

How much electricity does your appliances use?

Take a look at what you can do for just a few pennies with the help of electricity:

- Use a 75-watt lamp for 14 hours for about 7 cents
- Refrigerate food for a day for about 20 cents
- Operate a window fan for about 1 cent an hour
- Cook a meal on an electric range -using all the burners and the oven – for about 84 cents an hour.
- Use the self-cleaning feature on your oven for a total of 35 cents.
- Wash a load of dishes in a dishwasher for about 7 cents.

Electricity really is a bargain. What else can you buy that costs pennies and does so much work? You definitely couldn't do this amount of work or hire someone else to do it for the same value.

Appliance	Typical Wattage	Estimated Average Cost
Miscellaneous		
Electric Blanket	200	2¢/hr
Water Bed Heater	400	4¢/hr
Dehumidifier	390	4¢/hr
Air Cleaner	250	2.5¢/hr
20 gal. Aquarium	150	1.5¢/hr
Vacuum Cleaner	630	6¢/hr
Garage Door Opener	800	8¢/hr
Humidifier – tabletop	177	1.7¢/hr
Kitchen Appliances		
Barbeque Grill	1350	13.5¢/hr
Coffee Maker	900	9¢/hr
Deep Fat Fryer	1450	14.5¢/hr
Garbage Disposal	700	7¢/hr
Hot Plate	660	6.6¢/hr
Microwave	1450	14.5¢/hr
Range	12500	\$1.25/hr
Sandwich Grill	1160	11.6¢/hr
Toaster	1150	11.5¢/hr
Toaster Oven	1440	14.4¢/hr
Waffle Iron	1120	11¢/hr
Slow Cooker	200	2¢/hr
Home Office		
Personal Computer	80	1¢/hr
Color Monitor	75	1¢/hr

Fax Machine	105	1¢/hr
Injet Printer	35	1¢/hr
Laser Printer	400	4¢/hr

Home Entertainment

Radio	70	1¢/hr
Stereo	150	1.5¢/hr
Component System	500	5¢/hr
Videocassette Recorder	35	1¢/hr
DVD Player	50	1¢/hr
Television Color 19" – 36"	110-133	1¢/hr
53" Projection Television	170	1.7¢/hr
42" Plasma Television	250	2.5¢/hr
50" Plasma Television	550	5.5¢/hr

Refrigeration

18 cu. ft Refrig./Freezer (frost free)	720	7¢/hr
24 cu. ft Refrig./Freezer (frost free)	810	8¢/hr
18 cu. ft Refrig./Freezer (manual frost)	630	6¢/hr
24 cu. ft Refrig./Freezer (manual frost)	720	7¢/hr
Refrig./Freezer Side-by-Side	1020	10¢/hr
12 cu. ft Freezer (frost free)	650	6.5¢/hr
24 cu. ft Freezer (frost free)	845	8¢/hr
12 cu. ft Freezer (manual frost)	650	6.5¢/hr
24 cu. ft Freezer (manual frost)	845	8¢/hr

Swimming Pool and Spa

Hot Tub Heater	6000	60¢/hr
Hot Tub Pump (1 hp)	1800	18¢/hr
Swimming Pool Filter Pump	1200-2400	12¢/hr – 24¢/hr
Swimming Pool Sweep Pump	900	9¢/hr

Farm Operations

1/3 hp Water Pump	250	2.5¢/hr
1.5 hp Water Pump	1120	11¢/hr
1 hp Well Pump	2000	20¢/hr
Stock Tank Water Heater	1500	15¢/hr
Heat Lamp	250	2.5¢/hr
500 Watt Head Bolt Heater	500	5¢/hr
800 Watt Head Bolt Heater	800	8¢/hr
1500 Watt Head Bolt Heater	1500	15¢/hr
Livestock Fencer	100	\$1.00/month

Security Light (consumer owned)	90	\$9.00/month
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Heating

750 watt Individual Baseboard Heater	Each foot 250	2¢/hr
750 watt Portable SpaceHeater/ Oil Filled Radiator	750	7.5¢/hr
1000 watt Portable SpaceHeater/ Oil Filled Radiator	1000	10¢/hr
1500 watt Portable SpaceHeater/ Oil Filled Radiator	1500	15¢/hr
Electric Fireplace (heating mode)	1500	15¢/hr

Forced Air Systems

15 kw Central Electric Furnace	15,350	\$1.5323/hr
20 kw Central Electric Furnace	20,490	\$2.00/hr
25 kw Central Electric Furnace	25,670	\$2.50/hr
3 Ton Air Source Heat Pump (without backup running)		66¢/hr
4 Ton Air Source Heat Pump (without backup running)		71¢/hr
5 Ton Air Source Heat Pump (without backup running)		88¢/hr
3 Ton Air Source Heat Pump (with 15 KW backup running)		\$2.07¢/hr
4 Ton Air Source Heat Pump (with 15 KW backup running)		\$2.25/hr
5 Ton Air Source Heat Pump (with 15 KW backup running)		\$2.42/hr
3 Ton Ground Source Heat Pump (without backup running)		38¢/hr
4 Ton Ground Source Heat Pump (without emergency backup)		51¢/hr
5 Ton Ground Source Heat Pump (without emergency backup)		88¢/hr
3 Ton Ground Source Heat Pump with 15 kw backup		\$1.53/hr
4 Ton Ground Source Heat Pump with 15 kw backup		\$2.05/hr
5 Ton Ground Source Heat Pump with 15 kw backup		\$2.05/hr

Cooling

Attic Fan	370	3.7¢/hr
Ceiling Fan	150	1.5¢/hr
Box Fan (20")	180	2¢/hr
Furnance (1/2 hp)	500	5¢/hr

Room Air Conditioner

6000 Btu/hr	706	6¢/hr
12,000 Btu/hr	1412	14¢/hr
24,000 Btu/hr	2824	28¢/hr

Central Air Conditioner

3 Ton		66¢/hr
4 Ton		71¢/hr
5 Ton		88¢/hr

Air Source Heat Pump

3 Ton		53¢/hr
4 Ton		71¢/hr
5 Ton		88.7¢/hr

Ground Source Heat Pump

3 Ton		38.7¢/hr
4 Ton		51¢/hr
5 Ton		71¢/hr

Water Heating, Laundry & Cleaning

Dishwasher with cold water	1400	14¢/hr
Dishwasher with hot water	1400	25¢/hr
Clothes Dryer (per load)	5000	50¢/hr
Clothes Washer (per load) cold	500	5¢/hr
Clothes Washer (per load) hot	500	15¢/hr

Water Heating

Number of people	Gallons per month	kwhs per month	Cost per month
1	450	200	\$20.00
2	900	300	\$30.00
3	1350	400	\$40.00
4	1800	500	\$50.00
5	2250	600	\$60.00
6	2700	700	\$70.00

(Rule of thumb calculation: 100kwhs/person/month + 100 kwhs/month to keep water heated)

All computations based on a 10 cents per kilowatt hour electric rate. Estimated kwhs are based on average estimated consumption of electric home appliances.

What is a Kilowatt-Hour?

We pay for electricity in kilowatt-hours (kwhs). One kilowatt-hour is the equivalent of using 1,000 watts for one hour or using a 100-watt light bulb for 10 hours. While electric rates may vary among electric suppliers, we will use the average of eight cents per kilowatt hour for the above examples.

When these kilowatt hours add up, electric bills get higher. And kilowatt hour usage is adding up more and more each year. According to statistics, the average family's use of electricity is increasing at a rate of 4 to 7 percent per year.

For that reason, it seems reasonable that if we become more aware of how we use these kilowatt-hours, we can learn how to use them more efficiently.

What Does it Cost to Run My Appliances?

The appliance use chart above shows the most commonly used appliances and office equipment in homes, the average wattage of that equipment and the estimated average cost.

To calculate the exact use of your appliances, or for those not listed in this chart, use the following formula:

$$\begin{aligned} \text{amps} \times \text{volts} &= \text{watts} \\ \text{watts} \times \text{hours} &= \text{watt-hours} \\ \text{watt-hours} / 1000 &= \text{kilowatt-hours (kwhs)} \\ \text{kwh} \times .10 \text{ (10 cents)} &= \text{estimated cost of using appliance.} \end{aligned}$$

Look for the serial plate on the bottom or back of the appliance. It lists the power used in terms of watts (120 watts might be written 120 w) or amps and volts.

We will use an electric hand mixer as an example. This appliance requires about 127 watts.

Here is how you would figure its usage for 15 minutes:

$$\begin{aligned} 15 \text{ minutes} &= 1/4 \text{ hour, so} \\ 120 \text{ watts} \times 1/4 \text{ hour} &= 30 \text{ watt-hours} \\ 30 \text{ watt-hours} / 1000 &= .03 \text{ kwh} \\ .03 \text{ kwh} \times 10 \text{ cents} &= .003 \text{ cent (three-tenths of one cent)} \end{aligned}$$

For a larger appliance such as a water heater, remember that it is only running when it has clicked on and is actually heating water. The time your water heater is on varies according to how much you do laundry, take baths, or run the dishwasher. But, let's say your water heater is on for 3 hours on a particular day (the national average):

$$\begin{aligned} 4,500 \text{ watts} \times 3 \text{ hours} &= 13,500 \text{ watt-hours} \\ 13,500 \text{ watt-hours} / 1000 &= 13.5 \text{ kwh} \\ 13.5 \text{ kwh} \times 10 \text{ cents} &= \$1.35 \end{aligned}$$

Or, from another angle, you can see that you would be using 4.5 kwh for every full hour that your water heater is on. That means it costs you 31.5 cents per hour.

There are several things you can do to use electricity more efficiently.

You will find that your electric furnace, air conditioner and water heater will make up the greatest percentage of your electric bill, so these are the areas in which to concentrate your energy management efforts. There are other things you can do as well, such as change furnace filters at least once a month, use compact fluorescent light bulbs, and make sure the coils on your refrigerator are clean so it runs more efficiently.