

THE GreenGUIDE

environmental change begins at home.

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<http://www.thegreenguide.com/products/Appliances/Refrigerators>

Refrigerators

What To Look For

Any new refrigerator model will be much more efficient than the one you currently own, and will save you a considerable amount of money in power bills. But to make sure you're getting the most energy-efficient appliance for your money, there are a few things to look for.

Configuration

Look for top-freezer models, which are the most energy efficient and repair-free of the configurations offered.

Although side-by-side refrigerator/freezers are often more convenient, they're less energy efficient (particularly if they include water or ice dispensers). They're also more likely to need repair. The Rocky Mountain Institute determined that these models use roughly 7 to 13 percent more energy than similar top-freezer models, and automatic ice makers increase energy use by 14 to 20 percent.

Size

Buy a refrigerator that will accommodate all the food your family eats, rather than buying a new small fridge and keeping your old one running in a basement or garage to store bulk items like soda and frozen meat. Considering that a typical 1990 model refrigerator costs about \$75 per year to run, and releases over 1,200 pounds of CO₂ each year, it's much more economical and ecological to be sure your new model is a sufficient size to hold all your food.

Annual Energy Use in kWh, Annual CO₂ Emissions and Annual Energy Cost

Your refrigerator is probably the most power-hungry appliance in your house. The less energy needed to run your it, the less you'll have to pay. Also, buying the most efficient refrigerator will mean that you're emitting the least amount of greenhouse gases and CO₂ into the atmosphere.

Energy Star Rated

On January 1, 2004, the ENERGY STAR criteria for refrigerators changed for all full-size refrigerators. All refrigerators greater than 7.75 cubic feet must be at least 15 percent more

efficient than the federal standard.

Shopping and Usage Tips

Efficient Use

There are several ways to increase the energy efficiency of a newer model once you get it home from the store.

-Don't keep your fridge too cold. Refrigerators should be kept between 37 and 40 degrees and freezers at 5 degrees. Colder temperatures waste energy. To test the temperature, leave an appliance thermometer in a glass of water in the middle shelf for 24 hours. In the freezer, place a thermometer among packs of frozen food.

-Clean the coils annually.

-Cover food and drink to avoid evaporation in the fridge, which can force the compressor to work harder.

-Keep your freezer filled. Frozen blocks of food keep freezer temperatures more stable.

-Don't clutter the fridge top; it can hamper the compressor's proper air circulation.

-Don't put your refrigerator in direct sunlight or next to an oven or dishwasher.

-Check the door seals. They should be able to hold a piece of paper in place.

-Defrost the freezer regularly and avoid frost build-ups of more than a quarter-inch.

-And as always, don't leave the fridge door open.

Product Comparisons

To help you choose which refrigerator is best for your wallet and for the environment, here is a list of some of the most energy-efficient models of each size and configuration available.

Wondering what these table headings mean? They're the criteria we used to choose and evaluate the products in the chart below. Learn more about their importance in [What To Look For](#).

Name	Configuration	Size	Annual Energy Use in kWh	Annual C02 Emissions*	Annual Energy Cost**	Energy Star Rated	MSRP	
Fridgidaire FRT21HC5D	Top Freezer	18-22 cu. ft.	432	579 lbs	\$37	Yes	\$549	www.1800-3
Kenmore 64173	Top Freezer	18-22	432	579 lbs	\$37	Yes	\$679	www.1

		cu. ft.						800-34
Maytag MTB1953	Top Freezer	18-22 cu. ft.	413	553 lbs	\$36	Yes	\$619	www.whirlpool.com 688-96
Sun Frost RF-12	Top Freezer	11.41 cu. ft.	171	229	\$15	Yes	\$2,079	www.sunfrost.com 707-82
Whirlpool ET9FHTXM	Top Freezer	18-22 cu. ft.	417	559 lbs	\$36	Yes	\$609	www.whirlpool.com 866-69
Whirlpool GR9FHMXP	Top Freezer	18-22 cu. ft.	419	562	\$36	Yes	\$809	www.whirlpool.com 866-69
Kenmore 6523	Bottom Freezer	18-22 cu. ft.	488	654 lbs	\$42	Yes	\$899	www.kenmore.com 800-34
Kenmore Elite TRIO 77243	Bottom Freezer	22 cu. ft.	493	661	\$42	Yes	\$2,400	www.kenmore.com 800-34
Maytag MBF2254HE	Bottom Freezer	18-22 cu. ft.	488	654 lbs	\$42	Yes	\$1,329	www.maytag.com 688-96
Sub-Zero 650 Over-Under	Bottom Freezer	20.61 cu. ft.	483	647 lbs	\$42	Yes	\$4,995	www.subzero.com
GE GSH22VGR	Side-by-side	20-27 cu. ft.	571	765 lbs	\$49	Yes	\$1,129	www.ge.com 800-62
Kenmore 4425	Side-by-side	20-27 cu. ft.	540	724 lbs	\$46	Yes	\$1,016	www.kenmore.com 800-34
Whirlpool ED2FHEXN	Side-by-side	20-27 cu. ft.	572	766 lbs	\$49	Yes	\$879	www.whirlpool.com 866-69
MicroFridge Refrigerator/Freezer/Microwave	Compact	2.9 cu. ft.	290	389 lbs	\$25	Yes	\$399	www.microfridge.com 800-96

* CO2 emissions calculated using 1999 U.S. Department of Energy average power plant emission rate of

** Based on 2001 U.S. Government national average cost of 8.60 cents per kWh of electricity. Note: Ele

The Backstory

Environmental

Refrigerators are the largest power-guzzlers in the typical household. If you bought yours before 1993, chances are it's using two to three times as much energy as current models. In fact, the fridge may account for as much as one-fifth of your annual electricity costs, according to Consumer Reports.

So many refrigerators using so much energy put pressure upon the energy production infrastructure. More energy consumption requires more coal-fired power plants and the devastation caused by coal extraction. It also means more demands for hydroelectric dams and for nuclear power plants, with attendant hazards to surrounding areas and difficulties in disposing of radioactive fuel rods. And it means more emissions of soot and other air pollutants into the atmosphere by power plants burning coal and other fossil fuels to supply power. Among these emissions are mercury--a brain-damaging metal that can cause learning disabilities--and carbon dioxide (CO₂), a greenhouse gas that is a primary culprit in global climate change. For every kilowatt-hour of electricity used in a home or elsewhere, power plants release an average of 1.34 pounds of CO₂ into the environment! All in all, reducing energy consumption is key to a healthier planet.

Related Articles

From the *Green Guide*:

"Refrigerator CO₂ Calculator," www.thegreenguide.com/calculators/refrigerator-co2.mhtml

"Your Green Home: Kitchen," www.thegreenguide.com/green_home

"Repair or Replace?" www.thegreenguide.com/doc/121/repair

"The Appliance of My Eye," www.thegreenguide.com/doc/111/appliances

From Outside Sources:

Energy Star: www.energystar.gov.

"Home Energy Brief #3: Refrigerators and Freezers." Rocky Mountain Institute. www.rmi.org

"Making Your Fridge More Efficient." Real Money, July/August 2001.

The Most Energy-Efficient Appliances 2001. The American Council for an Energy-Efficient Economy. For copies, call 202-429-8873 or see www.aceee.org.

Wilson, Alex et al. *The Consumer Guide to Home Energy Savings*. American Council for an Energy-Efficient Economy, 1999.

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