

# What Is a Kilowatt Hour?

## How does it effect us, and how much does it cost



What is a kilowatt hour and why is it important? The kilowatt hour (kWh) is a standard unit of measure used to bill customers for electrical consumption. The kilowatt hour can be defined and understood by considering the following statements and examples.

The term “watt” is the basic standard of electrical consumption derived from the equation Volts X Amperage = watts. Now consider the term “kilo” as meaning one thousand.

The kilowatt-hour (symbolized kWh) is simply the use of one thousand watts for a one hour duration.

Examples listed below.

- A one thousand watt hair dryer run for an hour = consumes one kWh
- A one hundred watt light bulb burned for ten hours = consumes one kWh
- Two five hundred watt hotplates run for one hour = consumes one kWh

Most electrical appliances will have a watt rating listed on them. The higher the rating the more power they consume per hour and the more they will cost to run. Heat producing appliances typically consume the most power. Items such as stoves, space heaters and hairdryers should come to mind. If you want to know how much power an appliance consumes, simply look for the tag mounted on the unit. Some of your larger appliances such as air conditioners and furnaces might only have a voltage and amperage rating. To obtain the watt rating on these devices, simply multiply the nameplate amperage x the voltage supplied.

### **Typical Appliance Energy Use and Cost**

The following information relates to the energy use and associated energy costs of common home appliances. The average costs are based on Canisius College’s average rate of \$0.093 per kWh. Listed wattages are averages only; your individual appliances may vary.

**Example**, an electric space heater having 1500 Watts of power, run continuously for 12 hours, would use 18,000 Watt hours of energy, or stated in kilowatt hours, 18 kWh multiplied by the rate \$0.093 equals the cost for that period.

**Watts/1000 x hours = Kilowatt-hours (kWh) x rate = cost.**

**1500 watts/1000 x 12 hours = 6 kWh x 0.093 = \$1.67 for 12 hr. period**

**Consider that rate for a 31 day month's time at \$1.67/day and the total cost would rise to \$51.77**

### **Typical Appliance Costs per Month**

Air Conditioner (Central) 6000 watt 240hr/mo = \$133.92/mo

Air Conditioner (Window Unit) 1100 watt 240hr/mo = \$24.55/mo

Electric Baseboard heater 8 ft. 2000 watt 240hr/mo = \$44.64/mo

Electric Furnace 10000 watt 180 hr/mo = \$167.74/mo

Fan – Ceiling 100 watt 240hr/mo = \$2.23/mo

### **Water Heating**

Water Heater 4500watt 75hr/mo= \$31.38/mo

### **Lighting**

Fluorescent Lamps overhead 2 tube 95watt 360hr/mo = \$3.18/mo

Fluorescent Lamp Desk 20watt 300hr/mo \$0.55/mo

Parking Lot Lighting Each 400watt 300hr/mo = \$11.16/mo

Incandescent Lamp 100watt 300hr/mo = \$2.79/mo

### **Small Appliances**

Bread Maker 600watt 4hr/mo = \$.22/mo

Crock Pot 150watt 8hr/mo = \$.11/mo

Television 400watt 120hr/mo = \$4.46/mo

Frying Pan (Electric) 1000watt 10hr/mo = \$.93/mo

Hair Dryer - Hand Held 1500watt 2.5hr/mo = \$.35/mo

Vacuum Cleaner 800watt 3hr/mo = \$.22/mo

As you can see by the examples above, the costs of running appliances varies greatly by the type of appliance and the amount of time it is used. However, as you add the costs over a month's time, the charges become significant. These rising costs challenge us to find ways to reduce our consumption and conserve these resources for future generations.