



## For Consumers

In the winter, turn your thermostats down to 68 degrees or below. Reduce the setting to 55 degrees before going to sleep or when leaving for the day. (For each 1 degree you turn down the thermostat in the winter, you'll save up to 5% on your heating costs.) Programmable thermostats are most effective.

Turn off non-essential lights and appliances. The electricity generated by fossil fuels for a single home puts more carbon dioxide into the air than two average cars!

Avoid running large appliances such as washers, dryers, and electric ovens during peak energy demand hours from 5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.

Close shades and blinds at night to reduce the amount of heat lost through windows. This also applies during the day for warm climates.

Buy Energy Star appliances, products and lights.

## For Business

In the winter, turn your thermostat down to 68 degrees or below. Reduce the setting to 55 degrees at the end of the day. (For each 1 degree you turn down the thermostat in the winter, you'll save up to 5% on your heating costs.)

Turn off all unnecessary lights, especially in unused offices and conference rooms and turn down remaining lighting levels where possible.

Set computers, monitors, printers, copiers and other business equipment to their energy saving feature and turn them off at the end of the day.

Minimize energy usage during peak demand hours from 5:00 a.m. to 9:00 a.m. and 4:00 p.m. to 7:00 p.m.

Buy Energy Star appliances, products, and lights.

Consider placing outdoor signs on a timer so they only run until 1:00 a.m., saving electricity during non-peak hours.

## For Kids and Teachers

Choose an energy monitor for your classroom every week who will make sure that energy is being used properly.

At home, hold a ribbon up to the edges of windows and doors. If it blows, you've found a leak. Tell your parents.

When you leave the room, turn off the light.

## Heating and Cooling Tips

Set your thermostat as low as is comfortable in the winter and as high as is comfortable in the summer.

Clean or replace filters on furnaces once a month or as needed.

Clean warm-air registers, baseboard heaters, and radiators as needed; make sure they're not blocked by furniture, carpeting, or drapes.

Bleed trapped air from hot-water radiators once or twice a season; if in doubt about how to perform this task, call a professional.

Place heat-resistant radiator reflectors between exterior walls and the radiators.

Use kitchen, bath, and other ventilating fans wisely; in just 1 hour, these fans can pull out a houseful of warmed or cooled air. Turn fans off as soon as they have done the job.

During the heating season, keep the draperies and shades on your south-facing windows open during the day to allow sunlight to enter your home and closed at night to reduce the chill you may feel from cold windows. During the cooling season, keep the window coverings closed during the day to prevent solar gain.

During the heating season, close an unoccupied room that is isolated from the rest of the house, and turn down the thermostat or turn off the heating for that room or zone. However, do not turn the heating off if it adversely affects the rest of your system. For example, if you heat your house with a heat pump, do not close the vents-closing the vents could harm the heat pump.

Select energy-efficient equipment when you buy new heating and cooling equipment. Your contractor should be able to give you energy fact sheets for different types, models, and designs to help you compare energy usage. Look for high Annual Fuel Utilization Efficiency (AFUE) ratings and the Seasonal Energy Efficiency Ratio (SEER). The national minimums are 78% AFUE and 10 SEER.

Look for the ENERGY STAR® labels. ENERGY STAR® is a program of the U.S. Department of Energy (DOE) and the Environmental Protection Agency (EPA) designed to help consumers identify energy-efficient appliances and products.

### Duct Tips

Check your ducts for air leaks. First look for sections that should be joined but have separated and then look for obvious holes.

If you use duct tape to repair and seal your ducts, look for tape with the Underwriters Laboratories (UL) logo to avoid tape that degrades, cracks, and loses its bond with age.

Remember that insulating ducts in the basement will make the basement colder. If the ducts and the basement walls are not insulated, consider insulating both.

If your basement has been converted to a living area, install both supply and return registers in the basement rooms.

Be sure a well-sealed vapor barrier exists on the outside of the insulation on cooling ducts to prevent moisture buildup.

Get a professional to help you insulate and repair all ducts

### Heat Pump Tips

Do not set back the heat pump's thermostat manually if it causes the electric resistance heating to come on. This type of heating, which is often used as a backup to the heat pump, is more expensive.

Clean or change filters once a month or as needed, and maintain the system according to manufacturer's instructions.

### Solar Tips

Keep all south-facing glass clean.

Make sure that objects do not block the sunlight shining on concrete slab floors or heat-absorbing walls.

Consider using insulating curtains to reduce excessive heat loss from large windows at night.

### Fireplace Tips

If you never use your fireplace, plug and seal the chimney flue.

Keep your fireplace damper closed unless a fire is going. Keeping the damper open is like keeping a 48-inch window wide open during the winter; it allows warm air to go right up the chimney.

When you use the fireplace, reduce heat loss by opening dampers in the bottom of the firebox (if provided) or open the nearest window slightly—approximately 1 inch—and close doors leading into the room. Lower the thermostat setting to between 50 and 55 degrees F.

Install tempered glass doors and a heat-air exchange system that blows warmed air back into the room.

Check the seal on the flue damper and make it as snug as possible.

Add caulking around the fireplace hearth.

Use grates made of C-shaped metal tubes to draw cool room air into the fireplace and circulate warm air back into the house.

### Cooling Tips

Whole-house fans help cool your home by pulling cool air through the house and exhausting warm air through the attic. They are effective when operated at night and when the outside air is cooler than the inside air.

Set your thermostat as high as comfortably possible in the summer. The less difference between the indoor and outdoor temperatures, the lower your overall cooling bill will be.

Don't set your thermostat at a colder setting than normal when you turn on your air conditioner. It will not cool your home any faster and could result in excessive cooling and unnecessary expense.

Consider using a ceiling fan in conjunction with your central air conditioner to spread the cooled air more effectively through your home without greatly increasing your power use.

Don't place lamps or TV sets near your air-conditioning thermostat. The thermostat senses heat from these appliances, which can cause the air conditioner to run longer than necessary.

Plant trees or shrubs to shade air-conditioning units but not to block the airflow. A unit operating in the shade uses as much as 10% less electricity than the same one operating in the sun. If you replace your unit, find out if it can be placed in an interior space.

### Insulation Tips

Consider factors such as your climate, building design, and budget when selecting insulation for your home.

Use higher density insulation, such as rigid foam boards, in cathedral ceilings and on exterior walls. Spray foam insulation is considered to be the most effective because it can penetrate small spaces.

Ventilation plays a large role in providing moisture control and reducing summer cooling bills. Attic vents can be installed along the entire ceiling cavity to help ensure proper airflow from the soffit to the attic, helping to make your home more comfortable and energy efficient.

Recessed light fixtures can be a major source of heat loss, but you need to be careful how close you place insulation next to a fixture unless it is marked. "I.C."-designed for direct insulation contact. Check your local building codes for Spray foam insulation is considered to be the most effective because it can penetrate small spaces.

## Weatherization Tips

First, test your home for air tightness. On a windy day, hold a lit incense stick next to your windows, doors, electrical boxes, plumbing fixtures, electrical outlets, ceiling fixtures, attic hatches, and other locations where there is a possible air path to the outside. If the smoke stream travels horizontally, you have located an air leak that may need caulking, sealing, or weather stripping.

Caulk and weather strip doors and windows that leak air.

Caulk and seal air leaks where plumbing, ducting, or electrical wiring penetrates through exterior walls, floors, ceilings, and soffits over cabinets.

Install rubber gaskets behind outlet and switch plates on exterior walls. Paper liners can be purchased to place behind interior switch plates and outlets. They will block air leakage.

Look for dirty spots in your insulation, which often indicate holes where air leaks into and out of your house. You can seal the holes by stapling sheets of plastic over the holes and caulking the edges of the plastic.

Install storm windows over single-pane windows or replace them with double-pane windows. Storm windows as much as double the R-value of single-pane windows and they can help reduce drafts, water condensation, and frost formation. As a less costly and less permanent alternative, you can use a heavy-duty, clear plastic sheet on a frame or tape clear plastic film to the inside of your window frames during the cold winter months. Remember, the plastic must be sealed tightly to the frame to help reduce infiltration.

When the fireplace is not in use, keep the flue damper tightly closed. A chimney is designed specifically for smoke to escape, so until you close it, warm air escapes-24 hours a day!

For new construction, reduce exterior wall leaks by installing house wrap, and taping the joints of exterior sheathing.

## Water Heating Tips

Repair leaky faucets promptly; a leaky faucet wastes gallons of water in a short period.

Insulate your electric hot-water storage tank and pipes, but be careful not to cover the thermostat.

Insulate your gas or oil hot-water storage tank and pipes, but be careful not to cover the water heater's top, bottom, thermostat, or burner compartment; when in doubt, get professional help.

Install non-aerating, low-flow faucets and showerheads.

Buy a new water heater. While it may cost more initially than a standard water heater, the energy savings will continue during the lifetime of the appliance. Tankless water heaters can be quite energy efficient. To save water waste, they frequently need a pump to move the water quickly to the tap.

Although most water heaters last 10 to 15 years, it's best to start shopping for a new one if yours is more than 7 years old. Doing some research before your heater fails will enable you to select one that most appropriately meets your needs.

Lower the thermostat on your water heater; water heaters sometimes come from the factory with high temperature settings, but a setting of 115 degrees F provides comfortably hot water for most uses. Temperatures over 120 degrees are considered to be hazardous.

Drain a quart of water from your water tank every 3 months to remove the sediment that impedes heat transfer and lowers the efficiency of your heater. The type of water tank you have determines the steps to take, so follow the manufacturer's advice.

If you heat with electricity and live in a warm and sunny climate, consider installing a solar water heater. The solar units are environmentally friendly and can now be installed on your roof to blend with the architecture of your house.

Take more showers than baths. Bathing uses the most hot water in the average household. You use 15 to 25 gallons of hot water for a bath, but less than 10 gallons during a 5-minute shower.

Water heating is the third largest energy expense in your home, typically accounting for about 14% of your utility bill. Shorter showers, more efficient showerheads and lowering the thermostat on your water heater can help to decrease this expense.

Consider the installation of a drain water waste heat recovery system.

An electric hot pot will boil water within 2 minutes, much faster than your stove top. It is a nominal expense and will save energy costs.

## Cold-Climate Window Tips

Install exterior or interior storm windows; storm windows can reduce heat loss through your windows by 25% to 50%. Storm windows should have weather stripping at all moveable joints; be made of strong, durable materials; and have interlocking or overlapping joints. Low-e storm windows save even more energy.

Repair and weatherize your current storm windows, if necessary.

You can save 10% or more on your energy bill just by reducing the air leaks in your home.

Install tight-fitting, insulating window shades on windows that feel drafty after weatherizing.

Close your curtains and shades at night; open them during the day.

Keep windows on the south side of your house clean to maximize solar gain.

## Warm-Climate Window Tips

Install white window shades, drapes, or blinds to reflect heat away from the house.

Close curtains on south- and west-facing windows during the day.

Install awnings on south- and west-facing windows.

Apply sun-control or other reflective films on south-facing windows.

It is best to stop the heat on the outside of the windows.

### Tips when shopping for windows

When you're shopping for new windows, look for the National Fenestration Rating Council (NFRC) label; it means that the windows are performance certified.

Remember, the lower the U-value, the better the insulation. In colder climates, a U-value of 0.35 or below is recommended. These windows have at least double glazing and low-e coating.

In warm climates, where summer-time heat gain is the main concern, look for windows with double glazing and spectrally selective coatings that reduce heat gain.

Select windows with air leakage ratings of 0.3 cubic feet per minute or less.

In temperate climates with both heating and cooling seasons, select windows with both low U-values and low solar heat gain co-efficiency (SHGC) to maximize energy benefits.

Look for the ENERGY STAR® and EnergyGuide labels.

### Landscaping Tips

(Dependent on Geographic Area)

Trees that lose their leaves in the fall (i.e., deciduous) are the most effective at reducing heating and cooling energy costs. When selectively placed around a house, they provide excellent protection from the summer sun but permit winter sunlight to reach and warm your house. The height, growth rate, branch spread, and shape are all factors to consider in choosing a tree.

Vines provide shading and cooling. Grown on trellises, vines can shade windows or the whole side of a house.

Deflect winter winds by planting evergreen trees and shrubs on the north and west sides of your house; deflect summer winds by planting on the south and west sides of your house.

### Indoor Lighting Tips

Turn off the lights in any room you are not using and consider installing timers, photo cells, or occupancy sensors to reduce the amount of time your lights are on.

Use task lighting; instead of brightly lighting an entire room, focus the light where you need it. For example, use fluorescent under-cabinet lighting for kitchen sinks and countertops under cabinets.

Consider three-way lamps. They make it easier to keep lighting levels low when bright light is not necessary.

Use 4-foot fluorescent fixtures with reflective backing and electronic ballasts for your workroom, garage, and laundry areas.

Consider using 4-watt mini-fluorescent or electro-luminescent night lights. Both lights are much more efficient than their incandescent counterparts, and the luminescent lights are cool to the touch.

### Compact Fluorescent Bulbs

These compact fluorescent bulbs (CFLs) are four times more energy efficient than incandescent bulbs and provide the same lighting. Use CFLs in all the portable table and floor lamps in your home. Carefully consider the size and fit of these systems when you select them. Some home fixtures may not accommodate some of the larger CFLs.

When shopping for new light fixtures, consider buying dedicated compact fluorescent fixtures with built-in ballasts that use pin-based replacement bulbs.

For spot lighting, consider CFLs with reflectors. The lamps range in wattage from 13-watt to 32-watt and provide a very directed light using a reflector and lens system.

Take advantage of daylight by using light-colored, loose-weave curtains on your windows to allow daylight to penetrate the room while preserving privacy. Also, decorate with lighter colors that reflect daylight.

If you have torchiere fixtures with halogen lamps, consider replacing them with compact fluorescent torchieres. Compact fluorescent torchieres use 60% to 80% less energy and can produce more light (lumens) than the halogen torchieres.

### Outdoor Lighting Tips

Use outdoor lights with a photocell unit or a timer so they will turn off during the day.

Turn off decorative outdoor gas lamps. Just eight gas lamps, burning year round, use as much natural gas as it takes to heat an average-size home during an entire winter.

Exterior lighting is one of the best places to use CFLs because of their long life. If you live in a cold climate, be sure to buy a lamp with a cold-weather ballast.

### Dishwasher Tips

Check the manual that came with your dishwasher for the manufacturer's recommendations on water temperature; many have internal heating elements that allow you to set the water heater to a lower temperature.

Scrape off, don't rinse off, large food pieces and bones. Soaking or prewashing is generally only recommended in cases of burned-on or dried-on food.

Be sure your dishwasher is full, but not overloaded.

Don't use the "rinse hold" function on your machine for just a few soiled dishes. It uses 3 to 7 gallons of hot water each time you use it.

Let your dishes air dry. If you don't have an automatic air-dry switch, turn off the control knob after the final rinse and prop the door open a little so the dishes will dry faster.

## Refrigerator / Freezer Energy Tips

Look for a refrigerator with automatic moisture control. Models with this feature have been engineered to prevent moisture accumulation on the cabinet exterior without the addition of a heater. This is not the same thing as an "anti-sweat" heater. Models with an anti-sweat heater will consume 5% to 10% more energy than models without this feature.

Don't keep your refrigerator or freezer too cold. Recommended temperatures are 37 to 40 degrees F for the fresh food compartment of the refrigerator and 5 degrees F for the freezer section. If you have a separate freezer for long-term storage, it should be kept at 0 degrees F.

To check the refrigerator temperature, place an appliance thermometer in a glass of water in the center of the refrigerator. Read it after 24 hours. To check the freezer temperature, place a thermometer between frozen packages. Read it after 24 hours.

Regularly defrost manual-defrost refrigerators and freezers. Frost buildup increases the amount of energy needed to keep the motor running. Don't allow frost to build up more than one-quarter of an inch.

Make sure your refrigerator door seals are airtight. Test them by closing the door over a piece of paper or a dollar bill so that the paper or bill is half in and half out of the refrigerator. If you can pull the paper or bill out easily, the latch may need adjustment or the seal may need replacing.

Cover liquids and wrap foods stored in the refrigerator. Uncovered foods release moisture and make the compressor work harder.

Move your refrigerator away from the wall and vacuum the condenser coils once a year unless you have a no-clean condenser model. Your refrigerator will run for shorter periods with clean coils.

## Other Energy-Saving Kitchen Tips

Be sure to place the faucet lever on the kitchen sink in the cold position when using small amounts of water. Placing the lever in the hot position uses energy to heat the water even though it never reaches the faucet.

If you need to purchase a gas oven or range, look for one with an automatic, electric ignition system. An electric ignition saves gas because a pilot light is not burning continuously.

In gas appliances, look for blue flames. Yellow flames indicate the gas is burning inefficiently and an adjustment may be needed. Consult your manufacturer or your local utility.

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

Use a covered kettle or pan to boil water. It is faster and it uses less energy.

Match the size of the pan to the size of the heating element.

If you cook with electricity, turn the stovetop burners off several minutes before the allotted cooking time. The heating element will stay hot long enough to finish the cooking without using more electricity. The same principle applies to oven cooking.

Use small electric pans or toaster ovens for small meals rather than your large stove or oven. A toaster oven uses a third to half as much energy as a full-sized oven.

Use pressure cookers and microwave ovens whenever it is convenient to do so. They can save energy by significantly reducing cooking time.

## Laundry Tips

Wash your clothes in cold water using cold-water detergents whenever possible.

Wash and dry full loads. If you are washing a small load, use the appropriate water-level setting.

Dry towels and heavier cottons in a separate load from lighter-weight clothes.

Don't over-dry your clothes. If your machine has a moisture sensor, use it.

Clean the lint filter in the dryer after every load to improve air circulation.

Use the cool-down cycle to allow the clothes to finish drying with the residual heat in the dryer.

Periodically inspect your dryer vent to ensure it is not blocked. This will save energy and may prevent a fire. Manufacturers recommend using rigid venting material, not plastic vents that may collapse and cause blockages.

Look for the ENERGY STAR® and Energy Guide labels.

**SOURCE:** [www.earth911.org](http://www.earth911.org)