



From The Home Inspector

Energy & Money Saving Tips for Consumers

An **energy audit** is an inspection, survey and analysis of energy flows in a building, process or system with the objective of understanding the energy dynamics of the system under study. Typically an energy audit is conducted to seek opportunities to reduce the amount of energy input into the system without negatively affecting the output(s). An energy audit's purpose is to identify places in a house where energy is being wasted and prioritize the projects needed to fix them. The end result is intended to reduce the amount of energy the house needs to operate and keep occupants comfortable. While the word "audit" may sound ominous, an energy audit is just the first step in the process of lowering energy bills by making a house more efficient. Houses may qualify for tax credits from local and central governments.

If you own a house, there is a clearly defined benefit for your efforts to conserve by having an energy audit performed. You will start saving money on your energy bills as soon as you identify and fix energy wasters. Improvements requiring an investment in the building or its systems should be carefully evaluated.

Household Energy

About 35% of North Carolinian's residential energy bill goes to heating. The average heating energy bills for North Carolina households using natural gas will increase by about \$65 compared to last winter and by about \$80 for houses with electric heating. Heating costs for houses using heating oil will decrease by about \$90 compared to last winter, while heating costs for houses using propane will decrease by about \$55.

Look at the systems that keep your house comfortable. The heating and cooling equipment are probably the largest energy consumers. Begin by locating them and giving them a visual inspection. Many homes have split systems meaning you have equipment inside and outside the house. If you have a forced air furnace, check your filters and replace them as needed. Generally they should be changed about every 30 to 60 days. If the unit is more than 15 years old, consider replacing it with one of the newer, energy-efficient units. As part of your equipment check, inspect ductwork for dirt streaks, especially near seams. These streaks indicate air leaks, and they should be sealed. Make a note to insulate any ducts or pipes that travel through unheated spaces using insulation with an R-Value of at least 6. When choosing a new heating and cooling system, consumers should purchase models with the ENERGY STAR® label and a minimum rating of 13 Seer.

Reducing Home Heating Costs

Turn down the thermostat. In North Carolina, lowering the temperature setting by just 1 degree can reduce heating energy costs by up to 5% depending on the fuel used to heat the house. A programmable thermostat costs about \$100, but if used properly, it can save North Carolina households as

much as 10% per year on their heating bills.

Plug all leaks. Gaps between windows and doors may be small, but they can collectively add up to big energy losses. Plugging these leaks with caulk or other approved material is the first action homeowners should take to combat high heating fuel costs. Reducing air leaks, also known as drafts, can yield an energy savings as high as 30% per year, and provide a more consistent and comfortable temperature in the house. By sealing those leaks and installing proper insulation, especially in the attic and crawl spaces, North Carolina households can reduce home heating costs by up to \$225 per year, depending on the fuel used.

Your audit should include locating and evaluating your water heater. In many houses, the water heater is the second largest energy user and is worth evaluating. Set the hot water heater at 130 degrees or lower. Use cold water when washing clothes to save more energy and reduce bills for water heating.

Evaluate the insulation. Heat loss through your house's ceiling and walls could be significant if the insulation is not at the current recommended level. The insulation in your house is probably at a level that was recommended at the time it was built. Given today's energy prices, and the probability that future prices will be higher, proper insulation is not only energy saving but also cost efficient.

Energy for all other end-uses can add up to 25% of your total energy expenditures. Evaluate other systems but recognize that changes made to them won't save as much as changes made to one of the larger users like the heating and cooling system or the water heater. Start with the refrigerator and freezer. Check the door seals, temperature settings, and for good airflow across the coils. If you use an older refrigerator in the garage or basement, consider getting rid of it as dated units are potentially huge energy wasters. As for lighting, which can be 6% to 7% of the electric bill, look for places where you can substitute compact fluorescents for incandescent bulbs. By replacing the four most used bulbs in your house with compact fluorescent bulbs, North Carolina households can save almost \$130 over the lifetime of those bulbs. Outdoor lights are best controlled with timers or photocells. One of the fastest growing categories of appliances is home entertainment equipment. The Department of Energy reports 2% of a typical house's energy is used for TVs, and related systems, and another 2% is used for computers, monitors, and peripherals. These items can use power even when turned off. Consider plugging them into surge protected power strips that can be turned off when not in use. When purchasing new equipment, look for the most efficient models such as those with the ENERGY STAR® label.

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