



Energy Use and Savings Guide

For the residential customer

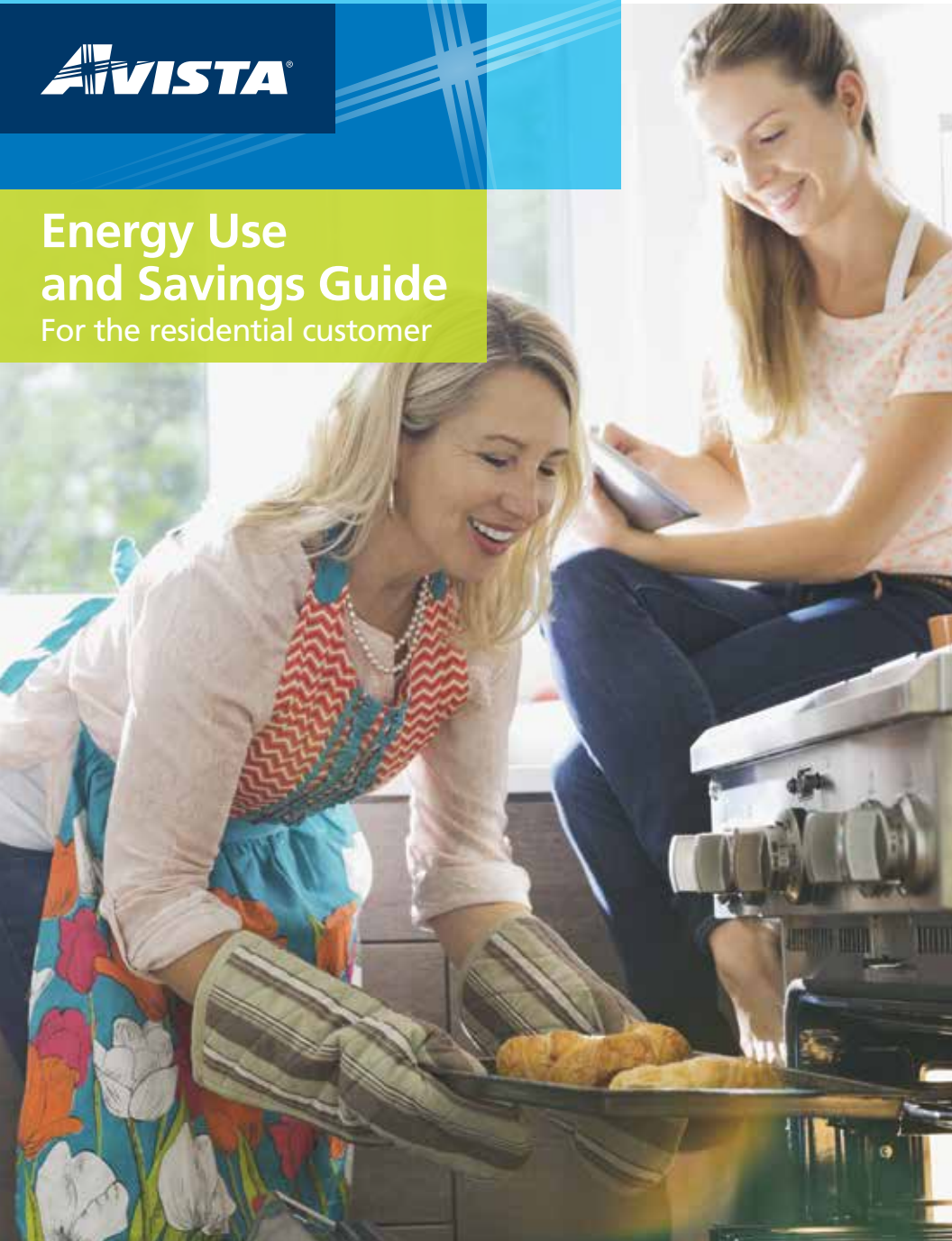

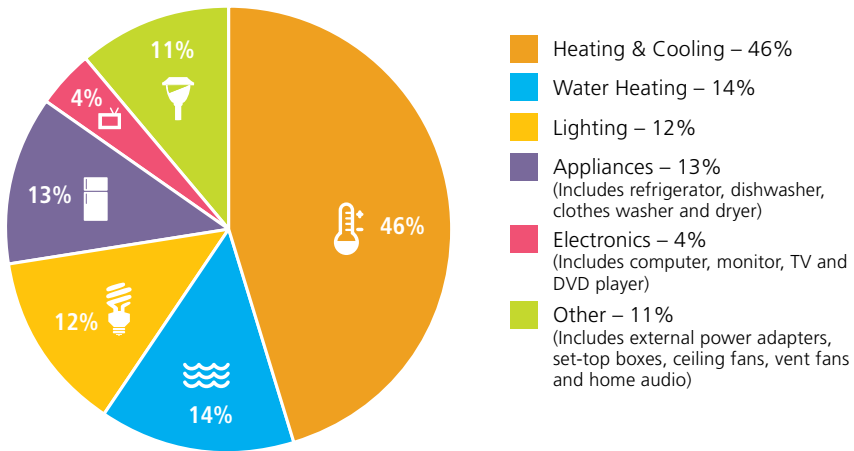


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Typical Energy Use in Your Home

The energy bills for a **typical U.S. single family** home totals approximately \$2,200 per year. Where does all this money go? The cost of heating your home can represent 40% to 60% of your total energy bill. The chart below shows the breakdown of energy use by category and starts to give you a sense of where savings can be found. Reducing energy consumption by just 15% could save you over \$300 a year in energy costs.



Managing Your Energy Budget

Having a budget is always a good idea. But developing a budget starts with understanding your resource needs. Each month, you need food, clothing, transportation and energy to run your home. Understanding your energy usage is the first step to creating that portion of your budget. Inside this booklet, you'll find many energy saving tips to help you manage your resources.

This booklet contains ideas and suggestions on how you can monitor—and better control—your energy consumption. You may already be familiar with some of our energy savings suggestions; some may surprise you though.

Individual lifestyle and energy use habits, number and age of occupants, as well as the size, design, levels of insulation and heating system in your home, all combine to determine how much energy you will use for heating.

The statistics in this booklet are based on national averages. The wattage or energy usage and efficiencies of your appliances, your own use habits, as well as the size of your family will vary. So, keep this in mind when you're reviewing your own energy use.

Understanding This Guide

Listed below are terms and definitions that will be used throughout this guide. All numbers and costs included are a representation based on national average use with average Avista rates.

Kilowatt Hours (kWh): We measure the amount of electricity in Watt hours. One kilowatt hour equals 1,000 Watt hours. The kilowatt hours on your bill equals the rate or speed of use (kilowatts) x the length of time electricity was used. Running a 5,000-watt (5 kilowatt) clothes dryer for 1 hour uses 5 kilowatt hours of electricity. Burning a 100-watt light bulb for 10 hours uses 1 kilowatt hour.

Therms: Your use of gas is billed in units called therms. Therms identify the heating value provided by gas. One therm equals the heating capacity of approximately 100,000 wooden kitchen matches.

Approximate Watts: The wattage is the consumption rate of electricity a device exhibits while operating. This energy consumption may occur when a computer is turned on, when a kitchen mixer is in use or when light bulbs are turned on in a light fixture.

Monthly kWh Usage: The monthly kilowatt hour usage for each device is based on an assumed typical month of operation, estimating the hours the device is operating in conjunction with its power consumption as noted in the Watt rating.

Annual kWh Usage: The annual kilowatt hour usage is an estimate of the yearly energy consumption in consideration of the Watts and hours of operation assumptions. In some cases, the season often creates just a few months of use per year.

Estimated Monthly Cost: The estimated monthly cost is based on the energy consumption at \$0.09 per kilowatt hour for electricity or \$0.84 per natural gas therm.

Benefits of Natural Gas

1. Affordability: Natural gas costs less to use in your home than electricity. On average, electricity costs more than twice as much as natural gas.

2. Convenience and Reliability: Natural gas is piped directly into your home. It's always there when you need it.

3. Comfort: Natural gas heat warms your home quickly compared to an electric heat pump by moving a small volume of hot air versus a large volume of warm air that can feel drafty.

4. Domestic Supply: Nearly 100% of the natural gas consumed in the U.S. is produced in North America with 90% coming directly from the U.S.

5. Energy Efficiency: Natural gas is highly efficient. About 90% of the natural gas produced is delivered to customers as useful energy. In contrast, only about 30% of the energy converted to electricity from natural gas reaches consumers.

Where available, natural gas is increasingly the fuel of choice in today's homes. Natural gas compares very favorably to other fuels. Below is a current snapshot of how natural gas compares to other fuels and some benefits to consider when choosing how to heat your home.

BTU: The British thermal unit (BTU) is a measure of heat. MMBtu equals 1,000,000 BTU. A typical home uses 5 to 7 MMBTU's per month in the heating season.

Heating cost per million BTU in Washington and Idaho (April 2016)	Efficiency	Heating Cost per Month
Natural gas furnace	80%	\$63.75
Natural gas furnace	94%	\$54.26
Electric resistance furnace or baseboard	100%	\$158.22
Electric heat pump	175%	\$90.41
Electric heat pump	225%	\$70.32
Propane furnace	80%	\$177.63
Propane furnace	94%	\$151.18

Electric resistance costs 2.5 times more than natural gas, propane 2.8 times more than natural gas, a heat pump backed by electric resistance heat is 1.4 times more than gas.

Try our online Fuel Cost Comparison Calculator to estimate your annual space or water heating costs compared to alternative energy sources.

Go to avistautilities.com/fuelcalc.

Direct Use of Natural Gas

You probably know about the comforts of natural gas—warm, even heat; precise temperature control when cooking; consistent hot water; and the cozy ambience of a natural gas fireplace. But did you know natural gas is the cleanest burning fossil fuel? As such, it plays a central role in emerging initiatives to help protect our environment. And while natural gas can be burned in turbines to produce electricity for our region (about 40% efficient), delivering it directly to your home for heating and cooking is the most efficient use of this resource (about 90 to 92% efficient).

Electricity



**Based on 2007 actual generation mix of all energy sources*

Natural Gas



*Information is based on national numbers and figures.
Data source: Gas Technology Institute*



MMBtu: MMBtu describes a defined volume of natural gas as a commodity, essentially 1,000 cubic feet of the fuel in the pipe. Another common term for natural gas usage is the *therm*, the unit used in residential billing. Ten therms are equivalent to a single MMBtu of natural gas. For a typical home that uses natural gas for space and water heat, about 50 to 70 therms, or 5 to 7 MMBtus of natural gas would be consumed in one month.



Heating and Cooling

Energy Saving Tips

- On sunny winter days, open your draperies to get full benefit of sun shining through the windows. In summer, close the draperies to help keep out unwanted heat.
- Fireplace dampers should be kept closed when you're not using the fireplace. A chimney can draw off as much as 25% of the heated air in your house if the damper is left open. Safely block off unused fireplaces when possible.
- When selecting an air conditioning unit, both room or central, check its Seasonal Energy Efficiency Ratio (SEER). The SEER indicates a unit's relative energy efficiency. Most units are tagged with this information, or your dealer can help you determine the SEER. The higher the SEER, the better. A SEER of 13 or above is preferred, 18 or above is exceptional.
- When selecting a heat pump, check its Heating Seasonal Performance Factor (HSPF). The HSPF indicates a heat pump's relative annual heating efficiency. A higher HSPF of 8.5 and above will provide lower operating costs for heating.
- Turn down the heat in winter. Keep your thermostat at or below 68° F; setting your thermostat three degrees lower in the winter can reduce your bill by about 10%.



Reading Your Meter

Electric and natural gas meters are not difficult to read and they can provide you with information about your energy consumption.

Visit [avistautilities.com/readyourmeter](https://www.avistautilities.com/readyourmeter) to learn more about how to read your meter.



Heating and Cooling

Energy Saving Checklist

- Block drafts.** Check caulking and weather stripping around windows and doors. If you see cracks, light, or feel a draft, make repairs where needed.
- Seal leaks.** Ductwork exposed to outside air or in unconditioned spaces should be wrapped securely with insulation; joints and connections should be sealed with insulation tape.
- Check furnace filter.** Check filters at least once a month; clean or replace them when dirty.
- Bring in a professional.** A qualified serviceman should check heating and cooling equipment at the beginning of each season to ensure efficient operation.
- Use drapes or shade.** Window coverings are one of the easiest ways to help insulate your house. Keep them closed on cold days and open on sunny ones.
- Use fans in the summer.** Try using fans in the summer before switching on the air conditioning. Old A/C equipment can be equivalent to using 30 or more fans. If you must use your air conditioner, set it at 78° F; each degree over 78° in the summer will save you approximately 3% on your cooling bill.
- Program your thermostat.** Adjust temperature settings according to a preset schedule. This way you can warm up or cool down your rooms when you know you'll be awake or at home. Consider a Wi-Fi enabled smart thermostat that learns your settings.



Heating and Cooling

Energy Use Guide – Electric

	Average Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Air purifier	70	51.1	613.2	\$4.60
Air purifier – ENERGY STAR®	20	14.6	175.2	\$1.31
Dehumidifier, room	350	25.6	306.6	\$2.30
Dehumidifier, whole-house	142	103.7	1,243.92	\$9.33
Dehumidifier, whole-house – ENERGY STAR	111	81	972.36	\$7.29
Humidifier	75	5.5	65.7	\$0.49
Portable fan	100	7.3	87.6	\$0.66
Room air conditioner 5 hours per day	1,500	225	562.5	\$20.25
Room air conditioner 1 hour per day	1,500	45	112.5	\$4.05
Space heater 1 hour per day	1,500	45	270	\$4.05
Space heater 10 hours per day	1,500	450	2,700	\$40.50

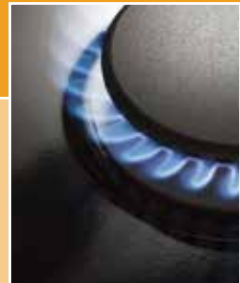
Energy Use Guide – Natural Gas

	Therm	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Fireplace 75,000 BTU 10 hours per day	0.75	225	1,350	\$191.25
Fireplace 25,000 BTU 10 hours per day	0.25	75	450	\$63.75
Fireplace 25,000 BTU 10 hours per month	0.25	2.5	15	\$2.13

Converting to Natural Gas Can Save Energy

Upgrading to high-efficiency natural gas equipment using rebates can save you money.

Visit avistautilities.com/resrebates to find available rebates and incentives.





Water Heating

Energy Saving Tips

- Set water heater temperature at 120° F. If you have a dishwasher, check the manufacturer's instructions for suggested temperature setting. Generally, residential water heaters should not exceed 140° F or be below 115° F.
- Turn off electricity at your circuit breaker/fuse box before adjusting thermostats on the water heater for safety, or when you are going away from home for three days or more to save energy.
- Turn gas water heater to pilot only if you are going away from home for a week or more.
- Once every three months, drain a pail or two of water from the drain at the bottom of your water heater. This removes sediment and mineral deposits, which make your water heater less efficient.
- Always use a sink stopper or dishpan rather than washing or rinsing dishes under running hot water.
- Showers generally take less hot water than baths and dishwashers generally take less water than hand washing.
- Buy ENERGY STAR appliances.
- Consider a tankless natural gas water heater that reduces standby losses.

Energy Saving Checklist

- Keep showers short.** Try to keep your shower to no longer than five minutes.
- Adjust your temperature settings.** Set your water heater at 120° F.
- Replace washers on faucets that drip.** A leaky faucet can waste 2,500 gallons of hot water per year at a rate of one drip per second.
- Install a low-flow shower head.** It can reduce your home water consumption as much as 50%, and reduce your energy cost of heating the water also by as much as 50%. No more than 1.5 gallons per minute.



Water Heating

Energy Use Guide – Electric

	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Water heater, 50-gallon heat pump	182.9	2,195	\$16.46
Water heater, 50-gallon high-efficiency	385.2	4,622	\$34.67
Water heater, 50-gallon standard-efficiency	404.8	4,857	\$36.43

Energy Use Guide – Natural gas

	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Water heater, 50-gallon, natural gas	20	240	\$17.00
Water heater, 40-gallon, natural gas	17.5	210	\$14.88





Lighting

Energy Saving Tips

- Light bulbs differ in energy efficiency. Wattage measures only the amount of energy needed to light the bulb. Light actually given off is measured in lumens. The law now requires that manufacturers list the wattage, the lumen output and the approximate life span of each bulb on the package. The most energy efficient bulb is the one that gives off the most lumens per Watt. Compare bulb ratings by dividing lumens by Watts.
- A 23-watt compact fluorescent lamp (CFL) will produce more light than a 100-watt incandescent bulb and can be used in kitchens, baths, laundry and work areas.
- ENERGY STAR qualified CFL bulbs use 75% less energy than incandescents.
- Light-emitting diode (LED) bulbs use up to 90% less electricity to produce the same amount of light as their traditional incandescent counterparts.
- Only use dimming CFLs or LEDs in dimming sockets.
- Light-colored ceilings reflect the light downward for better lighting efficiency.
- Security lights are a wise precaution. Outside post lights and floodlights can be controlled by a photoelectric cell for automatic dusk-to-dawn lighting.
- Automatic timers to turn lights on or off when you're not at home are available at a reasonable cost.

Energy Saving Checklist

- Turn it off.** Turn off lights when you are not using them.
- Make the switch.** Change out all regular incandescent lamps with ENERGY STAR qualified LED bulbs if they are used more than two hours per day.
- Keep bulbs clean.** Dust can cut light output by as much as 25%.
- Dispose of your used bulbs properly.** Recycle your old CFLs at a participating recycling center near you.



Energy Use Guide

Approximate Lumens	Type	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
250	Incandescent	20	1.8	21.6	\$0.16
	CFL	7	0.6	7.6	\$0.06
	LED	3	0.3	3.2	\$0.02
	Halogen	19	1.7	20.5	\$0.15
500	Incandescent	40	3.6	43.2	\$0.32
	CFL	10	0.9	10.8	\$0.08
	LED	6	0.5	6.5	\$0.05
	Halogen	32	2.9	34.6	\$0.26
800	Incandescent	60	5.4	64.8	\$0.49
	CFL	15	1.4	16.2	\$0.12
	LED	9	0.8	9.7	\$0.07
	Halogen	42	3.8	45.4	\$0.34
1,200	Incandescent	75	6.8	81	\$0.61
	CFL	20	1.8	21.6	\$0.16
	LED	12	1.1	13	\$0.10
	Halogen	54	4.9	58.3	\$0.44
1,800	Incandescent	100	9	108	\$0.81
	CFL	27	2.4	29.2	\$0.22
	LED*	18	1.6	19.4	\$0.15
	Halogen	72	6.5	77.8	\$0.58
2,500	Incandescent	150	13.5	162	\$1.22
	CFL	42	3.8	45.4	\$0.34
	LED*	25	2.3	27	\$0.20
	Halogen	130	11.7	140.4	\$1.05
	Night Light, Incandescent	5	1.5	18	\$0.14
	Night Light, LED	1	0.3	3.6	\$0.03

Assumes "on" average of three hours a day.

*Limited availability.



Major Appliances

Refrigeration Energy Saving Tips

- Choose a well-insulated, energy-efficient refrigerator with a separate door for the freezer compartment (that way, when removing an item from the freezer, you avoid opening the refrigerator door unnecessarily).
- Don't put warm foods directly into the refrigerator. Allow hot foods to cool, then refrigerate. Cooked meats, however, should be refrigerated immediately.
- Cover all foods and liquids. In frost-free models, evaporation of the liquid will force the unit to work harder to remove the moisture.
- Do not locate the unit near a heat source.
- Check the tightness of your refrigerator door gasket by shutting a piece of paper in the door. If the paper slides out without resistance, your refrigerator may be leaking cold air. Consider replacing the door seals.
- Every three months vacuum the condenser coils located at the bottom or rear of the refrigerator to remove accumulated dust.
- Both the refrigerator and the freezer operate most efficiently when they are full, but not overcrowded. It takes more energy to keep air cold than it does to keep food or liquid cold. Be sure to allow enough space between foods and containers for air to circulate freely.

Refrigeration Energy Saving Checklist

- Adjust the temperature.** Set your refrigerator between 37 to 40° F and your freezer between 0 to 5° F.
- Keep fridge door closed.** Know what you want out of the refrigerator before you open the door. An open door is wasted energy.
- Defrost freezer.** Defrost when ice is ¼" thick.
- Clean refrigerator coils.** Keep coils clean to keep your refrigerator in peak operating condition. They may be behind or below the fridge.
- Cover and wrap food.** Uncovered foods and liquid release moisture, which makes the fridge work harder.
- Fill it up.** A full fridge or freezer uses less energy. Fill with jugs of water to take up space.



Major Appliances

Refrigeration Energy Use Guide

	Average Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Chest freezer	46.5	33.9	406.9	\$3.05
Chest freezer – ENERGY STAR	40.9	29.8	358.1	\$2.69
Refrigerator, bottom-mounted freezer (automatic defrost)	66.7	48.7	584.1	\$4.38
Refrigerator, bottom-mounted freezer (automatic defrost) – ENERGY STAR	52	38	455.6	\$3.42
Refrigerator, bottom-mounted freezer and through-door ice (automatic defrost)	77.1	56.2	675	\$5.06
Refrigerator, bottom-mounted freezer and through-door ice (automatic defrost) – ENERGY STAR	60.1	43.9	526.5	\$3.95
Refrigerator with or without a top-mounted freezer (automatic defrost)	61.9	45.2	542.5	\$4.07
Refrigerator with or without a top-mounted freezer (automatic defrost) – ENERGY STAR	48.3	35.3	423.2	\$3.17
Refrigerator-freezer or refrigerator only (manual or partially automatic defrost)	55.7	40.7	488.3	\$3.66
Refrigerator-freezer or refrigerator only (manual or partially automatic defrost) – ENERGY STAR	43.5	31.7	380.9	\$2.86
Side-by-side refrigerator/freezer (automatic defrost)	73.2	53.4	641.1	\$4.81
Side-by-side refrigerator/freezer (automatic defrost) – ENERGY STAR	57.1	41.7	500	\$3.75
Side-by-side refrigerator/freezer with through-door ice (automatic defrost)	77.7	56.7	680.7	\$5.10
Side-by-side refrigerator/freezer with through-door ice (automatic defrost) – ENERGY STAR	60.6	44.2	530.9	\$3.98
Upright freezer (automatic defrost)	75	54.8	657.3	\$4.93
Upright freezer (automatic defrost) – ENERGY STAR	66	48.2	578.4	\$4.34
Upright freezer (manual defrost)	52.5	38.3	459.5	\$3.45
Upright freezer (manual defrost) – ENERGY STAR	46.2	33.7	404.3	\$3.03



Major Appliances

Range / Oven Energy Saving Tips

- Each time you open the oven door you can lose up to 20% of the heat. If you must look, do so through the oven window. Or rely on your own thermostat and timer. (This will cut down on baking failures, too!)
- The oven is a very inefficient toaster. It costs three times as much to toast bread in the oven as in a pop-up toaster.
- Match the size of your cooking pans to the size of the surface units on your range so you won't waste heat. Flat-bottomed pans receive heat directly and conserve energy.
- When boiling water, bring the water to a boil on high heat, then reduce the heat to your cooking temperature.
- Instead of heating water in an open pan, use a teakettle or microwave.
- Food should always be cooked on the lowest possible setting.
- Leave at least two inches between pans in the oven for proper heat circulation. Pans should not touch each other, the oven doors or walls.
- If the kitchen is chilly, don't use the electric range for heat. A small electric heater will do a much better job.
- Thaw frozen foods before placing them in the oven. Putting a frozen roast directly in the oven requires one-third additional cooking time (microwave ovens can be used for quick thawing).
- When using glass or ceramic dishes, you can lower the oven setting 25° F.
- If your electric or gas range has a self-cleaning feature, clean it while the oven is still hot after removing a meal. Since a self-cleaning oven must be well insulated, it uses less energy for baking or roasting. Using the self-cleaning feature costs about 15 cents per use.



Major Appliances

Range / Oven Energy Saving Checklist

- Keep racks clear.** It's tempting to line oven racks with foil to keep things clean, but don't do it. The hot air needs to be able to circulate to cook food efficiently.
- Use lids.** When cooking, lids keep heat and steam in and help food cook more quickly, which saves energy.
- Clean the burner pans on your stove.** When clean, burner pans will reflect heat back up to pots and pans.
- Don't peek.** You lose heat every time you open the door or lift the lid.
- Use the smallest pans possible.** It takes less energy to heat smaller pans.

Range / Oven Energy Use Guide – Electric

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Range top 40 minutes/day (large burner)	2,400	48	576	\$4.32
Self-cleaning oven, 30 minutes/day (1 clean cycle per month)	3,600	57.6	691.2	\$5.18
Standard oven, 30 minutes/day (non-self-cleaning)	3,300	49.5	594	\$4.46

Range / Oven Energy Use Guide – Natural Gas

	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Range, 4 cooktop, natural gas (40 minutes/day)	1.83	21.96	\$1.56
Oven, natural gas (30 minutes/day)	3.81	45.72	\$3.24
Pilot light	5.48	65.76	\$4.66



Major Appliances

Dishwasher Energy Saving Tips

- Hold dishes in your dishwasher until you have a full load. You'll use less hot water and save energy.
- According to ENERGY STAR, you can save 5,000 gallons of water each year and \$40 in energy costs using a dishwasher instead of washing dishes by hand.
- One dishwasher load usually uses less hot water than three washings by hand.

Dishwasher Energy Saving Checklist

- Fill it up.** It costs exactly the same to wash one dish as it does to wash a full load of dishes.
- Scrape dishes instead of pre-rinsing them.** Dishwashers made in the past five to ten years can clean even heavily soiled dishes without pre-rinsing.
- Use air-dry options.** Keep your machine from using a heating element to bake your dishes dry and opt to air dry your dishes instead.

Electric Water Heat

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Dishwasher (including hot water from electric water heater)	822.26	40.3	483.8	\$3.63
Dishwasher (including hot water from electric water heater) – ENERGY STAR	632.88	29.6	354.8	\$2.66

Natural Gas Water Heat

	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Dishwasher (including hot water from gas water heater)	1.1	12.9	\$2.27
Dishwasher (including hot water from gas water heater) – ENERGY STAR	0.7	8.3	\$1.79

Loads per year: 215



Major Appliances

Laundry Energy Saving Tips

- Match detergent and water level to the load. If your washer doesn't have a partial load setting, let the machine fill to the desired water level, then turn the dial manually to begin the wash cycle.
- When possible, wash and rinse clothes in cold water. However, hot water may be necessary for some types of wash loads, like baby clothes.
- For heavily soiled clothes, use the soak cycle, or prepare the load for washing and then let stand in the water for 10 to 15 minutes before starting the wash cycle.
- Keep your dryer exhaust vent clean. If clogged, it can lengthen drying time and increase energy consumption.
- Select the correct drying temperature and time. Don't over dry; in addition to wasting energy, over drying gives clothes a harsh feel and causes wrinkling.
- Sort clothes by thinness to avoid running an additional cycle for only one or two slow drying items.
- Vent your clothes dryer to the outside to reduce buildup of excess heat, moisture, and laundry chemicals.
- Don't overload dryer because clothes will take longer to dry.
- Since an iron heats faster than it cools, first iron the fabrics that require lower temperatures, then work up to fabrics requiring a hotter setting.

Laundry Energy Saving Checklist

- Select cold water.** Hot water only needs to be used for very dirty loads.
- Only run full loads.** The machine uses about the same amount of water whether you wash a full load or just one item.
- Hang it up.** Instead of using the dryer, dry clothes outside in good weather—sunlight is free.
- Clean the lint filter after every load.** Clogged filters drive up drying time and costs.



Major Appliances

Laundry Energy Use Guide – Electric

	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Clothes dryer, compact (120-volt)	25.4	305	\$2.29
Clothes dryer, compact (240-volt)	28.3	340	\$2.55
Clothes dryer, standard	57	684	\$5.13
Clothes, iron	16.5	198.1	\$1.49
Clothes washer (excluding water heating energy use)	6.3	75	\$0.56
Clothes washer (excluding water heating energy use) – ENERGY STAR	2.1	25	\$0.19
Clothes washer (including water heating energy use)	31.2	374	\$2.81
Clothes washer (including water heating energy use) – ENERGY STAR	10.5	126	\$0.95
Clothes washer and dryer	75.1	901	\$6.76
Clothes washer and dryer – ENERGY STAR	38.9	467	\$3.50
Vacuum cleaner	2.8	33	\$0.25

Laundry Energy Use Guide – Natural Gas

	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Clothes dryer, standard	1.8	21	\$2.00



Electronics

Kitchen Electronics Energy Saving Tips

- Use small appliances, such as your electric fry pan or toaster oven, whenever possible to cook small amounts of food. Use your big oven to bake complete meals, or to bake in quantity (perhaps to freeze for later).
- A pressure cooker and a microwave oven can cut down on cooking time and, in many cases, on energy usage.
- Keeping the inside of your microwave clean allows your food to cook more efficiently.

Kitchen Electronics Energy Saving Checklist

- Smaller is better.** For small meals, utilize the microwave, toaster oven, electric pans or other kitchen gadgets to avoid heating up the whole oven for one toasted cheese sandwich.
- Skip the oven.** In warm weather, cook outdoors on a grill.
- Shut off kitchen fans.** While fans are great for removing smells from the kitchen, they also suck heat out. Shut them off when you don't need them.
- Unplug it.** Your toaster should only be plugged in when you are using it.

Kitchen Electronics Energy Use Guide

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Blender (3 minutes/day)	300	0.45	5.4	\$0.04
Can opener (3 minutes/day)	100	0.15	1.8	\$0.01
Coffee machine (20 minutes/day)	1,100	11	132	\$0.99
Cooktop (20 minutes/day)	1,200	12	144	\$1.08
Espresso maker (20 minutes/day)	360	3.6	43.2	\$0.32
Microwave oven (10 minutes/day)	1,100	5.5	66	\$0.50
Popcorn maker (3 minutes/day)	1,400	2.1	25.2	\$0.19
Stand mixer (3 minutes/day)	100	0.15	1.8	\$0.01
Standard oven (non-self-cleaning, 20 minutes/day)	3,300	33	396	\$2.97
Toaster (3 minutes/day)	1,100	1.65	19.8	\$0.15
Toaster oven (3 minutes/day)	1,200	1.8	21.6	\$0.16



Electronics

Family Room / Living Room Electronics Energy Saving Tips

- Look for the ENERGY STAR label on consumer electronic products. These products use less energy without sacrificing quality or performance.
- Electronics may continue to use power even when they appear to be off. The little glowing light means they are using energy—up to 10% of your annual electricity usage. You can make sure you're cutting use by switching everything off with one power strip switch.
- Don't overload circuits by plugging too many electronics into one outlet.

Family Room / Living Room Electronics Energy Saving Checklist

- Unplug it.** Battery chargers or power adapters for devices like cell phones, eBooks and more may pull juice even when they're not in use—don't let them.
- Use power strips.** Plug your video game consoles, stereo, DVD players and any other home electronics into a single power strip so you can switch it off and cut all power to items at once.
- Try "smart" power strips.** They can help reduce your power usage by shutting down power to products that are not in use or that go into standby mode.

Check Out Your Energy Use by Checking Out a Kill-A-Watt™ Meter

Avista has teamed up with local libraries to make Kill-A-Watt™ meters available for check-out. Kill-A-Watt™ measures the energy usage of household appliances and electronics. By finding out how much energy your electric devices are using, and then making energy-saving adjustments, you can take charge of your electricity use and lower utility costs year-round.





Family Room / Living Room Electronics Energy Use Guide

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Answering machine**	1	8.76	105.12	\$9.46
Apple TV streaming box**	3	26.28	315.36	\$28.38
Blu-Ray player*	17	1.53	18.36	\$1.65
Blu-Ray player – ENERGY STAR*	13	1.17	14.04	\$1.26
CD player*	7	0.84	10.08	\$0.91
Clock radio**	10	87.6	1,051.2	\$94.61
Cordless phone**	3	26.28	315.36	\$28.38
CRT TV, 45-inch*	298	26.82	321.84	\$28.97
Digital photo frame, 7-inch*	1	0.46	5.48	\$0.04
DVD player*	12	1.08	12.96	\$1.17
DVD player – ENERGY STAR*	6	0.72	8.64	\$0.78
HD DVR set-top box**	2	17.52	210.24	\$18.92
HD receiver set-top box**	1.5	13.14	157.68	\$14.19
iPhone 4 charger*	5	0.0075	0.09	\$0.01
LCD TV, >60-inch*	190	17.1	205.2	\$18.47
LCD TV, 45-inch*	110	9.9	118.8	\$10.69
LED TV, 45-inch*	127	11.43	137.16	\$12.34
LED TV, 55-inch*	155	13.95	167.4	\$15.07
LED TV 75-inch 4K*	282	25.38	304.56	\$27.41
Microsoft Xbox 360 (2010), standby**	1	8.76	105.12	\$9.46
Microsoft Xbox 360 (2010), on*	88	0.13	1.58	\$0.14
Mobile phone, charging*	5	0.0075	0.09	\$0.01
MP3 player, charging*	1	0.0015	0.018	\$0.00
Nintendo Wii (2010), standby**	2	17.52	210.24	\$18.92
Nintendo Wii (2010), on*	14	0.02	0.25	\$0.02
Plasma TV, 45-inch*	81	7.29	87.48	\$7.87
Plasma TV, >60-inch*	190	17.1	205.2	\$18.47
Portable stereo (boom box)**	7	61.32	735.84	\$66.23
Rear-projection TV*	200	18	216	\$19.44



Family Room / Living Room Electronics Energy Use Guide (Continued)

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Satellite dish**	1	8.76	105.12	\$9.46
Security system**	1.2	10.51	126.14	\$11.35
Small stereo with remote*	24	2.16	25.92	\$2.33
Smoke detector (hardwired)**	0.05	0.43	5.25	\$0.47
Sony PlayStation 3 (2010), standby**	1	8.76	105.12	\$9.46
Sony PlayStation 3 (2010), on*	85	7.65	91.8	\$8.26
Standard DVR set-top box**	2	17.52	210.24	\$18.92
Standard receiver set-top box**	1.8	15.77	189.22	\$17.03
Stereo*	60	5.4	64.8	\$5.83
Tablet, charging*	10	0.015	0.18	\$0.02
VCR*	11	0.99	11.88	\$1.07

*3 hours per day

**continuous use or plugged in



Electronics

Office / Den Electronics Energy Saving Tips

- Laptops are far more efficient than desktop computers, especially ENERGY STAR qualified models.
- Make sure your computer doesn't turn on the printer or other external devices as part of its routine start-up cycle. Those should be turned on separately only when needed.
- Save energy and space with an ENERGY STAR qualified multi-function device that combines several capabilities (print, fax, copy, scan). Make sure power management features are enabled for additional savings.

Office / Den Electronics Energy Saving Checklist

- Turn computers off.** Sleep and hibernation modes may save energy, but switching computers off at night is the difference between using some and using none.
- Use power strips.** Plug your computer, printer, and any other home office equipment into a single power strip so you can switch it off and cut all power to items at once.
- Try "smart" power strips.** They can help reduce your power usage by shutting down power to products that are not in use or that go into standby mode.

Save Energy with ENERGY STAR

ENERGY STAR qualified products use less energy, save money, and help protect the environment. Their Product Finder is an online tool that provides access to a list of their products and arms you with the information you'll need to make purchasing decisions based on energy efficiency.

Learn more at
www.energystar.gov/productfinder





Office / Den Electronics Energy Use Guide

	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Battery charger (AA batteries)	0.79	9.48	\$0.07
Color copier (1 to 49 images per minute)	46.06	552.72	\$4.15
Color copier (1 to 49 images per minute) – ENERGY STAR	42.8	513.6	\$3.85
Copier (26 to 50 images per minute)	25.2	302.4	\$2.27
Copier (26 to 50 images per minute) – ENERGY STAR	12.6	151.2	\$1.13
Desktop computer	19.89	238.68	\$1.79
Desktop computer – ENERGY STAR	13.5	162	\$1.22
Digital camera	0.25	3	\$0.02
External computer speakers	1.67	20.04	\$0.15
Fax (inkjet)	2.33	27.96	\$0.21
Fax (inkjet) – ENERGY STAR	1.17	14.04	\$0.11
Fax (laser)	13	156	\$1.17
Fax (laser) – ENERGY STAR	6.5	78	\$0.59
iPad 2	1	12.01	\$0.09
Laptop computer	6.27	75.24	\$0.56
Laptop computer – ENERGY STAR	4.3	51.6	\$0.39
Modem (cable)	4.38	52.56	\$0.39
Modem (DSL)	4.09	49.08	\$0.37
Monitor	5.52	66.24	\$0.50
Monitor – ENERGY STAR	4.34	52.08	\$0.39
Multifunction device (inkjet)	2.25	27	\$0.20
Multifunction device (inkjet) – ENERGY STAR	0.92	11.04	\$0.08
Multifunction device (laser, color)	75	900	\$6.75
Multifunction device (laser, color) – ENERGY STAR	53.42	641.04	\$4.81
Printer (inkjet)	1.75	21	\$0.16
Printer (inkjet) – ENERGY STAR	1.33	15.96	\$0.12
Printer (laser)	62.25	747	\$5.60
Printer (laser) – ENERGY STAR	46.67	560.04	\$4.20
Scanner	3.67	44.04	\$0.33
Wireless router	3.86	46.32	\$0.35



Electronics

Bathroom Electronics Energy Saving Tips

- The bathroom vanity is one of the highest-use fixtures in the average home. ENERGY STAR qualified CFLs or LEDs provide bright, warm light, use less energy, and generate less heat than standard lighting.

Bathroom Electronics Energy Saving Checklist

- Unplug it.** Hair dryers, curling irons and other beauty items may pull juice even when they're not in use—don't let them.
- Shut off bathroom fans.** While they're great for removing excess steam, they also suck heat out too. Shut them off when you don't need them.

Bathroom Energy Use Guide

	Approximate Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Curling iron*	90	1.35	16.2	\$1.46
Hair dryer*	1,500	22.5	270	\$24.30
Shaver**	1.4	0.12	1.51	\$0.14
Toothbrush**	1.4	0.12	1.51	\$0.14

* 1/2 hour per day use

** charging



Outdoor

General Outdoor Energy Saving Tips

- Heat your spa to 102° F or lower to save money without sacrificing comfort.
- The American Red Cross recommends that swimming pool temperature be 78 to 82° F.
- You can save up to 90% on heating costs by simply using a pool cover. Besides helping to minimize nighttime heat loss, pool covers also help prevent chemical loss and water evaporation.
- Installing a solar water heating system can reduce the cost of energy used for heating water by more than half.

General Outdoor Energy Saving Checklist

- Heat it when you need it.** Heat the spa only when you plan to use it, allowing time for warm-up.
- Cover it.** Cover the spa or pool when not using it and when warming it.
- Check your thermostat.** An accurate spa thermostat can save you hundreds of dollars each year.
- Plant it.** Plant shade trees on the south and west sides of the house to cool in summer and protect in winter. Plant shrubs around the foundation.

General Outdoor Energy Use Guide

	Average Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Electric dog fence	1	8.76	105.12	\$0.79
Garage door opener	350	5.25	63	\$0.47
Hot tub	4,500	337.5	4,050	\$30.38
Power tool (cordless)	33.7	3.03	36.4	\$0.27
Well pump (1/2 HP, 1 hour/day)	375	11.25	135	\$1.01



Seasonal Outdoor

Seasonal Outdoor Energy Saving Tips

- Decorative LED bulbs use up to 90% less electricity to produce the same amount of light as their traditional incandescent counterparts. The energy used by one traditional C9 light bulb could power 140 LED bulbs.
- LED lights function just as well outdoors as they do indoors. They are constructed in such a way that they are impervious to moisture, heat and cold.
- Energy efficient holiday LED lights only add about two cents a day to your energy bill.
- In addition to saving energy, ENERGY STAR qualified LED lights contain up to 50,000 hours of use, are cool to the touch which reduces the risk of fire, and are more durable than glass incandescent lights which means less risk of electrical exposure from broken bulbs.
- Popular fan-driven inflatable lawn decorations ranging in size from 4' to 12' can add from \$1.11 to \$1.68 to your monthly bill if run for eight hours a day, or when used for 24 hours a day, the additional monthly cost would be from \$3.34 to \$5.05 per inflatable.
- Be aware and watch for overhead power lines when installing outdoor lights.

Seasonal Outdoor Energy Saving Checklist

- Check decorations.** Before decorating, check all light sets for frayed wires, damaged sockets, or cracked insulation. If you find any defects, replace the entire set.
- Upgrade to LEDs.** Replace your old holiday lights with LED light strings. Although they cost more initially, LEDs use a fraction of the energy of traditional holiday lights. Plus, they contain up to 50,000 hours of use.
- Use a timer.** Plug your indoor and outdoor lighting displays into a timer set to run during the earlier evening hours. If you don't use timers, unplug your lights when you go to sleep or leave home.
- Safety first.** Unplug lights before watering the tree and keep cords and light sets away from the water.



Seasonal Outdoor

Seasonal Outdoor Energy Use Guide

	Average Watts	Monthly kWh Usage	Annual kWh Usage	Estimated Monthly Cost
Christmas lights, 100 C7 bulbs (360 hours)	400	72	144	\$12.96
Christmas lights, 100 LED bulbs (360 hours)	96	17.28	34.56	\$3.11
Insect Killer Light (6 months, 12 hours/day)	40	14.4	86.4	\$7.78
Seasonal inflated decoration (360 hours)	90	16.2	32.4	\$2.92
Stock tank heater (4 months)	1,000	720	2,880	\$259.20
Swimming pool heater (3 months)	24,000	5,760	17,280	\$1,555.20

Seasonal Outdoor Energy Use Guide – Natural Gas

	BTU/hour	Monthly Therm Usage	Annual Therm Usage	Estimated Monthly Cost
Swimming pool heater	81,912	245.74	737.21	\$626.63

Use Less with LEDs

The energy used by 1 traditional bulb could power 140 LED bulbs!





Electric Vehicles

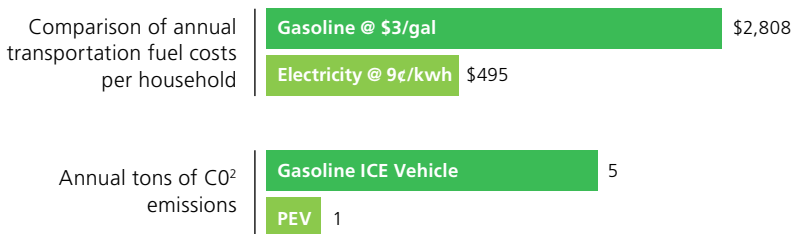
Electric Vehicle Tips

- Fuel cost for operating electric vehicles (EVs) is less than \$1.00 per gallon equivalent.
- EVs have zero tailpipe emissions. All upstream generating sources of Avista's electricity generate 80% fewer emissions to power an EV, compared to driving a conventional gasoline vehicle.
- In an effort to make EVs more affordable, the Federal Government offers tax credits and Washington State waives sales tax on EV purchases. Amounts vary by vehicle type. Make sure to check with a sales associate for more details.
- We recommend that you program your charger to recharge overnight between the hours of 10 p.m. and 7 a.m., when the grid is usually less heavily loaded.
- If you would like to know more about EVs, charging at home, or have any other questions, please visit our website at avistautilities.com/transportation, or send an email to electrictransportation@avistacorp.com.

Why Support Electric Transportation?

The number of people and companies adopting electric transportation is growing, and it couldn't happen sooner. Plug-in electric vehicles benefit the economy and the environment by saving on fuel costs and lowering air pollution. When equally compared to gasoline, the cost of driving on electricity is less than \$1 per gallon. Carbon dioxide (CO²) emissions are also reduced by 80 percent.

Avista strongly supports the growth of electric transportation and is working hard to minimize electric costs for all our customers. We're also committed to partnering with government and community groups to realize the benefits of electric transportation. Together, we can bring electric transportation to the forefront sooner.



Source: Avista Corp (2015). *Electric Integrated Resource Plan. August 31, 2015.*



Phantom Loads

What are Phantom Loads?

Energy consumed when the appliance is not being used while in the off or sleep/ready position.

Energy Use Guide

Product / Mode	Average Watts	Minimum Watts	Approximate Watts
Air Conditioner / Off	0.9	0.9	0.9
Heating, furnace central / Off	4.21	0	9.8
Computer Display, CRT / Off	0.8	0	2.99
Computer Display, CRT / Sleep	12.14	1.6	74.5
Computer Display, LCD / Off	1.13	0.31	3.5
Computer Display, LCD / Sleep	1.38	0.37	7.8
Computer, desktop / Off	2.84	0	9.21
Computer, desktop / Sleep	21.13	1.1	83.3
Computer, notebook / Off	8.9	0.47	50
Computer, notebook / Power supply only	4.42	0.15	26.4
Computer, notebook / Sleep	15.77	0.82	54.8
Modem, DSL / Off	1.37	0.33	2.02
Modem, cable / Off	3.84	1.57	6.62
Modem, cable / Standby	3.85	3.59	4.11
Speakers, computer / Off	1.79	0	5.6
USB, hub / Off	1.44	0.95	1.81
Copier / Off	1.49	0	2.97
Fax, inkjet / Off	5.31	0	8.72
Fax, laser / Off	0	0	0
Fax, laser / Ready	6.42	6.42	6.42
Multi-function Device, inkjet / Off	5.26	0	10.03
Multi-function Device, laser / Off	3.12	0	4.7
Printer, inkjet / Off	1.26	0	4
Printer, laser / Off	1.58	0	4.5
Scanner, flatbed / Off	2.48	0.27	8.2
Caller ID Unit / Ready	1.27	1.27	1.27
Charger, mobile phone / Power supply only	0.26	0.02	1
Telephone Answering Device / Off	2.01	1.31	2.55
Telephone Answering Device / Ready	2.25	1.42	2.83



Phantom Loads

Energy Use Guide

Product / Mode	Average Watts	Minimum Watts	Approximate Watts
Telephone, cordless with answering machine / Ready, handset	4	2.15	7.4
Telephone, cordless with answering machine / Ready, no handset	2.82	1.72	4.7
Telephone, cordless with answering machine / Off	2.92	0.9	7.4
Telephone, cordless / Ready, handset	2.81	1.05	4.89
Telephone, cordless / Ready, no handset	1.58	0.59	3.09
Telephone, cordless / Off	0.98	0.54	1.8
DVD Recorder / Off	0.75	0	1.5
DVD Player / Off	1.55	0	10.58
DVD/VCR / Off	5.04	0.09	12.7
Game Console / Off	1.01	0	2.13
Game Console / Ready	23.34	2.12	63.74
Television, CRT / Off by remote	3.06	0.3	10.34
Television, CRT / Off by switch	2.88	0	16.1
Television, rear projection / Off by remote	6.97	0.2	48.5
Television, rear projection / Off by switch	6.6	0.2	48.5
Television/VCR / Off by remote	5.15	2.15	13.3
Television/VCR / Off by switch	5.99	2.15	13.11
VCR / Off	4.68	1.2	9.9
Set-top Box, DVR / On, no recording	37.64	25.95	49.2
Set-top Box, DVR / Off	36.68	23.3	48.6
Set-top Box, digital cable with DVR / Not recording, TV off	44.63	44.38	44.87
Set-top Box, digital cable with DVR / Not recording, TV on	44.4	44.2	44.6
Set-top Box, digital cable with DVR / Off by remote	43.46	43.3	43.61
Set-top Box, digital cable / Off by remote	17.83	13.24	30.6
Set-top Box, digital cable / Off by switch	17.5	13.7	26.3
Set-top Box, satellite with DVR / Not recording, TV off	28.35	25.8	30.9
Set-top Box, satellite with DVR / Not recording, TV on	31.37	24.2	36.3
Set-top Box, satellite with DVR / Off by remote	27.8	22	33.6
Set-top Box, satellite / Off by remote	15.66	6.58	33.05
Set-top Box, satellite / Off by switch	15.47	6.58	32.7



Phantom Loads

Energy Use Guide

Product / Mode	Average Watts	Minimum Watts	Approximate Watts
Audio Minisystem / Cassette, not playing	13.85	1.67	33.14
Audio Minisystem / CD, not playing	13.99	1.67	36.95
Audio Minisystem / Off	8.32	0.3	24.58
CD Player / Off	5.04	2	18.4
Cassette Deck / Off	0.54	0	1.08
Stereo, portable / CD, not playing	4.11	1.29	6.83
Stereo, portable / Cassette, not playing	2.42	1.16	5.92
Stereo, portable / Off	1.66	0.7	5.44
Tuner, AM/FM / Off	1.12	0	3.37
Garage Door Opener / Ready	4.48	1.8	7.3
Low-voltage Landscape Lights / Ready	1.13	1.1	1.17
Night Light, interior / Off	0.05	0	0.34
Night Light, interior / Ready	0.22	0	1.2
Power Tool, cordless / Ready, charged	8.34	1.82	14
Power Tool, cordless / Ready	1.74	0	4.7
Security Systems, home / Ready	2.7	2.7	2.7
Timer, irrigation / Off	2.75	1.5	5.9
Timer, irrigation / Ready	2.84	1.5	5.9
Coffee Maker / Off	1.14	0	2.7
Microwave Ovens / Ready, door closed	3.08	1.4	4.9
Microwave Ovens / Ready, door open	25.79	1.6	39
Amplifier / Off	0.27	0	1.8
Musical Instruments / Off	2.82	1.2	4.2
Receiver (audio) / Off	2.92	0	19.7
Surge Protector / Off	1.05	0	6.3
Turntable (audio) / Off	0.2	0	0.6



1-800-227-9187

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