



Do-It-Yourself Home Energy Audit Tips

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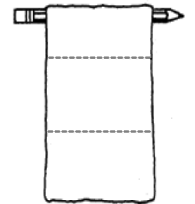
What's an "Energy Audit"? It's an evaluation of your energy usage to reveal where, and more importantly, how efficiently you're using energy. You can conduct a very simple energy audit around your home, and do it with no formal training! Some items you can correct on your own. Some will require a professional. Either way, a simple "DIY" home energy audit will help you discover what needs attention.

You'll Need the Following Basic Tools:

- 1) Indoor-outdoor thermometer with a wired outdoor sensor (not wireless). One is ok, two are better.
- 2) Incense sticks (Option: Very thin tissue paper, tape, and pencil.)
- 3) Kill-A-Watt Meter (approximately \$30.00).
- 4) Yardstick, flashlight.

#1: Fix Air Leaks – Often the Worst Cause of Energy Loss in a Home

Check windows and doors for air leaks. On a windy day, turn off your AC and all ceiling fans. Hold lit incense (or very thin tissue paper taped to a pencil) near gaps in windows, doors, fireplace dampers, light switches, and wall outlets. Incense smoke should rise vertically (or the tissue shouldn't move). If you see any movement in the smoke or tissue, you've found an air leak that needs to be fixed.



"Air Leak Detector"

#2: Check Your Air Conditioner – The Largest Electric Load in Your Home



Tape the "outdoor" sensor of thermometer #1 to the air intake of your air conditioner (where the filter is located). Tape the outdoor sensor of thermometer #2 to the air duct outlet in any room. Set the thermostat several degrees cooler than normal. After 15 minutes, check the temperature on both thermometers. The cold air coming from the air conditioner should be 20-24 degrees cooler than the intake temperature. If not, is the air filter clean? What about the coils behind the filter? Are they dirty? The outdoor unit coils must also be clean and free of debris. If these are all ok, you'll need to contact an air conditioning service specialist.

#3: Evaluate Your Appliances

Your refrigerator is often the largest energy consuming appliance. Properly setting its internal temperatures can help reduce power consumption. Put the "outdoor" sensor of the thermometer in the center of the freezer compartment and close the door. Wait 30 minutes. You should read 0-5°F. If not, adjust the freezer thermostat accordingly. You may need to make an adjustment, wait a day, then recheck and readjust the temperature. When finished, repeat this procedure for the refrigerator, with 35-40°F as your target. While you're at it, check the door gaskets with a dollar bill. Open the refrigerator door, insert the bill between the door gasket and the refrigerator body, then close the door. Pull on the bill. The bill should require considerable tugging to get it out. If it's easy to remove, the gasket isn't sealing properly, and either the door needs adjusting, or the gasket may need replacement. Do the same test for the freezer gasket. Tip: EnergyStar® appliances use at least 15% less energy than non-EnergyStar models!

#4: Eliminate "Phantom Loads" - Devices That Consume Power Even When "off".

Disconnect an appliance from its outlet. Plug in the Kill-A-Watt™ meter. Set the meter to read "Watts" (it's easy!). Turn the appliance "off", and plug it into the meter. If you read any watts, the appliance uses power all the time. Use a power strip with an on/off switch to truly turn these appliances off. Unused electrical devices that consume power when "off" can account for as much as 8% of your home's annual energy bill!



Kill-A-Watt™

#5: Water heater.

Use the “outdoor” thermometer sensor to test the hot water temperature at the kitchen faucet. Hold the sensor in the flow of water. Allow the water to run until it’s hot. You should read approximately 120°F. If it’s much hotter, adjust the water heater thermostat accordingly. Wait a day, then retest. If you’re not sure how to adjust the thermostat, contact a plumber (for gas heaters), or electrician (for electric heaters). After you set the water temperature to 120°F, wrap the water heater in an insulating jacket to help conserve the heat. Tip: Solar hot water systems can pay for themselves in 4-7 years, depending on your usage habits!

#6: Install a Programmable thermostat.

Buy and learn how to use a programmable thermostat. Each degree you raise the thermostat on your cooling system saves 2-3% on your electric bill. Set the air conditioner thermostat at 78°F or higher. Use ceiling fans for additional comfort. Tip: Turn off ceiling fans when you leave the room!

#7: Lighting

Install compact fluorescent lamps. The lights in a typical home can account for up to 10% or more of your home's annual energy use. If you're using incandescent lights, it's time to change them out. Compact fluorescent lamps (“CFLs”) use 25% of the electricity as incandescent lamps and last up to 10 times longer!

#8: Check the Attic Insulation

The first question to ask is, "How do I know if I have attic insulation?" Take a moment and poke your head into the attic. Use a flashlight if necessary. Ideally, you should have 12-15” of insulation lining your attic floor. You should not be able to see the ceiling joists (the wood holding up the ceiling of the room below. Measure the depth with a yardstick or tape measure. If you don’t have at least 12”, you've just discovered a major source of energy inefficiency in your home. Upgrade the insulation throughout your attic to 18” or more. Tip: Insulate the attic hatch. It’s a major source of energy loss overlooked by many homeowners!

#9: Attic Temperature

Carefully attach the “outdoor” sensor of thermometer #1 in an attic area above your attic access stairs. Use thermometer #2 to measure the temperature outside your home. Measure the daily maximum temperatures with each thermometer’s “memory” function. Record these values. Reset the thermometers’ memory. Track these temperatures for a week or more. If your attic is more than 20-25 degrees hotter than the outside air in the summer, you need to have work performed to reduce the attic temperature.

#10: Review Your Utility Bills (Before & After!)

Before you perform your home energy audit, take your old energy bills out of the filing cabinet and review them carefully. Sudden large jumps in energy usage in summer and winter may indicate your home's insulation isn't adequate, and your air conditioning and heater are working overtime to compensate. Also, by comparing pre-audit energy use to your utility bills received after you've made some home energy efficiency improvements, you'll be able to see how much your home energy audit steps are saving you.

Utility bills aren’t fun, but they contain important detail. Compare your utility costs month-by-month for as many past years as possible. Look for trends in usage or obvious changes. Do you see any spikes? Can you remember why? Your utility company can provide past bills. Call their Customer Service Department.

Note the “kilowatt-hours” you’re typically using each month, as well as the amount your utility company charges per kilowatt-hour. Get to know what you’re paying every month!

After you’ve made improvements, revisit your audit steps in a month or two. Get out your energy bills and compare. Did your usage decrease? Consider going back through the audit steps and look for appliances or areas you may have missed.

Need more information? Andrea’s new book, “If I Had a Hammer” contains more than 100 easy fixes and weekend projects, including many other energy conservation tips and improvements!

