E-Conservation

power to control what you spend

SPRING NEWSLETTER 2007

NEW WINDOWS OFFER ENERGY AND COST SAVINGS

Windows add light and a view, but if they're not energy efficient, they can also bring a chill, excessive heat, or sun damage to a home's furnishings. New windows, skylights, and doors – particularly those bearing the Energy Star label – can reduce heat loss in winter and heat gain in summer. Some window models under development will even be able to turn heat gain into passive solar energy.

Innovations such as low-emittance (low-e) glass, improved frame materials, and warm edge spacers make the difference in energy efficient windows. Coatings on low-e glass help to keep warm air inside in the winter, keep warm air out in the summer, and reflect damaging ultraviolet light, which can damage belongings such as furniture and photographs. Newer window frame materials including wood composites, vinyl, and fiberglass provide improved insulation. Improved warm edge spacers, which keep windowpanes the proper distance apart, help reduce heat flow and prevent condensation.

In existing homes, the best way to increase the energy efficiency of windows is to replace older single-pane windows with new, energy efficient ones. If new windows aren't in the budget, however, adding storm windows, caulking, and weatherstripping can all reduce airflow in and out of windows, which can help reduce your power bill. Drapes, awnings, and other window coverings can also help reduce heat loss in the winter and heat gain in the summer. Replacing single-pane windows with Energy Star qualified windows can save about $125-$450 per year; replacing double-paned clear glass replacement windows saves approximately $25-$110 per year.

When choosing windows for new construction, look for the NFRC (National Fenestration Rating Council) label, which provides information on solar heat gain and air leakage, among other aspects of the window. Also look for the Energy Star label, which identifies products that meet strict energy efficiency guidelines set by the USEPA and the US Department of Energy.

WHAT IS ENERGY STAR?

The Energy Star label identifies products that meet strict energy efficiency guidelines set by the EPA and US Department of Energy. Initially limited to energy-efficient computers and monitors, the Energy Star program has expanded to appliances, lighting, roofing materials, and even entire new homes.

Energy generation and use is a major cause of air pollution and is linked to global warming, or the greenhouse effect. Energy Star products are significantly more energy efficient than federal standards currently require. For example, refrigerators exceed federal guidelines by at least 15 percent; televisions consume fewer than 3 watts of power when turned off, light bulbs use two-thirds less energy but still meet the operating and reliability guidelines of standard bulbs.

Because energy efficiency is also a financial issue, Energy Star products help consumers save money. Given that the average home energy bill is $1,900 per year in the United States, families are looking for ways to reduce that cost. Energy efficient choices can save households up to a third on their energy bill without sacrificing features, style, or comfort.

Through the Energy Star program, consumers can outfit new and existing homes with more than 40 types of energy-

efficient alternatives, including major appliances, consumer electronics, and building materials. The Energy Star program also can connect consumers with builders and developers that build Energy Star-qualified new homes.

GET THE MOST OUT OF YOUR HOT WATER HEATER

Most of us only think about our hot water heaters when they *stop* working. However, water heating can make up 15-25 percent of a home's energy bill, so using the water heater wisely can save money and energy. More efficient water heating will also contribute to a cleaner environment by reducing air pollution from excessive energy usage.

If you are in the market for a new water heater, look for the Energy Star label. A high-efficiency water heater uses 10-50 percent less energy than its standard counterpart. Compare the energy factor (EF) on models that you are considering; a higher EF means a more efficient heater. Remember, however, that a higher EF may not mean lower annual operating costs if a more expensive fuel is required.

If your water heater has years of life left, try these strategies to reduce heated water consumption:

- Fix drips and leaks. A leak of one drip per second can cost as much as $1 per month.
- Install low-flow faucets and fixtures. A relatively small investment ($10-$20 for a quality fixture) can yield savings of 25-60 percent.
- Lower your water heating temperature to 120 F. Each 10-degree reduction in temperature can represent a savings of 3-5 percent of your energy costs.
- Make sure your hot water heater and pipes are insulated. If the water heater's tank feels warm to the touch, it needs additional insulation.
- Install a timer that will turn off the water heater at night when hot water is not in demand.
- Use hot water at off-peak times, if possible.
- Use less hot water. Take shorter showers; wash and rinse clothing in cold water.

CEILING FANS: COOL BREEZES AND COST SAVINGS

In the heat of the summer, we look forward to any kind of breeze, inside or out. Ceiling fans not only provide that relief from the heat, but also can help homeowners save money and energy all year long. To get the most out of your ceiling fan

- Make sure that it is installed properly. The UL-listed metal box in the ceiling should be marked "For use with ceiling fans."
- Ensure that the blades are properly balanced. (A balancing kit may have been included in the original packaging or may be available from the manufacturer without charge.)
- Turn off the fan when not in the room.
- Use the fan to move cool air in the summer (blades rotate counter-clockwise) and warm air in the winter (reverse the motor so that the blades rotate clockwise). In the summer, the fan creates a "wind-chill" effect, making you feel cooler. In the winter, the rotation of the blades creates a slight updraft, which moves the warmer air at the ceiling downward to warm the room.
- Adjust the household thermostat to account for the ceiling fan's cooling or heating effect.

If you are purchasing a ceiling fan, look for the Energy Star label to ensure energy efficiency. A 36- or 44-inch diameter fan will cool rooms up to 225 square feet, while a fan with a diameter of 52 inches or greater should be used in a larger room. Multiple fans work best in rooms longer than 18 feet. Small- and medium-sized fans will provide efficient cooling in a 4- to 6-foot diameter area, while larger fans are effective up to 10 feet.

IS YOUR REFRIGERATOR RUNNING EFFICIENTLY?

Many homeowners don't think about replacing their refrigerators until they no

longer cool the food inside them. But replacing an older model – even one that works perfectly – can save up anywhere from $50-$150 per year in energy costs. Because newer models use less power, their environmental impact is smaller – less energy-wasted means less air pollution.

Whether a refrigerator is new or old, homeowners should pay attention to how it is being used to achieve the appliance's peak performance.

- Position your refrigerator away from heat sources such as ovens, dishwashers, or direct sunlight from a window.
- Allow air to circulate around the condenser coils by leaving a space between the wall or cabinets and the refrigerator or freezer. Make sure to keep the coils clean.
- Ensure that the door seals are airtight.
- Keep your refrigerator between 35 and 38 degrees Fahrenheit and your freezer at 0 degrees Fahrenheit or colder.
- Open the refrigerator door only when necessary, and keep it open as little time as possible.

If you are shopping for a new refrigerator, look for an Energy Star model. Energy Star qualified refrigerators employ high efficiency compressors, better insulation, and more precise temperature and defrost mechanisms. These refrigerator models consume at least 15 percent less energy than their standard counterparts, and 40 percent less energy than a standard model from 2001.

The Energy Star program offers a calculator to help consumers compare the cost of operating their current refrigerator with that of an Energy Star qualified model:

http://www.energystar.gov/index.cfm?fuseaction=refrig.calculator

A refrigerator is a large investment, but it may be worth looking in your kitchen to determine whether you're getting the most out of this appliance.

ADDITIONAL RESOURCES

Windows
http://www.efficientwindows.org/
http://www1.eere.energy.gov/femp/pdfs/reswin.pdf

Energy Star
http://www.energystar.gov/index.cfm?c=about.ab_index

Hot water heaters
http://www.ces.ncsu.edu/depts/fcs/housing/pubs/energy_efficient.pdf
http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm/mytopic=12760

Ceiling fans
http://www.energystar.gov/index.cfm?c=ceiling_fans.pr_ceiling_fans
http://www.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12355

Refrigerators
http://www.eere.energy.gov/consumer/your_home/space_heating_cooling/index.cfm/mytopic=12355
http://www.energystar.gov/index.cfm?c=refrig.pr_refrigerators

NC STATE UNIVERSITY
A&T STATE UNIVERSITY
COOPERATIVE EXTENSION
Helping People Put Knowledge to Work

State Energy Office
ENERGY
www.energync.net 1-800-662-7131
N.C. Department of Administration "Ensuring a sustainable energy future"