

Estimating Appliance and Home Electronic Energy Use

If you're trying to decide whether to invest in a more energy-efficient appliance or you'd like to determine your electricity loads, you may want to estimate appliance energy consumption.

FORMULA FOR ESTIMATING ENERGY CONSUMPTION

Use this formula to estimate an appliance's energy use:

$$(\text{Wattage} \times \text{Hours Used Per Day}) \div 1000 = \text{Daily Kilowatt-hour (kWh) consumption}$$

$$1 \text{ kilowatt (kW)} = 1,000 \text{ Watts}$$

Multiply this by the number of days you use the appliance during the year for the annual consumption in kWh per year.

ESTIMATING ANNUAL COST TO RUN AN APPLIANCE

Multiply the annual consumption in kWh per year (that you calculated above) by your local utility's rate per kWh consumed to calculate the annual cost to run an appliance.



Note: To estimate the number of hours that a refrigerator actually operates at its maximum wattage, divide the total time the refrigerator is plugged in by three. Refrigerators, although turned "on" all the time, actually cycle on and off as needed to maintain interior temperatures.

EXAMPLES:

Window fan:

$$\begin{aligned} & (200 \text{ Watts} \times 4 \text{ hours/day} \times 120 \text{ days/year}) \div 1000 \\ & = 96 \text{ kWh} \times 11 \text{ cents/kWh} \\ & = \$10.56/\text{year} \end{aligned}$$

Personal Computer and Monitor:

$$\begin{aligned} & [(120 \text{ Watts} + 150 \text{ Watts}) \times 4 \text{ hours/day} \\ & \times 365 \text{ days/year}] \div 1000 \\ & = 394 \text{ kWh} \times 11 \text{ cents/kWh} \\ & = \$43.34/\text{year} \end{aligned}$$

WATTAGE

You can usually find the wattage of most appliances stamped on the bottom or back of the appliance, or on its nameplate. The wattage listed is the maximum power drawn by the appliance. Since many appliances have a range of settings (for example, the volume on a radio), the actual amount of power consumed depends on the setting used at any one time.

If the wattage is not listed on the appliance, you can still estimate it by finding the current draw (in amperes) and multiplying that by the voltage used by the appliance. Most appliances in the United States use 120 volts. Larger appliances, such as clothes dryers and electric cooktops, use 240 volts. The amperes might be stamped on the unit in place of the wattage. If not, find a licensed electrician to use a clamp-on ammeter to obtain the current flowing through the appliance.



When measuring the current drawn by a motor, note that the meter will show about three times more current in the first second that the motor starts than when it is running smoothly.

Many appliances continue to draw a small amount of stand-by power when they are switched "off." These "phantom loads" occur in most appliances that use electricity, such as VCRs, televisions, stereos, computers, and kitchen appliances. Most phantom loads will increase the appliance's energy consumption a few watt-hours. These loads can be avoided by unplugging the appliance or using a power strip and using the switch on the power strip to cut all power to the appliance.



TYPICAL WATTAGES OF VARIOUS APPLIANCES

Here are some examples of the range of nameplate wattages for various household appliances:

- Aquarium = 50–1210 Watts
- Clock radio = 10
- Coffee maker = 900–1200
- Clothes washer = 350–500
- Clothes dryer = 1800–5000
- Dishwasher = 1200–2400 (using the drying feature greatly increases energy consumption)
- Dehumidifier = 785
- Electric blanket (Single/Double) = 60 / 100
- Fans
 - Ceiling = 65–175
 - Window = 55–250
 - Furnace = 750
 - Whole house = 240–750
- Hair dryer = 1200–1875
- Heater (portable) = 750–1500
- Clothes iron = 1000–1800
- Microwave oven = 750–1100
- Personal computer
 - CPU - awake / asleep = 120 / 30 or less
 - Monitor - awake / asleep = 150 / 30 or less
 - Laptop = 50
- Radio (stereo) = 70–400
- Refrigerator (frost-free, 16 cubic feet) = 725
- Televisions (color)
 - 19" = 65–110
 - 27" = 113
 - 36" = 133
 - 53" - 61" Projection = 170
 - Flat screen = 120
- Toaster = 800–1400
- Toaster oven = 1225
- VCR/DVD = 17–21 / 20–25
- Vacuum cleaner = 1000–1440
- Water heater (40 gallon) = 4500–5500
- Water pump (deep well) = 250–1100
- Water bed (with heater, no cover) = 120–380

Source: www.energy.gov



Med-A-Lert *in case of emergency*

Safe & Independent in My OWN Home

Med-A-Lert is the dependable 24-7 Personal Emergency Reporting System from Chippewa Valley Electric Co-op, that helps you and your Loved Ones achieve quick access to HELP IMMEDIATELY.

With a touch of a button on your lightweight pendant or wristband, a trained monitoring center dispatcher will respond immediately, analyze the call, and contact your predetermined responder(s), and/or send medical assistance if needed.

Only \$25*/mo.

plus nominal one-time installation fee of \$35

*3 month minimum basic service

Call Today
715.239.6800 800.300.6800

Provided by  **Chippewa Valley Electric Cooperative**
317 S. 8th St., Cornell, WI 54732



Your Touchstone Energy® Cooperative 



Office Closed Labor Day (Sept 1)

Chippewa Valley Electric
is a member of...



Call before you dig!
Dial 811 or (800) 242-8511

**CHIPPEWA VALLEY
SATELLITE**



715-239-3862

High Speed Satellite Internet

**Chippewa Valley
Electric Cooperative**

P.O. Box 575
Cornell, Wisconsin 54732
(715) 239-6800 or 1-800-300-6800
www.cvecoop.com

Your Touchstone Energy® Partner 