



ENERGY

Energy checklist for homeowners no. 10.621

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Quick Facts...

An energy efficient house can reduce energy bills by up to 40 percent.

Reducing heating costs is the most important thing you can do in Colorado; this includes installing a programmable thermostat and proper furnace maintenance.

Cooling costs in the summer can be reduced by using a whole house fan and opening windows during cool evenings.

Cut hot water usage and adjust the water heater to 120 degrees F.

When replacing appliances, select those with the Energy Star label.

Use compact fluorescent lamps wherever possible.

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When comparing an average house to an energy efficient house, it is possible to reduce annual energy bills by up to 40 percent. To obtain such a reduction, it is important to develop an energy conservation plan. This is both an environmentally friendly and economically sound approach. A good place to start is to consider how the average house uses energy. According to Energy Star and the U.S. Department of Energy, energy use for the average house is as follows.

Heating and cooling	45%
Water heater	11%
Clothes washer and dryer	10%
Lighting	7%
Refrigerator	6%
Dishwasher	2%
TV/DVD	2%
Computer and monitor	2%
Other	15%

As you develop your home energy conservation plan, the first task is to identify problem areas. The above list of household energy uses suggests a place to start – the higher energy uses (i.e. heating) have the greatest potential for savings. Review the energy conservation measures checklist below to identify problem areas in your home.

Heating

- Set your thermostat as low as comfortable (68 degrees F is suggested) when you are at home.
- Set back the thermostat to 60 degrees F at night or when no one is at home.
- Set back the thermostat to 50-55 degrees F when the house is empty for over 24 hours.
- Install a programmable thermostat to automatically provide these setbacks.
- Close your fireplace damper and make sure the opening is sealed when the fireplace is not being used.
- Reduce heat to unused rooms in the house, and close their doors.
- Replace furnace filters once a month during the heating season.
- Regularly clean heating registers and make sure they are not blocked.
- Have your furnace checked annually by a trained professional.
- Seal all joints in sheet metal ducts in a forced air furnace with mastic or other appropriate tape.
- Insulate ducts passing through unheated spaces.
- Use kitchen, bath, and other ventilating fans only when needed.

- Install insulating gaskets behind electrical outlets and switch plates on exterior walls.
- Caulk and weatherstrip your doors and windows.
- Caulk and seal leaks where plumbing, ducting, or electrical wiring penetrates through exterior walls, floors, and ceilings.
- Use an inexpensive door sweep to reduce air leakage under exterior doors.
- Seal small holes around water pipes and stuff insulation into larger holes around plumbing fixtures.
- Use foam gaskets that fit behind cover plates to reduce heat loss around light switches and electrical outlets.
- Upgrade ceiling insulation to R-38 (higher R values mean greater insulation levels and thus more energy savings).
- Insulate exterior heated basement walls to at least R-11.
- Insulate floors over unheated areas to R-19.
- Open blinds and shades on sunny winter days, and close them at night.
- Install storm windows over single pane windows or use plastic film window kits.
- Replace an aging furnace with an efficient model, preferably one with an Energy Star label.
- Replace single pane windows with energy efficient double pane windows mounted in non-conducting window frames.
- Replace water heater, when needed, with an energy efficient model.

Cooling

- Open windows at night to bring in cool night air and close them during the day.
- Close your blinds and shades during the day.
- Shade west facing windows.
- Draw cool night air into the house with a whole house fan.
- Install an evaporative cooler.
- Use room air conditioning only where needed.
- Install an efficient Energy Star central system air conditioner if one is needed.
- Maintain an air conditioned house at 78 degrees F or higher.
- Regularly change air conditioning filters and clean the condenser.
- Plant trees that leaf out during the cooling season on the west and south sides of your house.

Hot Water

- Repair leaky faucets.
- Reduce the temperature setting of your water heater to 120 degrees F (medium setting on a gas heater dial), as long as your dishwasher has a booster heater.
- If you have an electric heater adjust both the upper and lower thermostats, after first turning off the electricity at the circuit breaker.
- Add an insulating wrap to an older water heater; for a new water heater check your manual to see if this is recommended.
- Install high efficiency low-flow showerheads.
- Upgrade to a low-flow toilet.
- Wash clothes in cold water, except for special loads such as diapers and stained clothes, and use the appropriate water setting for the load.
- Replace your water heater, when needed, with an efficient Energy Star model.

Appliances

- Maintain your refrigerator at 35-40 degrees F and freezer at 0-5 degrees F.
- Maintain a stand alone freezer at 0 F.
- Choose a refrigerator/freezer with automatic moisture control.
- Keep your refrigerator door closed whenever possible.
- Regularly clean dust out of the coils behind or under your refrigerator with a tapered appliance brush.
- Minimize freezer ice build-up.
- Use microwave ovens for cooking small meals.
- Adjust the flame on gas cooking appliances so it is blue, not yellow.
- Replace a gas cooking appliance with a unit that has an automatic, electric ignition system.
- If you have a newer dishwasher, skip pre-rinsing the dishes.
- Run the dishwasher only with a full load.
- Air dry dishes in your dishwasher.
- Regularly clean the lint filter on your dryer and inspect the dryer vent to make sure it is not blocked.
- Do not overload your dryer as it takes clothes longer to dry.
- Shut down home computers or put them on sleep mode when not in use.
- Plug small electronics into a power strip so you can turn them off at the same time.
- Turn off the TV when no one is viewing it.
- Select small appliances such as curling irons and coffee pots with time limited shut off switches.
- Replace aging appliances, when needed, with energy efficient Energy Star models. Compare the annual energy consumption and operating costs for each appliance being considered by looking at the bright yellow and black Energy Guide label when shopping for new appliances. Also look for the Energy Star label.

References

Amann, J.T., Wilson, A., & Ackerly, K. (2007). *Consumer guide to home energy savings*. Gabriola Island, Canada: New Society Publishers.

Consumer Reports. (2006). *Reducing energy costs*. Washington, DC: Consumers Union.

Energy Star, www.energystar.gov

U.S. Department of Energy, www.energy.gov/energyefficiency/buildings.htm

Xcel, www.xcelenergy.com/residential/saveenergy_money

Lighting

- Turn off lights when not in use.
- Use task lighting whenever possible instead of brightly lighting an entire room.
- Install compact fluorescent lamps in the fixtures which receive high use.
- Control outdoor lights with sensors or timers so they stay off during the day.
- String LED lights during the holidays.

By using as many of these suggestions as you can, you will see a major decrease in your home energy use and lower energy bills. Some of the suggested changes may qualify for a rebate so check with your utility company.

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