On-Peak Rate =  $10.2610 \text{ ¢/kwh} \times 0.7 + 22.000 \text{ ¢/kwh} \times 0.3 = 13.783 \text{ ¢/kwh}$

Off-Peak Rate =  $9.05 \text{ ¢/kwh} \times 0.7 + 22.000 \text{ ¢/kwh} \times 0.3 = 12.935 \text{ ¢/kwh}$

**MAUI ELECTRIC COMPANY, LTD.**  
**Maui Division**  
**ECA Reconciliation Adjustment**  
**May 2019**

|                                    |               |
|------------------------------------|---------------|
| 1. Amount to be Refunded           | (\$1,531,500) |
| 2. Monthly amount (1 / 3 X Line 1) | (\$510,500)   |
| 3. Revenue Tax Divisor             | 0.91115       |
| 4. Total (Line 2 / Line 3)         | (\$560,281)   |
| 5. Estimated Sales (May 2019)      | 80,603 mwh    |
| 6. Adjustment (Line 4 ÷ Line 5)    | (0.695) ¢/kwh |

MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION  
2019 FUEL OIL ADJUSTMENT RECONCILIATION SUMMARY  
(Thousand \$)

| <u>Line</u> |   | W/O Deadband<br>1st Quarter<br><u>YTD Total</u> | collection<br>by<br><u>company*</u> | Basis for Recon<br>With Deadband<br>1st Quarter<br><u>YTD Total</u> | collection<br>by<br><u>company*</u> |
|-------------|---|---|-------------------------------------|---|-------------------------------------|
|             | ACTUAL COSTS:   |   |                                     |   |                                     |
| 1           | Generation  | \$28,040.1                                      |                                     | \$28,040.1  |                                     |
| 2           | Distributed Generation  | \$5.6   |                                     | \$5.6   |                                     |
| 3           | Purch Power   | <u>\$9,987.1</u>                                |                                     | <u>\$9,987.1</u>  |                                     |
| 4           | TOTAL   | \$38,032.8                                      |                                     | \$38,032.8  |                                     |
|             | FUEL FILING COST  |   |                                     |   |                                     |
| 5           | Generation  | \$28,034.7                                      |                                     | \$28,158.4  |                                     |
| 6           | Distributed Generation  | \$0.0   |                                     | \$0.0   |                                     |
| 7           | Purch Power   | <u>\$9,987.1</u>                                |                                     | <u>\$9,987.1</u>  |                                     |
| 8           | TOTAL   | \$38,021.8                                      |                                     | \$38,145.6  |                                     |
|             | BASE FUEL COST  |   |                                     |   |                                     |
| 9           | Generation  | \$38,538.6                                      |                                     | \$38,538.6  |                                     |
| 10          | Distributed Generation  | \$4.8   |                                     | \$4.8   |                                     |
| 11          | Purch Power   | <u>\$10,291.1</u>                               |                                     | <u>\$10,291.1</u>   |                                     |
| 12          | TOTAL   | \$48,834.5                                      |                                     | \$48,834.5  |                                     |
| 13          | FUEL-BASE COST (Line 8-12)  | -\$10,812.7                                     |                                     | -\$10,689.0   |                                     |
| 14          | ACTUAL FOA LESS TAX   | -\$10,735.1                                     |                                     | -\$10,735.1   |                                     |
| 15          | FOA reconciliation adj for prior year                                 | <u>-\$1,577.6</u>                               |                                     | <u>-\$1,577.6</u>   |                                     |
| 16          | ADJUSTED FOA LESS TAX   | -\$9,157.5                                      |                                     | -\$9,157.5  |                                     |
| 17          | FOA-(FUEL-BASE) (Line 16-13)  | \$1,655.2 Over                                  |                                     | \$1,531.5 Over  |                                     |
|             | ADJUSTMENTS   |   |                                     |   |                                     |
| 18          | Current year FOA accrual reversal                                     | \$0.0   |                                     | \$0.0   |                                     |
| 19          | Other prior year FOA  | \$0.0   |                                     | \$0.0   |                                     |
| 20          | Other   | <u>\$0.0</u>                                    |                                     | <u>\$0.0</u>  |                                     |
| 21          | 1st QUARTER FOA RECONCILIATION (Lines 17+18+19+20)                    | \$1,655.2 Over                                  |                                     | \$1,531.5 Over  |                                     |
| 22          | 2018 FOA Reconciliation Recognized in FOA Rates                       |   |                                     | <u>\$0.0</u>  |                                     |
| 23          | FOA Reconciliation to be Refunded May 2019 to July 2019 (Line 22- 21) |   |                                     | <u><u>-\$1,531.5</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, 2019 through January 13, 2019

|  | <u>Notes</u>   | <u>YTD</u>    |
|--|----------------|---------------|
| <b><u>Industrial Fuel Oil</u></b>                                |                |               |
| Industrial Fuel Oil Efficiency Factor (TY2018), BTU/kWh          | f              | 15,892        |
| Industrial Fuel Oil Deadband Definition, - BTU/kWh               | d              | <b>100</b>    |
| Industrial Fuel Oil Portion of Recorded Sales, MWh               | a              | 6,043         |
| Industrial Fuel Oil Consumption (Recorded), MMBTU                | b              | 91,414        |
| Industrial Fuel Oil Efficiency Factor (Recorded), BTU/kWh        | c = (b/a)*1000 | 15,127        |
| Lower limit of Industrial Fuel Oil Deadband, BTU/kWh             | e = f-d        | 15,792        |
| Higher limit of Industrial Fuel Oil Deadband, BTU/kWh            | g = f          | 15,892        |
| Industrial Fuel Oil Efficiency Factor for cost-recovery, BTU/kWh | h = c, e, or g | <b>15,792</b> |
| <b><u>Diesel</u></b>   |                |               |
| Diesel Efficiency Factor (TY2018), BTU/kWh                       | f              | 9,950         |
| Diesel Deadband Definition, - BTU/kWh                            | d              | <b>100</b>    |
| Diesel Portion of Recorded Sales, MWh                            | a              | 23,411        |
| Diesel Consumption (Recorded), MMBTU                             | b              | 226,043       |
| Diesel Efficiency Factor (Recorded), BTU/kWh                     | c = (b/a)*1000 | 9,656         |
| Lower limit of Diesel Deadband, BTU/kWh                          | e = f-d        | 9,850         |
| Higher limit of Diesel Deadband, BTU/kWh                         | g = f          | 9,950         |
| Diesel Efficiency Factor for cost-recovery, BTU/kWh              | h = c, e, or g | <b>9,850</b>  |

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

Determination of Efficiency Factor to use for Cost-Recovery Purposes

Period: January 14, 2019 through March 31, 2019

|  | <u>Notes</u>   | <u>YTD</u>    |
|--|----------------|---------------|
| <b><u>Industrial Fuel Oil</u></b>                                |                |               |
| Industrial Fuel Oil Efficiency Factor (TY2018), BTU/kWh          | f              | 15,892        |
| Industrial Fuel Oil Deadband Definition, - BTU/kWh               | d              | <b>100</b>    |
| Industrial Fuel Oil Portion of Recorded Sales, MWh               | a              | 26,509        |
| Industrial Fuel Oil Consumption (Recorded), MMBTU                | b              | 424,614       |
| Industrial Fuel Oil Efficiency Factor (Recorded), BTU/kWh        | c = (b/a)*1000 | 16,017        |
| Lower limit of Industrial Fuel Oil Deadband, BTU/kWh             | e = f-d        | 15,792        |
| Higher limit of Industrial Fuel Oil Deadband, BTU/kWh            | g = f+d        | 15,992        |
| Industrial Fuel Oil Efficiency Factor for cost-recovery, BTU/kWh | h = c, e, or g | <b>15,992</b> |
| <b><u>Diesel</u></b>   |                |               |
| Diesel Efficiency Factor (TY2018), BTU/kWh                       | f              | 9,950         |
| Diesel Deadband Definition, - BTU/kWh                            | d              | <b>100</b>    |
| Diesel Portion of Recorded Sales, MWh                            | a              | 127,921       |
| Diesel Consumption (Recorded), MMBTU                             | b              | 1,282,027     |
| Diesel Efficiency Factor (Recorded), BTU/kWh                     | c = (b/a)*1000 | 10,022        |
| Lower limit of Diesel Deadband, BTU/kWh                          | e = f-d        | 9,850         |
| Higher limit of Diesel Deadband, BTU/kWh                         | g = f+d        | 10,050        |
| Diesel Efficiency Factor for cost-recovery, BTU/kWh              | h = c, e, or g | <b>10,022</b> |

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

2019

|  | Without<br>Deadband<br><u>Jan 1 - Jan 13</u> | With<br>Deadband<br>AS FILED<br><u>Jan 1 - Jan 13</u> | Without<br>Deadband<br><u>Jan 14 - Mar 31</u> | With<br>Deadband<br>AS FILED<br><u>Jan 14 - Mar 31</u> |
|--|--|---|---|--|
| <b>INDUSTRIAL</b>                              |  |   |   |  |
| Industrial Portion of Recorded Sales , MWH     | 6,043  | 6,043   | 26,509  | 26,509   |
| Industrial Sales Efficiency Factor (mmbtu/kwh) | 0.015892                                     | 0.015792  | 0.015892                                      | 0.015992   |
| Mmbtu adjusted for Sales Efficiency Factor     | 96,036                                       | 95,431  | 421,287                                       | 423,938  |
| \$/mmbtu                                       | <u>\$10.7273</u>                             | <u>\$10.7273</u>                                      | <u>\$9.5844</u>                               | <u>\$9.5844</u>  |
| TOTAL Industrial \$000s TO BE RECOVERED        | \$1,030.2                                    | \$1,023.7   | \$4,037.8                                     | \$4,063.2  |
| <b>DIESEL FUEL FILING COST</b>                 |  |   |   |  |
| Diesel Portion of Recorded Sales, MWH          | 23,411                                       | 23,411  | 127,921                                       | 127,921  |
| Diesel Sales Efficiency Factor (mmbtu/kwh)     | 0.00995                                      | 0.00985   | 0.00995                                       | 0.010022   |
| Mmbtu adjusted for Sales Efficiency Factor     | 232,936                                      | 230,595   | 1,272,809                                     | 1,282,019  |
| \$/mmbtu                                       | <u>\$15.2504</u>                             | <u>\$15.2504</u>                                      | <u>\$15.2531</u>                              | <u>\$15.2531</u>                                       |
| TOTAL DIESEL \$000s TO BE RECOVERED            | \$3,552.4                                    | \$3,516.7   | \$19,414.3                                    | \$19,554.8   |
| TOTAL GENERATION FUEL FILING COST, \$000s      | \$4,582.6                                    | \$4,540.4   | \$23,452.1                                    | \$23,618.0   |
| TOTAL GENERATION BASE FUEL COST , \$000s       | \$6,172.9                                    | \$6,172.9   | \$32,365.7                                    | \$32,365.7   |
| TOTAL GENERATION FUEL FILING COST, \$000s YTD  | \$4,582.6                                    | \$4,540.4   | \$28,034.7                                    | \$28,158.4   |
| TOTAL GENERATION BASE FUEL COST, \$000s YTD    | \$6,172.9                                    | \$6,172.9   | \$38,538.6                                    | \$38,538.6   |

**MAUI ELECTRIC COMPANY, LTD.  
MAUI DIVISION  
2019 Cumulative Reconciliation Balance**

| <u>Month</u> | (1)<br><u>YTD FOA Reconciliation</u> | <u>Qtr</u> | (2)<br><u>FOA Rec Adjust Variance</u> | (3)<br><u>FOA Rec Less Variance</u> | (4)<br><u>Try to Collect</u> | (5)<br><u>Actual Collect</u> | (6)<br><u>Month-end Cumulative Balance</u> |
|--------------|--------------------------------------|------------|---------------------------------------|-------------------------------------|------------------------------|------------------------------|--|
| December '18 |                                      |            |                                       |                                     | (327,700)                    | (323,073)                    | 279,528                                    |
| January '19  |                                      |            |                                       |                                     | (327,700)                    | (345,025)                    | (65,497)                                   |
| February     | 1,886,900                            | (4)        | (48,178)                              | 1,935,078                           | (628,967)                    | (587,149)                    | 1,282,432                                  |
| March        |                                      |            |                                       |                                     | (628,967)                    | (591,146)                    | 691,286                                    |
| April        |                                      |            |                                       |                                     | (628,967)                    |                              |  |
| May          | 1,531,500                            | (1)        | 62,314                                | 1,469,186                           | (510,500)                    |                              |  |

## 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 |          |            |
|---|----------|----------|------------------------|----------|------------|
|   | 04/01/19 | 05/01/19 | 04/01/19               | 05/01/19 | Difference |
| <b>Base Rates</b>                                   |          |          |                        |          |            |
| effective date:                                     | 08/01/13 | 08/01/13 |                        |          |            |
| Base Fuel/Energy Charge<br>¢/kWh                    | 23.0016  | 23.0016  | 115.01                 | 115.01   | 0.00       |
| Non-fuel Fuel Energy Charge                         |          |          |                        |          |            |
| First 350 kWhr per month<br>¢/kWh                   | 9.3393   | 9.3393   | 32.69                  | 32.69    | 0.00       |
| Next 850 kWhr per month<br>¢/kWh                    | 11.5993  | 11.5993  | 17.40                  | 17.40    | 0.00       |
| Customer Charge<br>\$                               | 8.50     | 8.50     | 8.50                   | 8.50     | 0.00       |
| <b>Total Base Charges</b>                           |          |          | 173.60                 | 173.60   | 0.00       |
| RBA Rate Adjustment<br>¢/kWh                        | 0.3183   | 0.3183   | 1.59                   | 1.59     | 0.00       |
| PBF Surcharge<br>¢/kWh                              | 0.4658   | 0.4658   | 2.33                   | 2.33     | 0.00       |
| SolarSaver Adjustment<br>¢/kWh                      | -0.0855  | 0.0000   | -0.43                  | 0.00     | 0.43       |
| Interim Rate Increase (Test Year 2018)<br>% on Base | 7.42     | 7.42     | 12.88                  | 12.88    | 0.00       |
| Purchased Power Adjustment<br>¢/kWh                 | -0.0244  | -0.0274  | -0.12                  | -0.14    | -0.02      |
| Energy Cost Adjustment<br>¢/kWh                     | -5.441   | -4.041   | -27.21                 | -20.21   | 7.00       |
| Green Infrastructure Fee<br>\$                      | 1.35     | 1.35     | 1.35                   | 1.35     | 0.00       |
| <b>Avg Residential Bill at 500 kwh</b>              |          |          | 163.99                 | 171.40   |            |
|   |          |          | Increase (Decrease -)  |          | 7.41       |
|   |          |          | % Change               |          | 4.52%      |

|   | Rate     |          | Charge (\$) at 600 Kwh |          |            |
|---|----------|----------|------------------------|----------|------------|
|   | 04/01/19 | 05/01/19 | 04/01/19               | 05/01/19 | Difference |
| <b>Base Rates</b>   |          |          |                        |          |            |
| effective date:   | 08/01/13 | 08/01/13 |                        |          |            |
| Base Fuel/Energy Charge<br>¢/kWh                                    | 23.0016  | 23.0016  | 138.01                 | 138.01   | 0.00       |
| Non-fuel Fuel Energy Charge   |          |          |                        |          |            |
| First 350 kWhr per month<br>¢/kWh                                   | 9.3393   | 9.3393   | 32.69                  | 32.69    | 0.00       |
| Next 850 kWhr per month<br>¢/kWh                                    | 11.5993  | 11.5993  | 29.00                  | 29.00    | 0.00       |
| Customer Charge<br>\$   | 8.50     | 8.50     | 8.50                   | 8.50     | 0.00       |
| <b>Total Base Charges</b>   |          |          | 208.20                 | 208.20   | 0.00       |
| RBA Rate Adjustment<br>¢/kWh  | 0.3183   | 0.3183   | 1.91                   | 1.91     | 0.00       |
| PBF Surcharge<br>¢/kWh  | 0.4658   | 0.4658   | 2.79                   | 2.79     | 0.00       |
| Renewable Energy Infrastructure Cost<br>Recovery Provision<br>¢/kWh | 0.0000   | 0.0000   | 0.00                   | 0.00     | 0.00       |
| SolarSaver Adjustment<br>¢/kWh                                      | -0.0855  | 0.0000   | -0.51                  | 0.00     | 0.51       |
| Interim Rate Increase (Test Year 2018)<br>% on Base                 | 7.42     | 7.42     | 15.45                  | 15.45    | 0.00       |
| Purchased Power Adjustment<br>¢/kWh                                 | -0.0244  | -0.0274  | -0.15                  | -0.16    | -0.01      |
| Energy Cost Adjustment<br>¢/kWh                                     | -5.441   | -4.041   | -32.65                 | -24.25   | 8.40       |
| Green Infrastructure Fee<br>\$                                      | 1.35     | 1.35     | 1.35                   | 1.35     | 0.00       |
| <b>Avg Residential Bill at 600 kwh</b>                              |          |          | 196.39                 | 205.29   |            |
|   |          |          | Increase (Decrease -)  |          | 8.90       |
|   |          |          | % Change               |          | 4.53%      |



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

| <u>EFFECTIVE DATE</u> | FUEL FACTOR<br>CENTS / KWH              |  | RESIDENTIAL BILL (\$) |                  |
|-----------------------|---|--|-----------------------|------------------|
|                       | <u>RESIDENTIAL &amp;<br/>COMMERCIAL</u> |  | <u>@ 500 KWH</u>      | <u>@ 600 KWH</u> |
| January 1, 2017       | -7.659                                  |  | 146.59                | 175.55           |
| February 1, 2017      | -8.247                                  |  | 143.65                | 172.02           |
| March 1, 2017         | -7.314                                  |  | 148.32                | 177.61           |
| April 1, 2017         | -5.770                                  |  | 155.35                | 186.05           |
| May 1, 2017           | -7.998                                  |  | 144.79                | 173.38           |
| June 1, 2017          | -5.191                                  |  | 159.61                | 191.16           |
| July 1, 2017          | -5.635                                  |  | 157.32                | 188.42           |
| August 1, 2017        | -7.867                                  |  | 145.30                | 174.01           |
| September 1, 2017     | -9.278                                  |  | 138.19                | 165.47           |
| October 1, 2017       | -7.391                                  |  | 147.64                | 176.80           |
| November 1, 2017      | -5.305                                  |  | 158.18                | 189.46           |
| December 1, 2017      | -7.839                                  |  | 145.51                | 174.26           |
|                       |   |  |                       |                  |
| January 1, 2018       | -6.115                                  |  | 154.28                | 184.75           |
| February 1, 2018      | -5.747                                  |  | 156.16                | 187.00           |
| March 1, 2018         | -4.402                                  |  | 162.88                | 195.07           |
| April 1, 2018         | -4.914                                  |  | 159.68                | 191.23           |
| May 1, 2018           | -4.510                                  |  | 162.34                | 194.42           |
| June 1, 2018          | -2.402                                  |  | 174.53                | 209.05           |
| July 1, 2018          | -1.259                                  |  | 180.32                | 216.01           |
| August 1, 2018        | -3.848                                  |  | 167.07                | 200.11           |
| September 1, 2018     | -3.445                                  |  | 174.06                | 208.51           |
| October 1, 2018       | -3.282                                  |  | 174.90                | 209.51           |
| November 1, 2018      | -2.358                                  |  | 179.87                | 215.47           |
| December 1, 2018      | -2.401                                  |  | 179.65                | 215.21           |
|                       |   |  |                       |                  |
| January 1, 2019       | -3.405                                  |  | 174.77                | 209.33           |
| February 1, 2019      | -5.987                                  |  | 161.69                | 193.64           |
| March 1, 2019         | -5.839                                  |  | 162.44                | 194.54           |
| April 1, 2019         | -5.441                                  |  | 163.99                | 196.39           |
| May 1, 2019           | -4.041                                  |  | 171.40                | 205.29           |

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

| EFFECTIVE DATE      | DESCRIPTION OF SURCHARGE  | RATE                         |
|---------------------|---|------------------------------|
| <b>06/01/11</b>     | <b>IRP RECOVERY REFUND</b>  | <b>0.000 PERCENT ON BASE</b> |
| 04/01/13 - 04/30/13 | SOLARSAVER ADJUSTMENT   | -0.2053 CENTS/KWH            |
| <b>08/01/13</b>     | <b>FINAL RATE INCREASE (1.25%), DOCKET NO. 2011-0092 (2012 TEST YEAR)</b> |                              |
|                     | RECOVERY PROVISION  |                              |
| 04/01/17 - 04/30/17 | SOLARSAVER ADJUSTMENT   | -0.1378 CENTS/KWH            |
| 05/01/17 - 3/31/18  | SOLARSAVER ADJUSTMENT   | 0.0000 CENTS/KWH             |
| 05/01/17 - 05/31/17 | PURCHASED POWER ADJUSTMENT  | -0.0224 CENTS/KWH            |
| 06/01/17 - 06/30/17 | PURCHASED POWER ADJUSTMENT  | -0.0218 CENTS/KWH            |
| 6/1/2017 - 05/31/18 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT                                 | 1.5654 CENTS/KWH             |
| 07/01/17 - 12/31/17 | GREEN INFRASTRUCTURE FEE  | 1.18 DOLLARS/MONTH           |
| 07/01/17 - 07/31/17 | PURCHASED POWER ADJUSTMENT  | -0.0202 CENTS/KWH            |
| 07/01/17 - 06/30/18 | RESID. PBF SURCHARGE ADJUSTMENT   | 0.4244 CENTS/KWH             |
| 08/01/17 - 08/31/17 | PURCHASED POWER ADJUSTMENT  | -0.0286 CENTS/KWH            |
| <b>08/17/17</b>     | <b>RENEWABLE ENERGY INFRASTRUCTURE COST</b>                               | <b>0.0000 CENTS/KWH</b>      |
|                     | RECOVERY PROVISION  |                              |
| 09/01/17 - 09/30/17 | PURCHASED POWER ADJUSTMENT  | -0.0307 CENTS/KWH            |
| 10/01/17 - 10/31/17 | PURCHASED POWER ADJUSTMENT  | -0.0275 CENTS/KWH            |
| 11/01/17 - 11/30/17 | PURCHASED POWER ADJUSTMENT  | -0.0058 CENTS/KWH            |
| 12/01/17 - 12/31/17 | PURCHASED POWER ADJUSTMENT  | -0.0054 CENTS/KWH            |
| 01/01/18 - 01/31/18 | PURCHASED POWER ADJUSTMENT  | -0.0060 CENTS/KWH            |
| 01/01/18 - 06/30/18 | GREEN INFRASTRUCTURE FEE  | 1.3400 DOLLARS/MONTH         |
| 02/01/18 - 04/30/18 | PURCHASED POWER ADJUSTMENT  | 0.0003 CENTS/KWH             |
| 04/01/18 - 04/30/18 | SOLARSAVER ADJUSTMENT   | -0.1278 CENTS/KWH            |
| 05/01/18 - 03/31/19 | SOLARSAVER ADJUSTMENT   | 0.0000 CENTS/KWH             |
| 05/01/18 - 06/30/18 | PURCHASED POWER ADJUSTMENT  | 0.0004 CENTS/KWH             |
| 06/01/18 - 08/22/18 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT                                 | 1.8954 CENTS/KWH             |
| 07/01/18 - 07/31/18 | PURCHASED POWER ADJUSTMENT  | 0.0003 CENTS/KWH             |
| <b>07/01/18</b>     | <b>RESID. PBF SURCHARGE ADJUSTMENT</b>                                    | <b>0.4658 CENTS/KWH</b>      |
| 07/01/18 - 12/31/18 | GREEN INFRASTRUCTURE FEE  | 1.2100 DOLLARS/MONTH         |
| 08/01/18 - 08/31/18 | PURCHASED POWER ADJUSTMENT  | -0.0618 CENTS/KWH            |
| 09/01/18 - 09/30/18 | PURCHASED POWER ADJUSTMENT  | -0.0635 CENTS/KWH            |
| <b>08/23/18</b>     | <b>INTERIM RATE INCREASE 2018 TEST YEAR</b>                               | <b>7.42 PERCENT ON BASE</b>  |
| <b>08/23/18</b>     | <b>REVENUE BALANCING ACCOUNT RATE ADJUSTMENT</b>                          | <b>0.3183 CENTS/KWH</b>      |
| 10/01/18 - 10/31/18 | PURCHASED POWER ADJUSTMENT  | -0.0602 CENTS/KWH            |
| 11/01/18 - 11/30/19 | PURCHASED POWER ADJUSTMENT  | 0.0108 CENTS/KWH             |
| 12/01/18 - 12/31/18 | PURCHASED POWER ADJUSTMENT  | 0.0099 CENTS/KWH             |
| 01/01/19 - 01/31/19 | PURCHASED POWER ADJUSTMENT  | 0.0094 CENTS/KWH             |
| <b>01/01/19</b>     | <b>GREEN INFRASTRUCTURE FEE</b>   | <b>1.35 DOLLARS/MONTH</b>    |
| 02/01/19 - 02/28/19 | PURCHASED POWER ADJUSTMENT  | -0.0241 CENTS/KWH            |
| 03/01/19 - 03/31/19 | PURCHASED POWER ADJUSTMENT  | -0.0224 CENTS/KWH            |
| 04/01/19 - 04/30/19 | PURCHASED POWER ADJUSTMENT  | -0.0244 CENTS/KWH            |
| 04/01/19 - 04/30/19 | SOLARSAVER ADJUSTMENT   | -0.0855 CENTS/KWH            |
| <b>05/01/19</b>     | <b>PURCHASED POWER ADJUSTMENT</b>   | <b>-0.0274 CENTS/KWH</b>     |
| <b>05/01/19</b>     | <b>SOLARSAVER ADJUSTMENT</b>  | <b>0.0000 CENTS/KWH</b>      |

~ 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**

