

How to save energy around the house

U.S. consumers spend a collective \$241 billion on home energy use every year

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U.S. consumers spend a collective \$241 billion on home [energy use](#) every year — keeping the home comfortable, the lights lit, the food cold, the clothes clean and the gadgets charged, according to Evan Mills, who leads the [Home Energy Saver](#) (<http://hes.lbl.gov>) project at the Lawrence Berkeley National Laboratory. The fuel burned to provide this energy pumps 1.2 billion tons of heat-trapping gases into the atmosphere. Mills says improvements in efficiency could cut home energy use by more than half, leading to lower energy bills and a smaller carbon footprint. Click ahead to learn how to save energy at home by making the home more [energy-efficient](#).

Get a home energy audit

The first step to improving home [energy efficiency](#) is as simple as logging onto the Internet or picking up the phone to set up a home energy audit. An energy auditor helps you identify ways to make your home more energy-efficient. The Lawrence Berkeley Laboratory's [Home Energy Saver](#) is a free online tool that uses data developed by the U.S. Department of Energy to make specific recommendations for energy-saving upgrades based on details you provide such as ZIP code, address, house size, type of insulation and number of occupants.

People interested in an audit with a live person can call up one of the nearly 2,000 professional home energy auditors recommended the U.S. Green

Building Council, a trade group. A directory is available on the council's [Green Home Guide](#). "They can help you pinpoint exactly what you need to be doing and in many instances give you a laundry list of measures from the least expensive to more expensive," says Nate Kredich, a vice president with the council.



David Saum / Infilec via NREL

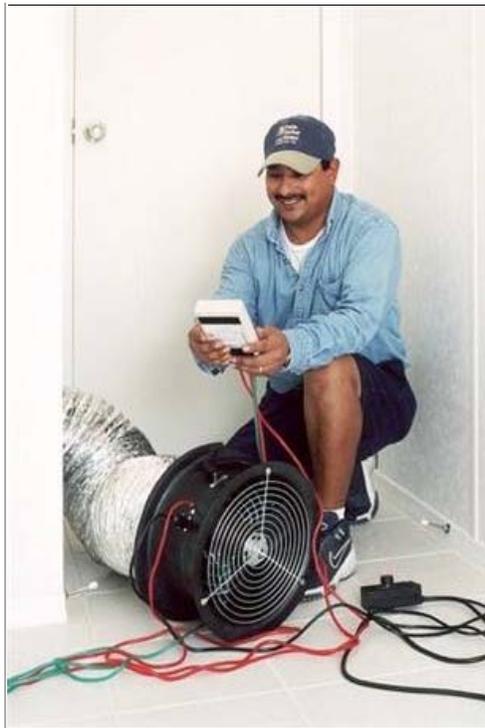
Get a home energy audit

Plug up leaks; skip the duct tape

A quarter to half of the heat leaving the furnace (or cold air leaving the air conditioner) leaks out of the duct system before it reaches the living area of a home, according to Mills. Sealing up ducts can save some serious dough. Duct tape, however, doesn't always stick well or last very long, so Mills recommends a professionally applied sealer that is sprayed into the duct system and fills the holes. "If you've sprayed a fix-a-flat into your flat tire, you know how it works," he notes. Other leaks such as the



front and back doors can be plugged with weatherstripping, and some caulk can plug up common intrusion areas such as the space between the backsplash of a stove and the countertop, says Kredich.



NREL

Plug up leaks; skip the duct tape

Insulate the attic and walls

Stuffing the walls or attic with insulation — typically fiberglass, cellulose, or foam — will slow the heat that flows out of the house in the winter and into the house in the summer, thus reducing the energy required to heat and cool the house, according to the Green Building Council. A home energy auditor can identify insulation needs, according to the U.S. Department of Energy, though handy people can just as easily remove outlet covers and look at the wall to determine if there is insulation there and, if so, how thick the insulation is. Then visit the energy department's [ZIP Code Insulation Program](#) to find out the most economic insulation levels for your home.



Community Services Consortium via NREL

Insulate the attic and walls

Consider new windows

Replacing windows can be an expensive up-front proposition, but it can shave up to nearly 25 percent off home energy bills, the Green Building Council's Kredich says. So, if your home windows are old and leaky, an upgrade to an energy-efficient model should eventually pay for itself. Existing windows can be made more energy-efficient with the addition of storm windows, which may cut down on leakage from the existing windows, according to the U.S. Department of Energy. Weatherstripping and caulking leaky windows is also a help. Shades or blinds cut down on heat lost in the winter and heat gained in the summer.



Chris Gunn / via NREL

Consider new windows

Turn down, insulate water heater



Warren Gretz / via NREL

Turn down, insulate water heater

Most hot water heaters leave their manufacturer's warehouse set to 140 degrees Fahrenheit, but for most homes 120 degrees F is sufficient, says Mills. According to the Department of Energy, a 3 to 5 percent savings in energy is achieved for every 10 degrees F the hot water temperature is lowered.

Wrapping the heater in an insulating blanket can translate to even more savings. "An easy way to tell if your hot water heater could use more insulation is to touch it.

If it feels warm, there is an opportunity to save energy," Mills says.

Another little-known trick is to insulate the final six feet or so of the cold water pipe leading to the hot water heater. This will block a pathway that allows heat to escape from the hot water heater, notes Mills.

Switch to compact fluorescent lights



DOE

Switch to compact fluorescent lights

The average U.S. household spends 11 percent of its energy budget on lighting. Replacing incandescent light bulbs with the newfangled compact fluorescent lights can reduce lighting energy use by 50 to 75 percent, according to Mills. Whether consumers take the step now is a personal choice, but starting in 2012 federal law will require a complete phase-out of incandescent bulbs. Motion and daylight sensors can add up to additional lighting savings by keeping the lights on only when they are needed, notes Mills.

Pick out future new appliances today



Pick out future new appliances today

When the water heater goes on the fritz, it may be too late to do the research necessary to find the most energy- and cost-efficient model for your home. Same goes for the refrigerator, dishwasher, and laundry machines. Advance planning today, while everything is functioning, means an easy replacement when the time comes.

Large appliances — especially refrigerators and laundry machines — account for about 17 percent of the average household's energy bill, notes Mills. A slightly more expensive energy-efficient model on the showroom floor may pay for itself in the first few years of its 10- to 20-year life expectancy.

And about that old fridge in the basement or garage keeping a beer cold: "Unplug it," says Mills.

Wring more water from clothes



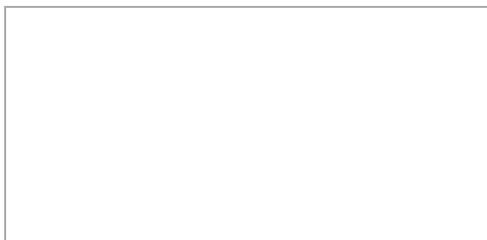
Associated Press

Wring more water from clothes

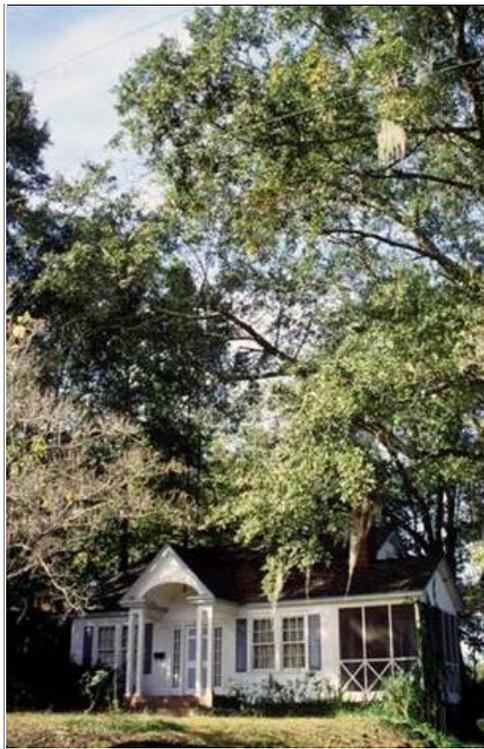
The laundry room is an energy hog — hot water to wash clothes, hot air to dry them, and the energy to drive the motors that make them spin, spin, spin. One way to cut down on the energy used to dry laundry is to put them in dryer when they are closer to dry. Another option, notes Mills, is to purchase an inexpensive free-standing spinner to wring more water from clothes before tossing them in the dryer. "Last but not least," he adds, "nothing smells and feels better — and trims energy bills more elegantly — than line-dried clothes."

Plant a tree or bush

Summer sun beating through a window heats up a home quickly, requiring more energy to run the air conditioner. To beat the heat, plant a tree on the south-facing side of the home, says Kredich of



the Green Building Council. "That will make a huge difference because that will provide shade in the summertime," he says. In the winter, when the leaves are off the tree, sun will filter through the limbs and help keep the house warm.



John Krigger / Saturn Resource via NREL

Plant a tree or bush

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Generate green energy



Haraz Ghanbari / AP

Generate green energy

One of the final things to consider — once all the leaks are plugged, windows tight, insulation installed, and new appliances purchased — is to generate green energy at home with, for example, rooftop solar panels.

previous
next ↓



"Too often people will say, 'I want to green my home so I'm going to go out and get some solar panels or something like that,'" notes Kredich. "And the simple fact is, that's not going to make their home more energy-efficient if they've got windows from the 1920s and they need to be replaced."

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