44 *no-cost and low-cost energy-saving tips*

OTTER TAIL
POWER COMPANY

Valued customer

All of us are interested in saving money. And most of us are (or should be) interested in preserving our nation's natural resources and improving our environment.

You can do both—every day of the year—by taking some simple steps toward greater energy efficiency.

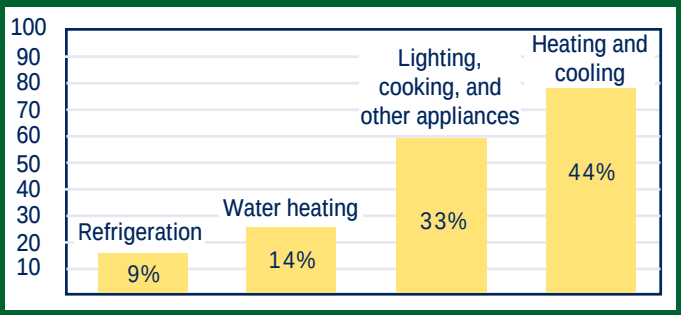
This booklet offers more than 50 practical suggestions as to how. A few—very few—require a fairly substantial financial investment. But most require little or none. And all guarantee both a financial reward and the satisfaction of knowing that you're being environmentally responsible.

Which of the suggestions should you implement first to realize the greatest benefits? Only you know that because it's dependent upon things that only you know. Things like:

- The condition of your home (insulation, windows, weather stripping, etc.).
- The condition and efficiency of your heating/cooling systems and major appliances.
- Your family's energy requirements and usage habits.
- Your personal financial resources.

That's why we've produced this booklet and organized it into three sections. The first section offers 27 no-cost tips that, taken together, can result in significant savings. The second section offers 17 low-cost tips that can allow you to save even more. And the third section offers a few tips that, while requiring fairly large initial investments, can result in substantial long-term paybacks.

Whether you read the booklet from start to finish or focus on the section that relates most directly to your personal situation, remember this: The more of the suggestions you implement—and the sooner you implement them—the sooner you'll realize their financial and environmental benefits.



Here's how energy is used in the typical home. Implementing the tips in this booklet may not change the percentages, but it will lower your overall costs!

27 no-cost energy saving measures

Heating/cooling

Heating and cooling are the greatest energy users in your home. The no-cost measures listed below will result in substantial energy savings.

1. Set your thermostat a degree or two lower in the winter, a degree or two higher in the summer. (For heating, every degree above 68 degrees F. adds about 3 percent to your heating bill. For cooling, every degree above 72 degrees F. saves about 3 percent.)
2. Reduce air-conditioning costs by running the fan on your furnace continuously. This will draw cool air from the basement and reduce humidity accumulation in the basement.
3. Keep the heat down in little-used rooms until shortly before you use them and in the entire home when you expect to be gone more than a day. (It's a myth that bringing the temperature back up takes more energy than keeping it constant.)
4. Keep the compressor units of heat pumps and air conditioners clean.
5. Use your drapes or blinds to bring the sun's warmth into your house in the winter, keep it out in the summer.
6. If you have a fireplace or wood stove, keep the damper tightly closed when it's not in use. Leaving the damper open is the same as leaving a good-sized window open.
7. Use the ventilation fans in your kitchen, bath, and other areas only as needed. Yes, they do a good job of removing moisture and odor. But they also remove a lot of heated air in the winter, cooled air in the summer.
8. Keep radiators, air registers, and baseboard heaters clean. And be sure furniture or drapes don't block them.
9. Open and close exterior doors as quickly as possible. Holding the door open while talking with or saying good-bye to visitors is wasteful.

Using drapes and blinds properly can help you save energy during all seasons.

Water heating

Water heating can account for up to 14 percent of the energy used in your home. You can reduce the amount of energy you use to heat water in all of the following no-cost ways.

1. Unless you have a specific need for a higher temperature, lower the thermostat on your water heater. For most hot water needs 120 to 140 degrees F. is ideal.
2. Never run hot water needlessly (when shaving, washing your hair, or preparing meals, for example). Doing so wastes two to three gallons of hot water a minute!
3. Consider taking more showers than baths. You use about twice as much hot water for a bath in a standard-size tub as you do for a five-minute shower. If you do take a bath remember that a half-full tub uses 11 gallons less water than does a full tub.
4. Wash full loads of clothes and dishes. It takes just as much hot water to wash a partial load of dishes as it does to wash a full load. And setting your clothes washer for a partial load uses only slightly less water than a full one.
5. When appropriate, wash clothes in cold water with cold-water detergents.

Washing full loads of dishes costs no more than washing partial loads, and your dishes come out just as clean.

6. During long (a week or more) absences from home, turn off the water heater and water softener and turn down water-bed heaters. (And speaking of water beds, always make your water beds and consider using insulated mattress pads to help retain the heat you've already paid for.

You should know

As of October 1, 2000, Otter Tail Power Company will offer free home energy audits over the Internet. After you answer questions online about your home's insulation package, heating/cooling equipment, and appliances—and your personal energy usage patterns—you will receive suggestions as to where and how to make your home more energy efficient. Check it out at www.otpco.com.

Lighting, cooking, washing/drying, refrigeratio

"Little things mean a lot" is as true in energy savings as it is in any other phase of life. The little thought and effort needed to implement the following no-cost tips will result in a lot of savings.

1. Turn off the television set, lights, and appliances when not in use. They're not big energy users, but remember: small daily savings add up to large annual savings.
2. Use only the amount of lighting you need. All the lights in the room needn't be on if you're the only person in it. And lower-wattage bulbs use less energy.
3. When cooking, use the smallest pot or pan needed and cover it. The cover keeps heat from escaping, thus decreasing the time needed to bring its contents to a boil.
4. Use the appropriately sized element on your range and turn it down once it reaches the boiling point.
5. Use your microwave or toaster oven whenever practical. Both use much less energy than the oven in your range.
6. Don't over-dry your clothes. If your dryer has an automatic moisture sensor, use it.
7. Clean the lint filter on your dryer after every load, and check the vent periodically to be sure it isn't blocked.
8. Open refrigerator and oven doors as seldom as possible, and close them as quickly as possible. Each time they're opened a significant amount of cold or heat has to be replacedand that takes energy.

A little everyday thought in using lighting and appliances will lead to significant annual savings.

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9. Don't waste energy by keeping your refrigerator or freezer too cold. Recommendations for the fresh-food compartment are 37 degrees to 40 degrees F., 5 degrees for the freezer section.
10. Keep refrigerators and freezers full but not packed.
11. Defrost manual-defrost refrigerators and freezers when the frost has built up to about a quarter of an inch in order to maintain maximum energy efficiency.
12. Vacuum the coils on your refrigerator periodically.

You should know

New electrotechnologies for heating, cooling, cooking, refrigerating, and a host of other home operations are being developed constantly. Those new technologies nearly always are much more energy efficient that those they're designed to replace.

Educating yourself about the latest electrotechnologies will improve your ability to make wise decisions when it's time to choose new products for your home.

17 low-cost energy-saving measures

Weatherization

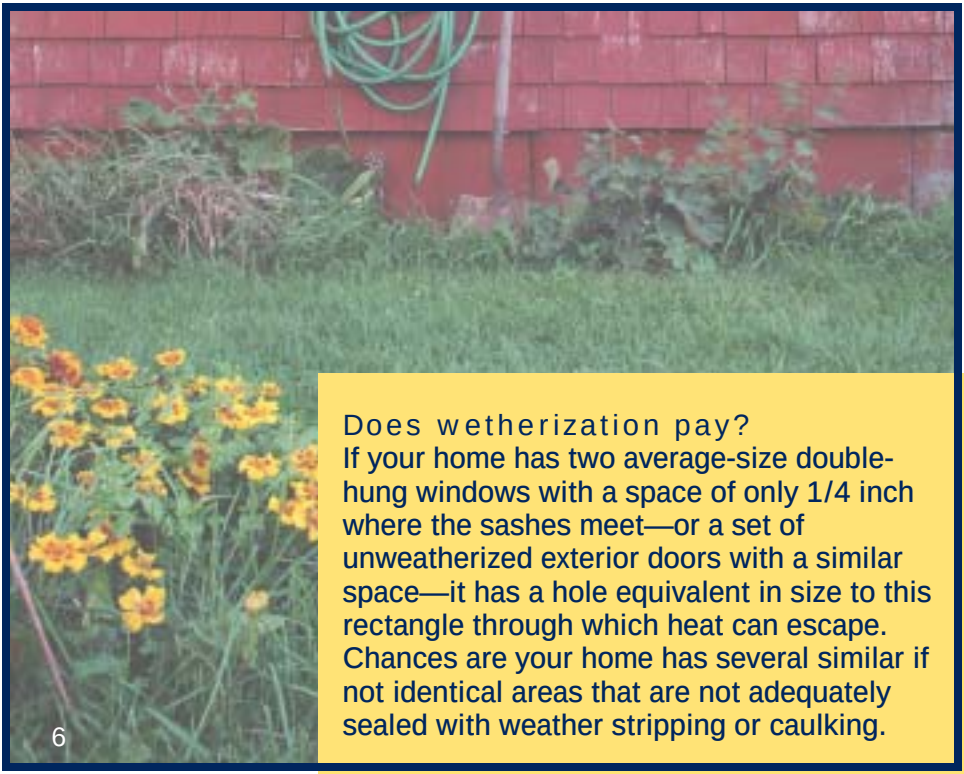
Air leaks are the biggest energy wasters in your home. A few hours of time and a few dollars' worth of caulking, sealant, and weather stripping can reduce your energy bill significantly.

Where should you weatherize? Any place air can escape. And most homes have many such places. You can reduce the effect of the most important ones by:

1. Caulking/weather stripping around entrance doors and any windows that leak air.
2. Caulking/sealing where ductwork, electrical wiring, plumbing, or exhaust fans have been installed through floors, ceilings, and exterior walls. (Examples: Electrical outlets and switch plates on exterior walls, warm-air registers, water-heater and furnace flues, bathroom and kitchen exhaust fans, exterior hose connections.)

You should know

Lower-income customers can apply for assistance with home weatherization through most local Community Action agencies.



Does wetherization pay?
If your home has two average-size double-hung windows with a space of only 1/4 inch where the sashes meet—or a set of unweatherized exterior doors with a similar space—it has a hole equivalent in size to this rectangle through which heat can escape. Chances are your home has several similar if not identical areas that are not adequately sealed with weather stripping or caulking.

Heating/cooling

Your heating and cooling system is the biggest energy user in your home. Every tip listed below will save both energy and money.

1. Keep your heating and cooling systems well maintained. A small investment in periodic maintenance is good insurance against larger repair bills. Just as important, it will prolong the life of your heating and air-conditioning systems and ensure that they operate at maximum efficiency.
2. Insulate ducts that pass through unheated spaces.
3. Inspect furnace filters at least every other month and clean or replace them as needed.
4. Install a programmable thermostat. It will allow you to turn your heat/air-conditioning up or down automatically with predetermined settings.
5. If you're building a new home, select equipment with high energy-efficiency ratings.
6. Consider installing individual thermostats in less-used rooms. Highly adaptable to most types of electric heating equipment, they save energy and money by allowing you to turn the heat down or off when the rooms are not in use.

Programmable thermostats let you achieve energy savings automatically.

Water heating

Reducing the cost of water heating (remember, it can account for up to 14 percent of the total energy use in your home) costs little but pays off big. Consider one or all of the following:

1. Repair or replace leaky faucets. The drips add up fast and represent dollars going down the drain. A hot-water faucet that leaks one drop per second wastes more than 2,300 gallons of hot water per year, which could cost as much as $36. The replacement washers needed to repair a leaky faucet cost only a few cents.
2. Unless you have a modern, well-insulated water heater, insulate the tank to prevent heat loss through its walls. (Be sure to read installation instructions carefully.)
3. Insulate long runs of hot-water supply pipe, especially sections located in unheated areas.
4. Install low-flow faucets and showerheads.
5. Replace an inefficient or worn-out water heater with an energy-efficient water heater. The initial cost will be greater, but the long-term energy savings will make the additional expense worthwhile.

Low-flow showerheads and faucets reduce water-heating costs substantially.

Lighting, appliances

1. Even though they cost more, use compact fluorescent lamps wherever possible. They're wise investments because they use 75 percent less electricity and last as much as 10 times longer.
2. Consider task lighting. Focusing light where it's needed in work spaces like kitchens, computer centers, and workshops can reduce, if not eliminate, the amount of more expensive general lighting needed.
3. Install motion sensors that will turn on the lights automatically when the room is entered, off when it's vacated.
4. When purchasing major appliances (refrigerator, clothes washer, dishwasher, clothes dryer, water heater), consider both the purchase price and the operating cost. A more efficient appliance usually will have a higher initial cost, but its lower operating costs often make it less expensive over the long term. The yellow Energy Guide label on the appliance provides an estimate of the appliance's yearly operating cost.

Look for the Energy Guide label when buying major appliances. And keep in mind that your operating cost may be more than 20 percent lower than the figure given. That's because the average operating cost is based on the national average cost of more than 8 cents per residential kilowatt-hour. Otter Tail's average in 1999 was only 6.25 cents.

A few higher-cost measures

A properly insulated home, complete with tightly fitting storm doors and windows (or double-pane windows with low-e coating on the glass), is your single most important source of energy and money savings. It requires much more detailed information—and considerably higher financial outlay-—than do the no-cost, low-cost tips. But keep in mind that, if the job is done right, the dollars spent will be recovered-several times over during the life of the home.

Many building materials suppliers can provide the information you need and estimate your costs. And you also can get more information with a toll-free call to our Idea Center (800-493-3299).

For starters:

1. Add insulation to your attic if it has less than 6 inches of cellulose or 7 inches of fiberglass insulation. (Look for the Energy Star label and the National Association of Home Builders certification when purchasing insulation.)
2. Replace broken window glass.
3. Replace or repair worn, improperly fitting doors and windows with new energy-efficient designs.
4. Add storm doors and windows if your home is not already equipped with them. Here, too, look for energy-efficient designs.
5. Replace old appliances, especially water heaters and refrigerators, with high-efficiency models. Some new refrigerator models, for instance, use 25 percent to 50 percent less energy than models sold during the 1970s.
6. Select high-efficiency heating and cooling equipment with programmable and zone-control features for your new home or when you must replace such equipment in your present home.
7. Hire an expert to perform a home energy audit and blower door test on your home, then make the repairs or changes identified by the audit.

You should know

Electric heating systems are 100 percent efficient. This means that electric furnaces convert 100 percent of the energy they use into heat. Nothing is wasted.

By contrast, gas, propane, and fuel-oil furnaces are generally only 80 percent to 90 percent efficient when new and 60 percent to 70 percent efficient when they get older. This means that they convert only 60 percent to 90 percent of the fuel they use into heat. From 10 percent to 40 percent of the energy they use is wasted.

Adding needed insulation is a guaranteed money saver.

Implementing

Now that you've read all or part of this booklet there's only one thing left to do: Start implementing as many of the energy-saving tips as possible as soon as possible. You'll enjoy both the financial rewards and the satisfaction of knowing that you're helping to preserve our natural resources and improve our environment.

You should know

Energy-efficiency improvements are sound investments. Your local bank may have a special community improvement program for home and business improvement projects. And Otter Tail Power Company has Dollar $mart financing for purchasing energy-efficient electric equipment.

Appendix

What's a kilowatt-hour?

Most people know that they pay for electricity by the kilowatt-hour (kwh), but few know exactly what a kilowatt-hour is. Perhaps the easiest explanation is that a 100-watt lightbulb burning for 10 hours uses 1 kilowatt-hour of electricity.

100 watts
x **10** hours

1,000 watt hours (1 kilowatt)

What does a kilowatt-hour of electricity cost?

In 1999 the typical Otter Tail Power Company residential customer paid 6.25 cents for a kilowatt-hour of electricity. In the above example, the cost of burning the 100-watt bulb for 10 hours would be 6.25 cents.

Here's another example.
A 250-watt color television would use 1 kilowatt in four hours.

250 watts
x **4** hours

1,000 watt hours (1 kilowatt)

This means that the cost of watching your favorite television programs from 6:30 to 10:30 in the evening would be about 6.25 cents.

Appendix con't.

Here's how to determine your costs more exactly

You will find the wattage of most appliances stamped on their backs or bottoms. To determine the kilowatts used per hour, divide the wattage by 1,000. Multiply that number by the number of hours per year you use the appliance, then multiply that answer by your electric rate as stated on your electric service statement.

Example: A dishwasher using 600 watts.

Divide the wattage by 1,000.

600 watts / **1,000** = **.6** kwh per hour

Multiply .6 by the number of hours per year you use the appliance.

500 hours used
x **.6** kwh per hour
300 kwh per year

Then multiply that answer by 6.25 (average Otter Tail residential rate).

300 kwh per year
x **6.25** average residential rate
$18.75

Appliance	Average wattage	Est. annual electricity use (kwh)	Otter Tail customers' estimated annual cost
Portable stereo	20	2	$ .13
Coffeemaker	1,200	140	$ 8.68
Dishwasher	600	330	$ 20.46
Microwave	750	191	$ 11.84
Range/oven	12,200	700	$ 43.40
Toaster	1,146	39	$ 2.42
Refrigerator-20 c.f. auto/defrost		857	$ 53.13
Clothes dryer	5,500	909	$ 56.36
Washing machine	512	99	$ 6.14
Room air conditioner	1200	925 (750 hrs./yr.)	$ 57.35
Dehumidifier	257	377	$ 23.37
Fan (attic)	370	291	$ 18.04
Hair dryer	1,500	25	$ 1.55
Shaver	15	0.5	$ .03
Collor elevision	80	528	$ 32.74
Clock	2	17	$ 1.05
Vacuum cleaner	620	46	$ 2.85

This chart provides an estimate of the annual operating costs of some of the most common electric appliances.

If you haven't read this booklet please read this!

From the time the alarm clock awakens us in the morning to the time we turn off the lights at night, electricity plays an essential role in our lives. It plays that role efficiently, reliably, and economically. So much so, in fact, that we have come to take it for granted. That's unwise, because—like everything else we buy—it does have a price. And every dollar we pay for it when we're not using it wisely is a dollar we don't have to pay for something else. The savings you'll realize by acting on the tips in this booklet won't be enough to pay for a new boat or car. But over the course of a year they'll go a long ways toward paying for that new power tool, kitchen appliance, or must-have toy for the kids.

So, read the booklet. Implement the tips. And have fun with the savings.

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