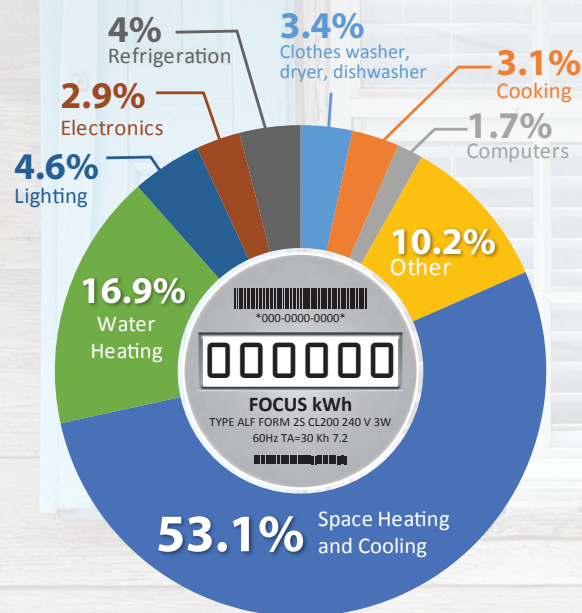


## How your home uses energy

Energy use varies from one home to another. Factors such as number of people living in the home, size of the home, how long appliances are plugged in, how many loads of clothes you wash and more all have an impact on how much energy your home uses. The chart below shows where the typical home uses energy.



Source: Building Energy Data Book, U.S. Department of Energy; Updated October 2015

## Smart energy resources

Home Energy Saver, an online resource to help homeowners calculate and look for energy-efficient improvements: [www.hes.lbl.gov](http://www.hes.lbl.gov)

Energy Education Council:  
[www.energyeducation.org](http://www.energyeducation.org)

ENERGY STAR: [www.energystar.gov](http://www.energystar.gov)

U.S. Department of Energy:  
[www.energysavers.gov](http://www.energysavers.gov)

Obtain a free booklet, Energy Savers: Tips on Saving Energy and Money at Home, by visiting [www.eere.energy.gov/library](http://www.eere.energy.gov/library).

Talk to your energy experts at **Three Rivers Electric Cooperative** at 573-644-9000 and learn about our energy efficiency and rebate programs. [www.threeriverselectric.com](http://www.threeriverselectric.com)



**Three Rivers Electric Cooperative**

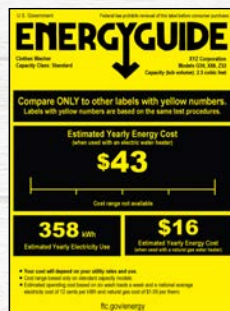
# Home energy use guide



A breakdown of energy use by common home appliances

## Look for the EnergyGuide

These labels show annual energy use and operating cost for each appliance. Keep in mind numbers are averages and may differ depending on how you use the appliance. Learn more at [ftc.gov/energy](http://ftc.gov/energy).



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**Take Control & Save**  
A Cooperative Effort for Energy Efficiency  
[www.TakeControlAndSave.coop](http://www.TakeControlAndSave.coop)

## YOU control your energy use

Have you ever looked at your energy bill and wondered, "Why is my bill so high?" You then think of all the appliances and gadgets you use every day to provide the modern-day conveniences you enjoy, the comfort of a warm home and a hot shower; and realize they all increase your energy costs.

If we can become more aware of how we use energy, we can also learn how to use it more efficiently.

## Did you know?

You can reduce your cooling bill by two percent just by raising your thermostat one degree in the summer? Likewise, in the winter, lowering your thermostat by one degree can reduce heating bills by three percent.

## 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.

Although electric rates vary among electric cooperatives, we've used an average of \$0.10 per kWh for examples.

Look inside for a chart of commonly used appliances and their estimated cost to operate.

## What's the cost to run appliances?

The charts on the inside of this brochure show the most commonly used appliances and office equipment in homes, the average wattage of that equipment and an estimated cost of use. To calculate the use of appliances or for those not listed in the charts, use the following formula:

$$\begin{aligned} \text{amps} \times \text{volts} &= \text{watts} \\ \text{watts} \times \text{hours} &= \text{watt-hours} \\ \text{watt-hours}/1,000 &= \text{kilowatt-hours (kWhs)} \\ \text{kWh} \times \$0.10 &= \text{estimated cost of use} \end{aligned}$$

Most appliances list the power used in watts. Look for the serial plate on the bottom or back of the appliance to determine watts used. (120 watts might be written 120W)

Example: An **electric hand mixer** that uses 120 watts. To calculate its use for 15 minutes:

$$\begin{aligned} 15 \text{ minutes} &= 1/4 \text{ hour, so} \\ 120 \text{ watts} \times 1/4 \text{ hour} &= 30 \text{ watt-hours} \\ 30 \text{ watt-hours}/1,000 &= .03 \text{ kWh} \\ .03 \text{ kWh} \times \$0.10 &= \$0.003 \\ &(\text{three tenths of one cent}) \end{aligned}$$

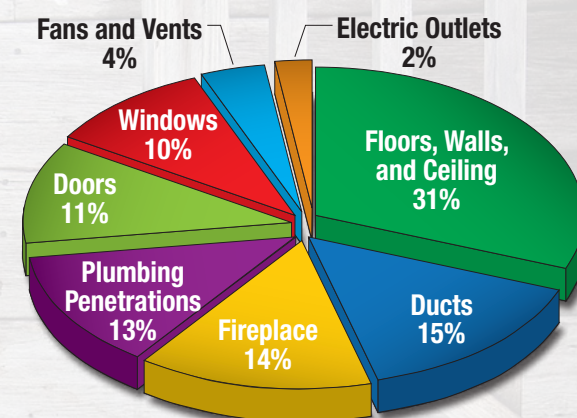
For larger appliances, such as a **water heater**, remember it is only running when it is actually heating water. The time your water heater is on varies according to how often you do laundry, take baths or run the dishwasher. Let's say your water heater is on for three hours on a particular day (the national average):

$$\begin{aligned} 4,500 \text{ watts} \times 3 \text{ hours} &= 13,500 \text{ watt-hours} \\ 13,500 \text{ watt-hours}/1,000 &= 13.5 \text{ kWh} \\ 13.5 \text{ kWh} \times \$0.10 &= \$1.35 \end{aligned}$$

From another angle, you would be using 4.5 kWh for every full hour your water heater is on. This means it costs you 45 cents per hour.

## Where a typical home loses energy

Seeing where energy escapes in the home gives you ideas where you can make improvements.



Source: U.S. Department of Energy

**Fact:** Air sealing is one of the most significant energy efficiency improvements you can make to your home.

## Be an Energy Star

You can't see energy efficiency. But if you're in the market for new appliances or electronics, you can look for energy-efficient models that carry the ENERGY STAR logo. A third party certification process makes sure anything that earns the blue label meets the highest standards.

Visit the ENERGY STAR homepage at [www.energystar.gov](http://www.energystar.gov) for more information.



# Appliance Energy Use Guide

Kitchen	Typical wattage	Estimated cost
Coffee Maker	894	\$0.01/hr
Keurig (2 cups/day, left idle all day)		\$6.40/month
Deep Fryer	1,450	\$0.15/hr
Dishwasher	1,800	\$0.18/hr
Electric Skillet	1,200	\$0.12/hr
Microwave Oven	1,450	\$0.15/hr
Range w/Self Cleaning Oven	13,700	\$1.37/hr
Roaster	1,333	\$0.13/hr
Electric Smoker	1,500	\$0.15/hr

Food preservation	Typical wattage	Estimated cost
<b>Food Freezer</b>		
12 cu. ft.	650	\$0.07/hr
24 cu. ft.	845	\$0.08/hr
<b>Refrigerator/Freezer</b>		
18 cu.ft.	630	\$0.06/hr
24 cu. ft.	720	\$0.07/hr
28 cu.ft.	840	\$0.08/hr

Laundry	Typical wattage	Estimated cost
Clothes Dryer	5,500	\$0.55/hr
Iron	1,008	\$0.10/hr
Washing Machine	512	\$0.05/hr
Water Heater	4,500	\$1.80/4 hrs
Heat Pump Water Heater	550/4,500	\$0.22/\$1.80/4 hrs

Housewares	Typical wattage	Estimated cost
Vacuum Cleaner	1,300	\$0.13/hr
Central Vacuum	1,600	\$0.16/hr

Medical equipment	Typical wattage	Estimated cost
Nebulizer	1,000	\$0.10/hr
Oxygen Concentrator	460	\$0.05/hr
Sleep Apnea Machine (CPAP)	200	\$0.02/hr

Phantom load	Typical wattage	Estimated cost
Satellite Receiver/Cable Box	25	\$1.80/month
Digital Clock	3	\$0.22/month
Computer Modem/Router	6	\$0.43/month
Cordless Tool Charger	5	\$0.36/month
Invisible Pet Fence	25	\$1.80/month
Night Light (LED)	1	\$0.07/month
Toothbrush Charger	1.6	\$0.12/month
Water Softener	17	\$1.22/month

Lighting	Watts	Estimated cost
<b>Residential Lights</b>		
Incandescent	60	\$0.05
EISA Compliant Adj.	43	\$0.03
CFL (60 watt equiv.)	13	\$0.01
LED (60 watt equiv.)	9	\$0.007
<b>Commercial Lights</b>		
T12 (4'-4 bulb fixtures)	164	\$0.13
T8 (4'-4 bulb fixtures)	118	\$0.10
T5 (4'-4 bulb fixtures)	112	\$0.09
LED (4'-4 bulb fixtures)	72	\$0.06
<b>Christmas Lights</b>		
		<i>Cost/240 hours (8 hrs for 30 days)</i>
Incandescent C9 (25 bulb set)	175	\$4.20
LED C9 (25 bulb set)	2.2	\$0.05

Swimming pool & spa	Typical wattage	Estimated cost
Hot Tub Pump	1 hp	\$0.18/hr
Hot Tub Heater	6,000	\$0.60/hr
Swimming Pool Filter Pump	1 hp	\$0.18/hr
	2 hp	\$0.25/hr

Home entertainment/home office	Typical wattage	Estimated cost
DVR (24hrs/day)	32	\$2.30/month
Xbox 360 (4hrs/day)	180	\$2.16/month
Playstation 4 (4hrs/day)	120	\$1.44/month
Nintendo Wii (4hrs/day)	19	\$0.23/month
55" LED TV (4hrs/day)	67	\$0.80/month
60" LED TV (4hrs/day)	75	\$0.90/month
65" LED TV (4hrs/day)	83	\$1.00/month
70" LED TV (4hrs/day)	92	\$1.10/month
Blu-ray Player (4hrs/day)	14	\$0.17/month
Laptop/Desktop (4hrs/day)	650	\$7.80/month
Laser Printer	400	\$0.04/hr

Comfort conditioning	Typical wattage	Estimated cost
Electric Blanket	177	\$0.02/hr
Dehumidifier	390	\$0.04/hr
Whole House Fan (Attic)	370	\$0.04/hr
Box Fan	200	\$0.02/hr
Space Heater	1,500	\$0.15/hr
Humidifier-tabletop	177	\$0.02/hr
Vaporizer	480	\$0.05/hr
Air Purifier	250	\$0.03/hr
Ceiling Fan	150	\$0.02/hr
Furnace Blower	1/2 hp	\$0.05/hr
Individual Baseboard Heater	250	\$0.02/hr <i>each foot</i>

Heating & cooling	Typical wattage	Estimated cost
<b>Central Electric Furnace &amp; Blower</b>		
10kW	10,500	\$1.05/hr
15kW	15,350	\$1.54/hr
20kW	20,490	\$2.05/hr
25kW	25,670	\$2.57/hr

Mini-Split Heat Pumps	Cooling/heating watts	Size	Estimated cost
9,000 BTU	590/790		\$0.06/\$0.08/hr
12,000 BTU	940/970		\$0.09/\$0.10/hr
15,000 BTU	1,040/1,320		\$0.10/\$0.13/hr
18,000 BTU	1,420/1,710		\$0.14/\$0.17/hr
21,500 BTU	1,720/2,210		\$0.17/\$0.22/hr

Air Source Heat Pump (without back-up electric furnace)	Estimated cost
3 Ton	\$0.53/hr
4 Ton	\$0.71/hr
5 Ton	\$0.89/hr

Ground Source Heat Pump (without back-up electric furnace)*	Estimated cost
3 Ton	\$0.46/hr
4 Ton	\$0.67/hr
5 Ton	\$0.81/hr
6 Ton	\$0.88/hr

\*With optional emergency electric back-up heat, add the appropriate kW electric furnace from above.

Room Air Conditioner	Typical wattage	Estimated cost
6,000 BTU/hr	706	\$0.07/hr
12,000 BTU/hr	1,412	\$0.14/hr
24,000 BTU/hr	2,824	\$0.28/hr

Central Air Conditioner	Typical wattage	Estimated cost
3 Ton	5,890	\$0.59/hr
4 Ton	9,220	\$0.92/hr
5 Ton	11,440	\$1.14/hr

Miscellaneous	Typical wattage	Estimated cost
Air Compressor	1 1/2 hp	\$0.22/hr
Well Pump	1 hp	\$0.28/hr
Stock Tank Water Heater	1,500	\$0.15/hr
Heat Lamp	250	\$0.03/hr
Engine Block Heater	1,500	\$0.15/hr
Electric Car Charger (240 volt)	7,680	\$0.77/hr
Hair Dryer	1,500	\$0.15/hr

**Watts X hours of operation / 1,000 X 0.10 = \$Cost**  
**10 cents per kWh used for all calculations**