



November 28, 2018

FILED

2018 NOV 28 P 3:34

PUBLIC UTILITIES
COMMISSION

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

Dear Commissioners:

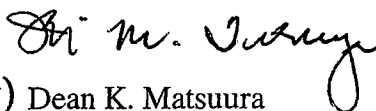
Subject: Hawaiian Electric Energy Cost Adjustment Factor for December 2018

Hawaiian Electric Company, Inc.'s ("Hawaiian Electric" or "Company") December 2018 energy cost adjustment factor is 5.553 cents per kilowatt-hour ("kWh"), an increase of 0.402 cents per kWh from last month. A residential customer consuming 500 kWh of electricity will be paying \$169.64, an increase of \$2.02 compared to rates effective November 1, 2018. The increase in the residential typical bill is due to an increase in the Energy Cost Adjustment factor (+\$2.01), and an increase in the Purchase Power Adjustment Clause rate (+\$0.01).

The Company's fuel composite cost of major energy increased 144.13 cents per million BTU to 1,618.68 cents per million BTU. The Company's composite cost of minor energy increased 15.534 cents per kWh to 56.233 cents per kWh. The composite cost of purchased energy decreased 0.602 cents per kWh to 9.820 cents per kWh.

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

Very truly yours,


(for) Dean K. Matsuura
Director, Regulatory Rate Proceedings

Attachments

cc: Division of Consumer Advocacy

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FACTOR

| | <u>Effective Dates</u> | | <u>Change</u> |
|---|------------------------|-----------------|---------------|
| | <u>11/01/18</u> | <u>12/01/18</u> | |
| Composite Cost Of Major Energy, ¢/mmbtu | 1,474.55 | 1,618.68 | 144.13 |
| Composite Cost Of Minor Energy, ¢/kwh | 40.700 | 56.233 | 15.534 |
| Composite Cost Of Purchased Energy, ¢/kWh | 10.422 | 9.820 | (0.602) |
| <u>Residential, Schedule "R"</u> | | | |
| Energy Cost Adjustment, ¢/kWh | 5.151 | 5.553 | 0.402 |
| <u>Others, Schedules "G,J,DS,P,F"</u> | | | |
| Energy Cost Adjustment, ¢/kWh | 5.151 | 5.553 | 0.402 |
| <u>Residential Customer with:</u> | | | |
| 500 kWh Consumption, \$/bill | 167.62 | 169.64 | 2.02 |
| 600 kWh Consumption, \$/bill | 199.40 | 201.82 | 2.42 |

Supersedes Sheet Effective: November 1, 2018

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING

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

| | | |
|------|--------------------------|--------------------|
| Line | | |
| 1 | Effective Date | - December 1, 2018 |
| 2 | Supersedes Factor | - November 1, 2018 |

GENERATION COMPONENT

| MAJOR ENERGY COMPONENT | | | | | MINOR ENERGY COMPONENT | | | | | |
|---|--|------------------|---------------------|-------------------|---|--------------|---------------------|-------------------|--------|----------|
| FUEL PRICES, ¢/mmbtu | | | | | Gen Cost Percent of Weighted Gen | | | | | |
| | | | | | <u>Fuel Type</u> | <u>¢/KWH</u> | <u>Minor Energy</u> | <u>Cost ¢/KWH</u> | | |
| 3 | Honolulu | 0.00 | | | 32a Airport DG | 31.82 | 0.89% | 0.2828 | | |
| 4 | Kahe | 1,618.77 | | | 32b CIP-Biodiesel | 0.00 | 0.00% | 0.0000 | | |
| 5 | Waiau-Steam | 1,618.45 | | | 32c CIP-Diesel | 0.00 | 0.00% | 0.0000 | | |
| 6 | (Future Use) | 0.00 | | | 32d SGS - Biodiesel | 64.36 | 45.23% | 29.1095 | | |
| 7 | (Future Use) | 0.00 | | | 32e SGS - ULSD | 21.70 | 2.51% | 0.5453 | | |
| 8 | (Future Use) | 0.00 | | | 32f Waiau-Diesel | 51.19 | 51.37% | 26.2959 | | |
| 9 | Other | 0 | | | 32g COMPOSITE COST OF MINOR ENERGY, ¢/kWh | | | | 56.233 | |
| BTU MIX, % | | | | | 33 % Input to System kWh Mix | | | | | 0.62 |
| 10 | Honolulu | 0.00 | | | 34 WTD COMP MINOR ENERGY COST, ¢/kWh (Lines 32d x 33) | | | | | 0.34865 |
| 11 | Kahe | 72.86 | | | 35 2017 TY Loss Factor | | | | | 1.0490 |
| 12 | Waiau-Steam | 27.14 | | | 36 WTD COMP MINOR ENERGY COST, ¢/kWh (Line 34 x 35) | | | | | 0.36573 |
| 13 | (Future Use) | 0.00 | | | 37 BASE MINOR ENERGY COMP COST | | | | | 35.2185 |
| 14 | (Future Use) | 0.00 | | | 38 Base % Input to System kWh Mix | | | | | 0.5117 |
| 15 | (Future Use) | 0.00 | | | 39 WTD BASE MINOR ENERGY COST, ¢/kWh (Line 37 x 38) | | | | | 0.18021 |
| 16 | Other | 0.00 | | | 40 2017 TY Loss Factor | | | | | 1.0490 |
| | | 100.00 | | | 41 WTD COMP MINOR ENERGY COST, ¢/kWh (Line 39 x 40) | | | | | 0.18904 |
| 17 | COMPOSITE COST OF GENERATION, MAJOR ENERGY ¢/mmbtu | 1,618.68 | | | 42 Cost Less Base (Line 36 - 41) | | | | | 0.176694 |
| 18 | % Input to system kWh Mix | 44.40 | | | 43 Revenue Tax Adjustment (1 / (1-0.08885)) | | | | | 1.097514 |
| EFFICIENCY FACTOR, mmbtu/kWh | | | | | 44 MINOR ENERGY FACTOR, ¢/kWh (Line 42 x 43) | | | | | 0.19392 |
| | (A) | (B) | (C) | (D) | | | | | | |
| | | Eff Factor | Percent of | Weighted | | | | | | |
| | <u>Fuel Type</u> | <u>mmbtu/kWh</u> | <u>Centrl Stn +</u> | <u>Eff Factor</u> | | | | | | |
| | | | <u>Other</u> | | | | | | | |
| 19 | LSFO | 0.011165 | 100.00 | 0.011165 | | | | | | |
| 20 | (Future Use) | 0.000000 | 0.00 | 0.000000 | | | | | | |
| 21 | (Future Use) | 0.000000 | 0.00 | 0.000000 | | | | | | |
| 22 | Other | 0.011165 | 0.00 | 0.000000 | | | | | | |
| (Lines 19 through 22): Col(B) x Col(C) = Col(D) | | | | | | | | | | |
| 23 | Weighted Efficiency Factor, mmbtu/kWh | | | 0.011165 | | | | | | |
| [lines 19(D) + 20(D) + 21(D) + 22(D)] | | | | | | | | | | |
| 24 | WEIGHTED MAJOR ENERGY COST, ¢/kWh Sales (lines 17 x 18 x 23) | | | 8.02422 | | | | | | |
| 25 | BASE MAJOR ENERGY COST, ¢/mmbtu | | | 909.59 | | | | | | |
| 26 | Base % Input to System kWh Mix | | | 45.4505 | | | | | | |
| 27 | Efficiency Factor, Mbtu/kWh | | | 0.011165 | | | | | | |
| 28 | WEIGHTED BASE MAJOR ENERGY COST ¢/KWH Sales (lines 25 x 26 x 27) | | | 4.61576 | | | | | | |
| 29 | Cost Less Base (Line 24 - 28) | | | 3.40846 | | | | | | |
| 30 | Revenue Tax Adjustment (1 / (1-0.08885)) | | | 1.097514 | | | | | | |
| 31 | MAJOR ENERGY GENERATION FACTOR, ¢/KWH (Line 29 x 30) | | | 3.74083 | | | | | | |

| SUMMARY OF TOTAL GENERATION FACTOR, ¢/kWh | |
|---|---------|
| 45 MAJOR ENERGY (line 31) | 3.74083 |
| 46 MINOR ENERGY (line 44) | 0.19392 |
| 47 TOTAL GENERATION FACTOR, ¢/KWH (lines 45 + 46) | 3.93475 |

Hawaiian Electric Company, Inc.
ENERGY COST ADJUSTMENT FILING

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

Line

| | | |
|---|--------------------------|--------------------|
| 1 | Effective Date | - December 1, 2018 |
| 2 | Supersedes Factor | - November 1, 2018 |

| <u>Line</u> | <u>PURCHASED ENERGY COMPONENT</u> | | |
|-------------|--|--|----------|
| | PURCHASED ENERGY PRICE - ¢/KWH | | |
| 48 | PAR Hawaii | - On Peak | 16.347 |
| 49 | PAR Hawaii | - Off Peak | 15.651 |
| 50 | HRRV | - On Peak | 17.19 |
| 51 | | - Off Peak | 16.70 |
| 52 | HRRV | - On Peak (excess) | 10.95 |
| 53 | | - Off Peak (excess) | 6.57 |
| 54 | IES Downstream | - On Peak | 16.347 |
| 55 | IES Downstream | - Off Peak | 15.651 |
| 56 | Kalaeloa | | 13.203 |
| 57 | AES-HI | | 3.285 |
| 58 | Kawailoa | | 22.064 |
| 59 | Kahuku Wind | | 20.704 |
| 60 | Waianae Solar PV | | 14.500 |
| 61 | As Available I | | 22.058 |
| 62 | FIT | | 19.180 |
| | PURCHASED ENERGY KWH MIX, % | | |
| 63 | PAR Hawaii | - On Peak | 0.22 |
| 64 | PAR Hawaii | - Off Peak | 0.16 |
| 65 | HRRV | - On Peak | 7.09 |
| 66 | | - Off Peak | 2.43 |
| 67 | HRRV | - On Peak (excess) | 0.00 |
| 68 | | - Off Peak (excess) | 2.20 |
| 69 | IES Downstream | - On Peak | 0.01 |
| 70 | IES Downstream | - Off Peak | 0.01 |
| 71 | Kalaeloa | | 36.71 |
| 72 | AES-HI | | 42.42 |
| 73 | Kawailoa | | 2.94 |
| 74 | Kahuku Wind | | 2.52 |
| 75 | Waianae Solar PV | | 1.44 |
| 76 | As Available I | | 0.42 |
| 77 | FIT | | 1.43 |
| | | | 100.00 |
| 78 | COMPOSITE COST OF PURCHASED ENERGY, ¢/KWH | | 9.820 |
| 79 | % Input to System kWh Mix | | 54.98 |
| 80 | WTD CMP PURCH ENRGY COST, ¢/KWH (lines 78 x 79) | | 5.39904 |
| 81 | 2017 TY Loss Factor | | 1.0490 |
| 82 | WTD CMP PURCH ENRGY COST, ¢/KWH (lines 80 x 81) | | 5.66359 |
| 83 | BASE PURCHASED ENERGY COMPOSITE COST, ¢/KWH | | 7.762 |
| 84 | Base % Input to System kWh Mix | | 54.0378 |
| 85 | WEIGHTED BASE PURCHASED ENERGY COST, ¢/KWH SALES (lines 83 x 84) | | 4.19441 |
| 86 | 2017 TY Loss Factor | | 1.049 |
| 87 | WTD CMP PURCH ENRGY COST, ¢/KWH sales (lines 85 x 86) | | 4.39994 |
| 88 | Cost Less Base (Line 82 - 87) | | 1.26366 |
| 89 | Revenue Tax Adjustment (1 / (1-0.08885)) | | 1.097514 |
| 90 | PURCHASED ENERGY FACTOR, ¢/KWH (lines 88 x 89) | | 1.38688 |
| | <u>Line SYSTEM COMPOSITE</u> | | |
| | 91 | GEN AND PURCHASED ENERGY FACTOR, ¢/kWh (lines 47 + 90) | 5.32163 |
| | 92 | (Future Use) Adjustment, ¢/kWh | 0.000 |
| | 93 | ECA Reconciliation Adjustment | 0.231 |
| | 94 | ECA FACTOR, ¢/kWh (lines 91 + 92 + 93) | 5.553 |

Hawaiian Electric Company, Inc.
FUEL OIL INVENTORY PRICES FOR 12-01-18

| | <u>Honolulu</u> | <u>Kahe</u> | <u>Waiau</u> |
|---|-----------------|----------------------|-------------------|
| Average Low Sulfur Fuel Oil, ¢/Mbtu | 1,618.45 | 1,618.45 | 1,618.45 |
| Kahe Fuel Additive, ¢/Mbtu | - | 0.32 | - |
| Honolulu Trucking Cost, ¢/Mbtu | - | - | - |
| | <hr/> <hr/> | | |
| Low Sulfur Fuel Oil Prices Used For Filing, ¢/Mbtu | 1,618.45 | 1,618.77 | 1,618.45 |
| | <hr/> <hr/> | | |
| | <u>Waiau</u> | <u>CIP Biodiesel</u> | <u>CIP Diesel</u> |
| Average Diesel / Biodiesel Oil, ¢/Mbtu | 1,807.56 | 2,799.64 | 1069.38 |
| Thruput Charges, ¢/Mbtu | - | - | 0 |
| | <hr/> <hr/> | | |
| Diesel / Biodiesel Oil Prices Used for Filing, ¢/Mbtu | 1,807.56 | 2,799.64 | 1,069.38 |
| | <hr/> <hr/> | | |
| | <u>Honolulu</u> | <u>Kahe</u> | <u>Waiau</u> |
| Average Low Sulfur Fuel Oil, \$/bbl | 101.89 | 101.89 | 101.89 |
| Kahe Fuel Additive, \$/bbl | - | 0.02 | - |
| Honolulu Trucking Cost, \$/bbl | - | - | - |
| | <hr/> <hr/> | | |
| Low Sulfur Fuel Oil Prices Used For Filing, \$/bbl | 101.89 | 101.91 | 101.89 |
| | <hr/> <hr/> | | |
| | <u>Waiau</u> | <u>CIP Biodiesel</u> | <u>CIP Diesel</u> |
| Average Diesel / Biodiesel Oil, \$/bbl | 103.60 | 146.15 | 61.23 |
| Thruput Charges, ¢/Mbtu | - | - | - |
| | <hr/> <hr/> | | |
| Diesel / Biodiesel Oil Prices Used for Filing, \$/bbl | 103.60 | 146.15 | 61.23 |
| | <hr/> <hr/> | | |
| Distributed Generation Fuel Prices Used for Filing, ¢/kWh | | | 61.830 |

FOAC December 2018

| <u>LSFO</u> | <u>BARRELS</u> | <u>MBTU</u> | <u>AMOUNT</u> | <u>AVE \$/MBTU</u> |
|-------------------------------|-----------------------|--------------------|----------------------|---------------------------|
| Per FOAC run | 584,649 | 3,680,520.75 | 59,567,242.91 | 16.184461 |
| Additional | - | - | - | - |
| Forecast Amt | 584,649 | 3,680,520.75 | 59,567,242.91 | 16.184461 |
| | - | 6.20 | - | ADD'L BBL |
| | 3,680,521 | 584,649 | 6.2953 | MBTU / BBL |
| | 59,567,243 | 584,649 | 101.89 | DOLLARS / BBL |
| <u>WAIKU DIESEL</u> | 38,865 | 222,762.11 | 4,026,564.20 | 18.075624 |
| | 4,026,564 | 38,865 | 103.60 | DOLLARS / BBL |
| <u>CIP BIODIESEL</u> | 3,777 | 19,716.56 | 551,992.94 | 27.996406 |
| | 551,993 | 3,777 | 146.15 | DOLLARS / BBL |
| <u>CIP DIESEL</u> | 31,428 | 179,939.16 | 1,924,234.79 | 10.693808 |
| | 1,924,235 | 31,428 | 61.23 | DOLLARS / BBL |
| KAHE FUEL ADDITIVE * | | | | |
| Additional | - | - | - | 0.003194 |
| Forecast Amt | - | - | - | 0.003194 |
| \$ / BBL = | | - | 0.02 | DOLLARS / BBL |
| HONOLULU TRUCKING COST | | | | |
| Per FOAC run | - | - | - | - |
| Additional | - | - | - | - |
| Forecast Amt | - | - | - | - |
| \$ / BBL = | - | - | - | DOLLARS / BBL |

Hawaiian Electric Company, Inc.

CONTRACT PRICES EFFECTIVE 11-1-18

| <u>TYPE OF OIL BURNED</u> | <u>\$/BBL</u> | <u>¢/MBTU</u> |
|--------------------------------|---------------|---------------|
| LOW SULFUR FUEL OIL | | |
| Tax * | 5.8564 | 94.47 |
| Ocean Transportation | 0.0000 | 0.00 |
| Land Transportation | 0.0000 | 0.00 |
| Storage | 0.0000 | 0.00 |
| Wharfage | 0.0000 | 0.00 |
| DIESEL | | |
| Tax * | 6.7661 | 115.47 |
| Ocean Transportation | 0.0000 | 0.00 |
| Land Transportation | 0.0000 | 0.00 |
| Storage | 0.0000 | 0.00 |
| Wharfage | 0.0000 | 0.00 |
| ULTRA LOW SULFUR DIESEL | | |
| Tax * | 7.1768 | 125.24 |
| Ocean Transportation | 0.0000 | 0.00 |
| Land Transportation | 0.0000 | 0.00 |
| Storage | 0.0000 | 0.00 |
| Wharfage | 0.0000 | 0.00 |
| BIODIESEL | | |
| Tax * | 7.7578 | 147.82 |
| Ocean Transportation | 0.0000 | 0.00 |
| Land Transportation | 0.0000 | 0.00 |
| Storage | 0.0000 | 0.00 |
| Wharfage | 0.0000 | 0.00 |

* Tax includes HGET, Hawaii Use Tax, Liquid Fuel Tax, LUST, Federal Oil Spill Recovery Fee, and Environmental Response, Energy and FS Tax.

Note: Since these components are not accounted for separately in inventory, contract prices for the current month are being provided. Contract prices are considered accurate pending actual delivery of the fuel.

HAWAIIAN ELECTRIC COMPANY, INC.

DETERMINATION OF DISTRIBUTED GENERATION EXPENSE

| Line No. | | | | | |
|-------------------------|------------|--|----|----------------------------|----------------|
| L1 | | Estimated Distributed Generation Fuel Cost (\$/mbtu) | \$ | | 62.64 |
| L2 | | Estimated Distributed Generation Fuel Transport Cost (\$/mbtu) | | | \$0.00 |
| L3 = L1 + L2 | | Estimated Total Fuel and Transportation Cost (\$/mbtu) | \$ | | 62.64 |
| L4 | Sum of (B) | Estimated Mbtu Generation for month (December 2018) | | | 25,567 |
| L5 = L3 x L4 | Sum of (C) | Estimated Distributed Generation Total Fuel Cost (\$) | | | \$1,601,441 |
| L6 | Sum of (D) | Estimated Distributed Generation kWh Produced (December 2 | | | 2,590,049 |
| L7 = (L5 ÷ L6) x 100 | | Distributed Generation Fuel Prices Used for Filing, (¢/kWh) | | | 61.8300 |
| | | Airport DG Biodiesel | | Schofield Biodiesel | |
| (A) | \$ | 28.33 | \$ | 65.68 | \$ |
| (B) | | 467 | | 23,779 | |
| (B1) | | 89 | | 4,531 | |
| (C) = (A) x (B) | | \$13,235 | | \$1,561,773 | \$26,434 |
| (D) | | 41,600 | | 2,426,643 | 121,806 |
| (E) = ((C) ÷ (D)) x 100 | | 31.810 | | 64.360 | 21.700 |

Fuel Prices for Avoided Cost Filing, Page 2 of 9 (¢/kWh)

Hawaiian Electric Company, Inc.
ECA RECONCILIATION ADJUSTMENT
December 2018

| | | | |
|----|---|----|---------------------|
| 1. | Amount to be collected | \$ | 3,451,000 |
| 2. | Monthly Amount (Line 1 x 1/3) | \$ | 1,150,333 |
| 3. | Revenue Tax Divisor | | 0.91115 |
| 4. | Total (Line 2 / Line 3) | \$ | 1,262,507 |
| 5. | Estimated MWh Sales (DECEMBER 2018) | | 546,500 |
| 6. | ECA Reconciliation Adjustment, ¢/kWh (Line 4 ÷ Line 5) | | <u><u>0.231</u></u> |

HAWAIIAN ELECTRIC COMPANY, INC.
2018 Cumulative Reconciliation Balance

| | (1) | | (2) | (3) | (4) | (5) | (6) |
|--------------|-------------------------------|------------|--------------------------------|------------------------------|-----------------------|-----------------------|-------------------------------------|
| <u>Month</u> | <u>YTD FOA Reconciliation</u> | <u>Qtr</u> | <u>FOA Rec Adjust Variance</u> | <u>FOA Rec Less Variance</u> | <u>Try to Collect</u> | <u>Actual Collect</u> | <u>Month-end Cumulative Balance</u> |
| November '17 | (988,400) | (3) | 140,027 | (1,128,427) | 329,467 | 323,129 | (663,027) |
| December | | | | | 329,467 | 305,191 | (357,836) |
| January '18 | | | | | 329,467 | 320,330 | (37,506) |
| February | (6,640,300) | (4) | (28,376) | (6,611,924) | 2,213,433 | 2,088,724 | (4,560,707) |
| March | | | | | 2,213,433 | 2,155,118 | (2,405,589) |
| April | | | | | 2,213,433 | 2,229,374 | (176,215) |
| May | (7,499,100) | (1) | (192,161) | (7,306,939) | 2,499,700 | 2,387,495 | (5,095,658) |
| June | | | | | 2,499,700 | 2,571,358 | (2,524,300) |
| July | | | | | 2,499,700 | 2,540,846 | 16,546 |
| August | (417,100) | (2) | (24,606) | (392,494) | 139,033 | 142,637 | (233,311) |
| September | | | | | 139,033 | 140,763 | (92,548) |
| October | | | | | 139,033 | 142,562 | 50,014 |
| November | (3,451,000) | (3) | 46,479 | (3,497,479) | 1,150,333 | | |
| December | | | | | 1,150,333 | | |

NOTES:

- Col(1): Quarterly FOA reconciliation amounts. (Refer to Attachment 4)
A positive number is an over-collection. A negative number is an under-collection.
- Col(2): FOA reconciliation adjustment variance accumulated during the last three months, starting with the fourth prior month; the difference between the estimated recorded sales used to derive the \$/kwh adjustment and the actual recorded sales.
(Col(5)-Col(4))
- Col(3): FOA reconciliation generated in the current quarter. The YTD FOA reconciliation difference minus the adjustment variance. Col(1)-Col(2)
- Col(4): Amount that the FOA reconciliation adjustment is trying to collect. (Col(1) * 1/3)
- Col(5): Actual collected amount. (recorded sales * \$/kwh adjustment/1.09751)
- Col(6): Cumulative balance of the FOA reconciliation (Previous balance + Col(3) + Col(5))

Hawaiian Electric Company, Inc.
FUEL OIL ADJUSTMENT FACTOR DATA

| <u>EFFECTIVE DATE</u> | FUEL FACTOR | RESIDENTIAL BILL (\$) | |
|-----------------------|--|-----------------------|------------------|
| | CENTS / KWH <u>RESIDENTIAL & COMMERCIAL</u> | <u>@ 500 KWH</u> | <u>@ 600 KWH</u> |
| January 1, 2016 | -3.748 | 129.34 | 153.97 |
| February 1, 2016 | -4.637 | 127.47 | 151.74 |
| March 1, 2016 | -5.498 | 123.06 | 146.43 |
| April 1, 2016 | -5.393 | 123.34 | 146.76 |
| May 1, 2016 | -5.527 | 124.85 | 148.58 |
| June 1, 2016 | -4.651 | 129.34 | 153.95 |
| July 1, 2016 | -3.854 | 133.43 | 158.90 |
| August 1, 2016 | -3.176 | 134.73 | 160.45 |
| September 1, 2016 | -3.345 | 133.98 | 159.57 |
| October 1, 2016 | -3.964 | 130.77 | 155.71 |
| November 1, 2016 | -3.848 | 131.04 | 156.03 |
| December 1, 2016 | -3.578 | 132.32 | 157.56 |
| January 1, 2017 | -2.091 | 135.39 | 161.22 |
| February 1, 2017 | -1.863 | 142.81 | 170.13 |
| March 1, 2017 | -1.730 | 143.26 | 170.66 |
| April 1, 2017 | -1.608 | 143.43 | 170.86 |
| May 1, 2017 | -2.347 | 140.42 | 167.26 |
| June 1, 2017 | -2.215 | 141.89 | 169.01 |
| July 1, 2017 | -2.003 | 141.79 | 168.91 |
| August 1, 2017 | -2.180 | 140.14 | 166.92 |
| September 1, 2017 | -2.288 | 139.74 | 166.45 |
| October 1, 2017 | -2.216 | 139.91 | 166.65 |
| November 1, 2017 | -2.109 | 139.52 | 166.18 |
| December 1, 2017 | -1.629 | 141.82 | 168.96 |
| January 1, 2018 | -1.145 | 144.26 | 171.84 |
| February 1, 2018 | -0.261 | 150.24 | 179.01 |
| March 1, 2018 | -0.389 | 152.06 | 181.14 |
| April 1, 2018 | -0.483 | 152.06 | 181.14 |
| May 1, 2018 | 0.923 | 149.05 | 177.53 |
| June 1, 2018 | 1.529 | 154.86 | 184.50 |
| July 1, 2018 | 1.204 | 158.27 | 188.61 |
| August 1, 2018 | 0.802 | 158.79 | 189.22 |
| September 1, 2018 | 4.201 | 169.09 | 201.16 |
| October 1, 2018 | 4.008 | 168.13 | 200.01 |
| November 1, 2018 | 5.151 | 167.62 | 199.40 |
| December 1, 2018 | 5.553 | 169.64 | 201.82 |

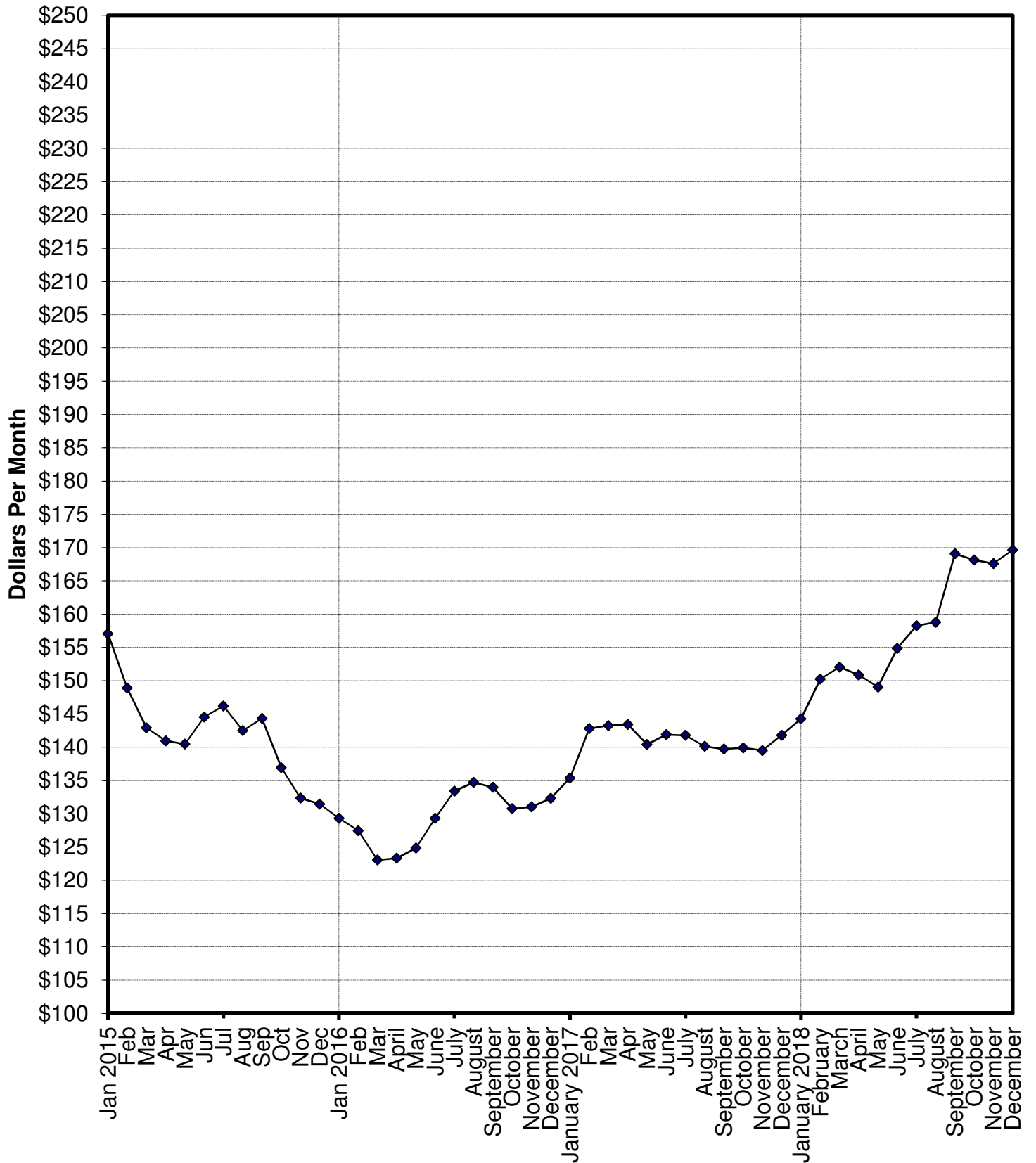
Hawaiian Electric Company, Inc.
RESIDENTIAL SURCHARGE DATA

| EFFECTIVE DATE | DESCRIPTION OF SURCHARGE | RATE |
|-------------------------|--|-------------------------------|
| 09/01/12 - 8/31/2018 | FINAL RATE INCREASE (TY2011) 3.39% EFFECTIVE 09/01/12, DOCKET NO. 2010-0080 | |
| 2/1/2013 | REFUND OF 2011 INTERIM RATE INCREASE | 0.00 PERCENT ON BASE |
| 01/1/2016 - 01/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 2.8642 CENTS/KWH |
| 12/17/2015 - 02/29/2016 | RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION | 0.0204 CENTS/KWH |
| 01/01/2016 - 06/30/2016 | GREEN INFRASTRUCTURE FEE | 1.3000 DOLLARS/MONTH |
| 02/1/2016 - 02/29/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.3809 CENTS/KWH |
| 03/1/2016 - 03/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.3578 CENTS/KWH |
| 3/1/2016 - 05/14/2016 | RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION | 0.0204 CENTS/KWH |
| 04/1/2016 - 04/30/2016 | SOLAR SAVER ADJUSTMENT | -0.1223 CENTS/KWH |
| 04/1/2016 - 04/30/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.3834 CENTS/KWH |
| 4/1/2016 - 3/31/2017 | RESIDENTIAL DSM ADJUSTMENT | 0.0811 CENTS/KWH |
| 5/1/2016 - 3/31/2017 | SOLAR SAVER ADJUSTMENT | 0.00 CENTS/KWH |
| 05/1/2016 - 05/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.6989 CENTS/KWH |
| 5/15/2016 | RENEWABLE ENERGY INFRASTRUCTURE COST RECOVERY PROVISION | 0.0000 CENTS/KWH |
| 06/1/2016 - 06/30/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.7373 CENTS/KWH |
| 6/1/2016 - 5/31/2017 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT | 2.1098 CENTS/KWH |
| 07/1/2016 - 07/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.6808 CENTS/KWH |
| 7/1/2016 - 12/31/2016 | GREEN INFRASTRUCTURE FEE | 1.1300 DOLLARS/MONTH |
| 7/1/2016 - 6/30/2017 | RESID. PBF SURCHARGE ADJUSTMENT | 0.5865 CENTS/KWH |
| 08/1/2016 - 08/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.2621 CENTS/KWH |
| 09/1/2016 - 09/30/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.2827 CENTS/KWH |
| 10/1/2016 - 10/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.2576 CENTS/KWH |
| 11/1/2016 - 11/30/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.1959 CENTS/KWH |
| 12/1/2016 - 12/31/2016 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.1815 CENTS/KWH |
| 01/1/2017 - 01/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 2.2812 CENTS/KWH |
| 1/01/2017 - 06/30/2017 | GREEN INFRASTRUCTURE FEE | 1.2700 DOLLARS/MONTH |
| 02/1/2017 - 02/28/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.5384 CENTS/KWH |
| 03/1/2017 - 03/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4937 CENTS/KWH |
| 04/1/2017 - 04/30/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.5276 CENTS/KWH |
| 4/1/2017 - 02/15/2018 | RESIDENTIAL DSM ADJUSTMENT | 0.0774 CENTS/KWH |
| 4/1/2017 - 4/30/2017 | SOLAR SAVER ADJUSTMENT | -0.1187 CENTS/KWH |
| 5/1/2017-3/31/2018 | SOLAR SAVER ADJUSTMENT | 0.0000 CENTS/KWH |
| 05/1/2017 - 05/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.5484 CENTS/KWH |
| 06/1/2017 - 06/30/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.5894 CENTS/KWH |
| 6/1/2017 - 2/15/2018 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT | 2.2291 CENTS/KWH |
| 7/1/2017 - 12/31/2017 | GREEN INFRASTRUCTURE FEE | 1.1800 DOLLARS/MONTH |
| 7/1/2017 - 7/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.5388 CENTS/KWH |
| 7/1/2017 - 6/30/2018 | RESID. PBF SURCHARGE ADJUSTMENT | 0.4244 CENTS/KWH |
| 8/1/2017 - 8/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.3840 CENTS/KWH |
| 9/1/2017 - 9/30/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4128 CENTS/KWH |
| 10/1/2017 - 10/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.3748 CENTS/KWH |
| 11/1/2017 - 11/30/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.1890 CENTS/KWH |
| 12/1/2017 - 12/31/2017 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.1709 CENTS/KWH |
| 1/1/2018 - 1/31/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.1422 CENTS/KWH |
| 1/1/2018 - 6/30/2018 | GREEN INFRASTRUCTURE FEE | 1.3400 DOLLARS/MONTH |
| 2/1/2018 - 2/28/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4536 CENTS/KWH |
| 2/16/2018 - 04/12/018 | INTERIM RATE INCREASE 2017 TEST YEAR | 8.8700 PERCENT ON BASE |
| 2/16/2018 - 5/31/2018 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT | 0.7116 CENTS/KWH |
| 2/16/2018 - 3/31/2018 | RESIDENTIAL DSM ADJUSTMENT | 0.0000 CENTS/KWH |
| 3/1/2018 - 3/31/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4266 CENTS/KWH |
| 4/1/2018 - 4/30/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4413 CENTS/KWH |
| 4/1/2018 - 4/30/2018 | SOLAR SAVER ADJUSTMENT | -0.1063 CENTS/KWH |
| 4/1/2018 - 7/31/2018 | RESIDENTIAL DSM ADJUSTMENT | -0.0513 CENTS/KWH |
| 4/13/2018 - 8/31/2018 | INTERIM RATE INCREASE 2017 TEST YEAR | 5.8900 PERCENT ON BASE |
| 5/1/2018 | SOLAR SAVER ADJUSTMENT | 0.0000 CENTS/KWH |
| 5/1/2018 - 5/31/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 2.2718 CENTS/KWH |
| 6/1/2018 - 6/30/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 2.5042 CENTS/KWH |
| 6/1/2018 | REVENUE BALANCING ACCOUNT RATE ADJUSTMENT | 1.0350 CENTS/KWH |
| 7/1/2018 | GREEN INFRASTRUCTURE FEE | 1.2100 DOLLARS/MONTH |
| 7/1/2018 | RESID. PBF SURCHARGE ADJUSTMENT | 0.4658 CENTS/KWH |
| 7/1/2018 - 7/31/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.4959 CENTS/KWH |
| 8/1/2018 - 8/31/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.9557 CENTS/KWH |
| 8/1/2018 | RESIDENTIAL DSM ADJUSTMENT | -0.0064 CENTS/KWH |
| 9/1/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 4.3234 CENTS/KWH |
| 9/1/2018 | INTERIM RATE INCREASE 2017 TEST YEAR | 0.0000 PERCENT ON BASE |
| 9/1/2018 | FINAL RATE INCREASE (TY2017) -0.039% EFFECTIVE 09/01/18, DOCKET NO. 2016-0328 | |
| 10/1/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 4.3252 CENTS/KWH |
| 11/1/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.0539 CENTS/KWH |
| 11/1/2018 | RESIDENTIAL DSM ADJUSTMENT | 0.0203 CENTS/KWH |
| 12/1/2018 | PURCHASED POWER ADJUSTMENT CLAUSE | 3.0553 CENTS/KWH |

~ Surcharges currently in effect are in bold.

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

Hawaiian Electric Company, Inc. Residential Bill at 500 KWH/Month Consumption



Hawaiian Electric Company, Inc.
CALCULATIONS OF THE AVERAGE RESIDENTIAL CUSTOMER BILL

| | Rate | | | Charge (\$) at 500 kWh | | |
|---|-----------------|-----------|-----------|------------------------|-----------|------------|
| | | 11/1/2018 | 12/1/2018 | 11/1/2018 | 12/1/2018 | Difference |
| Base Rates | effective date: | 09/01/18 | 09/01/18 | | | |
| Base Fuel/Energy Charge | ¢/kWh | 10.2278 | 10.2278 | 51.14 | 51.14 | 0.00 |
| Non-fuel Fuel Energy Charge | | | | | | |
| First 350 kWh per month | ¢/kWh | 10.6812 | 10.6812 | 37.38 | 37.38 | 0.00 |
| Next 850 kWh per month | ¢/kWh | 11.8347 | 11.8347 | 17.75 | 17.75 | 0.00 |
| Customer Charge | \$ | 11.50 | 11.50 | 11.50 | 11.50 | 0.00 |
| Total Base Charges | | | | 117.77 | 117.77 | 0.00 |
| Purchase Power Adjustment | ¢/kWh | 3.0539 | 3.0553 | 15.27 | 15.28 | 0.01 |
| RBA Rate Adjustment | ¢/kWh | 1.0350 | 1.0350 | 5.18 | 5.18 | 0.00 |
| DSM Adjustment | ¢/kWh | 0.0203 | 0.0203 | 0.10 | 0.10 | 0.00 |
| Interim Rate Increase (TY 2017) | % on base | 0.000% | 0.000% | 0.00 | 0.00 | 0.00 |
| Refund of 2011 Interim | % on base | 0.000% | 0.000% | 0.00 | 0.00 | 0.00 |
| PBF Surcharge | ¢/kWh | 0.4658 | 0.4658 | 2.33 | 2.33 | 0.00 |
| Renewable Energy Infrastructure Cost | | | | | | |
| Recovery Provision | ¢/kWh | - | - | 0.00 | 0.00 | 0.00 |
| SolarSaver Adjustment | ¢/kWh | 0.0000 | 0.0000 | 0.00 | 0.00 | 0.00 |
| Energy Cost Adjustment | ¢/kWh | 5.151 | 5.553 | 25.76 | 27.77 | 2.01 |
| Green Infrastructure Fee | \$ | 1.21 | 1.21 | 1.21 | 1.21 | 0.00 |
| Avg Residential Bill at 500 kWh | | | | 167.62 | 169.64 | |

| | |
|-------------------------|-------|
| Increase / (Decrease -) | 2.02 |
| % Change | 1.21% |

| | Rate | | | Charge (\$) at 600 kWh | | |
|---|-----------------|-----------|-----------|------------------------|-----------|------------|
| | | 11/1/2018 | 12/1/2018 | 11/1/2018 | 12/1/2018 | Difference |
| Base Rates | effective date: | 09/01/18 | 09/01/18 | | | |
| Base Fuel/Energy Charge | ¢/kWh | 10.2278 | 10.2278 | 61.37 | 61.37 | 0.00 |
| Non-fuel Fuel Energy Charge | | | | | | |
| First 350 kWh per month | ¢/kWh | 10.6812 | 10.6812 | 37.38 | 37.38 | 0.00 |
| Next 850 kWh per month | ¢/kWh | 11.8347 | 11.8347 | 29.59 | 29.59 | 0.00 |
| Customer Charge | \$ | 11.50 | 11.50 | 11.50 | 11.50 | 0.00 |
| Total Base Charges | | | | 139.84 | 139.84 | 0.00 |
| Purchase Power Adjustment | ¢/kWh | 3.0539 | 3.0553 | 18.32 | 18.33 | 0.01 |
| RBA Rate Adjustment | ¢/kWh | 1.0350 | 1.0350 | 6.21 | 6.21 | 0.00 |
| DSM Adjustment | ¢/kWh | 0.0203 | 0.0203 | 0.12 | 0.12 | 0.00 |
| Interim Rate Increase (TY 2017) | % on base | 0.000% | 0.000% | 0.00 | 0.00 | 0.00 |
| Refund of 2011 Interim | % on base | 0.000% | 0.000% | 0.00 | 0.00 | 0.00 |
| PBF Surcharge | ¢/kWh | 0.4658 | 0.4658 | 2.79 | 2.79 | 0.00 |
| Renewable Energy Infrastructure Cost | | | | | | |
| Recovery Provision | ¢/kWh | - | - | 0.00 | 0.00 | 0.00 |
| SolarSaver Adjustment | ¢/kWh | 0.0000 | 0.0000 | 0.00 | 0.00 | 0.00 |
| Energy Cost Adjustment | ¢/kWh | 5.151 | 5.553 | 30.91 | 33.32 | 2.41 |
| Green Infrastructure Fee | \$ | 1.21 | 1.21 | 1.21 | 1.21 | 0.00 |
| Avg Residential Bill at 600 kWh | | | | 199.40 | 201.82 | |

| | |
|-------------------------|-------|
| Increase / (Decrease -) | 2.42 |
| % Change | 1.21% |