

There are three areas in which homeowners can make their home more energy efficient. These are:

- 1) operational changes (altering your actions and the way your house operates in order to be more energy efficient)
- 2) building envelope improvements
- 3) upgrading equipment and appliances

Homeowners are encouraged to first make operational changes and building envelope improvements before considering upgrades for equipment and appliances. By making these changes and improvements first, homeowners may not have to invest in new equipment such as furnaces and air conditioners.

Operational Changes

Heating

- Use bathroom and kitchen vents sparingly when moisture and odors are not a problem
- Lock your windows so they will seal tighter
- Try to use doors that are protected from wind
- Set the thermostat at 68 when occupied and 60 at night or when unoccupied. If gone for a few days turn it down as low as it will go.
- Close registers and doors to unused rooms
- Don't block registers or vents with furniture
- Close drapes at night and on cloudy days
- Change the filter once every month or two
- Have the furnace tuned/serviced every 2-5 years
- Lower the boiler temps in the spring and fall
- Be sure thermostat is located away from heat sources and cold drafts

Air Conditioning

- Turn off unnecessary lights and appliances
- Keep both primary and storm windows shut when closing the house for the day or when running the a/c
- Close drapes on hot sunny days, especially the east and west drapes
- Use bathroom and kitchen vents to exhaust heat and humidity
- Avoid heat producing tasks inside your home; use appliances that don't produce a lot of heat; if you must, use them early in the morning or later in the evening
- Make sure your clothes dryer is vented outside or use a clothesline
- Alternatives to A/C: open windows in evening to capture cool breezes and close them early in the morning on hot days, use fans install a whole house fan and provide it with a good cover in the winter, install ceiling fans to create air movement
- If gone for the day, turn A/C off and shut up the house, if this doesn't keep the house cool for when you return install a clock thermostat to turn it on close to your return
- Don't run A/C all night if it is cooler outside than inside (open windows and use a fan)
- Keep filters and grills clean, change when needed
- Clean the A/C unit before each summer
- Set temperature at 78F degrees
- Shade the outside compressor unit but don't block air circulation

Water Heating

- Cut your hot water consumption
- Don't run water unnecessarily
- Repair leaky faucets promptly
- Wash only full loads of laundry and dishes
- Always use cold water when running the garbage disposal

Operational Changes continued...

Water Heating continued...

- Use cold water laundry detergent and always rinse in cold
- Install low flow restrictors on toilets and showers
- Set the water temperature at 110-120 degrees F if you don't have a dishwasher, which usually requires 140 degrees F
- Drain a bucket of water from the water heater at least once a year (more often if you have hard water) to flush out sediment
- Insulate the water heater, the first ten feet of hot and cold water pipes out of the heater, and pipes in unheated spaces
- Install a vent damper on a gas water heater
- Set an electric water heater on 1 inch of extruded polystyrene foam insulation
- Install a heat trap on both the hot and cold water lines if installing a new water heater
- Add a booster heater to your dishwasher so you can turn your water heater temperature down

Lighting

- Make more use of natural light
- Turn off lights when not in use
- Use lower wattage bulbs if possible
- Use compact fluorescent bulbs

Appliances

- Run only full loads in the dishwasher & washing machine
- Line dry clothes if possible
- Replace gaskets/seals on refrigerator/freezer

Building Envelope Improvements

Attic

- Weatherstrip around the access door
- Insulate the attic access door if possible by attaching insulation to the back
- Caulk: electrical wire penetrations at the top of the interior walls and wires into ceiling, along the tops of interior walls where the top plate meets the plaster/drywall, and seal any holes between heated space and the attic
- Seal around plumbing stacks and around chimney (be sure to use a high temperature sealant such as a muller cement and metal flashing where necessary here)
- Insulate the attic

Main Levels

- If you have a room air conditioner, removed it for the winter or seal it up and insulate it. Water heater insulation jackets work well for covering the interior.
- Replace broken glass and loose putty on window glazing
- Use clear sealant to caulk: around windows and door woodwork to seal where the frame meets the wall and all other joints in the window woodwork, along baseboards including interior walls,
- Seal around ceiling fixtures, registers, medicine cabinets, bath tubs, kitchen cabinets, drain, and water pipes where they enter the wall in the kitchen and bath, and any other interior or exterior wall penetrations.
- If you have double hung windows with ropes and pulleys, install pulley seals over the pulleys. These fit around the rope and pulley to reduce air infiltration at that location.
- Weatherstrip windows and doors
- Install interior storm windows or use plastic over windows.
- Install an insulated window treatment such as thermal curtains
- If you have a fireplace- check to make sure the damper is closed tightly, install tight fitting glass doors and/or make a decorative insulated cover for it, install a sealing damper

Building Envelope Improvements continued...

Basement

- Seal any holes in the foundation, the band joist and sill with caulk or foam sealant, also caulk around basement windows and seal the hole where the bathtub drain comes down and any other plumbing or electrical penetrations into the basement ceiling.
- Insulate the band joist and insulate the basement in general
- If you have a floor over an unheated space (like a garage) insulate the space between the floor and the unheated space

Exterior

- Install storm windows on single glazed windows
- Install a storm door
- Caulk around window frames and door frames, as well as around storm windows where metal meets the window frame (if you have combination storms). If you have wooden storms that must be exchanged depending on the season, use rope caulk to seal it.
- Caulk around all penetrations such as electrical, telephone, cable, gas, dryer vents, water faucets, etc.

Upgrading Equipment and Appliances

Heating and Air Conditioning

- Before considering replacing a furnace:
 - You should insulate adequately. If you make other improvements first, you may be able to downsize the size of furnace needed to heat the space.
 - Try to improve your current furnace by: insulating pipes and ducts in unheated areas, install an auto setback thermostat, install a vent damper, install a modulating aquastat on a boiler to adjust its temp according to outdoor temp, tape all the joints in the ductwork, install an electronic ignition and/or heat reclaimer, install an induced draft attachment if there is a potential for flue gases to come back down Chimney
- When replacing a furnace, consider installing one with an induced draft fan or sealed combustion using only outside air
- For a new furnace: install a new medium to high efficiency furnace, this should only be considered after house has been tightened and insulated
- Install a new medium-to-high efficiency air condition

Water Heating System

- Install a passive or active solar water heating system
- Replace an old water heater with a new, more efficient one or a tankless water heater

Appliances

- Check older appliances to make sure they are not consuming higher than normal levels of electricity
- If you are looking to buy new appliances seek out ENERGY STAR rated appliances