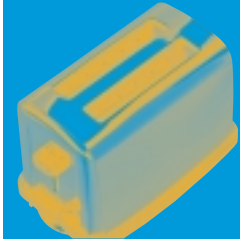
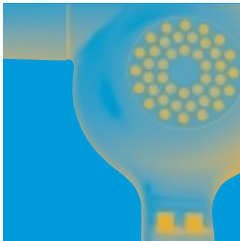


# Appliance Guide



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Turn the Page  
To **Turn On**  
Energy Savings





## Using Appliances Efficiently, And Tips When Shopping For New Ones

When talking about appliances, a big issue is how much it costs to run them. You can cut the energy usage of your appliances and save money with the tips in this booklet. All of them are practical suggestions, simple to use, and proven effective. You'll be pleased to see how just changing little things can add up to big savings.

We've also included some pointers for buying new appliances. It's important to get a good deal, but your best buy may not be the appliance with the lowest price. The real cost of your new appliance includes purchase price and also the operating costs for as long as you own it.

For example, if you're buying a refrigerator, models of the same size can vary quite a bit in price. The cheaper refrigerator might cost \$50 to \$70 more each year to operate. On average, refrigerators have a useful life of about 15 years, so the unit that was cheaper to buy ends up costing \$750 to \$1,050 more to operate. In the long run, a more energy-efficient appliance can be the better value.

This guide provides some useful information for getting the most efficiency out of your existing appliances and making informed decisions when choosing your new appliances.

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## Understanding Electrical Usage

Use of electricity is metered and billed by kilowatt-hour, often written as kWh. Kilowatt-hour is a unit of measure for consumption of electricity. It's the amount of electrical energy needed to run a 1,000 watt device for one hour. But the same amount of electrical energy can also be used in longer or shorter periods of time. For example:

- 1 kilowatt-hour = runs a typical 1,000-watt hair dryer for 1 hour
- 1 kilowatt-hour = lights a typical 100-watt bulb for 10 hours
- 1 kilowatt-hour = runs a typical 14-cu.-ft. refrigerator for about 10 hours

The thing to remember is that one kilowatt-hour of electrical energy can be used fast or slowly, depending on the appliance. That's also useful for understanding efficiency because electricity can be used more slowly or quickly by the same types of appliances.

Again, let's use refrigerators as an example. Comparing two 14-cu.-ft. refrigerators:

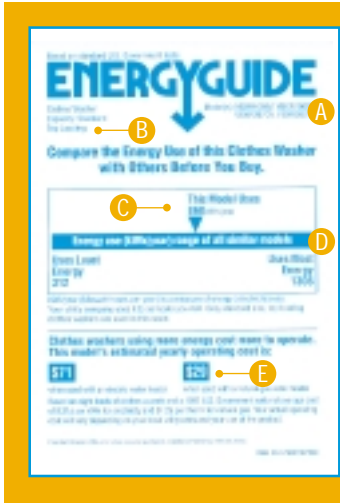
- Refrigerator #1 – consumes 1 kWh every 10 hours
- Refrigerator #2 – consumes 1 kWh every 11 hours

The second refrigerator is more efficient because it runs for one extra hour on the same amount of energy.

## Understanding Energy Efficiency

Energy-efficient appliances don't look very different. This is because most of the differences are on the inside. Motors, pumps, valves, compressors, or electronic "smart" sensors that can improve efficiency don't usually change the product's looks.

To help consumers, the government requires manufacturers to put EnergyGuide labels on refrigerators, freezers, dishwashers, clothes washers, central air conditioners, room air conditioners, water heaters, and other appliances. Here's how the labels look:



## All EnergyGuide labels show:

- The manufacturer, appliance type and model number
- Features and capacity or size, so you can compare models
- Estimates of the appliance's annual energy use. The lower the number, the more efficient the appliance, and the less it will cost you to run.
- The range of efficiency for similar models
- An estimate of the annual cost to run this model. Use this for comparison purposes only, because your actual cost will vary.

The efficiency claims are not just hype. Manufacturers must use standard test procedures developed by the Department of Energy to prove the energy consumption and efficiency of their products. So when you shop for an appliance, be sure to look for the EnergyGuide label.

## EnergyStar® Appliances

Some appliances also feature the



EnergyStar logo like the one shown here. These products have been designed to provide outstanding energy efficiency, so you cut usage and lower your energy costs. Be sure to check out whether EnergyStar appliances meet your needs. For more information about EnergyStar appliances, dial toll-free 1(888) STAR-YES [1(888) 782-7937] or visit [www.energystar.gov](http://www.energystar.gov) on the Web.

## Getting the Most From Your Existing Appliances, and Shopping Tips When Choosing New Ones

When buying appliances, always check the EnergyGuide label for a comparison of energy efficiency with other models. Consider EnergyStar appliances for maximum efficiency and lowest operating costs.

### Refrigerators

In most residences, the refrigerator uses more electricity than any other appliance. It can add up to nearly 15% of total energy usage.

But some very inefficient older models may represent as much as 30% to 50% of the monthly electric bill. If your existing refrigerator is more than 20 years old, buying a new one will save more than \$100 in annual energy costs.

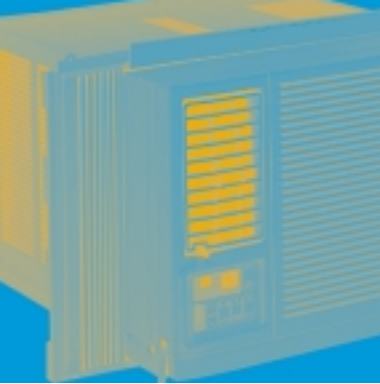
### For best efficiency from your refrigerator:

- Position refrigerator away from direct sunlight, and heat sources like stoves.
- Open door briefly, and close promptly to keep cold air in.
- Store food in the refrigerator so air can circulate, but in the freezer, pack items tightly.
- Set refrigerator temperature at 40 degrees Fahrenheit and freezer temperature at 0 degrees.
- Make sure rubber gaskets on doors provide a tight seal.
- Dust or vacuum condenser coils to keep them clean.

### Some things to consider when buying a new refrigerator:

- Models with freezer compartment at the top use 7% to 13% less energy than side-by-side models.
- Manual-defrost models use approximately half the energy of automatic-defrost refrigerators. To benefit from this superior efficiency, you must clean them manually when frost builds up to more than 1/4 inch.
- Automatic ice makers and through-door dispensers increase energy use by 12% to 14%.
- Models with an “anti-sweat” heater use 5% to 10% more energy.
- Don't buy a refrigerator that's larger than you need.





## Air Conditioners

An average air-conditioned home consumes more than 2,000 kilowatt-hours each year for cooling. High-efficiency A/C units can reduce energy consumption by 20% to 50%, and the most efficient air conditioners on the market are up to 70% more efficient than older room air conditioners.

### For best efficiency from your air conditioner:

- Turn off your air conditioner when there's no one home. For a cool interior when you return, buy a timer that can turn on the air conditioner half an hour before you get back.
- Keep the air conditioner's filter clean.
- If you're using only the room where your air conditioner is located, shut the doors to that room.
- Keep interiors no cooler than 78 degrees. It's an efficient setting that's also comfortable. Moving to a colder temperature consumes more energy and costs more money. Going to 75 degrees costs 18% more, and a 72-degree setting costs 39% more!
- Once a room is cool, shut off the air conditioner and use fans to keep comfortable. When the room warms up, cool it off with the air conditioner, then use fans again. Using this method can cut air-conditioner running time by 20% to 40%.

### Some things to consider when buying a new air conditioner:

- Air conditioner capacity should be right for the room. Bigger is not better. A smaller unit running for an extended period operates more efficiently, and it's better at dehumidifying the air than an oversized unit cycling on and off too frequently.
- Measure the room you need to cool. Store personnel will help you choose the right capacity air conditioner. Here is a general guide:

Approximate room size	A/C capacity in Btu/hr
10'X15'	5,000
16'X28'	10,000
25'X40' loft	18,000

- Be sure that your home's electrical system can meet the air conditioner's requirement. Some models operate at 120 volts, but others require a 208-volt source. Check to make certain the new unit will be properly powered.
- Air conditioners with built-in timers and thermostat setting features will help you trim energy usage.



## Clothes Washers

Most of the energy used by clothes washers is for heating the hot water used to wash clothes. Only about 10% is used by the electric motor during wash and spin cycles.

### For best efficiency from your clothes washer:

- Wash full loads rather than several partial loads.
- Use warm or cold water rather than hot.
- If you must wash small loads, choose a low water level.

### Some things to consider when buying a new clothes washer:

- Washer designs include front loading and top loading. Front loaders generally conserve water and are more energy-efficient, but are also more expensive.
- Choose a washer with a water-level selector, so smaller loads use less water.
- The pre-soak option feature saves energy.
- Choose a washer with faster spin speeds. Higher speed means better water extraction, less drying time.

## Clothes Dryers

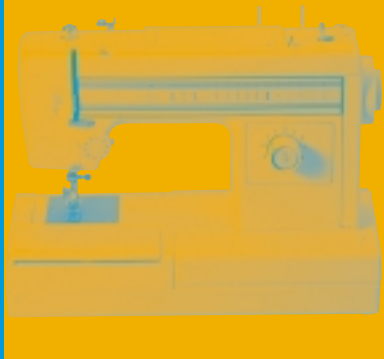
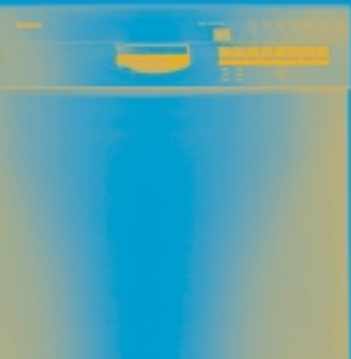
After refrigerators, clothes dryers are the second-biggest consumers of electrical energy in most homes. Older dryers generally run for a timed interval set by the user. Even if clothing is dry, the unit continues running until time runs out. Newer dryers have sensors that improve their performance and energy efficiency.

### For best efficiency from your dryer:

- Run full loads rather than several small ones.
- Keep lint filters clean.
- Avoid overdrying clothes.

### Some things to consider when buying a new dryer:

- Clothes dryers with moisture sensors are the most efficient. There are two types of sensors. One senses moisture inside the drum, and it's the most efficient. The second type senses moisture in the dryer exhaust. Compared to timed drying, the exhaust sensor will save about 10%, and the drum sensor will save about 15% of the energy used.
- Dryers with a "cool-down" or "perma-press" cycle finish drying with cool air for the last few minutes. This feature saves energy.
- If it meets your needs, consider a gas dryer. It's more efficient, and will dry a typical load of laundry for about half the cost of an electric dryer.



## Dishwashers

Older dishwashers generally run longer cycles than newer models, and they also need more water to clean. Older models typically use 8-14 gallons of water, compared to 7-10 gallons per cycle for newer units.

For best efficiency from your dishwasher:

- Wash full loads rather than smaller partial loads.

Some things to consider when buying a new dishwasher:

- Dishwashers are available in compact capacity and standard capacity. Compact models use less energy, but they hold less. Choose the size that's right for your needs, because running a compact unit more frequently can actually use more energy than cleaning a full load in the standard models.
- Dishwashers that offer a choice of cycles are more efficient. When dishes are lightly soiled, these models allow you to use "light wash" or "energy-saving" cycles.
- Dishwashers that let you choose heat drying or fan drying are more efficient. The fan-drying cycle takes a bit longer but uses much less energy.

## Small Kitchen Appliances



Small kitchen appliances like toasters, blenders, mixers, and food processors are not required to have EnergyGuide labels. You can still determine which appliances will use less energy by checking the electrical rating.

The rating may be shown in two ways. One is a listing of wattage and voltage, for example 1875 watts, 125 volts. The other shows amperage and voltage, for example 5 amps, 125 volts.

Generally speaking, the lower the wattage or amperage, the less energy the appliance consumes. When comparing different models, select the one with the lower wattage or amperage ratings if it meets your needs.





## Home Entertainment

Home entertainment equipment includes an enormous selection of video and audio gear. This equipment is not required to have EnergyGuide labels, but some general information can help you make wise energy choices.

- Television sets generally consume energy in proportion to the size of their screens. The bigger the television set, the greater the usage when it's on.
- Audio systems built up of individual components generally tend to consume more power than integrated units.
- Nearly all electronic components consume electricity even when they're off. In the average home, 90% of all the energy used to power home audio products is used while the equipment is off. Only 10% of the energy is used while the equipment is actually turned on.
- When choosing your equipment, look for models that allow you to disable the "instant-on" feature.
- Consider EnergyStar home entertainment equipment for maximum efficiency and lowest operating costs. For example, EnergyStar TVs use only 3 watts of power when turned off, compared to 12 watts for conventional sets. EnergyStar VCRs use less than 4 watts of power when turned off, compared to ordinary VCRs that can use up to 13 watts. For combination TV/VCR equipment, the EnergyStar units use less than 6 watts of power compared with up to 20 watts for ordinary models.



## Lighting

In many residences, lighting can make up a big share of the energy bill. To use lighting efficiently and to trim energy usage, consider these steps:

- Replace ordinary light bulbs with compact fluorescent bulbs that give the same light but use 40% to 60% less energy.
- Use 25- or 40-watt bulbs for places where some light is needed, and use brighter bulbs only for reading and work areas.
- Avoid leaving lights on when you're not home. Use timers to turn lights on and off. They save money and improve security.
- Keep fixtures clean. Dusty fixtures don't give all the light you're paying for.
- Replace ordinary light switches with dimmers. Every time you set light levels at less than full brightness, you save energy and money.
- Install motion sensors. They turn lights on automatically when people are present, off automatically when rooms are unoccupied.
- Use night lights when a little bit of light is enough. They use very little energy, and cost very little to operate.



## Computers and Peripherals

There is a very large selection of computers and peripheral equipment available from many manufacturers. This equipment does not have EnergyGuide labels, but there are some operating suggestions that can help save energy when using computers. Also, some computers and associated peripherals are EnergyStar products, which means they use less energy and cost less to operate.

- Shutting off peripherals like printers or scanners when they're not needed saves energy compared to leaving them on in "sleep" mode.

- If the computer needs to be left on, but unattended for long periods, energy can be saved by turning off the monitor.

- Screen savers do not save energy. In fact, running screen savers will not only draw power for monitors, it may also keep the computer from entering standby mode.

- Computer games left running in the background while multitasking will not allow the computer to enter "sleep" mode even if the game is paused.

- When computers will not be used for extended periods, for example, overnight, they should be turned off. When a machine is left on around the clock, it uses more energy, sucks up dust, and is vulnerable to power surges.

Turning computers on and off daily does not damage them or shorten their useful lives.

- Check to see if EnergyStar computers and peripherals meet your needs. They are designed to provide the same functionality as other models, but use considerably less energy.



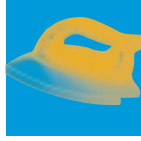
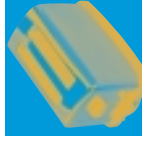
## **Best Efficiency, Best Performance, Best Value**

Today's amazing technology makes appliances more useful and reliable than ever before. By being energy-smart when you use your appliances or shop for new ones, you can make the choices that will give you the best value.

Even with up-to-the-minute technology, the most important factor in energy efficiency is you. You have the ability to make significant reductions in energy usage, and you won't need to make drastic lifestyle changes. No technology can do as much good as your decision to be energy-conscious. Be energy-smart!

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