

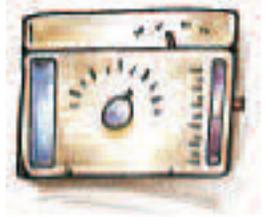
## **Home Heating Energy Savers: A home's space heating and air conditioning requirements generally require the most energy.**

# Home Energy Saving Tips

### **Thermostats:**

A bad or improperly adjusted thermostat can waste a lot of energy.

- Install a clock controlled thermostat that will automatically turn the heat down each night and then back up in the morning. Newer models allow for more than one setback in each 24-hour period. This allows the temperature to be turned down during the day if no one is home.
- During the winter, you can save as much as 3 percent of the energy your heating system uses for each degree you lower your thermostat setting.
- In the summer, you can save up to 5 percent of the energy used by your air conditioner for every degree you raise your thermostat setting.
- The thermostat settings providing the best combination of comfort and efficiency are winter settings of 68 degrees during the day and 62 degrees at night, and 78 degrees in the summer.
- Check the temperature in other rooms, to be certain the thermostat temperature is representative of the rest of the house and make adjustments if necessary.
- Plug the hole in the wall behind the thermostat with caulking or sealant.



### **Heating systems:**

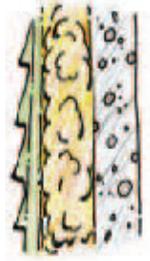
With fuel costs rapidly rising, many people are looking at newer, more efficient high-tech heating systems such as heat pumps. A heat pump is a mechanical device that transfers heat. In the summer, it transfers heat out of your home, and in the winter, it transfers heat into your home.

- An air-source heat pump uses air to move heat. In the summer, an air-source heat pump works like an ordinary air conditioner, pumping heat from inside your home to the air outside. In the winter, it reverses itself and pumps heat into your home from the air outside. These heat pumps work because even very cold air contains heat. Air at zero degrees Fahrenheit contains 89% of the heat that air at 100 degrees Fahrenheit contains.
- A geothermal heat pump works similarly except it uses a liquid to transfer heat between your home and the ground. Geothermal heat pumps have the greatest potential for efficient and economical operation since ground temperatures remain fairly constant throughout the year.
- A dual-fuel system is a combination of a heat pump and a fossil fuel furnace as a back-up. The house is heated by the heat pump alone until the outside temperature drops to a level where efficiency is low, or a peak electric usage period occurs. At this point, the furnace takes over. This arrangement allows each fuel to take advantage of its most efficient characteristics.

## **Insulation:**

Increasing insulation levels is often the most cost effective way to lower heating and air conditioning costs.

- Adding insulation to your attic is the best place to start. If you only have six inches of insulation in your attic, adding another six inches will cut your heat loss in half. Adding 12 inches of insulation to an uninsulated attic reduces the heat lost by over 90%.
- Adding 3.5 inches of insulation to a concrete block basement wall reduces the amount of heat lost by one half.
- Installing 6 inches of insulation under a wooden floor can reduce the amount of heat lost by 75%.
- Make certain the sill plate above the concrete basement wall is also insulated.
- Apply caulking to the sill plate joint under the siding, where door and window frames meet the siding and at all exterior wall and ceiling penetrations where cracks could let cold air blow in.
- Inside, use foam gaskets under all outlet and switch covers on exterior walls.



## **Air Conditioning:**

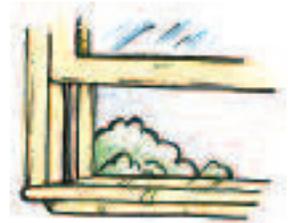
Select a good quality air conditioner with a SEER of 12 or higher.

- To cool your house efficiently, your air conditioner has to be cool. Try to place window units or central system compressor units on the shaded side of your home.
- Turn the air conditioner off when you leave the house for several hours or more.
- Keep the cooling coils clean. Use a vacuum to suck out or blow out leaves and dirt.
- Clean or replace filters following the manufacturer's specifications.

## **Windows:**

Double and in some cases triple pane low-e windows are the standard.

- When replacing windows, always use at least double pane low-e windows. The multiple panes use an air space to increase insulation, and the low-e coating reflects heat out of the house in the summer and back into the house in the winter.
- If some of your windows are missing storm windows or feel too cold on the inside, you would probably benefit from installing plastic inside storm windows. This includes basement windows even if the basement is unheated.
- Make your curtains and shades work for you. Keep them closed in the winter when the sun is not shining in. Reverse this procedure in the summer.
- Seal cracks with caulk or weather stripping, especially if you can feel a draft.



## **Doors:**

Doors should be insulated and weather stripped for a tight seal.

- Make sure all doors have a good seal against the molding to prevent drafts. Use weather stripping, threshold seals, and/or reposition the molding.
- Doors that have lost their integrity should be replaced with insulated doors.

## **Fireplaces:**

Open fireplaces can actually waste heat.

- Conventional fireplaces can actually cool a house by forcing large amounts of heated air up the chimney causing cold replacement air to infiltrate through cracks and other openings.
- Close the flue when a fireplace is not in use.
- Install an air-tight glass door over the fireplace opening.
- When the fireplace is in operation, crack a window near the fireplace to provide makeup air and short circuit drafts from other parts of the house.
- Installing an airtight fireplace unit with an outside combustion air draft is even better.

## **Hot Water:**

The hot water tank is generally the second highest energy user in your home.

- If you have an older tank with less insulation, use a blanket kit to wrap the tank following the manufacturer's recommendations for gas or electric tanks.
- If you do not need 140 degree water for your dishwasher, lower your water heater thermostats to 120 degrees.
- Cover the hot water pipes with insulation wherever they are exposed.
- Replace standard shower heads with low flow models to reduce usage by up to 50%.
- Install aerators on kitchen and bath faucets to reduce water usage.



## **Oven and Ranges:**

Microwave ovens cook with 50% less energy than conventional ovens.

- Use your microwave oven whenever possible.
- Use an oven thermometer to check the thermostat in your oven. Chances are it is not accurate and should be replaced.
- Keep the reflectors under your stove-top burners clean and they will reflect heat better. The best reflectors can save as much as 33% of the heat needed to cook.
- Inspect the seal on the oven door for gaps. Even a small leak can allow a lot of heat to escape.
- Clean self-cleaning ovens right after use, to take advantage of residual heat.



## **Lighting:**

Compact fluorescent lighting can reduce lighting costs by 80% over incandescent lighting.

- In kitchens, workshops, security lights, or wherever bright light is needed for an extended time, replace incandescent lights with efficient, long-life fluorescent or compact fluorescent bulbs.
- Keep bulbs clean. Dust can reduce a light bulbs brightness by 10%.
- Consider painting walls and ceilings lighter colors. White walls reflect 80% of the light that hits them, while black only reflects 10%.
- Open curtains on sunny days. Direct sunlight is 100 times as bright as light from a bright reading lamp.

## **Dishwashers:**

Dishwashers can require 37% less water than washing dishes by hand.

- More than 80% of the energy used by dishwashers is for heating water. Wash only full loads and use longer cycles only for the dirtiest dishes, in order to reduce hot water usage.
- Use the air dry setting instead of the heated dry setting.
- Scrape dishes before loading. Do not rinse them first.
- Try to install the dishwasher away from the refrigerator as the heat and steam from the dishwasher can cause the refrigerator to run more.

## **Clothes Washers and Dryers:**

Americans use their washing machines an average of 416 times a year.

- Wash with cold water and a cold water detergent. Most of today's fabrics and detergents cleanup in cold water.
- Each wash cycle uses 32 to 59 gallons of water (as much as 2 showers). Set the water level to suit the size of the load.
- Wash delicate clothing on the delicate setting. The motor will not have to work as hard and save energy.
- Keep the dryer's lint filter clean or its efficiency will fall dramatically.
- Dry full loads, but do not overload as air must be able to circulate while the clothes tumble.
- Use the dryer's moisture sensor setting, if it has one, to prevent over drying.
- Do not add wet items to a load that is already partly dry.
- Dry heavy and light fabrics separately so like pieces will be dry at the same time.
- Use a clothes line.

## **Refrigerators and Freezers:**

Many new models use only half the energy of models just a few years old.

- Keep your refrigerator and freezer at the correct temperature. Setting the thermostat just 10 degrees cooler can increase energy usage by 25%. Set refrigerators between 38 and 42 and freezers between 0 and 5 degrees Fahrenheit.
- Make sure the doors seal tightly. The seal should hold a piece of typing paper firmly. Check the gasket for deterioration. Replace if necessary.
- Keep the condenser coils clean. Brush or vacuum them at least twice a year.
- It is better to keep your refrigerator or freezer about three-quarters full, as food retains cold better than air, to level out running times. But, do not overcrowd. Cold air needs to circulate.
- Tightly cover liquids in the refrigerator to reduce moisture levels and defrost times.
- Move food to be defrosted from the freezer to the refrigerator about a day ahead of time. This way, the frozen food helps to cool the refrigerator as it defrosts.

