

Calculate and Conserve!

By understanding your energy usage, you can take charge of your electric bill. Use these formulas to help calculate your energy usage and projected costs.



A watt (W) is a measurement of power. Most appliances and light bulbs are labeled with the wattages they use.

A kilowatt (kW) is equivalent to 1000 watts.

A kilowatt-hour (kWh) is a measurement of energy consumption. It is the amount of power used over time, and the basis for how electric bills are calculated.

Calculate Energy Consumption:

Power x Time = Energy

For example, using a 100-watt bulb for 10 hours equals 1 kWh.

(100 watts x 10 hours = 1000 watt-hours or one kilowatt-hour.)

Calculate Energy Costs:

Power (kW) x Time (hours of operation) x Price (\$/kWh) = Cost of Operation

To find out how much it may cost to run a specific appliance, follow these five easy steps. Keep in mind that you are billed per kilowatt-hour (kWh), or for how much electricity you use in one hour. **Examples are based on an average cost of \$0.144 per kWh.**

1) Obtain the wattage (watts) from the appliance nameplate. *Example: A quartz heater with a nameplate of 1500W.*

Note: if listed as kW, skip to step 3. If amps are specified, multiply amps x voltage to obtain watts.

2) Divide the number of watts by 1000 to get kW. *Example: 1500W ÷ 1000 = 1.5kW.*

3) To find out how many kilowatt-hours (kWh) the appliance uses, multiply the kW x the number of hours* the appliance is running each day. *Example: The heater runs for 10 hours per day = 1.5kW x 10 hours = 15 kWh per day.*

*If the appliance operates for less than one full hour, (i.e. a hair dryer), divide the number of minutes by 60. For example: a hair dryer is used 5 minutes each day, or $5 \div 60 = 0.083$ hours per day. A 1250W hair dryer = $1.25kW \times 0.083$ hours per day = 0.1 kWh per day.

4) To calculate the daily operating cost, multiply the kWh of the appliance by the average cost per kWh. *Example: The quartz heater daily cost = 15 kWh x \$0.144 = \$2.16 per day to operate.*

5) To calculate the monthly operating cost, multiply the daily cost by the number of days the appliance is used during the month. *Example: If you run the 1500W quartz heater 10 hours per day, 30 days per month = 15 kWh x \$0.144 x 30 = \$64.80.*

Remember: Calculate and Conserve!

For the example used, you might want to conserve energy by putting the heater on a thermostat or timer to decrease the time it is used.



I did my own Home Energy Audit

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Home Energy Audit

Use this Do-it-Yourself Home Energy Audit to find ways to save. Check each area of your home to make sure you're using energy efficiently. Every nook and cranny holds potential inefficiencies, so it pays to be thorough!

INSULATION and DUCTWORK

Attic

- Minimum R-value of 38 for insulation (approximately 12 inches of blown-in cellulose or 18 inches of blown-in fiberglass)
- Insulation spread evenly
- Insulation in good condition
- Attic vents are unblocked by insulation
- Attic access doors properly insulated and sealed

Walls and Floors

- Minimum R-value of 10 for perimeter walls (approximately 2 inches of foam board insulation)
- Minimum R-value of 25 for under-floor insulation (approximately 5.5 inches of fiberglass batt insulation)

Basement/Crawlspace

- Ductwork sealed and insulated
- Hot water pipes insulated

HEATING and COOLING

- Air supply and return vents are unblocked by furniture
- Air handler filters are clean
- HVAC system has had annual maintenance check-up
- Programmable thermostat installed and programmed: 78° or higher in the summer, 68° or lower in the winter

APPLIANCES and LIGHTING

- Appliances are ENERGY STAR® qualified
- Inactive battery chargers, electronics and appliances unplugged
- Refrigerator and freezer condenser coils clean
- Refrigerator door gasket tight
- Dishwasher energy-saving feature turned on

- Washing machine loads run with cold water when possible
- Line dry laundry when possible
- Dryer duct clean

Lighting

- Use compact fluorescent bulbs (CFLs) with the ENERGY STAR label
- Outdoor lighting automatically triggered by motion or photosensor

AIR INFILTRATION

- Windows and Doors
- Windows close and lock properly
- Window gaskets in good condition
- Window trim sealed with caulk
- Doors properly weather stripped
- Doors close and latch properly

Exterior Penetrations

- Plumbing and electrical entrances sealed:
 - Under sinks
 - Dryer vents
 - TV and phone line entrances
- Gaskets behind outlets and light switches
- Fireplace damper sealed tightly

WATER HEATING

- Thermostat set to 120°
- Water heater insulated if in unconditioned space
- Low flow showerheads, with flow rate of 2.25 gallons per minute (gpm) or less, and faucet aerators, with flow rate of 2.2 gpm or less, installed
- Pipes insulated
- No dripping or leaking faucets

Well Pump

- Operating properly
- Good pressure
- No leaks

Energy Savings Tips

- Clean and dust light fixtures to ensure they give out as much light as possible.
- Use your microwave or toaster oven. It's more efficient than either a gas or electric oven.
- Air dry dishes instead of using the dishwasher's drying cycle.
- Turn off all unused lights, electronics and appliances.
- Use surge protector power strips for electronics, such as TVs, DVD players and game consoles; turn off the power strips when electronics are not in use.
- Wash full loads of clothes and dishes.
- Clean the lint filter on your clothes dryer after each load and periodically check exhaust duct for leaks, buildups or blockages.
- Keep your freezer full. Frozen food helps keep other food frozen, which means less work on your freezer.
- Check the seal on your refrigerator and freezer with the dollar-bill test. Close the door on a bill so that part of it is left outside. Then try to pull the bill out of the door. If it comes out easily you should install a new seal.
- Position your refrigerator at least four inches from the wall if it has back coils. Keep the main compartment between 36° F and 38° F; keep the freezer between 0° F and 5° F.
- Haul away that old refrigerator or freezer in the garage.
- When purchasing new appliances, look for the ENERGY STAR label. These products meet strict efficiency guidelines.



“I set my thermostat to cheap.”

By setting your thermostat to 78° or higher in the summer and 68° or lower in the winter you can greatly decrease your heating and cooling costs.

Visit togetherwesave.com, www.azgcec.coop or energysavers.gov to find other helpful conservation tips and energy saving tools.