

## Typical Residential Electricity Use and Cost



**How to determine the cost of running appliances:**

**Wattage x hours used ÷ 1,000 = kilowatt hours (kWh)**

**Kilowatt hours x cost per kilowatt hour = cost to operate (\$)**

**(note: there are 720 hours in a 30 day month)**

| Appliance by Type  | Typical Wattage | Monthly Hours of Use | Monthly kWh | Approximate Cost to Operate per Month*** |
|--|-----------------|----------------------|-------------|--|
| Air conditioner - Room**   | 1000 - 1400     | 60 - 180             | 60 - 252    | \$5.49 - \$23.05                         |
| Air purifier   | 30 - 100        | 240 - 480            | 7 - 48      | \$0.66 - \$4.39                          |
| Blue-Ray disc player (ENERGY STAR)*  | 13              | 30 - 150             | 1 - 2       | \$0.06 - \$0.18                          |
| Compact Disc (CD) player*  | 13              | 30 - 150             | 1 - 2       | \$0.06 - \$0.18                          |
| Clothes dryer, standard  | 3400 - 5000     | 8 - 16               | 27 - 80     | \$2.49 - \$7.32                          |
| Clothes dryer, standard - SINGLE LOAD  | 3400 - 5000     | 0.3 - 0.5            | 1 - 3       | \$0.10 - \$0.23                          |
| Clothes washer, excluding water heating energy use & cost of water (ENERGY STAR) | 250             | 8 - 16               | 2 - 4       | \$0.18 - \$0.37                          |
| Clothes washer, including water heating energy use                               | 425 - 1000      | 8 - 16               | 3 - 16      | \$0.31 - \$1.46                          |
| Clothes washer, including water heating energy use & cost of water - SINGLE LOAD | 425 - 1000      | 0.3 - 0.5            | 0 - 1       | \$0.35 - \$0.38                          |
| Coffee maker   | 1100 - 1500     | 9 - 60               | 10 - 90     | \$0.91 - \$8.23                          |
| Computer monitor *   | 20 - 150        | 30 - 240             | 1 - 36      | \$0.05 - \$3.29                          |
| Computer, desktop *  | 40 - 120        | 30 - 480             | 1 - 58      | \$0.11 - \$5.27                          |
| Computer, laptop *   | 12 - 50         | 30 - 480             | 1 - 24      | \$0.08 - \$2.20                          |
| Copier (small)*  | 300 - 500       | 1 - 10               | 1 - 5       | \$0.08 - \$0.46                          |
| Copier (large)*  | 1400 - 1600     | 1 - 10               | 2 - 16      | \$0.18 - \$1.46                          |
| Dehumidifier (30 - 70 pint capacity)**   | 350 - 720       | 30 - 120             | 11 - 86     | \$0.96 - \$7.90                          |
| Dehumidifier (100 -180 pint capacity)**  | 1000 - 1350     | 30 - 120             | 30 - 162    | \$2.74 - \$14.82                         |
| Digital Video Disc (DVD) player (ENERGY STAR)*                                   | 17 - 25         | 30 - 150             | 1 - 4       | \$0.05 - \$0.34                          |
| Dishwasher (ENERGY STAR)*  | 633             | 30 - 60              | 19 - 38     | \$1.74 - \$3.47                          |
| Dishwasher (non ENERGY STAR)*  | 822 - 1800      | 30 - 60              | 25 - 108    | \$2.26 - \$9.88                          |
| Electric blanket   | 100             | 12 - 120             | 1 - 12      | \$0.11 - \$1.10                          |
| Fan - Ceiling-mounted  | 65 - 175        | 30 - 330             | 2 - 58      | \$0.18 - \$5.28                          |
| Fan - Furnace fan, efficient variable speed motor (intermittent)**               | 100 - 300       | 150 - 200            | 15 - 60     | \$1.37 - \$5.49                          |
| Fan - Furnace fan, standard motor (continuous)                                   | 500             | 720                  | 360         | \$32.93                                  |
| Fan - Furnace fan, standard motor (intermittent)**                               | 500             | 150 - 200            | 75 - 100    | \$6.86 - \$9.15                          |
| Fan - Exhaust fan (such as a bathroom fan)                                       | 150             | 15 - 150             | 2 - 23      | \$0.21 - \$2.06                          |
| Fan - Capture hood fan, for ventilation, 435 cubic feet per minute               | 116             | 540 - 720            | 63 - 84     | \$5.73 - \$7.64                          |
| Fan - Capture hood fan, for ventilation, 745 cubic feet per minute               | 198             | 540 - 720            | 107 - 143   | \$9.78 - \$13.04                         |
| Fan - Oscillating 16", 300 cubic feet per minute                                 | 90 - 100        | 30 - 720             | 3 - 72      | \$0.25 - \$6.59                          |
| Freezer - Compact, chest (ENERGY STAR)**   | 160 - 200       | 180 - 260            | 29 - 52     | \$2.63 - \$4.76                          |
| Freezer - Upright w/auto defrost (ENERGY STAR)**                                 | 200 - 240       | 190 - 270            | 38 - 65     | \$3.48 - \$5.93                          |
| Freezer - non-ENERGY STAR **   | 240 - 273       | 200 - 280            | 48 - 76     | \$4.39 - \$6.99                          |
| Hairdryer  | 1200 - 1875     | 3 - 9                | 4 - 17      | \$0.33 - \$1.54                          |
| Hot tub (pump and electric heater) - meeting California efficiency code**        | 3200 - 4500     | 35 - 45              | 112 - 203   | \$10.25 - \$18.52                        |
| Hot tub (pump and electric heater) - typical**                                   | 4700 - 5800     | 40 - 55              | 188 - 319   | \$17.20 - \$29.18                        |
| Humidifier   | 75              | 30 - 120             | 2 - 9       | \$0.21 - \$0.82                          |
| Light - Incandescent lamp - 60 Watt  | 60              | 17 - 200             | 1 - 12      | \$0.09 - \$1.10                          |
| Light - Light emitting diode (LED) - 60 Watt equivalent                          | 9               | 17 - 200             | 1 - 2       | \$0.08 - \$0.16                          |
| Light - Compact fluorescent lamp (CFL) - 60 Watt equivalent                      | 13 - 18         | 17 - 200             | 1 - 4       | \$0.08 - \$0.33                          |
| Light - Metal halide or high-pressure sodium - 400 Watt                          | 432             | 360 - 540            | 156 - 233   | \$14.23 - \$21.34                        |
| Light - Metal halide or high-pressure sodium - 600 Watt                          | 680             | 360 - 540            | 245 - 367   | \$22.39 - \$33.59                        |
| Light - Metal halide or high-pressure sodium - 1000 Watt                         | 1080            | 360 - 540            | 389 - 583   | \$35.57 - \$53.35                        |
| Light - Fluorescent T5 fixture with 4 lamps                                      | 216             | 17 - 540             | 4 - 117     | \$0.34 - \$10.67                         |
| Light - Fluorescent T5 fixture with 6 lamps                                      | 324             | 17 - 540             | 6 - 175     | \$0.50 - \$16.01                         |
| Microsoft Xbox 360® - always on*   | 119             | 720                  | 86          | \$7.82 - \$7.82                          |
| Microsoft Xbox 360® - turned "off" when not in use                               | 88              | 90 - 180             | 8 - 16      | \$0.72 - \$1.45                          |

*(continued below)*

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**Kilowatt hours x cost per kilowatt hour = cost to operate (\$)**

**(note: there are 720 hours in a 30 day month)**

| Appliance by Type  | Typical Wattage | Monthly Hours of Use | Monthly kWh | Approximate Cost to Operate per Month*** |
|--|-----------------|----------------------|-------------|--|
| <i>(continued from above)</i>  |                 |                      |             |  |
| Modem - Cable or digital subscriber line (DSL) - always on*                      | 6               | 720                  | 4           | \$0.40                                   |
| Nintendo Wii™ - always on*   | 14              | 720                  | 10          | \$0.90                                   |
| Oven & cooktop combination unit  | 1250 - 2500     | 10 - 30              | 13 - 75     | \$1.14 - \$6.86                          |
| Oven - Microwave 1.25 cu.ft.   | 1500            | 6 - 12               | 9 - 18      | \$0.82 - \$1.65                          |
| Oven - Self-cleaning   | 5000 - 7200     | 3 - 12               | 15 - 86     | \$1.37 - \$7.90                          |
| Oven - Toaster   | 1200            | 4 - 8                | 5 - 10      | \$0.44 - \$0.88                          |
| Popcorn maker  | 1400            | 1 - 5                | 1 - 7       | \$0.13 - \$0.64                          |
| Printer - Inkjet*  | 45 - 120        | 1 - 12               | 1 - 2       | \$0.05 - \$0.21                          |
| Printer - Laser*   | 150 - 1500      | 1 - 12               | 1 - 18      | \$0.05 - \$1.65                          |
| Pump - 1/8 HP (typical for a small pond) - always on                             | 93              | 720                  | 67          | \$6.13                                   |
| Pump - 250 Watt (typical for a 50-gallon aquarium) - always on                   | 250             | 720                  | 180         | \$16.47                                  |
| Pump - 1/2 HP (typical for a pond or small swimming pool) - always on            | 373             | 720                  | 269         | \$24.57                                  |
| Refrigerator - ENERGY STAR **  | 150 - 170       | 200 - 260            | 30 - 44     | \$2.74 - \$4.04                          |
| Refrigerator - top-mount freezer, without icemaker **                            | 170 - 220       | 215 - 280            | 37 - 62     | \$3.34 - \$5.64                          |
| Refrigerator - side-mount freezer, with icemaker **                              | 210 - 250       | 215 - 280            | 45 - 70     | \$4.13 - \$6.40                          |
| Satellite dish   | 15              | 80 - 120             | 1 - 2       | \$0.11 - \$0.16                          |
| Sony PlayStation 3® (2007) - always on   | 150             | 720                  | 108         | \$9.88                                   |
| Sony PlayStation 3® (2007) - Active & Standby modes*                             | 150             | 60 - 180             | 9 - 27      | \$0.82 - \$2.47                          |
| Space heater **  | 1000 - 1500     | 30 - 120             | 30 - 180    | \$2.74 - \$16.47                         |
| Stereo component system  | 60              | 30 - 60              | 2 - 4       | \$0.16 - \$0.33                          |
| Stereo - portable  | 7               | 30 - 60              | 1 - 2       | \$0.06 - \$0.14                          |
| Swimming pool cleaner - booster pump powered                                     | 1500            | 70 - 120             | 105 - 180   | \$9.61 - \$16.47                         |
| Swimming pool cleaner - robotic  | 180             | 70 - 120             | 13 - 22     | \$1.15 - \$1.98                          |
| Television - Cathode ray tube (CRT) 45-inch*                                     | 298             | 60 - 180             | 18 - 54     | \$1.64 - \$4.91                          |
| Television - Liquid crystal display (LCD) or Light emitting diode (LED) 45-inch* | 110 - 213       | 60 - 180             | 7 - 38      | \$0.60 - \$3.51                          |
| Television - Plasma 45-inch*   | 110 - 339       | 60 - 180             | 7 - 61      | \$0.60 - \$5.58                          |
| Vacuum cleaner (central or portable)   | 650 - 1600      | 2 - 6                | 1 - 10      | \$0.12 - \$0.88                          |
| Water heater - submersible aquarium heater                                       | 200 - 400       | 80 - 120             | 16 - 32     | \$1.46 - \$2.93                          |
| Water heater - 50-gallon standard-efficiency**                                   | 4500 - 5500     | 80 - 90              | 360 - 495   | \$32.93 - \$45.28                        |
| Water heater - Heat pump 60-gallon and 80-gallon**                               | 500 - 4500      | 85 - 105             | 43 - 193    | \$3.89 - \$17.61                         |
| Wireless Internet Router - always on*  | 6 - 7           | 720                  | 4 - 5       | \$0.40 - \$0.42                          |

The typical Wattages, hours of use, and kWh above are based on EWEB research using a variety of industry sources. Research sources include independent and robust sources such as E Source, US DOE, EPRI, ACEEE, Lawrence Berkeley and Oak Ridge National Laboratories.

\* This appliance has different energy-use modes. **Active** mode is when the device is being used as intended (e.g., drying with a hairdryer).

**Standby** mode is when the device is in a lower-power mode. This includes Idle mode (for example, a computer in sleep mode) or Off (for example, a TV that is off but needs to respond instantly to a signal from a remote control). See also the Standby Power Table below.

\*\* This appliance turns on and off to maintain a set-point (for example, a refrigerator is always plugged in but the compressor cycles on and off to keep things cold). The hours of use for this appliance will depend on its set-point and ambient conditions.

\*\*\* Costs are based on Eugene Water & Electric Board residential rates in effect as of Jan 1, 2019, at 9.148 cents per kWh.

## Standby Power Table

**Standby Power** is the power draw of a device in its low-power modes. This includes Idle mode (for example, a computer in sleep mode) or Off (for example, a TV that is off but needs to respond instantly to a signal from a remote control). This type of power draw is often referred to as “phantom power.” As shown below, standby power draw is relatively low. However, modern homes often have multiple smartphones, TVs, computers, and other items plugged in. The total power used by these devices adds up. To make sure your devices do not consume standby power, you can unplug them from the wall, or plug them into a power strip and turn the power strip off when not in use.

| Appliance                                | Mode                  | Typical Wattage | Average Cost per Month |
|--|-----------------------|-----------------|------------------------|
| Audio Mini System/CD/Radio               | Off                   | 8               | \$0.53                 |
|  | On but not playing    | 14              | \$0.92                 |
| Blue-ray disc player                     | Off                   | 1               | \$0.07                 |
| CD Player                                | Off                   | 5               | \$0.33                 |
|  | On but not playing    | 9               | \$0.59                 |
| Clock Radio                              | On                    | 2 - 10          | \$0.13 - \$0.66        |
| Coffee Maker                             | Off                   | 1               | \$0.07                 |
| Computer Modem , Cable                   | Off/Standby           | 4               | \$0.26                 |
|  | On                    | 6               | \$0.40                 |
| Computer Monitor, CRT                    | Off                   | 1               | \$0.07                 |
|  | On/Sleep              | 12              | \$0.79                 |
| Computer Monitor, LCD                    | Off                   | 1               | \$0.07                 |
|  | On/Sleep              | 1               | \$0.07                 |
| Computer, Desktop                        | Off                   | 3               | \$0.20                 |
|  | On/Sleep              | 21              | \$1.38                 |
| Computer, Notebook                       | Off                   | 9               | \$0.59                 |
|  | On/Sleep              | 16              | \$1.05                 |
| Copier/Printer                           | Off                   | 3               | \$0.20                 |
|  | On/Sleep              | 20              | \$1.32                 |
| DVD/VCR Player                           | Off                   | 5               | \$0.33                 |
|  | On but not playing    | 14              | \$0.92                 |
| Fax, Inkjet                              | Off                   | 5               | \$0.33                 |
|  | On but not being used | 6               | \$0.40                 |
| Fax, Laser                               | Off                   | 1               | \$0.07                 |
|  | On but not being used | 6               | \$0.40                 |
| Game Console                             | Off                   | 1               | \$0.07                 |
|  | On but not being used | 23              | \$1.51                 |
| Garage Door Opener                       | On but not being used | 5               | \$0.33                 |
| Heating, Furnace Fan                     | Off                   | 4               | \$0.26                 |
| Microwave Oven                           | Off                   | 3               | \$0.20                 |
| TV Set-top Box, Digital Cable w/ DVR     | Off                   | 33 - 44         | \$2.17 - \$2.90        |
|  | On but not recording  | 33 - 44         | \$2.17 - \$2.90        |
| TV Set-top Box, Digital Cable            | Off                   | 18 - 20         | \$1.19 - \$1.32        |
|  | On but not being used | 120 - 25        | \$1.65                 |
| Telephone, Mobile Charger                | Power supply only     | 0 - 1           | \$0.02 - \$0.07        |
|  | On, charging          | 4               | \$0.26                 |
| Telephone, Cordless w/ Answering Machine | Off                   | 3               | \$0.20                 |
|  | On but not being used | 4               | \$0.26                 |
| Television, CRT                          | Off                   | 4               | \$0.26                 |
| Television, non-CRT (including LED, LCD) | Off                   | 1               | \$0.07                 |
| Toothbrush, electric                     | Off                   | 2               | \$0.13                 |
| Wireless Internet Router                 | On but not being used | 2               | \$0.13                 |



## Eugene Water & Electric Board

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### Residential Light and Appliance Daily Electric Cost Worksheet

You can use the worksheet on the back to estimate the daily cost of your home lighting and appliance energy use. With this information you can make choices about your energy usage.

#### Instructions

1. List all lights (ceiling and freestanding) and appliances plugged into the electrical outlets in each room of your house in the first column.
2. Enter the watts of each light or appliance in the second column. Look on the rating label. Most appliances are rated by watts (w) (sometimes called "va"). If neither of these is shown, most rating labels will at least indicate Amps (a) and Volts (v). Calculate watts by multiplying the two together: Amps (a) x Volts (v) = Watts. If you cannot locate an appliance's electrical rating label, use the EWEB Typical Residential Electricity Use and Cost sheet to estimate the watts.
3. Enter the estimated hours per day the light or appliance operates in the "Hours per day" column.
4. Enter the electric rate you want to use to estimate your energy costs. Your electric rate will be the sum of the distribution charge and the power charge shown on your EWEB electric bill, currently:

|                 |                         |
|-----------------|-------------------------|
| Delivery Charge | \$0.02624               |
| Power Charge    | \$0.06524               |
| "Electric Rate" | <b><u>\$0.09148</u></b> |

5. Perform the calculations across each line and total your costs at the bottom.

#### Remember:

1. Electric use for lights and appliances is only a percentage of your total bill. Other uses, such as space and water heating typically represent the greatest portion of the bill.
2. Appliances do not use energy unless they are plugged in and turned on.
3. Any appliance with a remote control, clock, or programmable timer is always using some power, even when turned off. (See Appliance Standby Power Table, attached to Typical Residential Electricity Use and Cost.)

## Daily Electric Cost Worksheet

| Appliance or Light     | Watts | X | Hours<br>per day | ÷ | 1000         | = | KWh | X | Rate    | = | Cost/Day |
|------------------------|-------|---|------------------|---|--------------|---|-----|---|---------|---|----------|
| Coffee Maker * Example | 1100  | X | 1                | ÷ | 1000         | = | 1.1 | X | 0.09148 | = | \$ 0.10  |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       | X |                  | ÷ | 1000         | = |     | X |         | = |          |
|                        |       |   |                  |   | <b>Total</b> | = |     | X |         | = |          |