



 ***Xcel Energy***<sup>®</sup>



# How to Lower Your Energy Bill and Be More Comfortable This Winter

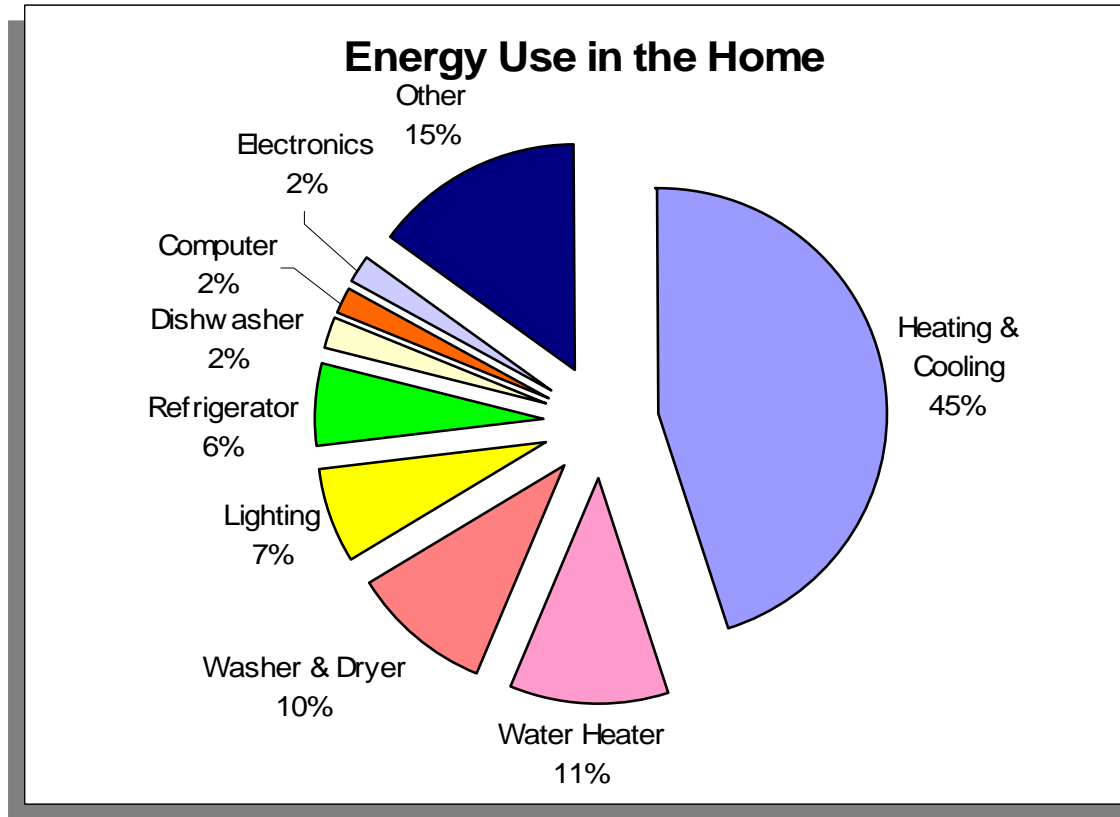
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*This presentation is for information only. Every reasonable effort has been made to ensure the accuracy of the information. However, individual programs are subject to regulation and may change, and individual results will vary.*



# Energy Use in the Home

*Heating and cooling comprises nearly half of the average household's energy costs*



# Efficiency and Conservation

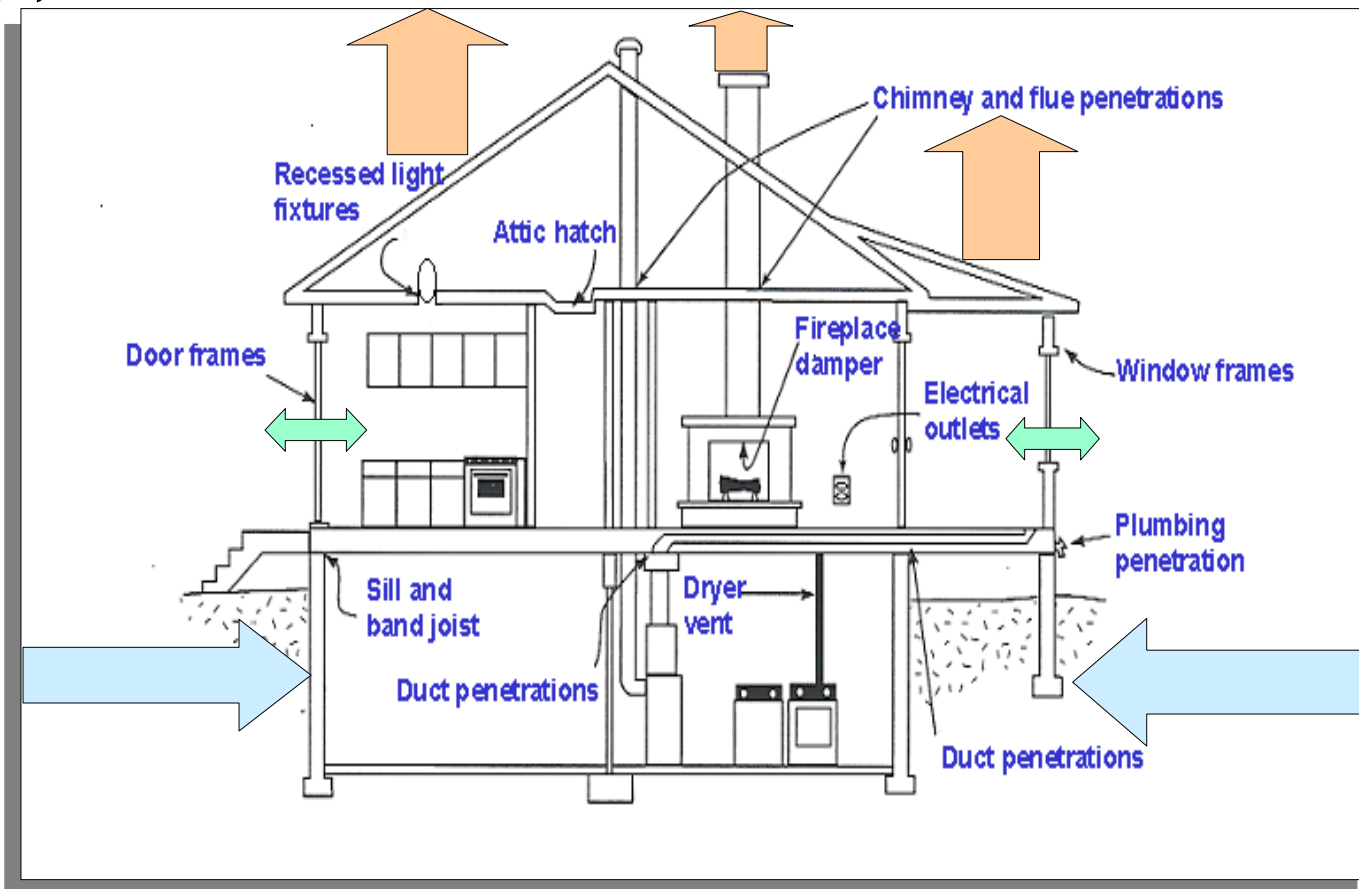
*There are several areas in your home where you can make adjustments to reduce your energy bill and increase comfort*



- Air Leaks and Insulation
- Heating and Cooling
- Water Heating
- Lighting
- Appliances

# Where Your Home Leaks

*Air enters at the lower levels and exits at the top, this is known as the Stack Effect*

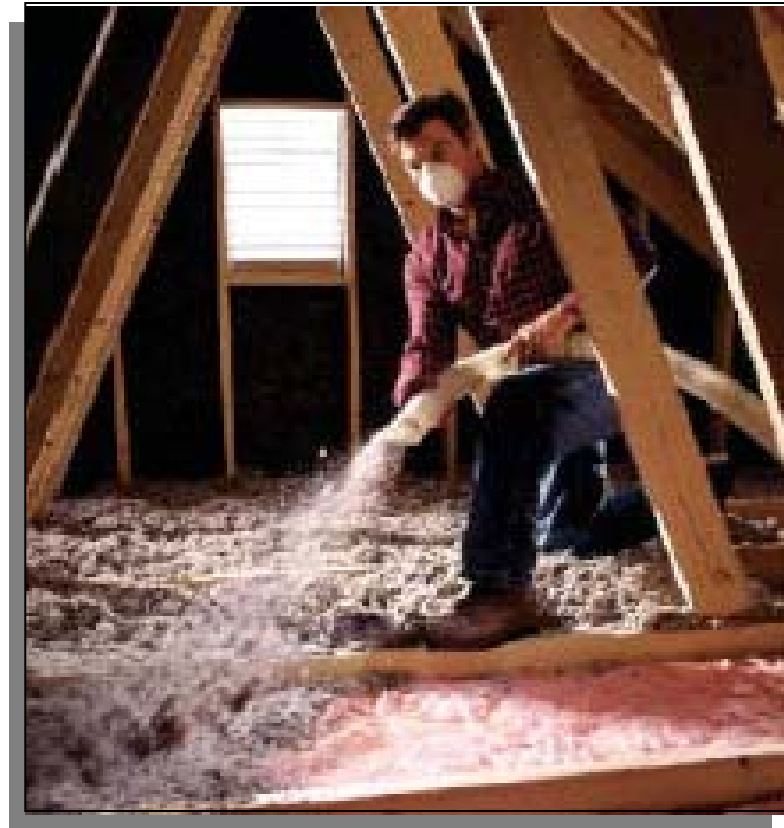




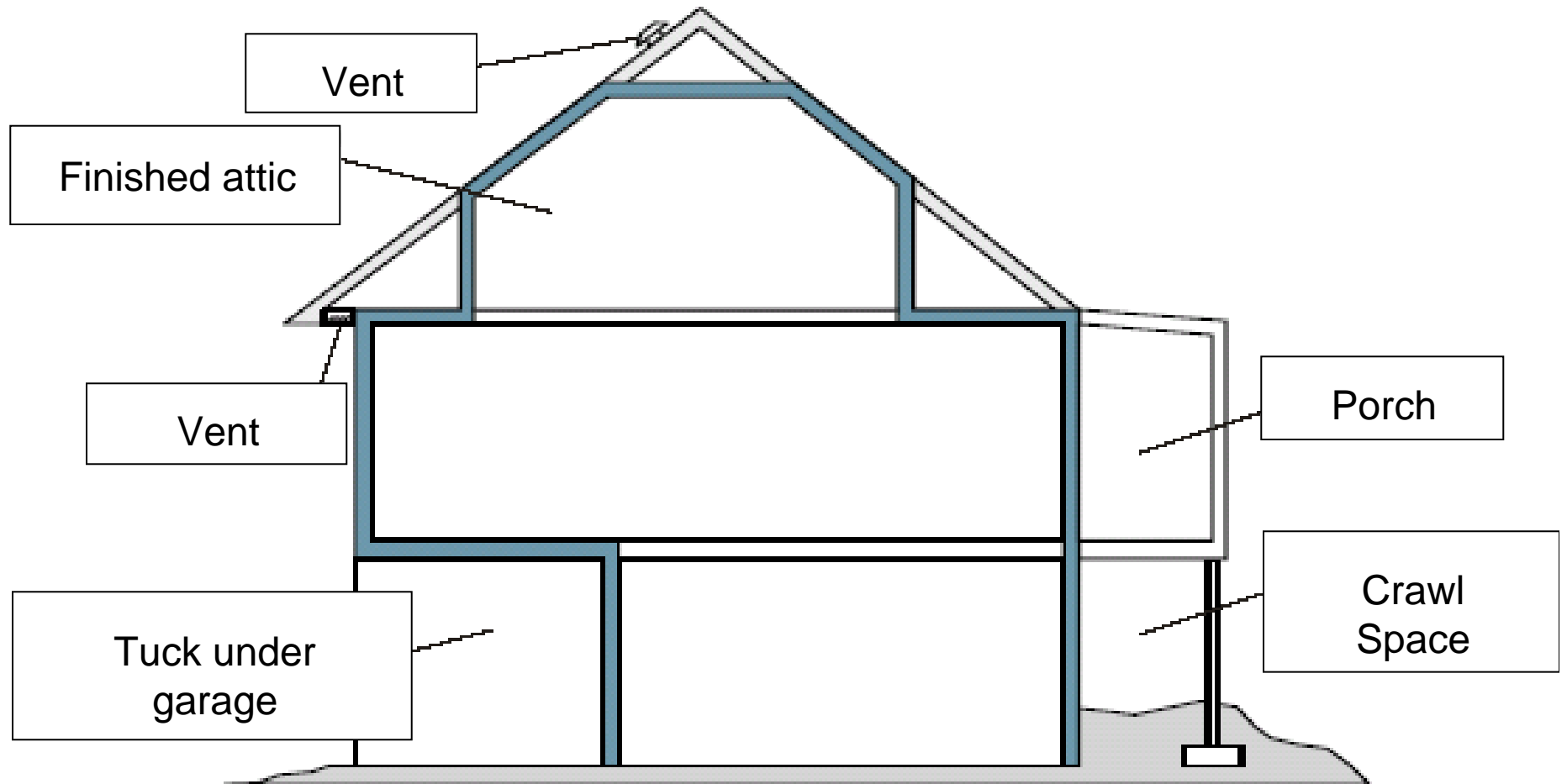
# Insulation

*Properly insulate to maintain your home's warmth*

- Check insulation in your attic (min. R-38, 11" cellulose, 16" fiberglass blown, 12" fiberglass batt)
- Check for insulation in your walls
- Insulate your basement and your garage (between garage and living space)



# Where to Insulate





# Insulate, Insulate, Insulate!

*How Much Do I Need ?*

Attic	at least R-38, can go R-50
Walls	to at least R-19 or 13 (depending on wall thickness)
Kneewalls, Air and/or Radiant barrier	to R-13 (with air barrier on attic side)
Basements	to at least R-11
Crawlspace	to at least R-11

\*R-value = Resistance to conductive heat loss. The higher the R-value the better.

# Attic Insulation

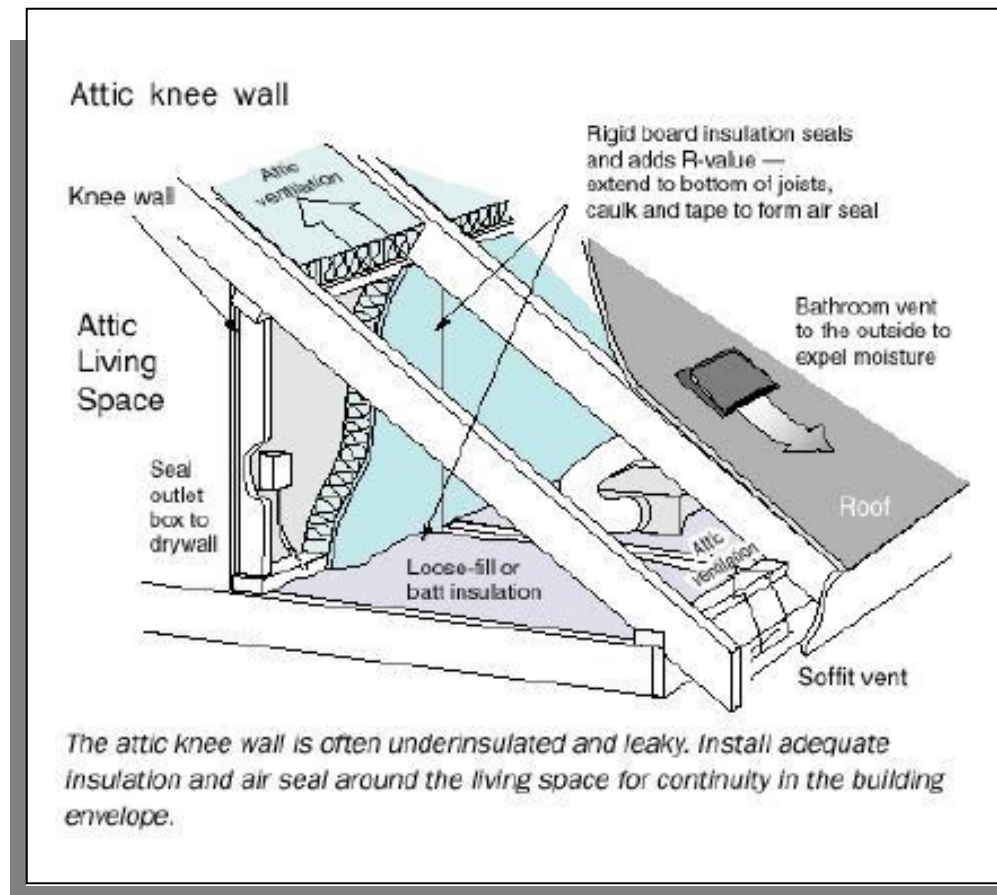
Blown-in or Batts,  
Fiberglass or Cellulose



# Walls And Knee Walls

*The attic knee wall is often under-insulated and leaky*

- Blown-in or batts
- Fiberglass
- Cellulose
- Fire-rated air and/or radiant barrier



# Tuck-Under Garage

*Rooms over tuck-under garage are typically under-insulated and have inadequate ventilation.*



- Make sure floor/ceiling is insulated properly.
- Air ducts may be in the wrong place or under-insulated.
- Cooling systems have to compete with hot car engines. Let your car cool down in the driveway.

# Basements

*Basements can be insulated with batts or vinyl facing insulation*



**Interior basement insulation with unfaced batts between framing.**



**Interior basement insulation with vinyl facing.**

# Crawlspaces

*Crawlspaces should be insulated the same as basement walls*



# Heating

*Small changes can lead to big savings*

- Use a programmable thermostat
- Set thermostat to the lowest temperature you find comfortable, lower at night and periods you're away
- 1 degree = 1% lower energy bill per 8 hour set back; 3% per permanent set back
- Use exhaust fans only as needed
- Change your furnace filter monthly
- Seal and insulate air ducts
- Keep furnace maintained



# Time For a New Furnace?

- Make sure the rest of your house is well sealed & insulated first
- Have your contractor size the equipment properly
- Furnaces need combustion air
- Go for the highest efficiency you can afford - Minimum is ~80%, high efficiency is 90+%
- Get several bids, and be sure your contractor is licensed & gets a permit

\*BTU's = British Thermal Units. Measurement of the amount of heat that a furnace produces.

\*AFUE = Annual Fuel Utilization Efficiency. Measure of a furnace's efficiency.







# Heating Equipment

*Keep it running and in good shape*

- Annual Safety Inspection, *including* a Carbon Monoxide test
- Keep blower(s) cleaned
- Controls adjusted for optimum operation
- Keep filters clean (forced air unit) – Check monthly, clean/change often
- Ductwork should be well sealed & insulated
- Boiler? Keep water lines purged, radiators clear
- Keep your thermostat set to the lowest temperature you find comfortable
- **NEVER USE UNVENTED GAS SPACE HEATERS**

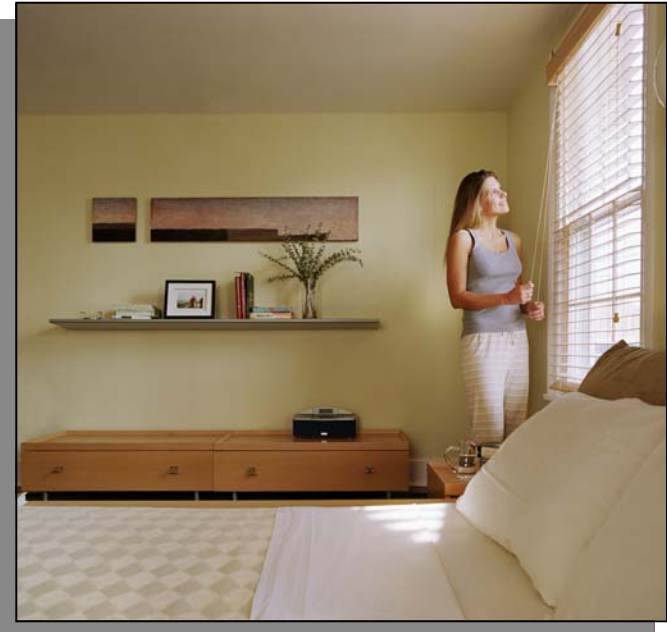
# Efficient Water Heating

*Save big on water heating costs by reducing heat loss and hot water usage*



- Set water temperature to 120 degrees
- Repair leaky faucets
- Insulate water heater and pipes
- Use low-flow shower heads and faucets
- Maintain your water heater
- Use vacation setting when out of town
- On-demand “tankless” water heaters are more efficient

# Windows



*Good windows will increase your comfort*

- Return on investment may be long term
- Help reduce the size of the furnace and (even more so) the size of the air conditioner needed
- Buy the best quality windows you can afford (vinyl or wood frame, double pane, low-e glass)
- Get several bids, and be sure your contractor is licensed & gets a permit
- Installing storm windows or even seasonal “window films” can help tremendously

# Window Information

		 EPA ENERGY STAR qualified in All Climate Zones
 National Fenestration Rating Council	 6110 HORIZ SLIDER VINYL 9-16" GAP LOE.04	AIR FILL GRIDS
<b>ENERGY PERFORMANCE RATINGS</b>		
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient	
<b>0.35</b>	<b>0.31</b>	
<b>ADDITIONAL PERFORMANCE RATINGS</b>		
Visible Transmittance		
<b>0.52</b>		
<small>Manufacturer stipulates that these ratings conform to applicable NFRCC procedures for determining whole product performance. NFRCC ratings are determined for a fixed set of environmental conditions and a specific product size. Consult manufacturer's literature for other product performance information. www.nfrc.com</small>		
<small>This fenestration product has been certified by the manufacturer to meet the air infiltration requirements of Section 116(a)1, 1992 California Energy Standards</small>		
<b>SOUND RATING</b>	<b>28</b>	
Tested to ASTM-E90		
287515.006/L2	751F/0527/0514-35	

- New windows have a sticker from the National Fenestration Rating Council (NFRC), a consumer's guide to buying windows.
- It tells you:
  - U-Value
  - Solar Heat Gain Coefficient (SHGC)
  - If it's a low-e window
- The lower the U-Value, the better insulated the window. U-Value is the inverse of R-Value

# Appliances and Electronics



*Look for appliances that are Energy Star Rated*

- Clean refrigerator and oven door seals
- Use the power management features for your computer and monitor
- Keep your appliances cleaned and maintained
- Consider replacing refrigerators or if you can eliminate one?



# Lighting

## *Turn down your lighting costs*

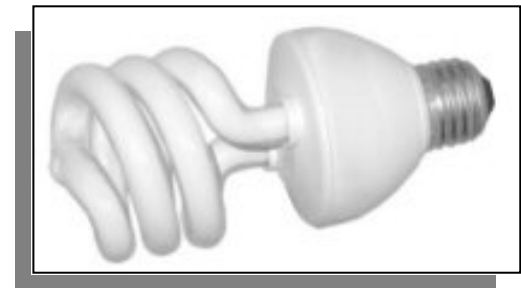
- Turn off lights when not in use
- Install dimmers and motion sensors
- Install three way bulbs where possible because they provide light where needed instead of over-lighting with a single high wattage bulb
- For outdoor lighting, consider motion-detector and photocells for highest efficiency
- Utilize compact fluorescents



# Compact Fluorescents

*If all 110 million households in America replaced just one 60-watt bulb with a CFL, the energy saved would power a city of 1.5 million people*

- One CFL will outlast 10 regular bulbs (10,000 hours vs. 750 hours)
- Uses up to 75 percent less energy and produces up to 90 percent less heat
- Available for purchase at [xcelenergy.com/homelighting](http://xcelenergy.com/homelighting)



# Energy Conservation

## What's in it for Me?

*Every house is unique so get an energy audit or rating to find out your best investment option*

<b>Energy Saving Improvements</b>	<b>Typical Payback</b>
Ceiling insulation	3-7 years
Wall insulation	6-12 years
Floor insulation	2-5 years
Seal large air leaks	1-2 years
Seal small air leaks	1-2 years
Seal ducts	1-2 years
Setback thermostat	1-2 years
Energy-saving showerhead	1-3 years
Insulate water heater	1-2 years

Source: Guide to Home Energy Savings – Xcel Energy 2005



# How You Can Help

- Make energy efficient changes to your home that will lower your energy bills and help conserve our natural resources.
- Contribute to Energy Outreach Colorado by checking-off a donation on your Xcel Energy bill.
- If you need help paying your energy bills, call 1-866-HEAT-HELP. 25

