

E-Conservation

Home Energy Management Series

HOME ENERGY ASSESSMENT CHECKLIST

Energy efficiency is an investment that can help you gain a return on your energy bill and on the value of your home. Save money by conducting a do-it-yourself home energy assessment. With a simple but careful inspection, you can identify areas in your home where you are losing energy. This checklist will help you organize your assessment so you can pinpoint the energy efficiency improvements you need to make.

Locating and Sealing Air Leaks

Warm air leaking into your home during summer and out of your home during winter wastes a lot of energy. One of the most effective things you can do to start saving money now is to seal seams, cracks, and openings to the outside.

Caulking and weather stripping will reduce drafts, saving energy and making you more comfortable.

Take a close look at places where two different building materials meet, such as corners, around chimneys, where pipes exit and around doors and windows.

Start by sealing air leaks in the basement and the attic. These are often the places where the biggest holes can be found and by properly sealing them will yield big benefits.

Small gaps (less than ½") around the frames of windows and doors can be sealed with common caulks.



HERE ARE THREE WAYS TO TEST FOR AIR LEAKS:

1. Incense test: carefully (avoiding drapes and other flammables) light an incense stick and keep it close to any areas where you suspect an air leak. The smoke will “flutter” in the places where there is leakage.
2. Have someone on the outside blow a hair dryer around each window while you hold a lighted candle inside. If the candle flickers or goes out, you need to caulk or weather strip around the frame.
3. After dark, walk around your house and shine a flashlight on places that are likely to have air leaks. Have someone on the inside recording where they see light entering through gaps.



CHECK THESE TROUBLE SPOTS AND SEAL AS NEEDED:

- Utility cut-throughs for pipes (“plumbing penetrations”)
- Gaps around chimneys
- Around recessed lights in insulated ceilings
- Unfinished spaces behind cupboards/closets
- Electrical outlets
- Switch plates
- Window frames
- Baseboards
- Around exterior doors
- Fireplace dampers
- Attic hatches
- Around wall- or window-mounted air conditioners.

SAFETY NOTE: Take care when sealing if you have combustion appliances. You do not want to eliminate the ventilation necessary for these appliances, as they need fresh air to operate properly and cutting off their air supply could result in carbon monoxide dangers.

Insulation

Once you have sealed air leaks, having proper insulation in your home is one of the most cost-effective ways to use a whole-house approach to reduce energy waste and make the most of your energy dollars.

- Once you have sealed, make sure you have the proper amount of insulation for your area and that it is properly installed.
- Insulate heating ducts in unheated areas, such as attics and crawlspaces. Keeping ducts insulated, properly sealed and in good repair can prevent a substantial amount of heat loss.

Window Insulation

Windows can account for 10%–25% of your heating bill. It is important to reduce heat loss through windows in the wintertime and heat gain through windows in warm months.

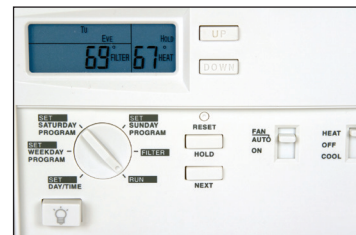
- Adding a plastic window insulation buffer reduces drafts and can help your home hold heat.
- During winter, open curtains on your south-facing windows during the day to allow sunlight to naturally heat your home and close them at night to reduce the chill from cold windows.
- In the summer months, close blinds and drapery to reduce heat gain from the summer.

Heating/AC system

Most households spend over half of their energy budgets on heating and cooling.

For every degree you lower the thermostat during heating season, you can save between 1 and 3% of your heating bill.

Maintaining your heating and cooling systems not only provides savings and increased comfort, but also helps ensure your safety.



Programmable thermostats can help you manage your energy use.

Look for the ENERGY STAR® label when replacing your system.

- Maintain your HVAC properly with annual maintenance and tune-up so it runs efficiently.
- Clean or replace filters in your home’s furnace, air conditioner, and heat pump regularly.
- Install a programmable thermostat that adjusts according to your schedule or adjust your thermostat when you leave home.
- Do not place lamps or other heat sources near your thermostat.
- Do not set your thermostat at a higher or lower temperature than normal in the hope of heating or cooling your house faster: it will not heat or cool your home any faster and could result in unnecessary expense.
- Close curtains to insulate your home more effectively (at night in the winter and during the day in the summer).



Equipment and Appliances

Appliances can account for up to 17% of our energy bill.

- Unplug equipment that continues to use energy even when not in use (i.e. computers, cell phone chargers, fans, coffeemakers, desktop printers, radios, etc.)
- Use a smart power strip to control electronics when not in use. These turn off items using timers, occupancy sensors or electrical current sensors.

Lighting

Newer energy efficient incandescent bulbs last three times longer and are about 25% more energy efficient than older incandescent bulbs.

Compact fluorescent light bulbs (CFLs) are 75% more efficient and last ten times longer than older incandescent



bulbs. LEDs are about 75-80% more efficient and last up to 25 times longer than older incandescents.

One concern many people had regarding CFLs and LEDs related to the color of the light. Many produced a cool light, instead of the warm light color produced by incandescents. Now,

however, CFLs and LEDs can produce that same warm light. Consumers should check the lighting label and look for a bulb that has a light appearance on the lower end of the Kelvin scale.

- Change older incandescent light bulbs to compact fluorescent lights (CFLs) or light-emitting diodes (LEDs) bulbs. At a minimum use newer more energy efficient incandescent bulbs.
- Use task lighting to focus light where you need it, rather than brightly lighting an entire room.
- Take advantage of daylight by using light-colored, loose-weave curtains to allow outside light in while preserving privacy.
- Turn off the lights in rooms that are not in use.
- Consider installing timers, photocells, or occupancy sensors to reduce the amount of time your lights are on.

Fireplace

Your fireplace is one of the most inefficient heat sources you can use, because it sucks warm air from throughout your entire house up and out of the chimney.



- Keep your fireplace damper closed unless a fire is going. Keeping the damper open is the same as keeping a window open in the winter.
- Use a chimney balloon to help air seal the fireplace with not in use. Remove when using the fireplace.
- Install and use tempered glass doors.

Water Conservation

The average household spends as much as \$500 a year on its water and sewer bill. By making just a few simple water efficient changes, you could save money.

- Install low-flow showerheads and faucet aerators.
- Replace older toilets with water efficient toilets. Newer efficient toilets can use as little as 1.28 gallons of water per flush. Older toilets may use as many as six gallons.
- In your yard, use native plants that require less watering and reduce grass/lawn areas that require regular watering.
- Install a rain barrel to collect rainwater from gutters and then use to water plants and the lawn.



Refrigerator and Freezer

Recommended temperatures are 37° to 40°F for the refrigerator and 0°F for the freezer section.



Look for the ENERGY STAR label when buying a new refrigerator.

By eliminating an older, energy-inefficient refrigerator or freezer, you can save \$10–\$20 a month.

- Ensure that the refrigerator door seals well.
- Clean coils periodically.
- Check the temperature (37° to 40°F for the refrigerator and 0°F for the freezer section).
- Uncovered foods release moisture, making the compressor work harder. Cover liquids and wrap foods.
- Keep the refrigerator and freezer full, even if only with water jugs. Mass stays cold more easily than air.



REFERENCES

Department of Energy (2012). Lighting choices to save you money. <http://energy.gov/energysaver/articles/lighting-choices-save-you-money>

US Environmental Protection Agency (2013). Water Sense Toilets. www.epa.gov/watersense/products/toilets.html

Energy Star (no date) More IT Energy Saving Tips. www.energystar.gov/index.cfm?c=power_mgt.pr_power_mgt_more_tips

Low-income households can qualify for weatherization improvements to their homes through government programs administered by each state. Find out about North Carolina Weatherization Assistance Program at: www.energync.net/about-us/weatherization-office or by calling the Weatherization Assistance Program at (919) 733-2230 or toll-free at (800) 662-7131.

Helpful Websites

E-CONSERVATION SITES

www.e-conservation.net/

<http://pinterest.com/econservation/>

www.facebook.com/pages/E-Conservation-Residential-Energy-Conservation/101187089950997?ref=hl

COOPERATIVE EXTENSION'S EXTENSION HOME ENERGY

www.extension.org/home_energy

U.S. DEPARTMENT OF ENERGY

www.eere.energy.gov/topics/homes.html

ENERGY STAR

www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_index&s=m



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