

Home **Energy** **Saving** Strategies



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Program of the New Mexico Environment Department.



Oregon State
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Extension Service



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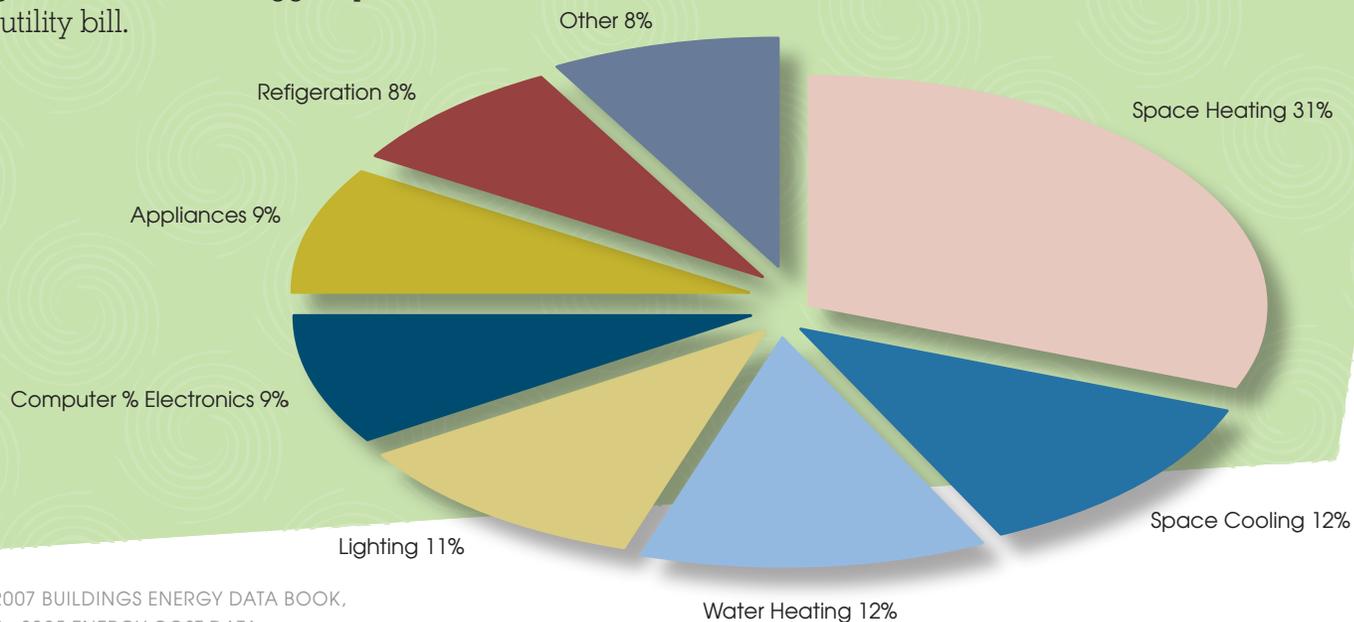
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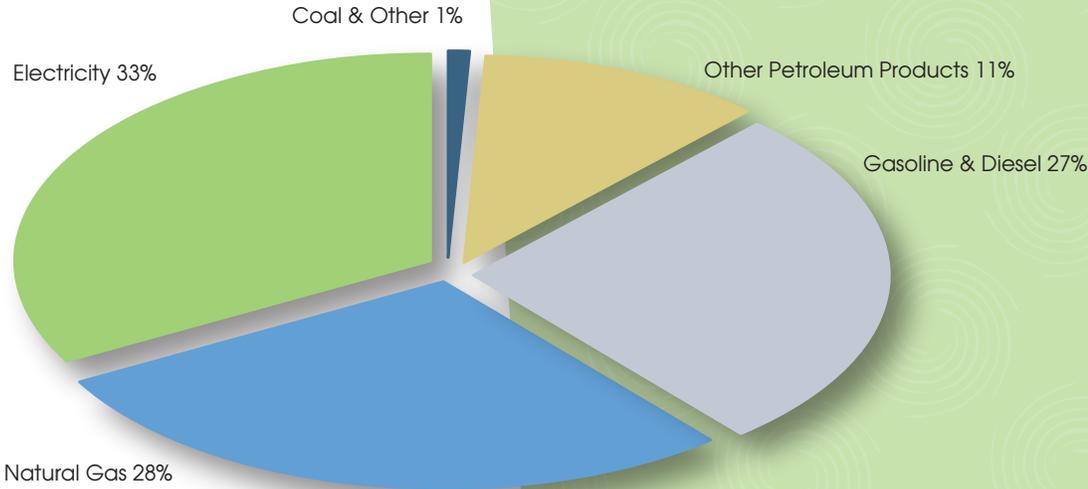
How We Use Energy in Our Homes

Heating accounts for the biggest piece of a typical utility bill.



SOURCE: 2007 BUILDINGS ENERGY DATA BOOK,
TABLE 4.2.1., 2005 ENERGY COST DATA

Where Energy Comes From in New Mexico

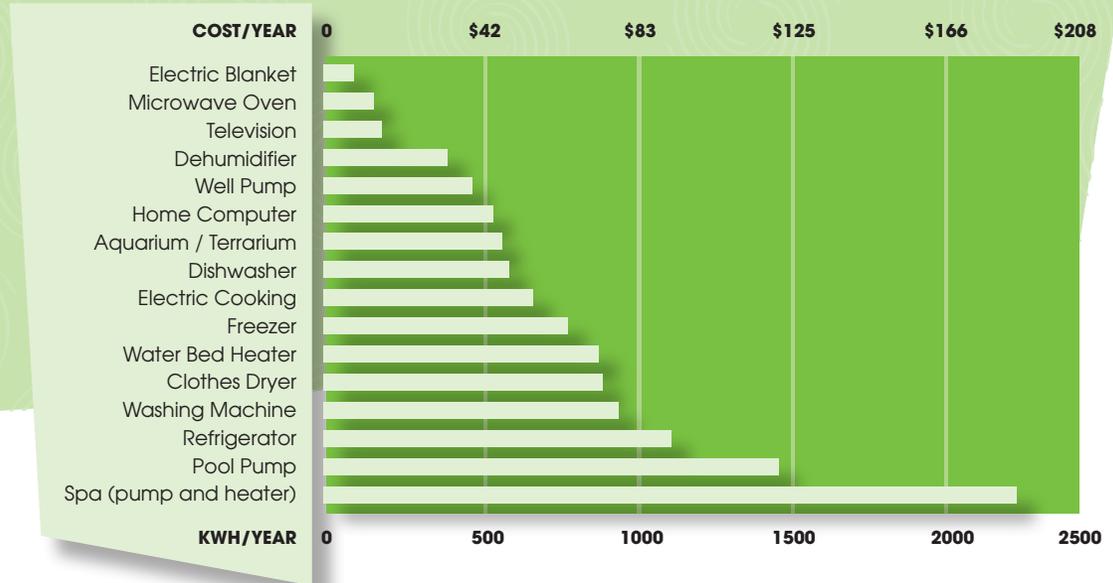


NEW MEXICO PRIMARY ENERGY USE IN 2005
TOTAL PRIMARY ENERGY USE - 675.0 TRILLION BTUS

How Much Electricity do Appliances Use?

This chart shows how much energy a typical appliance uses per year and its corresponding cost based on national averages. For example, a refrigerator uses almost five times the electricity the average television uses.

Visit www.energysavers.gov for instructions on calculating the electrical use of your appliances.



Heating and Cooling

Turn down the heat. For every degree that you heat your house over 67°F, you add 3% to your heating bill. For example, turning the heat down from 72°F to 67°F can save you \$123 and cut 1575 lbs of CO₂-equivalent from your GHG emissions per year.

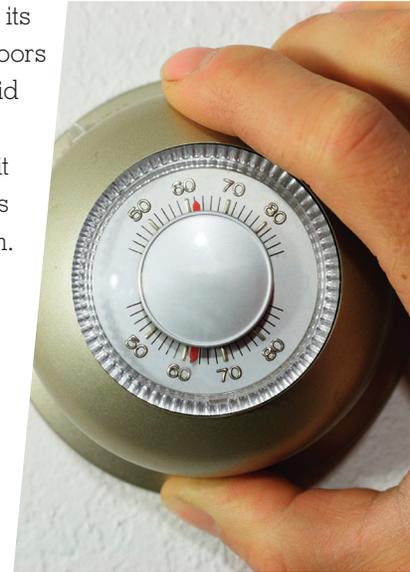
Turn up the A/C. The air conditioning energy saving setting is 78°F or higher. Each degree lower adds 3% to your cooling bill while each degree higher subtracts 3% from your cooling bill.

Turn the heat down when out for the day or sleeping. This can save up to \$444 and cut a massive 5670 lbs of CO₂-equivalent from your GHG emissions each year! To help you with these measures you can get a programmable thermostat and/or calibrate the thermostat yourself.

Zone heating. Heat only the room that you are using.

Wood heating. A wood stove is 5 times more efficient than a fireplace! ■ The chimney is a huge heat funnel; it's like an open hole in the wall 2 times its size! If you must use a fireplace, install glass doors and close the damper when not in use. ■ Avoid using the fireplace and a gas/electric heater simultaneously. Fire needs oxygen to burn, so it will draw cold air through the cracks and leaks in your house in order to have sufficient oxygen.

Seal air leaks. In an average home, air leaks are equivalent to leaving an average sized window open. Install weather stripping, outlet insulators, insulating foam, window putty and door sweeps to save \$222 per year and cut 2835 lbs of CO₂-e from your GHG emission per year.



strategies

Insulating reduces the loss of up to sixty percent of the energy you use to heat your home. Much escapes through parts of the house that can be insulated (walls, ceiling, and floor). Attic insulation can save 20-35% in heating costs.

Maintain & optimize your furnace and heating / cooling system. In some cases, up to 50% of the energy used in the furnace is wasted. ■ Have your electric furnace tuned every year. This can save \$53 annually and cut 677 lbs of CO₂-equivalent from your GHG emissions each year. ■ Seal and insulate all warm-air heating ducts. ■ Avoid blocking vents and heating units with furniture for better air flow. ■ Use a fan to circulate the air and mix up the heat. ■ Clean or switch your filters monthly for forced air systems.

Windows. For an average-size home built in the 70's with electric heating, switching from single paned to double paned windows will save approximately \$152 and cut 1744 lbs of

CO₂-equivalent from your GHG emissions annually. ■ Add storm windows or plastic wrap to single paned-windows. ■ Close curtains or blinds during cold nights to trap heat or on hot days to block sunlight. ■ Thick drapes will keep your house warmer than thin ones.

Cool with a fan instead of an air conditioner.

Buy an energy efficient heating system if purchasing a new one to reduce costs and emissions in the long run.

Work with the sun. Allow sunlight to warm your house in the winter by opening curtains and blinds. Block out the sun with curtains and blinds during hot, summer days to keep your house cooler.

Buy renewable energy from your utility or, if you've done everything to gain efficiency, consider installing solar photovoltaic panels to produce energy at home.

Hot Water

Showering. A ten minute shower uses approximately 50 gallons of hot water when not using a low-flow shower head. Heating this water emits 6 lbs of CO₂. ■ Shoot for a 5 minute scrub (instead of 10 minutes). ■ Install a low-flow shower head, which typically uses 2.5 gallons per minute. Each of these options saves \$43 per year and cuts 494 lbs of CO₂-equivalent from your annual GHG emissions.

Hot water heater. Most heaters are programmed at 140°F and can easily be decreased to 120°F. This can save \$14 annually and cuts 162 lbs of CO₂-equivalent from your annual GHG emissions. Add an insulation blanket to older electric units that feel warm to the touch. Insulating a new one can fry the heater. See resources below for instructions. ■ Add foam insulation sleeves to the first 5 ft of pipes. ■ Turn off your hot water

heater while you're on vacation or even while you're asleep and at work. Turn it off at the circuit breaker or install a switch. Switches can be installed with timers, so you don't have to remember to turn it on and off.

Turn off the tap. Stop sending clean water and money down the drain by running the tap while doing dishes, brushing your teeth and shaving. While you're at it, use cold water for these activities for greater savings.

Check for leaks around faucets, clothes washer and hot water heater.

Install a solar water heater. Although costly to install, a solar water heating system can save a household 50-80% off the water-heating bill. As prices for electricity or natural gas go up, the savings increase. Annual emissions savings range from 2,700 to 4320 lbs of CO₂.



Refrigerator

Replace inefficient models. For refrigerators older than 2001, EnergyStar models are roughly 40% more energy efficient. Depending on use, the average household will save 540 lbs of CO₂ per year.

Set temperature at 38-42 degrees F. Use a thermometer in a glass of water to calibrate.

Locate away from heat sources.

Clean vacuum coils (on back or underneath). When they're dirty, the fridge comes on more often and runs longer. Be sure to unplug it first.

Clean gasket and area around the gasket where the door seals. Easy to replace. Use \$ bill to test the seal.

Cool food before putting it in the fridge. This reduces the amount of work the refrigerator has to perform.

Keep refrigerator full, even if just with full water jugs. Solid mass stays cold easier than air.

Get rid of your second refrigerator or freezer. Consolidate food into one unit. If it is not possible to get rid of a unit, then unplug seldom used units. These energy hogs of the appliance world can cost \$100 per year

Freezer

Set temperature at 0-10 degrees F. for "product" (not air temperature). Use a thermometer packed in frozen foods for reading the temperature accurately.

Keep freezer full, even if just with full water jugs.

Washing Machine

Use the **appropriate settings** and water level for the load size.

Wash clothes in **the cold water cycle** (or at least rinse in cold water).

Minimize detergent used. The motor works harder with extra suds.

Run washer with full loads (don't run partial loads).

Use an extra spin cycle to reduce the time needed for running the dryer.

Use eco-friendly (non-petroleum based) detergent and soap.

Dryer

Clean the lint trap each time you run the dryer.

This results in a 5-10% reduction in energy use. Excess lint is also a fire hazard.

Replace vent cover with louver type. This results in a 20-50% increase in airflow, taking less energy to force air through.

Don't overload the dryer.

Sort loads by clothing weight & material type.

Line dry your clothes. Use the sun's natural warmth to save energy.



Dishwashers and Hand Washing

Select **air dry** or turn off and open door.

Run full loads.

Use tubs or fill the sink for hand washing, rather than constantly running the water.

Use cold water to rinse dishes.

Cooking

Use small appliances when suitable, e.g., a toaster oven or microwave instead of a stove. ■ Preheat the oven only for five minutes or less. ■ Use a timer and don't peek! Opening the door drops the temperature by 25 degrees and wastes power. ■ Turn off your oven fifteen minutes before the end of baking time. ■ Cook more than one thing at a time. ■ Use the self-clean function sparingly (if at all). ■ Cover pots and pans with lids to use a third less energy. ■ Use pots and pans with flat bottoms and tight lids, and use the same size burner as the pan. ■ Don't use foil on the burner pans or in the oven. It decreases efficiency and the life of the elements.

Power Strips / Surge Protectors

Switch off electronics and appliances at the wall or power strip to cut the 5-10% of your electric bill spent on standby power. Clocks and lights on TVs and stereos constantly use power unless unplugged. Power strips make it much easier to accomplish this but appliances and electronics can also simply be unplugged when not in use. The basic rule of thumb is: if you can see it on (standby light, clock) or feel it on (heat coming from wall chargers), then it's considered a "phantom power user" because it is constantly drawing electricity, even when turned "off".

Lighting

Replace incandescent light bulbs with compact fluorescents. Each bulb can save 100 lbs. of carbon dioxide a year and will cut your lighting costs. Use them in almost any fixture and experience the improved quality of light. Purchase at any hardware or lighting store.

Turn off lights when you leave a room to save money and cut emissions.

Use task lighting instead of lighting an entire room.

Take advantage of natural light during the daytime.

Put outdoor lights on a **motion sensor** or use **solar lights**.



For more Information

Tips for sealing air leaks (US Dept of Energy). http://www1.eere.energy.gov/consumer/tips/air_leaks.html

Find more information on caulking and weatherstripping at: Tips for sealing air leaks (US Dept of Energy). http://www1.eere.energy.gov/consumer/tips/air_leaks.html

Energy-Efficient Water Heating. (US Dept of Energy) Instructions on how to lower temperature, install an insulating blanket, timer, and more. http://www.eere.energy.gov/consumer/your_home/water_heating/index.cfm/mytopic=13030

Home Energy Magazine's website evaluates the energy efficiency of your refrigerator model. Their website can be accessed at: <http://www.homeenergy.org/consumerinfo/refrigeration2/refmods.php>

The Energy Star program offers an informative website on energy-efficient appliances, home improvement and commercial and residential building that can be found at: <http://www.energystar.gov/>

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New Mexico Energy Efficiency Strategy: Policy Options.
Howard Geller, et al. October 20, 2008

Source of information: Climate Master Handbook, Institute for
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