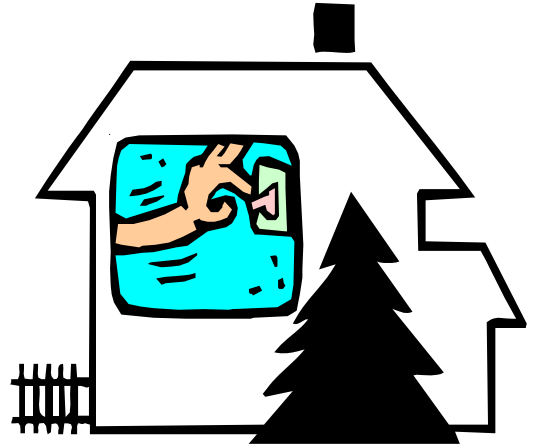


**Over 100 Ways
To Save On
Your Electric Bill**



**Maine Public Service Company
Customer Services**

Introduction

Using electricity at home offers great opportunities for using energy wisely. The purpose of this booklet is to share these opportunities with you in the major areas of home heating and cooling, lighting, cooking, water heating, laundering, and refrigeration.

Maine Public Service Company offers advice and assistance in each of these areas. We offer whole-house energy audits and information on using electricity more efficiently in particular areas of your home. The following are simple, low-or no-cost tips to assist you in gaining greater control over your electric bill. These tips also will improve the comfort and convenience of your home, and help to protect the environment by using energy wisely. Though some of the tips may be familiar, many are new. So read the booklet carefully and profit from it fully. It is complete with a chart that provides estimated yearly costs of operating a number of home appliances. If you have additional questions, please call Maine Public Service Company at 1-877-655-4448 or 760-2300 and ask for the ENERGY AUDITOR.

Priority List

Free— things that cost nothing and save cash!

Turn off TVs, stereos, and radios when leaving a room.

Turn down water heater thermostat to 120° F.

Use natural lighting whenever possible.

Don't leave the refrigerator door open; decide what you want before you open the door.

Turn off lights when leaving a room.

Set thermostats to 68° F in winter when you're home, and down to 65° F when you go to bed, and 60° when you're away. Programmable thermostats are a great option.

Use energy-saving settings on washing machines, clothes dryers, dishwashers, and refrigerators.

Wash clothes in cold water and only in full loads.

Don't waste water, hot or cold, inside or outside your home.

Check your refrigerator's condenser coils and clean as needed.

Close heating vents in unused rooms.

Repair leaky faucets and toilets (5% of water "use" is leakage).

Close drapes (and windows) during sunny summer days and after sunset in the winter.

Do not let the hot water run for chores like rinsing dishes, shaving, or washing your face.

Simple and inexpensive — things that will pay for themselves in lower energy bills in less than one year.

Install a water-saving 2.25 gallon per minute shower-head. MPS offers them with an energy audit if you have an electric water heater.

Use your microwave oven whenever possible.

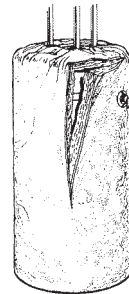
Use the smallest available appliance (for example, a toaster oven rather than a regular oven for a small item).

Install a programmable thermostat.

In the attic and basement, plug the air leaks; replace and re-putty broken window panes.

Clean or change air filter on your warm-air heating system during winter and on air conditioning units in the summer.

Installing a water heater jacket on your existing water heater is one of the most



effective do-it-yourself energy-saving projects, especially if your water heater is in an unheated basement or space.

The insulating jacket will reduce standby heat loss (heat lost through

the walls of the tank) by 25-40%, saving 4-9% on your water heating bills. Some newer water heaters come with fairly high insulation levels, reducing (though not eliminating) the economic advantages of adding additional insulation. In fact, some manufacturers recommend against installing jackets on their energy-efficient models, so make sure to follow the manufacturer's installation instructions.

Insulate the first three feet of hot and inlet cold water pipes. Insulate all of them if possible.

Install a compact fluorescent light bulb in the fixture you use the most (approximately a 75% savings).

Is the exhaust hose from the clothes dryer free from obstructions and vented to the outside? Metal piping is best for the exhaust hose.

Measures that collectively will cost up to \$500 and have pay backs of one to three years.

Remember the recommended minimum R-Value in Maine is R-38. Adding more insulation in your attic to meet those standards might cost \$300-\$400 but would pay for itself in two to three years.

Caulk and weatherize all leaks. Start with the attic and basement first (especially around plumbing and electrical penetrations, and around the framing that rests on the foundations), then weatherize windows and doors.

Seal and insulate warm-air heating (or cooling) ducts.

Have heating and cooling systems tuned up every year.

Add insulating storm windows wherever needed.

Insulate hot water pipes in unheated basements or crawlspaces.

Measures that will save a lot of energy and money, but will take three to fifteen years to pay for themselves.

Foundation: insulate inside rim joist and down the foundation wall to below frost-line to at least R-10.

Basement: insulate the ceiling above crawlspaces or unheated basements to at least R-19 in cold climates.

Install more compact fluorescent bulbs. Put them in your most frequently used fixtures, including those outdoors.

Replace exterior incandescent lights with compact fluorescent. Many new products will start at temperatures to 20°F, though the light output may be somewhat reduced at very low temperatures.

Replace high-flow toilets with modern water-efficient toilets that use 50% or 80% less water.

Plant a tree to shade your largest west window in summer. You won't save any money for years, but you will get an A+ for long-range vision.

Helpful Hints for Efficient Use of Appliances

REFRIGERATOR/FREEZER AND FREEZERS

Place refrigerators and freezers away from sources of heat such as ranges, dishwashers, radiators, and direct sunlight.

Replace door gaskets when they become hard or out of shape. A tight seal will minimize air leakage.

Defrost freezers before the ice becomes 1/4 inch thick.

Don't use your refrigerator or freezer too cold. Recommended temperatures are 38° F to 40° F for the refrigerator and 0° F to 5° F for the freezer.

When buying a freezer, consider buying one that has to be defrosted manually; these appliances use less energy than those that defrost automatically.

Cover all foods, especially liquids. They give off humidity, making your refrigerator use more energy.

Never cover shelves with aluminum foil. Try to have as much space as possible between items. Air should be able to circulate freely.

Chest-type freezer models use less energy than upright freezers.

Freezers are most efficient when kept full. This helps prevent loss of cold air each time the door is opened. If you find that your freezer is almost empty for long periods of time, don't use it. Unplug it and remove the door so that you can be sure that children from your family or the neighborhood can't accidentally be trapped inside.

When buying a new refrigerator/freezer or freezer, use the Energy Guide label. Using this guide to find the lowest energy cost can save you hundreds of dollars over the life of the appliance.

LAUNDRY ENERGY SAVERS

Wash clothes in warm or cold water, rinse in cold. You'll save energy and money. Use hot water only if absolutely necessary.

Pre-soak heavily soiled garments so you won't have to wash twice.

Sort clothes and wash only full loads.
Match the water level to the load size.

Dry full loads, but avoid overloading the dryer.

Dry consecutive loads to utilize accumulated dryer-heat.

Avoid over-drying clothes.

Clean lint filter after each drying cycle.

Hang your clothes outside to dry as often as possible.

Turn OFF the iron when not using it.

DISHWASHERS

Be sure your dishwasher is full, but not overloaded. Running two half loads can take twice as much energy as a full load.

Don't waste water or your time pre-rinsing dishes. If they need rinsing, use cold water. Most newer models require only that dishes be scraped off and liquids emptied.

Use the no-heat, air-dry feature on your dishwasher, if it has one. If you have an older dishwasher that doesn't include this feature, you can turn the dishwasher off after the final rinse cycle is completed and open the door to allow air drying.

RANGE/OVENS

Never boil water in an open pan. Water will come to a boil faster and use less energy in a kettle covered pan. Put a lid on your pots when cooking. Lids help keep heat in and speed up cooking times.

Use "high" setting only to bring water to a boil or food to cooking temperature quickly. Once there, foods will cook just as quickly at a simmer and use up to 90% less energy.

Check the seal or gasket on your oven door. A brittle or cracked seal wastes energy and money.

Self-cleaning ovens are especially efficient. When self-cleaning is necessary start the cycle right after cooking while oven is still hot. Cleaning the oven on cool, damp days are best.

Keep range-top burners and reflectors clean. They will reflect the heat better, and you will save energy.

Match the size of the pan to the heating element. More heat will get to the pan; less will be lost to surrounding air.

When using the oven, make the most of the heat from that single source. Cook as many foods as you can at one time.

Don't continually open the oven door to check food. Every time you open the door, heat escapes and your cooking takes more energy. A significant amount of heat escapes each time you open the oven door. Use timers and door window instead.

Turn elements off a few minutes early and allow retained heat to continue cooking the food.

Preheat the oven only when necessary, meat does not require a pre-heated oven.

Thaw frozen meats and casseroles in the refrigerator before cooking. This can reduce cooking time by as much as 50%.

In many cases, microwave ovens use less electricity than conventional ovens because they cook faster at lower wattage. The microwave oven is more efficient when used to cook small to medium amounts of moderately moist food. They add less heat to the kitchen in the summer too!

NEVER use an oven as a heater. It is inefficient and expensive.

BATHROOM ENERGY SAVERS

Take showers rather than tub baths, but limit your showering time and check the water flow if you want to save energy. It takes about 30 gallons of water to fill the average tub. A shower with a flow of 3 gallons of water a minute uses only 15 gallons in five minutes. Be sure to install a low flow shower head.

Install an insulation jacket on your electric water heater. Follow the manufacturer's installation instructions.

Set the water heater temperature at 120°F- 125°. If you have a dishwasher, check the owner's manual for recommended settings.

Insulate hot and cold water pipes.

Drain water out of the water heater once a year until it is free of sediment. Deposit built-up on heating surfaces can decrease the system's efficiency.

Repair leaky faucets promptly. Especially the hot water faucets.

LIGHTING

Turn off lights in any room not being used.

Consider installing solid-state dimmers or high-low switches when replacing light switches. They make it easy to reduce lighting intensity in a room and thus save energy.

Use fluorescent lights whenever you can; they give out more lumen per watt. For example, a 40-watt fluorescent lamp gives off 80 lumen per watt and a 60-watt incandescent gives off only 15 lumen per watt. The 40-watt fluorescent lamp would save about 140 watts of electricity over a 7-hour period. These savings, over a period of time, could more than pay for the fixtures you would need to use fluorescent lighting. Many of these high-efficiency fluorescent lights fit into conventional lamps.

Keep all lamps and lighting fixtures clean. Dirt absorbs light.

You can save on lighting energy through decorating. Remember, light colors for walls, rugs, draperies, and upholstery reflect light, and therefore reduce the amount of artificial light required.

Use outdoor lights only when they are needed. One way to make sure they are off during the daylight hours is to put them on a photocell unit or timer that will turn them off automatically.

Locate floor, table, or hanging lamps in the corner of a room rather than against a flat wall. Lamps in corners reflect light from two wall surfaces instead of one, therefore providing more usable light.

Take advantage of sunlight whenever possible. Let the sunshine naturally light and heat the rooms.

COMPUTERS

Turn off PCs, monitors, printers and copiers when not in use. If unable to switch off the entire computer, turn off the monitor and printer. Don't use screen savers. Despite common belief, a screen saver does not save energy.

Use a laptop computer instead of a desktop computer. The laptop will consume 90 percent less energy.

An ink-jet printer consumes 90 percent less energy than a laser printer.

Consider a flat panel. They use only 1/3 the energy, some as little as 30W or 1W on standby.

OTHER ENERGY SAVERS

Use cold water rather than hot to operate your food disposer.

Use your air conditioner only when you really need to. On cool and breezy days and nights, you can keep your house cool by opening windows and turning on fans. Kitchen and bathroom exhaust fans can also be used to help vent heat and moisture out of your house.

Don't leave your air conditioner on if the house or room is unoccupied. Cool only the rooms you use; close off unused rooms.

Shop for the highest SEER or EER rating possible on your air conditioning unit. The higher the number, the more efficient.

Keep your cooling and heating systems well tuned with periodic maintenance by a professional serviceman.

During heating months, remove window screens; screens cut the sun's ray from energy by 33%.

Keep hot tubs and waterbeds covered when not in use.

Turn your electric blanket on just prior to bedtime, then turn it off when going to bed - as opposed to having it on all night.

Well pumps are very common in rural areas. The amount of energy they use is dependent on how deep the well is, the pump quality, and the pressure controls. If the pump seems to be switching on more often than it should, there maybe a leak in the system somewhere, or the pressure switch may not be functioning properly. Have the system checked out. You can also save on well pumping electricity costs by reducing your water use.

A 5-amp block heater could be using 14 kWh per day if you leave the car plugged in all the time. You will probably find that using the block heater for just a half-hour or so before you start the car will warm it up perfectly well.

What's A Watt?

A watt is a unit of electricity and the rate at which energy is delivered. A thousand watts equal one kilowatt (kW). The energy that's used over a period of time is measured in kilowatt hours (kWh), the unit that your electric bill is based on. Every electrical appliance uses a specific number of watts. This is referred to as the appliance's wattage. A 100-watt light bulb, for instance, uses 100 watts. Divide the wattage by 1,000. This calculation gives you the energy consumption of the light bulb, which is .10 kW of energy per hour. A 8" range burner uses 2400 watts on a high setting. If you used it

one hour a day that would equal 2.4 kWh of energy. Some larger appliances, such as your refrigerator or clothes dryer, are rated in terms of volts and amps, instead of wattage. So how can you determine the number of kWh used by these appliances? It's simple. When you multiply the amps used by an appliance times the volts it uses, the product is that appliance's wattage. The following two equations will help you determine the energy used by the appliances at home:

Amps X Volts = Wattage

$$\frac{\text{Appliance's wattage}}{1,000} \times \frac{\text{hours used}}{\text{per month}} = \frac{\text{kWh per}}{\text{month}}$$

If you like to know how much it costs to use any of your appliances, here are the calculations you need. First, find the wattage of the appliance. In most cases, you'll find this listed on a small metal plate on the back or the bottom of the appliance. If the appliance has only the amps and volts written on it, as many large appliances do, use the above equation to calculate wattage. Once you know the wattage, write the number down.

- 1) Write down the wattage of the appliance.
(amps X volts = wattage)

2) Divide this number by 1,000 to convert watts to kilowatts

$$\frac{\text{watts}}{1,000} = \text{kW}$$

3) Now multiply the kilowatts by the number of hours you use the appliance each month.

Remember: 1,000 watt-hours = 1 kilowatt-hour (kWh)

$$\text{kW} \times \text{hours used per month} = \text{monthly kWh}$$

4) Next, multiply the total number of kWh's used each month by the total average residential rate (which includes both electricity supply and delivery service) of \$0.17 per kWh (MPS's approximate rate).

$$\text{monthly energy use} \times \frac{\text{current price per kWh}}{\text{price to use appliance}} = \text{monthly price to use}$$

For example: To find out how much it will cost to run a 60-watt porch light for 11 hours every night for a month when electricity costs \$0.17 per kWh:

$$60 \text{ watts} \times 11 \text{ hours/day} = 660 \text{ watt hours/ day}$$

$$660 \text{ Wh/d} \times 30 \text{ days/month} = 19,800 \text{ Wh/month}$$

$$\frac{19,800}{1,000} = 19.8 \text{ kWh}$$

19.8 kWh/month X \$0.17/kWh = \$3.37
For a year it would be 237.6 kWh (19.8 X 12 months)

237.6 X \$0.17 per kWh = \$40.39

(And this doesn't count the cost of having to replace the incandescent lightbulb five times during the year.)

How much does it take?

In the following table, you'll discover the energy used each month by certain appliances around the house. Since every brand and model varies in its energy use, these numbers are approximations. They can help you estimate how much energy an appliance uses and help you make better decisions when you're considering a purchase.

Appliance	Approx. Wattage Used	Average Hours of Use	Average kW X hours of Use	Monthly Cost for Aver. Period of Use
Refrigerator/Freezer				
Manual defrost (10-15 cu. ft.)				
Automatic defrost (16-18 cu. ft.)	300	200	60	\$10.20
Side-by-side "new" frige.	300	320	144	\$24.48
	300	320	80	\$13.60
Freezer				
Manual defrost	300	200	60	\$10.20
Auto defrost (16-18 cu. ft.)	450	320	144	\$24.48
Range				
6" burner (high)	1300	8	11	\$1.87
8" burner (high)	2400	8	20	\$3.40
Oven Bake (self-clean)	3200	8	26	\$4.42

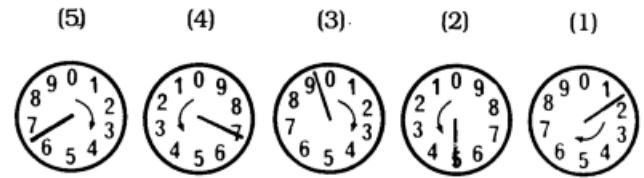
Oven Broil	3000	4	12	\$2.04
Microwave Oven	600-1000	6	6	\$1.02
Coffee Maker	600-1100	20	22	\$3.74
Bread Maker	500	20	10	\$.06 per loaf
Toaster Oven	1500	4	6	\$1.02
Slow Cooker/ Crockpot	160-300	8	1-2	\$0.17 to \$0.34
Water Heater (family of 2)	4500	45	203	\$34.51
Total	—	—	—	
Shower (one 5 minute shower/day)	—	—	—	\$0.14
Bath				
30 gallons/day	—	—	—	\$18.03
Dishwasher	1200	25	30	\$5.10
Laundry				
Washing Machine	550	20	11	\$1.87
5 warm-warm loads/wk.	—	—	—	\$10.20
5 hot-warm loads/wk.	—	—	—	\$15.13
Dryer	5000	22	110	\$18.70
King Side Water Bed				
Made	350	326	114	\$19.38
Unmade	350	428	150	\$25.50
Queen Size Water Bed				
Made	350	254	89	\$15.13
Unmade	350	330	116	\$19.72
Sump Pump	250	30	8	\$ 1.36
Septic System Pump	1000	30	30	\$5.10
Hot Tub				
Heater	5500	30	165	\$28.05
Circulating Pump	4500	30	135	\$22.95
Stereo Equipment	300	90	27	\$4.59
Color TV	100	180	18	\$3.06
Lg. Screen TV 27"	200	180	36	\$6.12

Computer	600	120	72	\$12.24
Computer Printer	360	30	11	\$1.87
Pool Pump/ Circulator (1 HP)	746	360 (8 to 12- hour day)	268	\$30.44- \$45.56
Fish Tank (heated)				
55 gallons	290	300	87	\$14.79
30 gallons	170	300	51	\$8.67
15 gallons	120	300	36	\$6.12
Incandescent Bulbs				
60-watt bulb	60	150	9	\$1.53
75-watt bulb	75	150	11	\$1.87
100-watt bulb	100	150	15	\$2.55
Fluorescent Bulbs				
Compact Bulb	15	150	2	\$0.34
4 " tube (2- lamp)	110	150	17	\$2.89
8 " (2-lamp)	194	150	29	\$4.93
Recessed/Track Lighting				
75-watt	75	180	14	\$2.38
150-watt	150	180	27	\$4.59
Outside Lighting				
Security Light	300	360	108	\$18.36
Christmas Lighting				
50-light set	25	240	6	\$1.02
100-light set	50	240	12	\$2.38
Electric Baseboard				
4ft.250 watts/ft,	1000	200	200	\$34.00
Space Heater	1500	120	180	\$30.60
Forced Hot Air Furnace				
Burner Motor	516	225	116	\$19.72
Warm Air Fan (Blower)	636-1224	270	171- 330	\$29.07- \$56.10
Boiler				
Burner Motor	516	225	116	\$19.72
Circulator Motor	88	270	24	\$4.08
Heat Tape (24 ft. 7 watts/ft.)	168	720	121	\$20.57
8,000 BTU Air Conditioner	860	120	103	\$17.51
Humidifier	177	180	32	\$5.44

Dehumidifier	900	360	324	\$55.08
Fan				
Attic	360	60	22	\$3.74
Window	200	150	30	\$5.10
Circulating	88	150	13	\$2.21
Ceiling	75	150	11	\$1.87
Oxygen Machine	450	720	324	\$55.08
Auto Engine Heater	750	135	101	\$17.17

How To Read The Basic Electric Meter

Your meter has either four or five dials, some of which turn clockwise, some counter-clockwise.



READING=66951

Read the meter from right to left, recording the number the dial has just passed.

If the pointer seems to be directly on a number, you refer to the previous dial on the right. If the previous dial's pointer has not passed zero, record the small number. If it has passed zero, record the number the dial's pointer is on.

When the pointer is between 9 and 0, 9 is the lower number, and when the pointer is

between 0 and 1, 0 is the lower number.

The reading for the meter above is 66951.

Let's assume that in August your meter read 66042.

Now in September your meter reads 66951.

So, your kWh of electricity used is the difference between the two readings, which is 909 kWh.

So, for 909 kWh and an assumed rate of \$0.17 per kWh, the bill would be \$154.53.

If you have any questions, don't hesitate to call our **Call Center at 760-2300 or toll free 1-877-655-4448.**

Notes

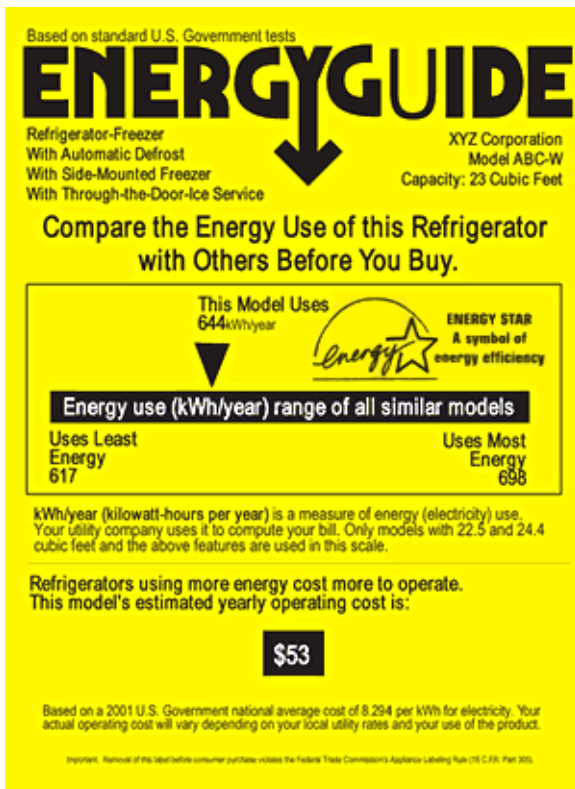
ENERGYGUIDE

Look for **EnergyGuide** labels when you're shopping for appliances. They will help you make the most energy efficient purchase - and save you money over the life of your appliance. The distinctive yellow and black **EnergyGuide** labels appear on most of the energy-using products that are subject to minimum efficiency standards set by the federal government. Consumers will find them on refrigerator-freezers and freezers, dishwashers, clothes washers, microwaves, water heaters, pool heaters, room air conditioners, central air conditioners and heat pumps, furnaces and boilers, and fluorescent lamp ballasts. (Although televisions, clothes-dryers, ranges and ovens, and space heaters have to meet federal minimum efficiency standards, they were exempted from the EnergyGuide program. That's because the amount of energy the products use does not vary substantially from model to model.)

How To Read Them

EnergyGuide labels come in slightly different formats for different appliances, but they're all easy to understand. The information they contain will help you make the wisest purchase.

- On the left under the headline EnergyGuide, the label describes the type of appliance it is - in this case, a refrigerator-freezer. It offers a brief description and the size - of this particular appliance.
- On the right it lists the manufacturer, the model numbers that fit this description and the capacity.



- In the box, the estimated amount of energy this model refrigerator will use in a year is spelled out - in this case, 644 kilowatt-hours a year.
- Below that is a line scale showing the range of energy use in models of comparable size and type. Of those refrigerators being compared, the scale shows the least amount of energy used - in this case, 617 kilowatt-hours - and the most amount of energy used - 698 kilowatt-hours. A caret points out where this particular appliance falls along the range of energy costs.
- A paragraph indicates the range of model sizes being compared.
- Finally, the label tells you how much you can expect to spend each year in electricity costs, given the estimated kilowatt-hours this refrigerator uses, and the suggested cost of electricity (This particular label states 8.29 cents per kWh. MPS is approximately 17 cents per kWh).

So in this case you would multiply 644 kWh use per year by 17 cents. The estimated energy cost is \$109.48 per year.) It also assumes this refrigerator will be operated under normal conditions. (Running it in a closed, unventilated garage in the middle of the Mojave Desert in the summer will obviously run up your electric bill.)

The EnergyGuide label is a valuable tool for comparison - but beware of some limitations!

Warnings About The Energyguide Label

Our sample label compares a range of different refrigerators - in this case, models with a capacity between 16.5 and 18.4 cubic feet.

That's a large range. If all refrigerators were equally efficient, the smallest size in that range would be at the low end of the scale, and the 18.4 capacity models would be at the high end. If you're trying to find the most efficient 18.4-cubic-foot refrigerator, **the bar scale may not accurately reflect a refrigerator's efficiency.**

In a sense, you're comparing small apples with big oranges.

To make an intelligent choice, you should compare the energy use in kilowatt-hours of **all 18.4 cubic feet refrigerators.** Some will be more efficient than others. Don't just rely on where a model fits on the comparison scale - make sure you're comparing appliances of the same size.

Another word of caution - the ranges shown on the labels are not updated frequently, and manufacturers are constantly introducing more efficient appliances. As a result, it could be possible to find a model that is more efficient than the most efficient end of the range. In that case, the label may note that the efficiency of this particular model was not available at the time the range was published.