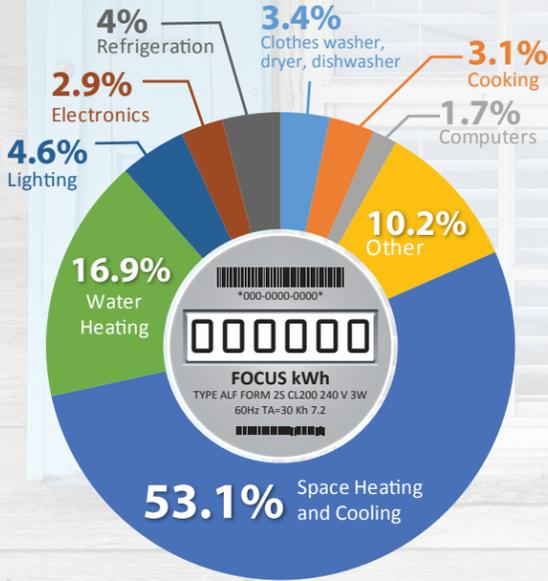


## How your home uses energy

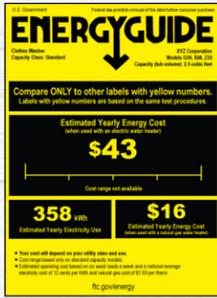
Energy use varies from one home to another. Factors such as number of people living in the home, size of the home, how long appliances are plugged in, how many loads of clothes you wash and more all have an impact on how much energy your home uses. The chart below shows where the typical home uses energy.



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

## 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).



## 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).

Call the energy advisor at your electric cooperative to learn more about energy efficiency and smart energy choices.

# Home energy use guide



## Mid-State 8 Electric Cooperatives

**Boone Electric Cooperative**

573-449-4181 ~ [www.booneelectric.coop](http://www.booneelectric.coop)

**Callaway Electric Cooperative**

573-642-3326 ~ [www.callawayelectric.com](http://www.callawayelectric.com)

**Central Missouri Electric Cooperative**

660-826-2900 ~ [www.cmecinc.com](http://www.cmecinc.com)

**Co-Mo Electric Cooperative**

660-433-5521 ~ [www.co-mo.coop](http://www.co-mo.coop)

**Consolidated Electric Cooperative**

573-581-3630 ~ [www.consolidatedelectric.com](http://www.consolidatedelectric.com)

**Cuivre River Electric Cooperative**

636-528-8261 ~ [www.cuivre.com](http://www.cuivre.com)

**Howard Electric Cooperative**

660-248-3311 ~ [www.howardelectric.com](http://www.howardelectric.com)

**Three Rivers Electric Cooperative**

573-644-9000 ~ [www.threeriverselectric.com](http://www.threeriverselectric.com)

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A breakdown of energy use by common home appliances

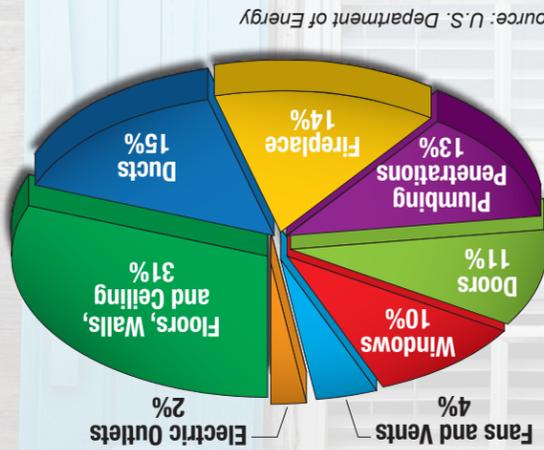
**Take Control & Save**  
 A Cooperative Effort for Energy Efficiency  
[www.TakeControlAndSave.coop](http://www.TakeControlAndSave.coop)

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.



## Be an Energy Star

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



Source: U.S. Department of Energy

Seeing where energy escapes in the home gives you ideas where you can make improvements. Where a typical home loses energy

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):  
 $4,500 \text{ watts} \times 3 \text{ hours} = 13,500 \text{ watt-hours}$   
 $13,500 \text{ watt-hours} / 1,000 = 13.5 \text{ kWh}$   
 $13.5 \text{ kWh} \times \$0.10 = \$1.35$   
 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.

Example: An electric hand mixer that uses 120 watts. To calculate its use for 15 minutes: (120 watts might be written 120W)  
 $120 \text{ watts} \times 1/4 \text{ hour} = 30 \text{ watt-hours}$   
 $30 \text{ watt-hours} / 1,000 = .03 \text{ kWh}$   
 $.03 \text{ kWh} \times \$0.10 = \$0.003$   
 (three tenths of one cent)

**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 listed in the charts, use the following formula:  
 $\text{amps} \times \text{volts} = \text{watts}$   
 $\text{watts} \times \text{hours} = \text{watt-hours}$   
 $\text{kWh} \times \$0.10 = \text{estimated cost of use}$   
 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.  
 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:

**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.

**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.

**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.

# Appliance Energy Use Guide

| Kitchen                                | Typical wattage | Estimated cost |
|--|-----------------|----------------|
| Coffee Maker                           | 894             | \$0.09/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>       |       |                |
| 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      |

| 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      |

| <b>Mini-Split Heat Pumps</b> |                       |                  |
|------------------------------|-----------------------|------------------|
| Size                         | Cooling/heating watts |                  |
| 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 |

| <b>Air Source Heat Pump (with back-up electric furnace)</b> |           |
|---|-----------|
| 3 Ton with 15kW Backup                                      | \$2.06/hr |
| 4 Ton with 15kW Backup                                      | \$2.35/hr |
| 5 Ton with 15kW Backup                                      | \$2.56/hr |

| <b>Ground Source Heat Pump (without back-up electric furnace)*</b> |           |
|--|-----------|
| 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.

| <b>Room Air Conditioner</b> |       |           |
|-----------------------------|-------|-----------|
| 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 |

| <b>Central Air Conditioner</b> |        |           |
|--------------------------------|--------|-----------|
| 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      |

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