

Buying and Using Refrigerators and Freezers

When shopping for a new refrigerator or freezer, there's more to consider than price and features. The amount you'll spend on energy to operate the appliance over its life far exceeds the purchase price.

Each refrigerator and freezer you own adds \$7 to \$15 per month to your electric bill. Spending a little more on an efficient model will save you money each month for years to come.

Several programs have been developed to help you identify more efficient appliance models. The Oregon Office of Energy publishes monthly a list of high efficiency appliances (by model number) that qualify for the Oregon Residential Energy Tax Credit (see page 3). The tax credit is available to homeowners and renters for qualifying appliances installed in their principal residence or vacation home in Oregon. You take the credit on your state income tax. Your dealer can provide you with the paperwork. Submit your completed application to the Office of Energy well before tax time, as confirmation may take several weeks.

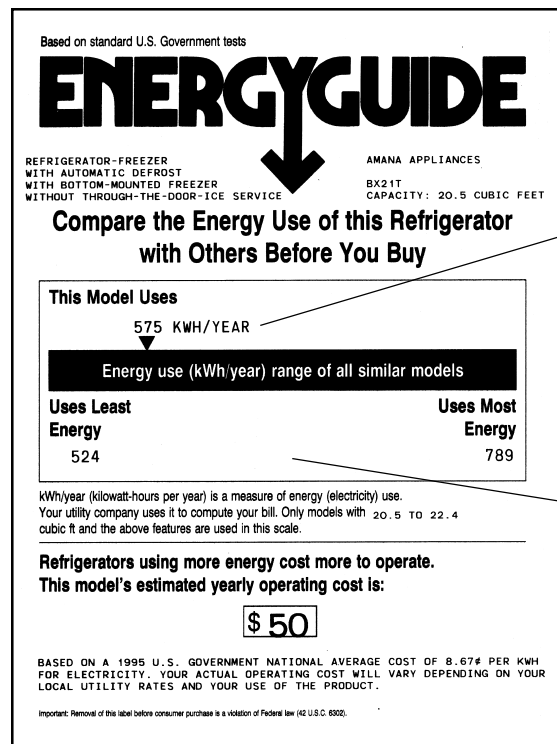
Although the efficiency standards are not as high as standards for the Oregon tax credit, the U.S. Environmental Protection Agency and U.S. Department of Energy sponsor Energy Star™ labels on efficient refrigerators, heating equipment, water heaters, computers and office equipment.

The yellow EnergyGuide sticker on most major home appliances in the dealer's showroom makes it easy to compare energy efficiency of different models.

The heart of the EnergyGuide label is the annual energy consumption, in therms or kilowatt hours, that the appliance uses under

typical operating conditions. Usage is based on standardized tests for typical household size and usage.

Efficient appliances usually cost more than regular models. How can you calculate whether spending extra money for a more efficient appliance is worth it? Use a "life cycle cost comparison" (see page 3). In addition to the purchase price, the calculation includes the energy bills you'll pay to operate the appliance over its life. The appliance with the lowest life cycle cost is the best investment.



For approximate cost in your home, multiply this number by the local utility rate.

Scale shows efficiency compared to similar-sized models.

Sample EnergyGuide label for a refrigerator.



Efficient Use

- If you have a second refrigerator or freezer, you can save \$7 to \$15 per month when it's unplugged. Plugging it in for occasional use does not harm the compressor.
- Use a thermometer to set refrigerator temperature to 40°F. Each degree colder increases energy costs 2.5%. Freezers should be set to 0°F.
- Set the "Power Saver" or "Winter/Summer" switch to ENERGY SAVER or WINTER. If you see condensation around the door gasket in the summer, set the switch to OFF or SUMMER. (The switch operates a heater in the door gasket to reduce condensation.)

Maintenance

- Vacuum the coils on the back or underneath the refrigerator and freezer every 6 months for good air circulation (more frequently if you have pets).
- If possible, locate refrigerators and freezers away from heat sources such as the oven, dishwasher, heating registers, and direct sunlight.
- Provide 1 to 2 inches of clearance around top and sides for good airflow around the coils.
- Adjust the front legs so the refrigerator or freezer is level and the door closes by itself if left open. Rotate the adjuster wheel on the front legs to raise or lower the unit as needed.
- Repair door gasket seals if damaged. As a temporary measure, use self-stick foam weather-strip tape. (The commonly recommended "dollar bill" test is not necessarily a good indicator that the gasket needs replacing.)

Buying New

- Should you replace your refrigerator? If it's more than 15 years old, it's probably worth it. New

How Efficient Are New Refrigerators and Freezers?

At typical Oregon energy costs: 5¢ per kWh

	1990 average	1999 average
Refrigerator-freezer	1,220 kWh	485 kWh
Total annual cost:	\$61	\$24
Freezer	1,010 kWh	450 kWh
Total annual cost:	\$51	\$23

Source: Oregon Office of Energy

Super Efficient Refrigerators Are Available Now

The state of Oregon has compiled a list of the most efficient refrigerators in each size. These units cost substantially less to operate, and they qualify for the Oregon Residential Energy Tax Credit. That effectively lowers your cost about \$50 to \$150. See "For More Information," page 3.



models use less than half the electricity that older models use. High efficiency refrigerators that qualify for the Oregon Residential Energy Tax Credit use 25% to 30% less energy on average than standard new models.

- Side-by-side models are usually less efficient.
- Don't buy a larger refrigerator than you need. (But one large unit is better than two small ones.)
- Features like automatic ice-maker and through-the-door water and ice service add 10% to 25% to the cost of operation. Models with these features also have higher repair rates.
- If you're shopping for a stand-alone freezer, choose a manual-defrost chest model. They use 10% to 25% less energy than upright models.
- Consult *Consumer Reports* for information about other features and brand name reliability.

About CFCs

The refrigerant used in most older refrigerators and freezers (CFC-11) contributes to ozone depletion when it escapes into the atmosphere. Most manufacturers have started using a new refrigerant, HCFC-134a, which is less harmful to the environment but is still not completely benign. If you're junking your old refrigerator, be sure the scrap dealer will recover the CFCs before recycling the metal.

For More Information

Oregon Energy Line

Publications about home energy efficiency are available at no charge from Oregon Energy Line (sponsored by the OSU Extension Energy Program and the Oregon Office of Energy). Call **1-800-457-9394** and request a list of publications or state the topics you're interested in. Leave your name and mailing address on the message machine. Publications will be sent to you within 3 days.

Oregon Residential Energy Tax Credit

Major household appliances certified energy-efficient by the Oregon Office of Energy are eligible for a tax credit. The list of eligible models changes monthly. Tax credits are available for high-efficiency refrigerators, dishwashers, clothes washers, and water heaters, solar and geothermal heating equipment, photovoltaic systems, alternative fuel vehicles, sealing heating and cooling ducts, and beginning in 2000, fuel cells and wind systems. Contact the Office of Energy: **1-800-221-8035** or **www.energy.state.or.us**

Other Resources

Consult back issues of *Consumer Reports* and *Consumer Digest* for comparisons of appliance performance, features and reliability. Two books that include more complete discussions about appliances are:

Life Cycle Cost Comparison: Appliance Example

	Standard	Energy-efficient
Annual energy cost (from EnergyGuide label)	\$97.00	\$67.00
Fuel cost escalation multiplier for 10-year life ¹	X 11.07	X 11.07
Total energy cost over 10 years	= \$1,073.79	= \$741.69
Purchase price	+ \$500.00	+ \$600.00
Life cycle cost of appliance	\$1,573.79	\$1,341.69

The appliance with the lowest life cycle cost is the best investment.

¹Assumes you'll keep the appliance for 10 years, with a 5% annual inflation rate and 2% increase in energy costs per year.

Consumer Guide to Home Energy Savings, by Alex Wilson and John Morrill; Sixth edition, 1998; 274 pp.; American Council for an Energy Efficient Economy, 2140 Shattuck Ave., Suite 202, Berkeley, CA 94704; (510) 549-9914; ISBN 0-918249-31-7; \$7.95.

Home Made Money: How to Save Energy and Dollars in Your Home, by Richard Heede and Staff of Rocky Mountain Institute, 1995; 258 pp.; Brick House Publishing Co., Box 266, Amherst, N.H. 03031-0266; (800) 466-8642; ISBN 1-883178-07-X, \$14.95.



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