



ENERGY EFFICIENCY & BUILDING CODES

STRONG ENERGY CODES, BIG SAVINGS

ENERGY USE IN U.S. BUILDINGS

U.S. Buildings represent the largest source of U.S. greenhouse gas emissions at 46.9 percent in 2009.¹ At a whopping 1,455 billion kilowatt hours of electricity in 2010, U.S. homes used enough electricity to power all of Central and South America for almost two years.²

By the year 2035, approximately 75 percent of the U.S. building sector will be new or renovated.³ Setting stronger efficiency standards through building energy codes is the most cost effective means of increasing efficiency in our homes and commercial buildings and shielding our economy from high energy bills.

WHAT ARE BUILDING ENERGY CODES?

Building energy codes lay out the minimum requirements for insulation, windows, HVAC equipment, lighting, and other building attributes in terms of energy efficiency. It's important to get efficiency right during the construction process, because energy efficient buildings are more comfortable and save building owners money, while inefficient buildings are leaky, can block out less outside noise, and result in higher energy use for the life of the building. Strong building energy codes protect building owners from high energy costs, just like car efficiency standards help promote more efficient cars and trucks. Building to meet the latest national standards would save homeowners at least \$243 every year.⁴

86% of residential customers want to know a home's energy operating costs before they buy or rent.

82% of homeowners believe they have a right to homes that meet national standards.

77% of homeowners think that homebuilders should not make less efficient homes at the consumer's expense.

2011 Consumers Union Survey

ECONOMIC BENEFITS

Since the purchase and operation of buildings are some of the biggest expenses faced by a household or business, strong building energy codes have economic as well as environmental benefits. Some of these benefits include:

- Reduced utility bills that accrue over the building's lifetime. In fact, when spread across a standard mortgage, energy efficiency investments usually put money in a property owner's pocket on day one.
- Higher quality buildings with higher resale values.
- Support for the manufacturing sector and higher demand for domestically-made efficiency products.
- Reduction of wholesale energy prices due to decreased energy demand.
- Job creation in the building industry including high performance HVAC installers, code officials, building performance testers, and more.
- Cleaner air and water by reducing pollution from power plants.
- Driving further innovation, keeping America competitive for the research, design, and development of energy efficient technologies

WHAT YOU CAN DO

It's important to inform yourself about energy efficiency options in your region. Ask your energy utility to help you fund energy efficiency projects in your home. Be sure to check the average monthly energy bill on a home or building before you buy or rent, and use the tips on the back to reduce energy use in your home and workplace. You can also ask key decision makers to prioritize energy efficiency over dirty power like coal, natural gas, and nuclear power. Finally, you can always contact your Sierra Club state chapter or local group to find out more their efforts to promote energy efficiency and building codes.

HOME ENERGY EFFICIENCY CHECKLIST

WHOLE HOUSE/UTILITY ROOM

- Install a programmable thermostat. Winter temps should be 68 degrees F, and 60 F or less while you sleep.
- In the summer, set the air conditioner at no cooler than 78 degrees F.
- Adjust hydrostat on water heater to 120 degrees F.
- For old water heaters, install insulating blanket on tank and insulate pipes.
- Consider upgrading to an Energy Star water heater. For ultimate efficiency, buy a “flash” (also called “on-demand” or “tankless”) water heater or a solar water heating unit.
- Check home insulation in attic, basement and walls. Is it adequate?
- Seal any gaps in walls. Pay special attention to plumbing outlets, vents, and recessed light fixtures.
- Seal ducts to maximize HVAC efficiency.
- Keep AC and furnace filters clean.
- Install weatherstripping and caulking on drafty doors and windows.
- Replace single-paned windows with double-paned windows designed for your climate.

LIVING ROOM/BEDROOMS/FAMILY ROOM

- Consider installing ceiling fans.
- Use curtains, shades, and shutters for insulation and shade.
- Use task lighting rather than ambient lighting when possible.
- Switch out incandescent light bulbs with compact fluorescents, especially in the most-used light fixtures.
- Turn off lights when not in use, and consider installing motion and occupancy sensors where appropriate.

BATHROOMS

- Install aerating shower heads and faucets to reduce hot-water consumption.
- Take showers instead of baths.
- Do not run vent fan more than necessary.

KITCHEN

- Always buy Energy Star appliances.
- Use water- and energy-saving features on dishwasher. (Do not use dishwasher to dry dishes.)
- Only run full dishwasher loads.

HOME OFFICE

- Purchase Energy Star products like monitors and CPUs and use advanced power strips that turn off connected plug loads when inactive.
- Consider using a laptop instead of a desktop PC.
- Do not buy a bigger monitor than you need.
- Set computer to go into sleep mode when not in use.
- Turn off computer and peripherals at power strip so that transformers do not continue drawing power even when “off.”
- Turn off printers and copiers when not in use. They consume considerable energy even in standby.

LAUNDRY ROOM

- Buy Energy Star appliances. As a rule, front-loading washing machines are more efficient than top-loading machines.
- Wash and rinse clothes in cold or, if you must, warm water.
- Only run full loads; if you must run smaller loads, adjust water level if possible. Install and use a clothesline.

OUTDOORS

- Install compact fluorescents rated for outdoor use.
- Install motion detectors on security lights.

REFERENCES

- 1 Architecture 2030 (citing U.S. Energy Information Administration) and American Institute of Architects (AIA).
- 2 <http://205.254.135.7/cfapps/ipdbproject/IEDIndex3.cfm?tid=2&pid=2&aid=2>
- 3 <http://www.imt.org/building-codes.html>
- 4 <http://energycodesocean.org/incremental-cost-analysis>