Energy Facts

Energy Consumption and the United States:

- Though accounting for only 5 percent of the world's population, Americans consume 26 percent of the world's energy. *(American Almanac)*
- Residential appliances, including heating and cooling equipment and water heaters, consume 90% of all energy used in the U.S. residential sector.
- The United States spends about $440 billion annually for energy. Energy costs U.S. consumers $200 billion and U.S. manufacturers $100 billion annually.
- The United States imports more than seven million barrels of oil per day.
- Only 7.5 percent of total U.S. energy consumption came from renewable sources in 1998. Of that total, 94 percent was from hydropower and biomass (trash and wood incinerators). *(U.S. Energy Information Administration)*
- Just by using the "off the shelf" energy-efficient technologies available today, we could cut the cost of heating, cooling, and lighting our homes and workplaces by up to 80%. *(U.S. Department of Energy and Maryland Energy Administration)*

Energy Consumption and New York State:

- Residential net energy use accounts for 27% of total energy demand in New York, compared to 17% nationally
- In 2006, New York's reliance on foreign oil as a proportion of total petroleum was 89% while the United States, reliance on foreign oil was 66%
- New York is the fourth largest energy consuming state, but also the second most energy efficient state on a per-capita basis, behind only Rhode Island.

How has the new Stimulus bill affected the tax credits for energy efficient home improvements?

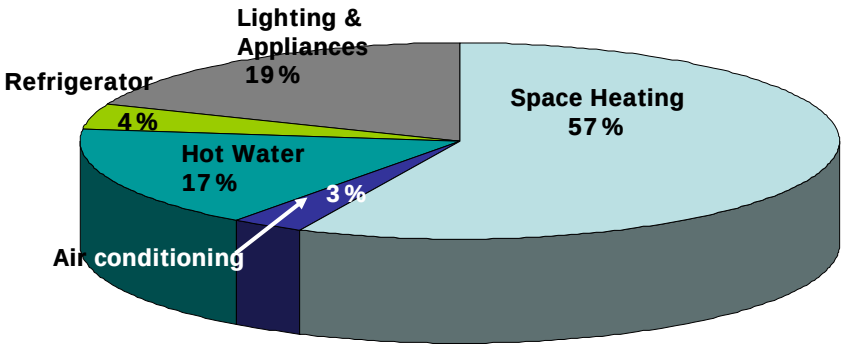
On February 17, 2009 President Obama signed a stimulus bill (The American Recovery and Reinvestment Act of 2009) that made some significant changes to the energy efficiency tax credits. The highlights are:

- The tax credits that were previously effective for 2009, have been extended to 2010 as well.
- The tax credit has been raised from 10% to 30%.
- The tax credits that were a specific dollar amount (example $300 for a CAC) have been converted to 30% of the cost
- The maximum credit has been raised from $500 to $1500 for the two years (2009-2010). However, some improvements such as geothermal heat pumps, solar water heaters, and solar panels are not subject to the $1,500 maximum.
- The $200 cap on windows has been removed, but the efficiency requirement of the windows has increased significantly. In fact, some ENERGY STAR labeled windows may not be efficient enough to qualify.

For specific details visit: http://www.energystar.gov/index.cfm?c=products.pr_tax_credits

Home Heating Facts

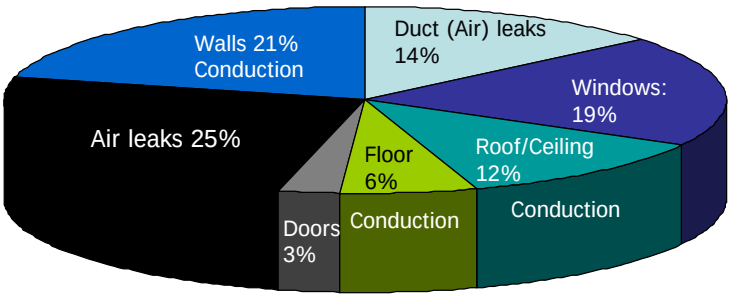
Home Energy Use In Mid-Atlantic States



Typical family spends $2267/year on home utility bills

Source:
Residential Energy Consumption Survey
Energy Information Administration

How Heat is Lost in Typical House



Prioritized list of most effective strategies for reducing home heating costs

That is, reducing air leakage is typically the least expensive improvement to make and has the highest impact in terms of reducing heating bills.

- Reduce air leakage into/out of the house1
- Increase Thermal Insulation Levels2
- Update Heating System3
  - Have Furnace Ducts Sealed
  - Duct leaks responsible for up to 14% heating system losses (houses heated with a furnace)

Do you know what type heating system your home has?

Most homes are heated with hot air or hot water. A few older homes are heated with steam.

Furnaces heat air and distribute this air throughout the house via a series of ducts connected to registers in each room of the house

Boilers heat water and distribute that hot water via a series of pipes connected to baseboard heat emitters located in each room of the house. Hot water heating systems are often called ***hydronic*** heating systems

Steam Boilers heat water to the point of becoming steam and that steam is distributed via a piping system to large, heavy radiators located throughout the house.

Furnaces and boilers typically use fossil fuel as the heat source. Natural gas, liquefied petroleum gas (LPG)-also often called propane, and fuel oil are the most common fuels used.

Resources on World Wide Web for Weatherizing your Home:

A Do-It-Yourself Guide To ENERGY STAR Home Sealing
(Sealing air leaks and adding attic Insulation) Free pdf file available from U.S. EPA at:
http://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing

ENERGY STAR Home Energy Yardstick
Use the ENERGY STAR Home Energy Yardstick to compare your home's energy efficiency to similar homes across the country and get recommendations for energy-saving home improvements from ENERGY STAR. Go to:
http://www.energystar.gov/index.cfm?fuseaction=home_energy_yardstick.showStep2

Energy Federation
This is an internet site that is essentially a one-stop-shop for an array of resource conservation-related products that are typically difficult to find through conventional distributors and retailers. All types of weatherization products including; weather striping, caulks, spray sealants, energy efficient lighting, exhaust fans etc.
www.energyfederation.org

I hear that stores will only be allowed to sell CFLs after 2012. Is that true?

- The Energy Independence and Security Act of 2007 (the "Energy Bill"), signed by the President on December 18, 2007 requires all light bulbs use 30% less energy than today's incandescent bulbs by 2012 to 2014. The phase-out will start with 100-watt bulbs in January 2012 and end with 40-watt bulbs in January 2014. By 2020, a Tier 2 would become effective which requires all bulbs to be at least 70% more efficient (effectively equal to today's CFLs).
- It's not entirely correct to say "CFLs will be required" or "incandescents will be phased out" because the standards set by the bill are technology neutral, and by 2012, a next generation of incandescent bulbs could satisfy the 30% increased efficiency. There are also other lighting technologies, such as halogen and LEDs that will be able to meet the new requirements and are expected to both increase in performance and drop in cost over the next few years.
- Lighting is approximately 20% of the average household's energy bill. The National Resources Defense Council estimates this law could cut our nation's electric bill by more than $10 billion a year.

There are many types of incandescent bulbs that are exempt from this law:
--any kind of specialty light (ie. bulb in refrigerator)
--reflector bulbs
--3-way bulbs
--candelabras
--globes
--shatter resistant
--vibration service
--rough service
--colored bulbs (i.e. "party bulbs")
--bug lights
--plant lights
*The law applies to the sale of bulbs, not the use of existing stock of bulbs

Some information on Americans use of lighting in their homes

The following information was obtained from the Energy Information Administration (EIA)via a Residential Energy Consumption Survey (RECS) conducted under the general direction of W. Calvin Kilgore, Director of the Office of Energy Markets and End Use. If you would like to see the survey go to: http://www.eia.doe.gov/emeu/lighting/contents.html

Lighting Usage and Costs

In 1993, the average household consumed 940 kWh of electricity for lighting. Electricity consumption for lighting increases with increasing income, number of household members, and number of rooms in the housing units.. Consumption also varies with Census region. Households in the South and Midwest consume the most electricity for lighting. Perhaps this is because electricity costs less in those Census regions.

Dominance of Incandescent Lights

The majority of light bulbs in residential households are incandescent. According to the RECS Survey, 453 million lights out of a total of 523 million used one or more hours per day are incandescent (87 percent). The Lighting Supplement also estimates that 87 percent of residential lights used 15 minutes or more per day are incandescent.

Compact Fluorescent Lights

According to the RECS Survey, compact fluorescent lights are used in 8.9 percent of residential households, although 49 percent of the homes reported knowing about them. The percentage of households using compact fluorescent lights varies slightly by Census region, with households in the Northeast being somewhat more likely to use them, presumably due to higher electricity prices. The Lighting Supplement data show that less than one percent of all lights used 15 minutes or more per day are compact fluorescent.

Outdoor Lighting

About two-thirds of U.S. homes use outdoor lighting. 76 percent of single-family homes use outdoor lighting and 69 percent of mobile homes. 59 percent of small apartment buildings (2 to 4 units) use outdoor lighting.

In approximately half of the households that use outdoor lights, the wattage of all outdoor lights combined for each household is below 150 watts. We may assume it is over 150 watts for the other half. Lights are turned on for the evening in 41 percent of the homes, while other homes using outdoor lights leave them turned on all night or have them controlled in some way.

Replacing one incandescent light bulb with an energy-saving compact fluorescent bulb means 1,000 pounds less carbon dioxide is emitted to the atmosphere and $67 dollars is saved on energy costs over the bulb's lifetime. (U.S. Environmental Protection Agency and Alliance to Save Energy)