

Estimating Appliance Usage Costs

This page will lead you through the process of figuring out how much a specific appliance is costing you for a specific amount of time. If some of the words are unfamiliar to you, you might want to look at the list of helpful terms.

STEP ONE: Determine the wattage of the appliance

Since the wattage of a machine determines the electrical usage per hour, the first thing to do is to find out the wattage. Look at the serial plate of the appliance to get this information. If the serial plate doesn't list watts, you can multiply volts times amps to get watts.

STEP TWO: Calculate kilowatt hour use of the appliance

This step requires you to do some math.

The basic formula to find kilowatt hour use is: kWh use = watts x hours / 1000

Example A:

A light uses 100 watts and is left on 15 hours. How many kWhs are used?

kWh use = (100 watts x 15 hours) / 1000 = 1.5 kWh

Example B:

A microwave oven uses 1,450 watts and you use it for 30 minutes. How many kWhs are used?

kWh use = (1,450 watts x 0.5 hours) / 1000 = 0.725 kWh

Example C:

A 1/2 horsepower motor on a ventilation fan operates for 8 hours. How many kWhs are used?

kWh use = 1 kW per HP x 0.5 HP x 8 hours = 4.0 kWh

STEP THREE: Calculate average cost of a kilowatt hour

Get out your last electric bill and divide your electric bill by the number of kilowatt hours you used. This will give you an average cost per kilowatt hour.

Average kWh cost = \$ amount of bill / kWh used. Example: \$96 bill / 1200 kWh = \$0.08 per kWh

STEP FOUR: Find the cost of the appliance

Using the information that you found in steps 2 and 3, you can calculate the cost of the use of the appliance as you specified in step 2.

Example A:

The cost of the use of the light = 1.5 kWh x \$0.08 = \$0.12 = 12 cents

Example B:

The cost of the use of the microwave = $0.725 \text{ kWh} \times \$0.08 = \$0.058 = 5.8 \text{ cents}$

Example C:

The cost of the use of the motor = $4.0 \text{ kWh} \times \$0.08 = \$0.32 = 32 \text{ cents}$

HELPFUL TERMS: Some electrifying words to know.

Watt (W): A basic unit of electrical power used for measuring work done.

Kilowatt (kW): 1,000 watts **Megawatt (MW)** 1,000 kilowatts or 1 million watts.

Kilowatt Hour (kWh): A unit of work or energy equal to using 1,000 watts for one hour. Your bill is computed according to the number of kWhs that you use.

Horsepower (h.p.): A unit equal to 746 watts. Usually used to measure the power of motors.

Ampere (Amp.): The measure of current flowing through a wire.

Voltage (Volt): The force which moves electric current through a conductor from the origin to the point of use.