

My Florida Home Book 2.7: Saving Energy in Your Home¹

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Saving Energy in Your Daily Life

Easy Ways to Save Energy in Your Home

The U.S. Department of Energy (DOE) recommends the following nine low- or no-cost tips to save energy in your home:

- Set your thermostat as low as is comfortable in the winter and as high as in comfortable in the summer. Install a programmable thermostat that is compatible with your heating and cooling system.
- Lower the thermostat on your hot water heater to 120°F.
- Instead of using your dishwasher's drying cycle, air dry dishes.
- Wash only full loads of dishes and clothes.
- Take short showers instead of baths.
- Use compact fluorescent light bulbs.

- Turn off home electronics, such as TVs and DVD players, when they are not in use.
- Turn off your computer and monitor when not in use.
- When you purchase home appliances or home electronics, look for the ENERGY STAR® label on products.

Energy Use of Appliances and Home Electronics

Electricity use of an appliance is usually measured in watts. Generally, the watt information can be found bottom or back of most items that uses electricity including appliances and home electronics, such as computer, television, DVD player, etc. Here are some examples of the range of electricity use of various home appliances and electronics (DOE, 2005).

Kitchen (watts)

- Refrigerator (frost-free, 16 cubic feet): 725

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- Dishwasher: 1200–2400 (using the drying feature greatly increases energy consumption)
- Microwave oven: 750–1100
- Toaster oven: 1225
- Toaster: 800–1400
- Coffee maker: 900–1200

Laundry Area (watts)

- Clothes washer: 350–500
- Clothes dryer: 1800–5000
- Clothes iron: 1000–1800

Heating and Ventilation (watts)

- Portable heater: 750–1500
- Water heater (40 gallon): 4500–5500
- Fans
 - Ceiling fan: 65–175
 - Window fan: 55–250
- Dehumidifier: 785

Other Home Electronics (watts)

- Color televisions
 - 19" CRT: 65–110
 - 27" CRT: 113
 - 36" CRT: 133
 - 53"-61" Projection: 170
 - Flat screen CRT: 120
- VCR/DVD: 17–21 / 20–25
- Personal computer
 - CPU - awake / asleep: 120 / 30 or less
 - Monitor - awake / asleep: 150 / 30 or less

- Laptop: 50

- Aquarium: 50–1210
- Vacuum cleaner: 1000–1440
- Water bed with heater: 120–380
- Electric blanket- Single/Double: 60/100
- Hair dryer: 1200–1875

Heating and Cooling

In the typical Florida home the heating, ventilation and air conditioning (HVAC) system uses more than 40% of home energy use (Porter, Lee, & Ruppert, 2008a). Set your air conditioning thermostat to 78°F. For every degree setting below 78°F, you spend up to 8% more in cooling costs.

Clothes Washer and Dryer

Cut costs to do your laundry by using the cold water setting to wash your clothes whenever possible. DOE points out that about 90% of the energy expended for washing clothes is used to heat the water, and running a hot water wash with warm rinse costs 5 to 10 times more than a cold wash and rinse. In addition, you can save even more by only washing full loads if your machine has no adjustment for load size.

Clean the lint filter in your clothes dryer after each use. This will improve air circulation as well as dry the clothes faster. For better dryer performance, dry heavyweight items, such as towels and heavy cottons, and lighter-weight items in separate loads.

Fluorescent Light Bulbs

Lighting your house can cost up to 20% of home electricity bills. Consider replacing incandescent bulbs in your home with compact fluorescents lights (CFLs). A CFL can provide brightness (measured in lumens) nearly the same as that of an incandescent bulb, but uses about 1/4 of the energy that incandescent bulb uses and lasts up to 10 times longer. CFLs are more expensive to buy, but they save by reducing your electricity bills in the long run. See Table 1 for comparisons of estimated purchase price and residential energy costs of incandescent

versus fluorescents, each with the same light output. To see tangible savings on your electricity bill, start with replacing ones in your family room, living room, and kitchen—any rooms where you spend the most time.

Replacing incandescent bulbs with CFLs not only reduces your electricity bill, but also contributes to save our earth. Since CFLs use less energy, we can reduce the green house gas emissions generated by power plants and slow global warming. In addition, because CFLs last longer, there will be less waste.

power strips instead of plugging them directly into the wall outlet, you can avoid these phantom loads more easily by switching off the power strips rather than unplugging their power cords from wall outlets every time.

Maximizing Energy Savings in Your Home

In addition to daily energy savings practices, there are several more ways to make your home more energy-efficient.

Table 1. Estimated Cost to Household Comparison: Incandescent Bulbs and Fluorescent Bulbs

Light Output (Lumens)	Bulb Type & Energy Use	Bulb Purchasing Cost ^A	Rated Life (hours)	Energy Cost for 10,000 hours (at \$0.10/kWh)	Total Cost for 10,000 hours (Bulb + Energy)
800	Incandescent: 60 watts	\$1	1,000	\$60	\$70
	Fluorescent: 15 watts	\$4.50	10,000	\$15	\$19.50
1,200	Incandescent: 75 watts	\$1	1,000	\$75	\$85
	Fluorescent: 20 watts	\$4.50	10,000	\$20	\$24.50
1,750	Incandescent: 100 watts	\$1	1,000	\$100	\$110
	Fluorescent: 25 watts	\$4.50	10,000	\$25	\$29.50

^A Estimated purchasing costs do not include taxes, shipping, handling fees, recycling fees, or travel expenses associated with acquisition of bulbs at point of purchase, nor do they include additional taxes, fees, or charges required by your utility provider.

Note: Actual light output, bulb cost, and rated life vary by product. Utility rates vary by provider.

Source: *Energy Efficient Homes: Fluorescent Lighting* (EDIS FCS3270, UF IFAS)

Standby Power and Phantom Load

Turn off computer monitors and other home electronics when not in use. As you could see from the energy use of home electronics section, sleep mode still consumes wattage. DOE advises turning off computer monitors when the computer will be idle for more than 20 minutes, and to turn off both the monitor and the CPU when you are not using your computer for more than 2 hours.

Also, unplug home appliances or electronics when you are not using them. Many appliances continue to draw a small amount of power even though their switches are turned off. The power that is drawn during this switch-off mode is called "phantom load." Although the phantom load may be relatively small compared to regular electricity use of the product, you can save your electricity expense by unplugging the appliance. If you are using power strips and plug the appliances and electronics into

Check Your Utility Bills

Collect your utility bills. Separate electricity and fuel bills. Try to reduce the biggest bill with energy conservation. The single largest energy use in Florida homes is for cooling. In North Florida, cooling may be just over 20% of total energy use, and in South Florida it may be over 40%.

Check with your utility companies for any rebates, incentives, or loan programs to support your energy saving efforts. You also can find federal and Florida incentive programs from the Database of State Incentives for Renewables and Efficiency (DSIRE) Web site (<http://www.dsireusa.org>).

Seal Up Air Leaks

No matter how good your home's heating, air conditioning and ventilation systems are, it is very difficult to save energy if conditioned air goes out and outdoor air comes in. Check for any air leaks through

windows, doors, electrical boxes, plumbing fixtures, electrical outlets, ceiling fixtures, attic hatches and other locations where there is a possible air path to the outside—see if you can hear any whistling on windy days, or feel drafts.

The U.S. Department of Energy recommends a professional energy rating for a thorough and accurate measurement of air leakage in your home. Until you are able to schedule an energy rating, there are easy do-it-yourself methods to detect air leakage. The DOE recommends the following steps to detect air leaks in your home:

1. Turn off your furnace on a cool, very windy day.
2. Shut all windows and doors.
3. Turn on all exhaust fans that blow air outside, such as bathroom fans or range vents.
4. Light an incense stick and pass it around the edges of common leak sites. Wherever smoke is sucked out of or blown into the room, there's a draft.

Upgrade any leaky windows and doors. Either boost their efficiency with weather stripping, or install high performance windows which are 40% more efficient than standard windows. About one-third of a typical home's heat loss occurs through the doors and windows. Energy efficient doors are insulated and they seal tightly to prevent air from leaking through or around them. If your doors are in good shape, make sure that they, too, seal tightly, and have door sweeps at the bottom to prevent air drafts. Seal up any leaky spots by caulking, sealing, or applying weather stripping.

Increase the Airflow of Your Heating, Air Conditioning, and Ventilation Systems

Clean or replace furnace, air-conditioner, and heat-pump filters frequently. Dirty filters restrict airflow and may cause the system to run longer, increasing your energy use. Also, prune back shrubs that may block airflow to your air conditioner or heat pump.

Increase the Energy Efficiency of Your Water Heater

Most recent water heater models have factory-installed heat traps, one-way valves or loops of pipe that prevent heated water in a storage tank from mixing with cooled water in pipes. Heat traps can save you \$15–30 per year. If your water heater is a model of 2004 or older, install a heat trap.

If the surface of your water heater is warm when you touch it, the water heater needs additional insulation. Install a water heater blanket (or water heater jacket) around the water heater. By installing one, you will save around 4–9% in water heating costs. Choose a blanket with an insulating value of at least R-8.

Increase the Energy Efficiency of Your Appliances

Check your refrigerator. Move your refrigerator if it's near the stove, dishwasher, or heat vents. Vacuum the coils every three months to eliminate dirt buildup that reduces efficiency. Check the door gaskets for air leaks. Defrost the freezer when more than a quarter-inch of ice builds up.

Check the age and condition of all your major appliances, especially the refrigerator. When buying an appliance, remember that it has three major costs to consider:

- Purchase price that you pay to take it home
- Upkeep costs for care and maintenance
- Cost for energy and water to be consumed

In general, a product that is more energy efficient initially costs more than less efficient products. However, it saves you money over time because it uses less energy and water, and will typically have lower maintenance costs. When you shop for energy-efficient appliances or electronics, check out the ENERGY STAR® logo and EnergyGuide label. See the "Shopping for energy efficient products" section of this publication for further information on the ENERGY STAR® logo and *EnergyGuide* label, as well as the online publication by researchers at UF IFAS entitled *Energy*

Efficient Homes: Appliances in General available online at <http://edis.ifas.ufl.edu/FY1028>.

Save Water Usage

Incorporate Florida Water StarSM for savings on indoor and outdoor water usage. The average home could save between 20–26% on indoor water use when purchasing clothes washers, dishwashers, and toilets. Conserve on outdoor water usage in the landscape and irrigation system with items featuring water savings of about 40%. Check out the Web site <http://www.floridawaterstar.com/> (or <http://www.epa.gov/watersense/>) for further information.

Additional Efforts to Save Energy in Your Home

Shade your windows using closed shutters, window shades, blinds, curtains, or lined draperies. These will help reduce your cooling costs by helping to insulate windows. You also can save more by installing low-cost simple devices such as low-flow showerheads, faucet aerators, and dimmers and timers for your lights.

Shopping for Energy Efficient Products

When you shop for new energy efficient home appliances or electronics, check for the ENERGY STAR® logo and *EnergyGuide* label.

ENERGY STAR

You can find the ENERGY STAR® logo (Figure 1) only on products that meet strict guidelines that are set by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). These guidelines regulate specific minimum standards and testing procedures to ensure energy efficiency and safety. Different guidelines are set for different types of products. In general, ENERGY STAR® qualified home appliances or electronics use 10–50% less energy and/or water than their counterparts (Lee, Ruppert, Porter, & Prescott, 2008).

The ENERGY STAR® logo is not for all products. You can find a full list of items that



Figure 1.

currently have ENERGY STAR® at the ENERGY STAR® Web site <http://www.energystar.gov>. Some products that currently offer ENERGY STAR® qualified models are as follows:

- Refrigerators & freezers
- Dishwashers
- Clothes washers (no ENERGY STAR® guidelines for clothes dryer)
- Compact fluorescent lighting bulbs (CFLs)
- Residential light fixtures
- Battery charging systems
- Central air conditioner, room air conditioner
- Room air cleaners
- Ceiling fans, ventilating fans
- Dehumidifiers
- Programmable thermostat
- Televisions, home audio, VCRs, DVD products
- Computers, monitors, printers, scanners, all-in-one machines
- Home sealing (insulation, air sealing)
- Roof products
- Windows, doors, & skylights

EnergyGuide Label

The Federal Trade Commission developed the *EnergyGuide* label that standardizes energy consumptions to help consumers more easily compare energy efficiency among similar products. You cannot find the *EnergyGuide* labels on every type of consumer product. The Federal Trade Commission's Appliance Labeling Rule (1980) requires that *EnergyGuide* labels be placed on the following products:

- Refrigerators
- Refrigerator-freezers and freezers
- Dishwashers
- Clothes washers
- Central air conditioners
- Room air conditioners
- Water heaters (some types)
- Heat pumps
- Furnaces
- Lighting products
- Fluorescent lamp ballasts
- Plumbing products

There are different formats of EnergyGuide labels for different types of products. Figure 2 shows an example of EnergyGuide label for refrigerator-freezers with pointers on how to interpret the details.

Typically, *EnergyGuide* labels for appliances contain three key pieces of information:

- Energy consumption or energy efficiency rating of the appliance, as determined from standard DOE tests
- Highest and lowest energy consumption of efficiencies for all similar models
 - Estimated annual operating cost that is calculated based on DOE guidelines

See the Energy Efficient Homes Series at http://edis.ifas.ufl.edu/topic_series_energy_efficient_homes for more about saving energy in your home.

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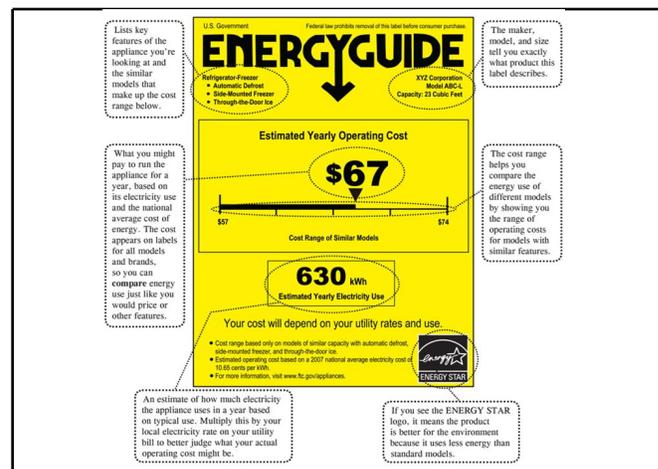


Figure 2. Sample *EnergyGuide* label for refrigerators/freezers with guidance on label terms Credits: Department of Energy

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