

How to buy energy-efficient appliances

Energy-efficient appliances will reduce the amount of energy and resources you use, which, in turn, saves you money! Not only will this save you money year after year, it will also give you an active role in revitalizing your

family's environment by reducing the amount of pollution emitted into our atmosphere and protecting our natural resources.

These labels help you select an energy-efficient appliance:

There are two labels that will help you identify energy-efficient appliances, the Energy Guide label and the Energy Star logo. These labels provide useful information on the energy performance of each appliance. The Energy Guide's format makes it easy for the consumer to compare between the various models and brands that are available. The Energy Star logo identifies exceptional products that save energy, water, the environment and money.

Energy Star

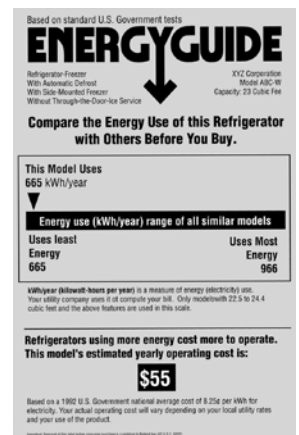
Energy Star label will help you identify efficient products. This rating is given to appliances that substantially exceed the Federal minimum requirements on energy efficiency. This rating is a collaboration of efforts by the Department of Energy, the Environmental Protection Agency and the product manufacturers. The appliances that



are labeled with the Energy Star logo include clothes washers, dishwashers, refrigerators and room/window air conditioning units. A complete list of appliances that meet this standard is available on the Energy Star Web site at www.energystar.gov

Energy Guide Label

The bright yellow background and black text identify the Energy Guide label. Federal standards, set by the Federal Trade Commission, require that retailers display this label for consumers. Clothes washers, refrigerators, freezers, dishwashers and water heaters are all required to display the label.



Shopping strategies for buying appliances

- Decide on the size and style. Make sure your new appliance will fit. Also, remember that you will need enough room to open the door or lid fully and to have enough clearance for ventilation.
- Estimate how much the appliance will cost to operate. Since these products are designed to last 10 to 20 years, the differences on your monthly energy bill can add up. Use the Energy Guide to compare the energy use of different models.
- Compare different brands and models. How energy efficient is it? How much water does it use?
- Find a place to shop. Factors to consider include the selection available, price, reputation or reliability and warranties.

- Don't make a purchase decision until you think you understand your choices and the trade-offs you're making.

Think long term when making appliance decisions

Average life of major appliances

Dishwasher	12 years
Clothes washer	13 years
Refrigerator	17 years

Refrigerators

Did you know refrigerators consume the most energy of all household appliances? Of course; they're always on.

All new refrigerators use half the energy of similar models built 12 years ago. Highly efficient Energy Star models can cut that by another 20 to 36 percent. Refrigerators are the most diverse of all the appliances. There are different sizes, shapes, styles and options available on the market. The three most common styles are the bottom freezer, side-by-side and top freezer. The top freezer models are the most efficient, using 7-13 percent less energy than the side-by-side. Bottom freezers are slightly less efficient than the better top freezer models. Size and features also effect the energy use of a refrigerator. Smaller refrigerators use less energy, so only buy what you need. Through-the door features, such as water and ice dispensers, use substantially more energy.

Characteristics of new energy-efficient refrigerators include better insulation, better seals, more efficient compressors, and more precise temperature/defrost controls. The improved defrost control not only saves energy, it also reduces freezer-burn.

Refrigerator conservation tips

- Check for leaks in door seals
- Clean the coils regularly
- Relocate the refrigerator if near heat-generating appliance

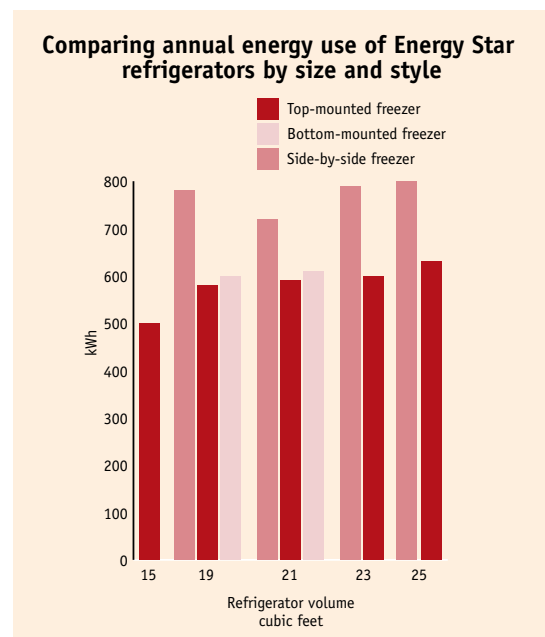
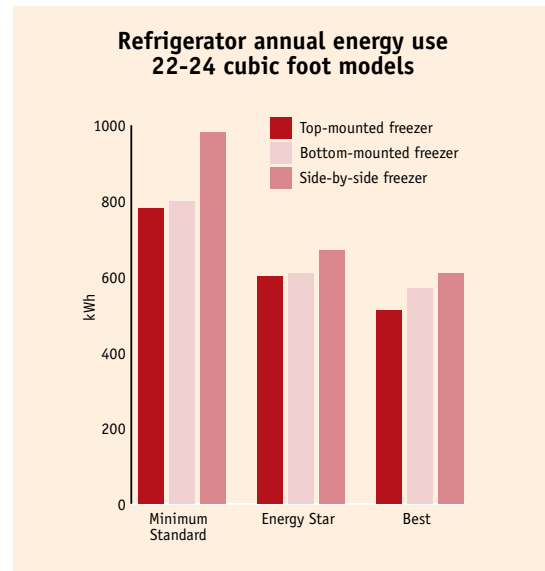
Taking care when disposing of an old refrigerator or freezer

Old refrigerators and freezers contain CFCs, a hazardous chemical. Only discard refrigerators where trained personnel are available to recover the gas for reuse or proper disposal. Also for safety, completely remove the door from all refrigerators and freezers before disposing of them.

Reading the energy use graphs:

The size, style and technologies have significant impacts on energy consumption. Dishwasher estimates are based on 322 loads per year. Clothes washer estimates are based on 416 loads per year.

- **Minimum standard** – Indicates the energy used by an appliance that meets the Federal minimum standards for efficiency. Manufacturers must meet or exceed the standard for each appliance. The minimum standard varies depending on capacity or style of appliance.
- **Energy Star** – Appliances must exceed the minimum standard by a set percentage. Refrigerators must be at least

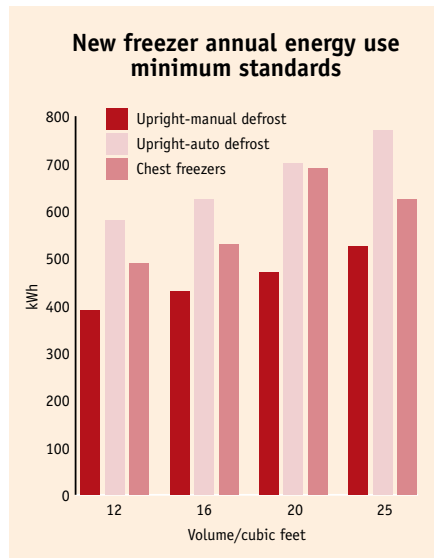


20 percent more efficient, clothes washers must use at least 50 percent less water and 30 to 40 percent less energy, and dishwashers must be at least 13 percent more efficient. The graphs show the minimum Energy Star requirements.

- **Best** – This category shows the energy use of the most efficient appliances currently available. These models may be somewhat difficult to find at your local dealer.
- **KWh per year** – Estimated electrical energy use per year. Assumes the appliance is used in conjunction with an electric water heater for the dishwashers and clothes washer.

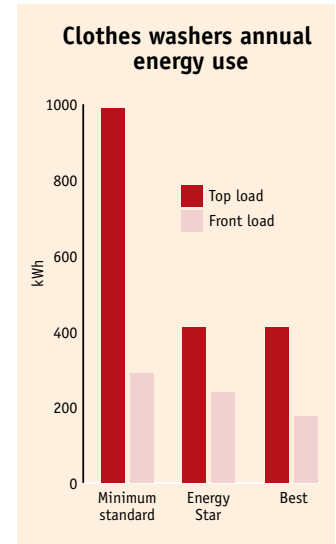
Freezers

Stand-alone freezers are often used for long-term storage. Look for specific features if you want to optimize the energy efficiency. A manual defrost freezer uses 35 to 40 percent less electricity than one with an auto-defrost option. Eliminating the auto defrost will also reduce the freezer burn. When purchasing an energy-efficient freezer, use the Energy Guide to compare models and sizes.



Clothes washers

Conventional clothes washers consume 45 to 60 gallons of water per load. Hot water consumed by these machines typically account for 26 percent of your home's hot water bill. An energy-efficient clothes washer will use only one third as much water. This can reduce your cost for water, water heating and waste disposal. New machines with high-speed spin cycles also reduce the time needed to dry your clothes, saving more energy.



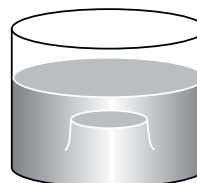
There are two styles of washers on the market; top load and front load (or tumble action). In a top-load model, the tub is filled completely, immersing the clothes in water. In a front load model, only the bottom of the tub contains water. The clothes are tumbled into water instead of immersed, requiring significantly less water and energy for heating water.

A few top-load washers take advantage of new technology to save water. Instead of filling the tub for the rinse cycle, these washers use a high-pressure spray to remove the soapy, dirty residue, saving many gallons of water.

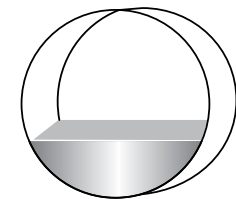
Energy Star clothes washers include both front- and top-load styles, and use nearly 50 percent less water and 30 to 40 percent less energy per load. Some other characteristics of Energy Star washers are better extraction of water due to a high-speed spin cycle, sensors to control incoming water temperature and high-pressure sprays used for rinsing.

Standard wash tubs vs. tumble action wash tubs

Savings water = saving energy and saving \$\$



Standard wash tub
Uses 45-65 gallons per load



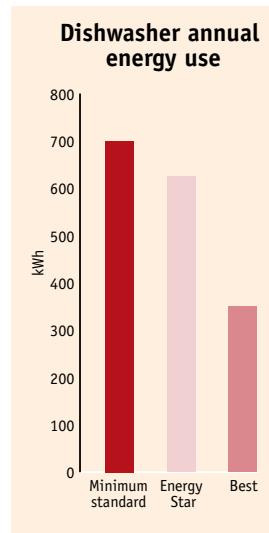
Tumble action wash tub
Uses 17-26 gallons per load

Freezer conservation tips

- Check for seal leaks
- Defrost regularly, 1/4 inch frost build up will decrease efficiency
- Set the thermostat at 0 to 5 degrees Fahrenheit
- Locate freezer in a cool space, such as a garage or basement
- A freezer is most efficient when full

Dishwashers

Most of the energy used by your dishwasher is for heating the water. The circulation pump and dryer account for the rest. Energy-efficient dishwashers reduce the amount of water used. This reduces the amount of energy used to heat the water. This is made possible by the use of better motors and pumps. Some models also include sensors to determine length of cycles or completion of cycles that can reduce the water needed to complete the wash cycle. Energy-efficient dishwashers also include air-drying options that allow you to dry the load without additional heat, saving additional energy and money.



Dishwasher conservation tips

- Use the air-dry feature
- Use energy-savings cycles
- Operate the appliance only with a full load

Clothes washer conservation tips

- Wash full loads, or select a low water-level option
- Use cold water when you can in rinse cycles especially

Comparing electric, gas, propane clothes dryers

Depending on the availability and cost of fuels, you may be able to reduce your clothes drying cost when purchasing a new dryer. Apply your local fuel cost to the energy use estimate listed below to estimate your annual clothes dryer energy cost.

Gas and propane clothes dryers typically cost only \$40 more than a comparable electric model. Gas and propane dryers also require fuel pipe that will cost \$50 to 200 to install. Propane also requires a propane tank. ⚡

Clothes dryer energy use estimate

Based on 416 loads per year

Standard clothes dryer	Electricity kWh/year	Gas Therms/year	Propane Gallons/year
Electric	966	—	—
Natural gas	38	37	—
Propane	38	—	38

Additional resources:

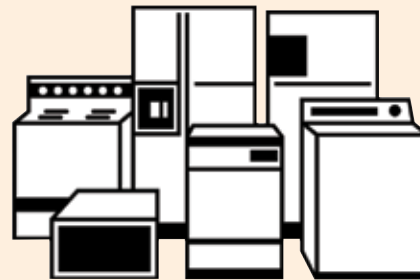
Books

Consumers Guide to Home Energy Savings, 8th Edition
Alex Wilson, Jennifer Thorne, and John Morrill;
American Council for an Energy-Efficient Economy;
Berkeley, Calif.; 2003, \$8.95
www.aceee.org/consumerguide/index.htm

Web sites

Energy Star
www.energystar.gov

How to Buy an Energy-Efficient Home Appliance
Federal Trade Commission and U.S. Department of Energy
www.ftc.gov/bcp/online/pubs/homes/applnecs.htm



Home Energy Brief #6 Cleaning Appliances (235kb pdf)
Rocky Mountain Institute
www.rmi.org/images/other/Energy/E04-16_HEB6CleaningApps.pdf

Energy Savers
U.S. Department of Energy
www.energysavers.gov



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