



Insulation is generally discussed in terms of R values. Higher R values represent better insulation and greater resistance to heat flow. Insulation is available in a variety of forms, including batts and blankets, rigid board, and loose fill. Batts are made to fit between studs in walls or joists in ceilings and floors. Rolls or blankets can be rolled across the attic floor. Loose fill can be poured or blown into spaces and rigid boards can be added to basement walls, exposed foundation, cathedral ceilings, and the inside of exterior walls.

Compact fluorescent use

Compact fluorescent light (CFL) bulbs have become increasingly popular and available in the commercial mainstream. CFLs are much longer lasting and much more energy efficient than traditional incandescent light bulbs. There have been recent improvements in the color and clarity of the light produced by CFLs and a reduction in the heat they release when used in closed spaces. CFLs are currently available in wattages from 7 to 55 watts and may be used in place of incandescent screw-in bulbs ranging from 25 to 250 watts. CFLs last between 6,000 and 12,000 hours or about 10 times longer than typical incandescents. So, despite generally costing more up front, they are a very good investment over time. They can save 75 percent of the energy used by incandescent light bulbs. Energy Federation Incorporated estimates that if each of the approximately 106 million households in the United States replaced just one standard 60 watt light bulb used three hours a day with an Energy Star qualified 20 watt CFL, the economic savings would exceed \$1.8 billion over the life of the CFLs.



Tight home exterior

Some utilities offer rebates or incentives for high efficiency new home construction including an energy efficient exterior shell that will provide significant cost savings over time. Check with your local utility if you are considering a new home purchase. Even if your home's exterior is less energy efficient, there are many things you can do to improve its efficiency and many are not cost prohibitive. Sealing air leaks in your home with caulking and/or weatherstripping is a good start. Careful inspection and tightening of problem areas can save a typical homeowner about 40 percent a year on energy costs, according to the American Council for an Energy Efficient Economy. Ceilings, walls, foundations, and areas around windows or doors are common trouble spots. Also check around basement ducts, plumbing stacks, attic doors, recessed lights, bathroom fans, plumbing pipes running from the basement or outside, chimneys, electrical outlets, ceiling fixtures, exterior door frames, and other holes on exterior walls. Caulk outside your house around electric, gas, and water supply lines, drainage pipes, television and telephone cable entrances, and vents or pipes for furnaces or driers.



Iowa Utilities Board

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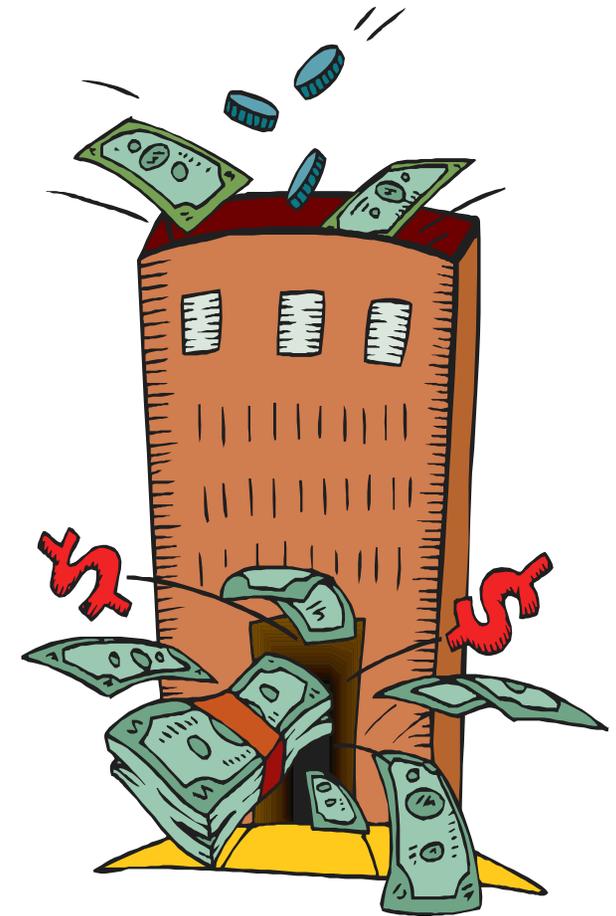
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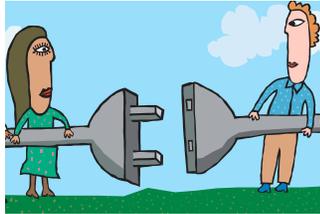
Effective means of reducing energy costs



Learn to use proven money saving ideas

Reducing energy costs

The Iowa Utilities Board (IUB) wants customers to obtain the greatest value possible for the dollars they spend on natural gas and electricity. One of the best ways to reduce energy cost is through energy efficiency. Iowa law requires that all utilities have energy efficiency plans and gives the IUB authority to set goals and approve plans for investor-owned utilities.



Energy-saving measures

Information provided as part of the energy efficiency plan of a rate-regulated utility serving Iowa depicts the following energy efficiency measures as among the most effective and widely used based upon the energy cost savings they generate: furnace replacement, water heater replacement or repair, thermostat replacement (programmable) or adjustments, insulation improvements, installation of compact fluorescent lighting, and maintenance of a tight exterior shell on your home.

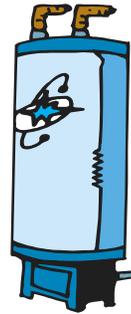
Furnace replacement

According to the U.S. Department of Energy, use of heating and cooling systems requires more energy and money than any other system in your home. Forty-four percent of a typical home energy bill goes for heating and cooling, so an energy efficient furnace during long, cold Iowa winters is an important part of saving on energy usage and costs. Many utilities serving Iowa customers offer rebates or cashback incentives for the installation of furnaces meeting certain energy efficiency

standards. Contact your local utility for more information. A typical modern heating system will last about 25 years. You might consider replacement if your furnace is old, worn out, inefficient, or significantly oversized. Be sure to replace it with a high-efficiency model. The efficiency of a furnace is measured in a rating known as Annual Fuel Utilization Efficiency (AFUE), which indicates how efficiently the furnace converts fuel into heat. An AFUE of 80 percent means that 80 percent of the fuel is used to heat your home. High-efficiency furnaces have AFUE ratings of 90 percent or higher.

Water heater replacement

Both the U.S. Department of Energy and the Iowa Energy Center report that water heaters are the second-leading home energy expense, accounting for about 20 percent of a typical home energy bill. Old water heaters, particularly those more than 10 years old, are usually significantly less energy efficient. Replacing your water heater with a new higher-efficiency model can make a big difference in home energy savings. Unfortunately, most people wait until their water heater breaks before shopping for a new one and then do so in a hurry to restore their hot water needs. When searching for a new water heater, consider your hot water needs and compare them to the first hour rating (FHR), or the amount of water a unit can heat during a busy hour. Then decide which type and model is the most energy efficient. The best indicator is its energy factor (EF), which is an overall measure of energy efficiency based upon how effectively heat from the energy source is transferred to the



water, the amount of heat lost through tank walls and pipes, and (for gas heaters) the extra energy expended in starting and stopping burners. The higher the EF rating, found in the manufacturer's guide or on the yellow EnergyGuide label, the more efficient the heater. The energy efficiency of many existing water heaters can be increased by adding a water heater blanket, insulating water heater pipes, and/or lowering the water heater temperature. One hundred twenty degrees Fahrenheit will generally be hot enough to meet a home's hot water needs, but experiment with what temperature setting is best for you. Your local utility can usually help you maximize the efficiency of your water heater if you schedule a home energy audit. Many utilities offer energy audits, including materials to insulate water heating systems, free of charge. Contact your local utility to inquire.

Thermostat control

Take control of your thermostat settings because the fastest way to save energy and money is to reset thermostats. Every degree you turn down your thermostat in winter can save 3 percent. Every degree you turn up your thermostat in summer may save 5 percent. Even better than manual thermostat adjustments is the use of a programmable thermostat in your home. This relatively inexpensive item is now widely available. A programmable thermostat can help you avoid unnecessary energy costs, the hassle of constant manual thermostat adjustment, and the discomfort of waiting for the house to warm up or cool down when returning home. Programmable thermostats can be set to raise or lower the temperature to a desired level whenever your home is unoccupied or you are sleeping.

Insulation improvements

Insulation can be added to almost any home.