Powering Your Future
CVEC
Chippewa Valley Electric Cooperative
317 S. 8th St., Cornell, WI 54732

Where did it all go?

During the summer months we receive inquiries questioning the amount of electricity used by a Member, and of course the cost.

While a defective meter is a remote possibility, the chances of a meter being defective are minimal. All of the meters on our system report back to the office on a daily basis, and are manually read once a year.

Billing for electricity is based on Kilowatt-Hours (KWh). The current rate for residential service is 11.65¢ per KWh.

Based on this rate, the following appliances/devices will cost this much to use, per hour.

Device / Appliance	Wattage*	Cost per Hour
Central A/C (30,000 BTU or 2½ Ton, average efficiency)	3,400	$ 0.40
Space Heater, Engine Heater, or Stock Tank Heater	1,500	$ 0.17
Clothes Dryer	6,000	$ 0.70
Water Heater	4,500	$ 0.52
Electric Range (all elements on)	6,000	$ 0.70
Well (3/4HP Pump)	650	$ 0.08
Dehumidifier	785	$ 0.09
Refrigerator (17 ft^3)	400	$ 0.04
Hot Tub	6,000	$ 0.70

*Average rating obtained from various on-line sources

Using the above examples, a central A/C unit running 8 hours per day for a month will cost approximately $ 96 per month to operate. A dehumidifier that is on 12 hours/day will cost approximately $ 33 per month.

Some less obvious, but equally costly, contributors to your electric usage are a failed water heater element or a faulted underground copper cable, after the utility meter.

If a water heater element fails by shorting the actual heating element to the metal exterior of the element, a condition could exist that causes the element to heat regardless of the thermostat setting. Signs of this type of failure are excessively hot water or water dripping from the pressure relief valve.

If damaged, buried aluminum wire will generally burn off, and the fault will become obvious. Copper wire however will arc to the earth for an eternity. This arcing is a sign that current is flowing, costing you money.

Your electrician should be able to assist you in testing your underground facilities.

Phantom, or ghost loads, are worth looking into as well. Examples of phantom loads often overlooked include cell phone chargers, microwaves, TVs, computers, whole house (attic) fans, and yard lights.

We have a “Kill-a-Watt” meter available to our Members for $ 26.00 plus tax. This is money well spent to assist you in determining how much an individual appliance is contributing to your energy bill.

We can print a KWh usage history for you upon request. A guide entitled “Use energy wisely” is available free of charge to our Members.

Please contact Russ or Nicole in Member Services for more information.

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Estimating Appliance and Home Electronic Energy Use
(from www.energysavers.gov)

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

You can use this formula to estimate an appliance's energy use:

(Wattage × Hours Used Per Day) ÷ 1000 = Daily Kilowatt-hour (kWh) consumption

1 kilowatt (kW) = 1,000 Watts

Multiply this by the number of days you use the appliance during the year for the annual consumption. You can then calculate the annual cost to run an appliance by multiplying the kWh per year by your local utility's rate per kWh consumed.

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:

(200 Watts × 4 hours/day × 120 days/year) ÷ 1000
= 96 kWh × 11.65 cents/kWh
= $11.18/year

Personal Computer and Monitor:

[(120 Watts + 150 Watts) × 4 hours/day × 365 days/year] ÷ 1000
= 394 kWh × 11.65 cents/kWh
= $45.90/year

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 clamp-on ammeter—an electrician's tool that clamps around one of the two wires on the appliance—to measure the current flowing through it. You can obtain this type of ammeter in stores that sell electrical and electronic equipment. Take a reading while the device is running; this is the actual amount of current being used at that instant.

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.

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Many appliances continue to draw a small amount of 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