

eco@home™

15 Ways to Cut Your Electric Bill Today



**Selecting the Best
Insulation for Your Home**

**6 Ways to Make Your
Water Heater Happy**

Energy Competitions for Families

welcome to **eco@home**TM

Fall 2011

With the change in seasons, many homeowners are looking to make improvements that can increase energy efficiency, whether that involves adding more insulation or getting a tune-up for your heating system. We've got tips for both in our fall issue—plus a selection of energy calculators to help you determine how quickly your improvements will pay off.

In addition, we've put together six tips for keeping your water heater in top working order, from wrapping it in a blanket to checking your anode rod (What's that? See the article on page 4.) You'll be amazed to learn the amount of water that's used in the production of food and other everyday items. And we offer six easy ways to save electricity in your home office—such as adding an occupancy sensor to shut off lights automatically when you leave the room.

Plus, check out this issue's book review. It's packed with simple, practical, and eco-friendly ideas for your life. There's even more energy-efficient news and information in this issue, so dive right in.

Here's to a pleasant—and energy-efficient—autumn!



we want to hear from you

The editors of **eco@home** want to see how you conserve energy and water and reduce your environmental footprint. Send photos of your efficiency projects to **ecoeditor@iamu.org** with "My Projects" in the subject line. You might see your photo in an upcoming issue of the magazine.

ecofact

Colorfx, the printer of **eco@home**, is the only printer in Iowa that has achieved tri-certification in chain of custody, which validates that the paper **eco@home** is printed on comes from qualified, sustainably harvested forests. Colorfx is certified by the Forest Stewardship Council, the Sustainable Forestry Initiative, and the Program for the Endorsement of Forest Certification—leading national and global forest protection agencies. Through the Carbon Neutral Print Productions program, Colorfx also purchases carbon offsets for the printing of **eco@home**. In addition, **eco@home** is printed with soy inks.



Calculate Your Energy Savings



Once you decide to invest in a home energy improvement, one of your next questions may be “How long will it be until I recoup my money?”

The answer is: It depends.

Your home’s location, the utility rates for your area, and the type of improvement you’re making all factor into the savings. Your first step may be to identify online calculators that can pinpoint your energy savings and return on investment. Check these out:

The Energy Efficiency and Renewable Energy Program offers myriad calculators that help you determine the payback of improvements to insulation, appliances, fixtures, and more. Access them at <http://www.eere.energy.gov/calculators/homes.html>.

The U.S. Department of Energy provides calculators for residential savings that are specific to your local zip code and energy rates. Start your search at <http://hes.lbl.gov/consumer>.

The U.S. Small Business Administration has energy calculators for both businesses and residences, and covers improvements for heating systems, CFLs, dishwashers, and more. Learn more at <http://www.sba.gov/content/energy-saving-calculators-energy-star>.

ENERGY STAR® also offers calculators for various ENERGY STAR appliances and components, plus information on tax credits and rebates. Both builders and homeowners can use the HomeCalc tool, available for download at http://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.pt_homecalc.

try this
today ...

Add weather stripping around doors and windows to stop air leaks. Just a small investment of time and money now will pay off quickly this winter.

Time for a Tune-Up

It's fall home maintenance time—have you added a furnace tune-up to your to-do list? An annual inspection can boost energy efficiency, prolong the lifespan of your furnace, and help safeguard your family from harmful carbon monoxide. Professional servicing can run from \$100 to \$200.

What to Expect

During a standard furnace check-up, a contractor will examine all working parts, such as the heat exchanger and condensate drain; check system controls; check thermostat settings; tighten electrical connections; lubricate moving parts; clean and remove dirt; check for rust; and test for carbon monoxide.

DIY Checks

While it's best to have a professional service your furnace, you can monitor your system with periodic spot checks. Make sure your duct work is intact and that all seams are taped (dirty streaks near seams can indicate leaks). For gas furnaces, check the color of the flame to see that it's a steady blue—not yellow or orange, which can signal a combustion problem. And see that vents and registers are clean and not covered by furniture or rugs.

Don't Forget Your Filters

One of the easiest things you can do to keep your home's heating system running efficiently is replace or clean your furnace filter regularly.

Different filters trap dust, mold spores, pet dander, and other pollutants that circulate through your home. They also help your furnace run more efficiently, extending the life of your system and saving you money on energy bills.

TYPES OF FILTERS

Disposable fiberglass: The woven fiberglass filter is the most common off-the-shelf model. They're cheap and disposable, but they only trap the largest pollutant particles.

Electrostatic filters: These contain electrically charged fibers that attract pollutants like a magnet. They cost between \$50 and \$200 but can be rinsed with a hose and reused.

Pleated allergy filters: The design of this disposable model helps trap and hold large and small particles between its pleats. They're somewhat pricey—\$5 to \$20. Some pleated filters also offer electrostatic fibers.

High Efficiency Particulate Air (HEPA) filters: Residential versions of commercial HEPA filters reduce air flow and stop the smallest particulates. Prices vary, depending on the size and type of filter.

Electronic air cleaners: These attach to your furnace system (ducts) and cost upwards of \$1,000 installed. Despite the cost, this option may be worth it to allergy sufferers.

Check the MERV

The Minimum Efficiency Reporting Value (MERV) on the filter relates to its ability to remove particles from the air. Filters are rated on a scale of 1 to 20. If you suffer from allergies, look for filters with MERVs of 11 or 12 or greater.

Book Review

Easy Green Living: The Ultimate Guide to Simple, Eco-Friendly Choices for You and Your Home

By Renée Loux
Rodale Press, Inc. 2008
416 Pages, \$25

The host of the TV show *It's Easy Being Green*, award-winning author and celebrated raw foods chef Renée Loux turns her attention to living green at home. She provides easy-to-follow suggestions for avoiding toxins and hazardous products in home maintenance, beauty, and cleaning routines—from green cleaning supplies to building materials. Find out the simple steps you can take to green up your home in this book.



Should You Add a Storm Door?

Is your front door going it alone against the elements? Adding a storm door can improve your home's efficiency, security, and beauty – not to mention protect your door against everyday wear and tear.

Insulation – A storm door is a good idea if you have an older, non-insulated front door. (Most new front doors are insulated.) For best efficiency, make sure the storm door is insulated, fits the frame snugly to keep out drafts, and has low-emission glass.

Storm protection – When rain or snow pelt your home, a quality storm door keeps the elements outside and moisture away from your front door.

Security – Many of today's better storm doors have sturdy frames and secure locks or dead bolts, adding another barrier against break-ins.

Additional light – If a heavy wood door has been blocking your view, you can usher more natural light into your home with a storm door. (The U.S. Department of Energy cautions not to get a full-glass storm door if your front entrance gets more than a few hours of direct sunlight each day: The glass will trap heat and potentially damage your front door.)

Beauty – Storm doors can help protect the finish of your main entrance—and stylish frames help enhance your home's curb appeal.

try this
today ...

Plug your smaller appliances into a “smart” power strip. It cuts off power that your appliances are drawing—even when they're turned off.

Take Care of Your Water Heater

Your water heater is a **workhorse**, providing good service – and warm water – day in and day out. But because heating water can account for up to 25 percent of your home's energy use, it's important to keep the unit working efficiently and effectively. Here's what to know:

Gauge the age.

A conventional tank gas water heater typically delivers 10 to 12 years of service; electric water heaters can last a bit longer. Water hardness, the quality of the unit and its components, and even the location of the heater can impact how long it will last – but regular maintenance improves your odds for a long life.

Turn down the heat.

Most heaters are set at 140°F but setting the temperature back to 120°F delivers plenty of hot water—and saves you energy. Turning the temperature down also may help increase the life of your unit. Always follow your manufacturer's directions when adjusting the temperature.

Watch the pressure.

Keep an eye on your home's water pressure. A pressure gauge should show a 60 to 80 psi reading; pressure greater than 80 psi may be damaging your heater, components, or pipes.

Check the anode rod.

The anode rod's job is to attract the minerals in your water and keep them from rusting out the tank walls. This

rod is screwed inside conventional tank heaters and may be removed through the top of the unit. A properly working rod will be quite corroded, though if its inner core wire is more than 50 percent depleted, it's time to replace this important component. Check the rod as you near the end of the warranty period or more often if you're softening your water supply.

Wrap it up.

An insulating blanket costs \$20 or less at a hardware or home store, yet it can reduce standby heat loss by up to 25 to 45 percent. Be sure not to install the blanket correctly and cover exhaust vents and air intake valves.

Grab a bucket.

Drain your tank once every three months or so to release sediment—more frequently in areas with very hard water. Before draining, turn off the power to the heater, close the cold water inlet valve, and open a nearby hot water faucet. Connect a hose to the drain valve (at the bottom of the tank) and let the water run until it's clear.



25%
Heating water can account for up to 25% of your home's energy use.

try this today ...

Limit your shower time to five minutes to save 15 to 20 gallons of water per shower. (That's nearly \$400 per year on your water bill.)

“Hidden” Uses of H₂O

Get this: The average American uses nearly 2,000 gallons of water daily—and the majority of this water isn't used for bathing, laundry, or flushing the toilet.

Instead, most of your water consumption is “hidden.” For instance, more than 50 percent of it goes toward the growth and production of the food you eat. Producing your morning cup of joe required 55 gallons of water. A juicy 1/3-pound hamburger requires 660 gallons.

Surprised? See for yourself how much water is used to produce and fuel everyday food, materials, and activities.

FOOD

AMT. OF WATER

1 pound of chocolate	3,170 gallons
1 pound of beef	1,799 gallons
1 pound of sausage	1,382 gallons
1 gallon of milk	880 gallons
1 pound of pork	576 gallons
1 pound of processed cheese	589 gallons
1 pound of eggs	400 gallons
1 pound of bananas	103 gallons
1 pound of apples	84 gallons
1 pound of oranges	55 gallons
1 pound of beans	43 gallons
1 pound of eggplant	25 gallons
1 slice of bread	11 gallons
1 cup of tea	9 gallons

OBJECTS

1 pair of blue jeans	2,900 gallons
1 non-organic cotton bedsheet	2,800 gallons
1 laptop	2,800 gallons
1 non-organic cotton T-shirt	766 gallons

ACTIVITIES

Cross-country airline trip	5,950 gallons
500 sheets of paper	1,321 gallons
Car wash	150 gallons
Road trip: 1 gallon of gasoline	13 gallons

Smart Business Energy Savings for Your Home Office

If you use your office to telecommute, you don't want to spend the money you save on gas to power the room. Follow these simple home office makeover tips to save energy and money.

Use a smart strip.

Even when peripherals like scanners and printers, aren't in use, a current of electricity—called a phantom load—is flowing through them. Rather than let energy and money go to waste, plug your computer accessories into a “smart” power strip that senses when appliances aren't in use and shuts the power off completely.

Power down.

Though you may have heard turning a computer on and off wastes more energy than just leaving it on, it's not true. There's a small surge of electricity every time you switch a computer on, but it doesn't compare to the amount flowing through it over an extended period. For energy savings, turn off the monitor if you'll be away from your computer for more than 20 minutes. When you'll be away for more than two hours, turn off the computer itself.

Go for a laptop.

Buying a new computer? Opt for a laptop. It consumes only 15 watts of electricity while a desktop uses nearly

130. If your work requires a desktop computer, look for the ENERGY STAR® label.

Turn off overhead lights.

Use table and floor lamps with compact fluorescent lights, rather than unnecessary overhead lights, to illuminate your workspace. With task lighting, you'll brighten essential work areas and save energy.

Employ LED lighting.

Highly efficient LED lighting has tremendous energy-saving potential—residential LEDs use at least 75 percent less energy and last 25 times longer than incandescent lighting. Look for LED desk lamps, as well as LEDs for recessed downlights.

Make it automatic.

If your work requires overhead lights, use an occupancy sensor—a device that automatically turns the light on when a room is occupied and off when the room is vacant—to shut off the lights for you. You'll reduce the amount of energy your lights consume anywhere from 15 to 90 percent, depending on the room, how frequently it's used, and the bulbs you choose.

try this
today ...

Use your slow cooker and save energy while preparing meals. New models use about 100 watts of electricity—costing only about 20 cents over eight hours' use.

Add an **Extra** Blanket this Fall

Choose the right insulation to stop air leaks in their tracks.

Whether your goal is conserving energy, saving money, or improving your comfort level, fall is a great time to add more insulation where you need it.

Insulation helps regulate your home's temperature and energy use by blocking heat transfer between interior and exterior spaces.

Begin with an audit.

Assess your home's need for insulation by performing a do-it-yourself audit or contacting your local utility company or energy office for assistance. You'll discover where your home is leaking air.

Choose the form.

Insulation comes in several forms including:

Blanket – Batts and rolls of fiberglass, rock wool, or fibers are good choices for DIY installers adding insulation between rafters or in floors and ceiling spaces.

Foam board – These relatively thin, rigid pieces of insulation are good for walls and ceilings but must be covered by a 1/2" piece of gypsum after being installed.

Loose-fill – Made of cellulose, fiberglass or mineral (rock or slag) wool, this insulation may be poured or blown into spaces such as attics and crawl spaces.

Spray foam – Polyurethane insulation is pressure-sprayed into existing wall cavities or around structural obstructions.

In addition, new green materials are showing up in the insulation industry.

Among them: recycled cotton fiber and paper content in a loose-fill form; environmentally friendly foam; and composite boards made of water, flour, minerals, and mushroom spores.

Select the R-value.

The insulation's "R-value" tells you the insulation's resistance to heat flow. The higher the R-value, the more insulative the material is. Find out what the recommended R-value is for your area of the country at ornl.gov/sci/roofs+walls/insulation/ins_16.html.

Extra places to insulate.

Add insulation in less obvious places:

Switch plates: A thin, inexpensive foam sheet behind switch and plug plates stops subtle air leaks.

Pipes and chimneys: Expanding foam insulation seals openings around objects that are cut into the frame of your home.

Basement toppers: Batts of insulation installed where concrete block and wood frame come together block heat transfer.

Most homeowners can complete basic insulation projects. For more complicated projects, or for those involving structural changes to your home, seek the advice of a professional contractor.

Learn more.

Go to energysavers.gov to find information about energy audits and insulating your home.



Put Your Family's Energy Saving to the Test

New energy programs around the country are pitting families against one another in friendly competitions to see who can achieve the biggest reductions in home energy use. In the spirit of fun—and with a worthwhile goal—homeowners are stepping up to the challenge.

Consider these programs:

• Energy Smackdown

Three families in Massachusetts participated in this program devised by the BrainShift Foundation, Inc. (energysmackdown.com). After a baseline assessment of their home energy use, each family sought ways to reduce its carbon footprint. They unplugged old freezers, replaced incandescent bulbs with CFLs, added power strips, and more. A local television station broadcast the results in a “reality show” format. Each family reduced its carbon footprint by at least 30 percent—one family cut its footprint by 63 percent!

• Save Energy Now

Two Edmonds, Washington, families took on a pilot energy challenge issued by Sustainable Edmonds ([\[edmonds.org\]\(http://edmonds.org\)\). Both families received an energy audit, then plunged ahead with ideas that included installing low flow showerheads to unplugging electronics not in use to insulating crawl spaces. One family lowered its electric and gas bills by 25 percent per year and the other made significant strides in reducing electrical consumption.](http://sustainable-</p>
</div>
<div data-bbox=)

• OPower

OPower (opower.com) sends utility customers summaries of their energy use—comparing their usage to their neighbors. OPower even puts smiley faces on the reports to “reward” customers who reduce energy or keep their good habits intact. (And it works—customers like the feedback of knowing they are making a difference!)

You don't have to wait for an organized program to start your own family competition. Keep a chart that tracks when a child shuts off a light in an empty room, Dad turns back the thermostat, or Mom washes clothes in cold water. At the end of a set period, figure up your energy savings. Earmark the money you saved for an activity that rewards everyone—like a family vacation.

try this today ...

As you turn on more lights this fall, switch out any incandescent bulbs with compact fluorescent lamps (CFLs) or even more efficient light-emitting diodes (LEDs).

did you
know ...

ENERGY STAR-rated light-emitting diodes (LEDs) use 75% less energy—and last 25 times longer—than incandescent bulbs. LEDs also emit virtually no energy as heat, compared to incandescents, which release 90% of their energy as heat.

Look inside for more ways to save energy and water in this issue.

RECYCLE. Please pass along to a friend.

