



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Office of External Affairs



# **WATT's Up?**

## **What You Can Do To Reduce Your Home Energy Costs**

**Nov. 14, 2012**

**Dial-in number for Audio: 1-877-668-4493**

**Access code: 640 973 212**

**WebEx Technical Support: 866-229-3239**

# WATT's Up Webinar: Speakers

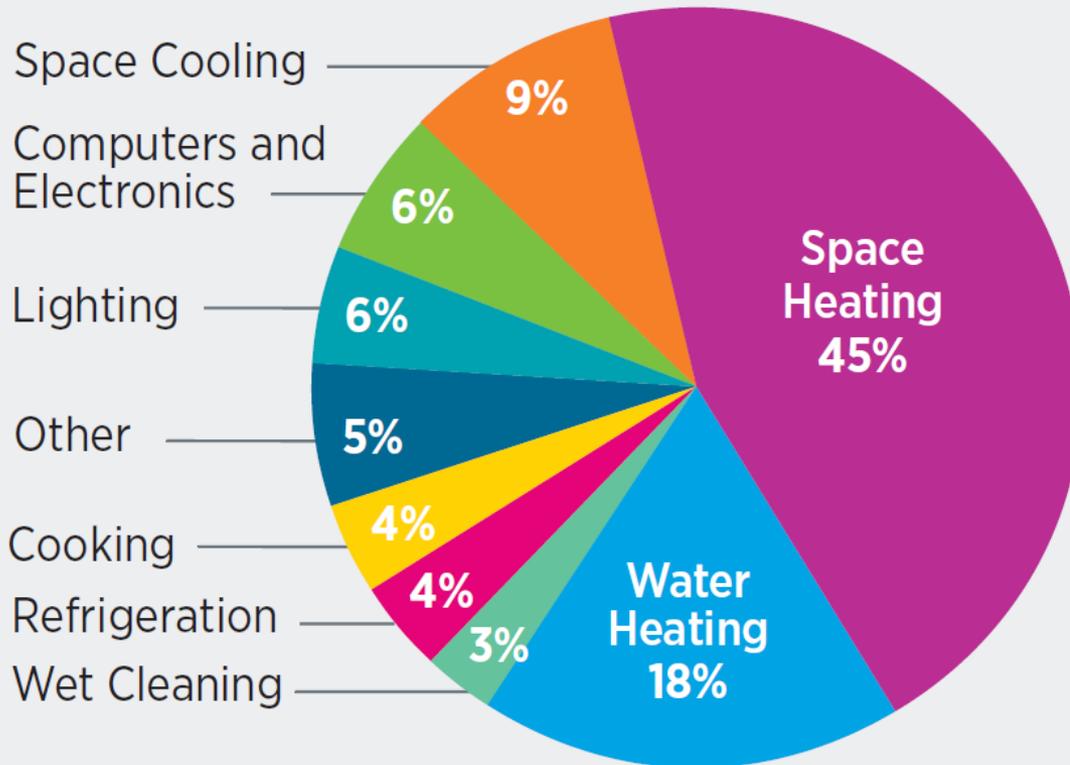
## **Libby Dodson**

DEP's Office of Pollution Prevention and  
Energy Assistance

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Energy Assistance

# Residential Energy Usage



## How We Use Energy in Our Homes

Heating accounts for the biggest portion of your utility bills. *Source: 2010 Buildings Energy Data Book, Table 2.1.1 Residential Primary Energy Consumption, by Year and Fuel Type.*

”

# Residential Energy Conservation



**Some Tips and Ideas  
to Save Money  
this Winter**

# Whole-House Approach

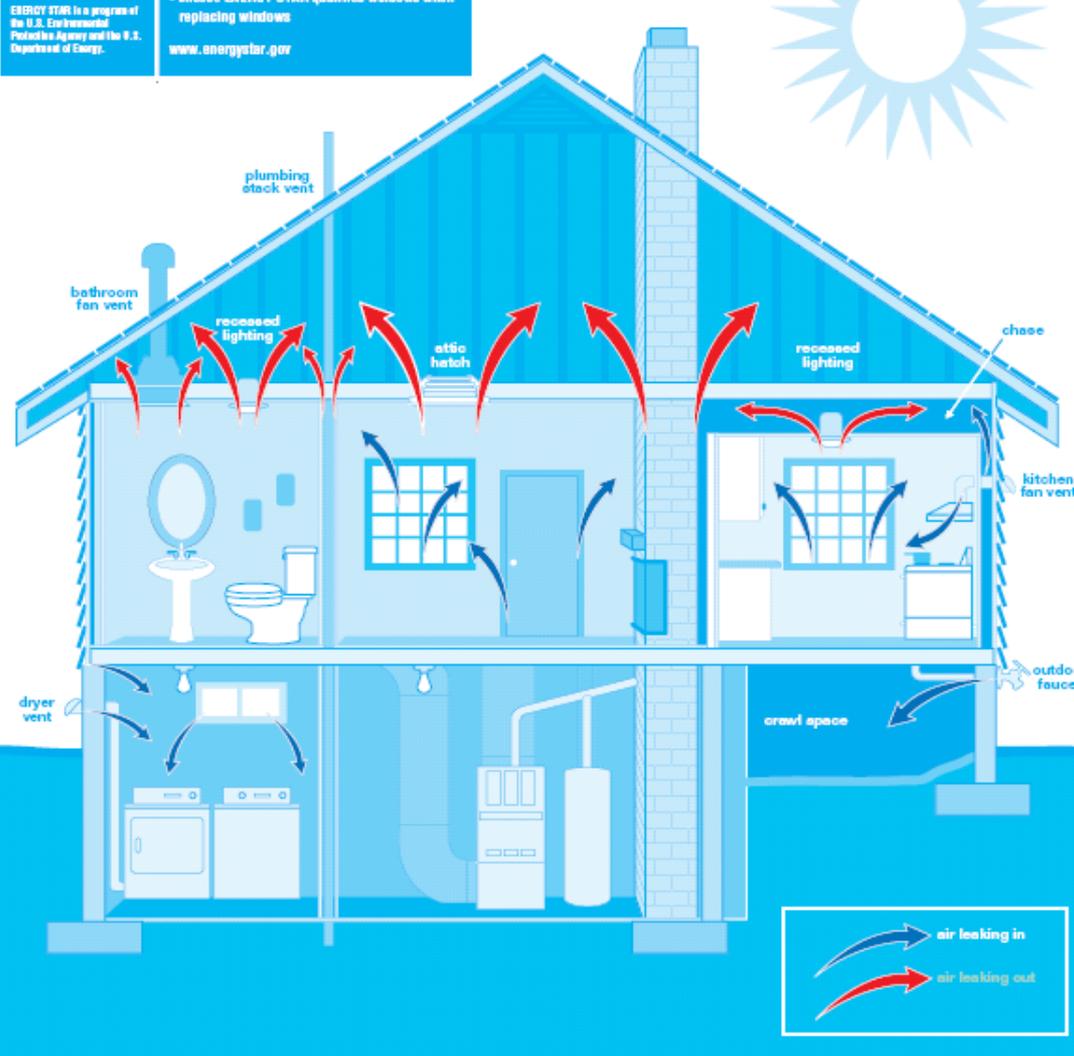
Exhaust fans in using the "backdraft" and increase your living space:

- the ceiling
- exterior walls
- windows
- floors

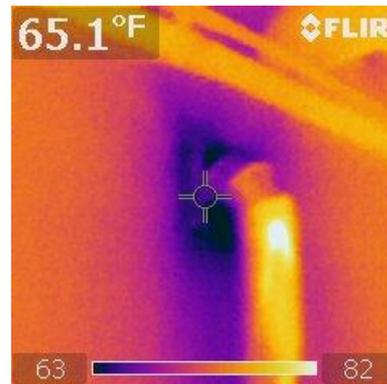
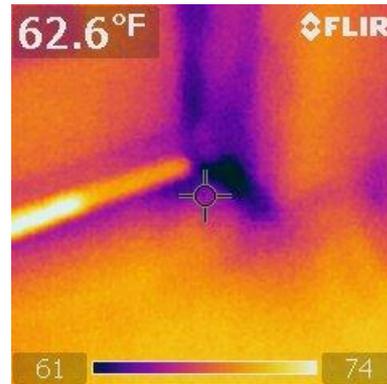
To save on your heating and cooling bill and increase the comfort of your home:

- add insulation
- seal air leaks
- choose ENERGY STAR qualified windows when replacing windows

[www.energystar.gov](http://www.energystar.gov)



# Energy Audits



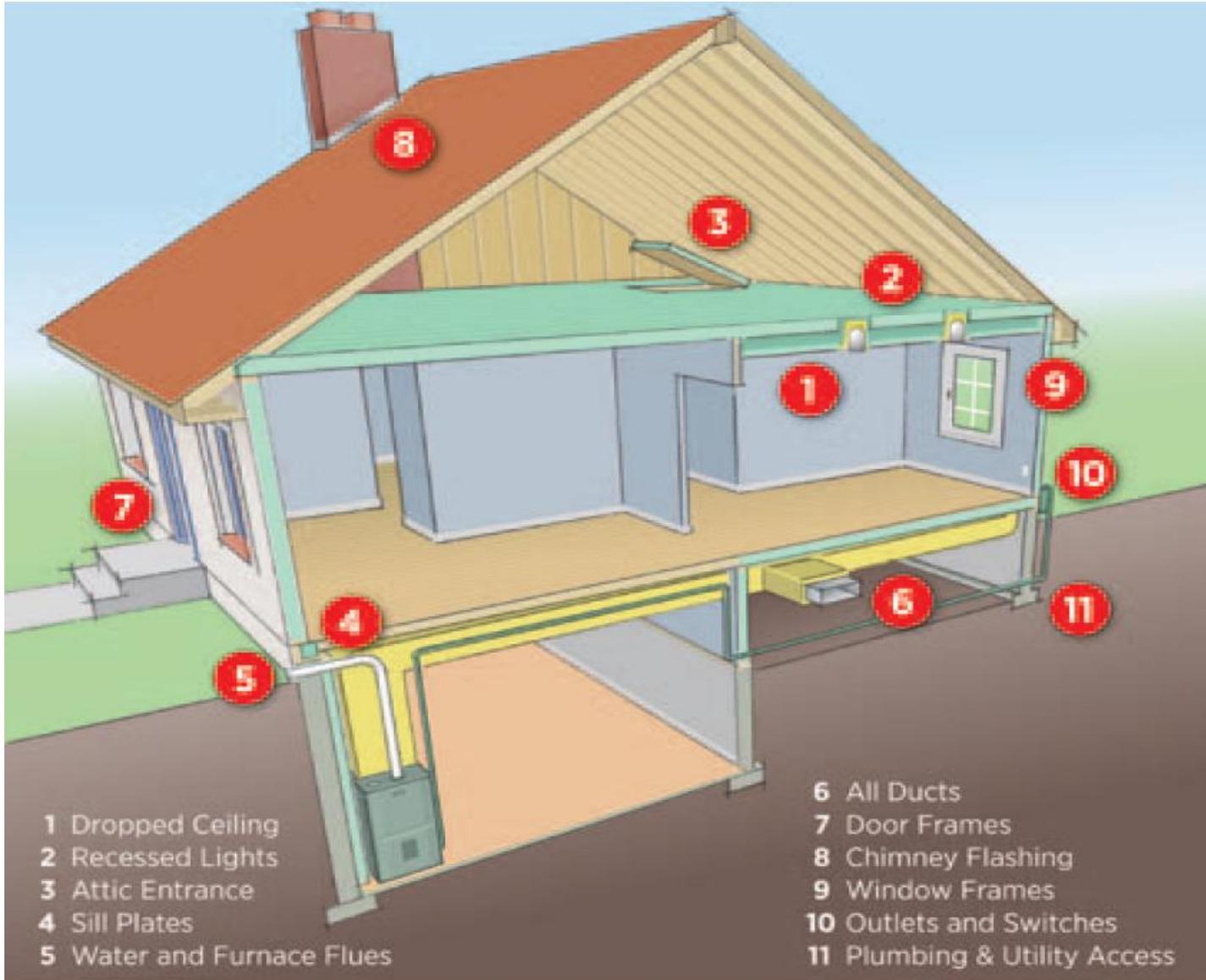
**Infrared camera  
or thermal  
imaging**

# Energy Audits



## Blower door test

# Reducing Air Infiltration



# Reducing Air Infiltration



## Exterior and Interior Caulking

- Remove old cracked caulking
- Scrub the area and let dry
- Apply new caulking on inside and outside of doors and windows
- \$5 to \$7 per tube



# Reducing Air Infiltration

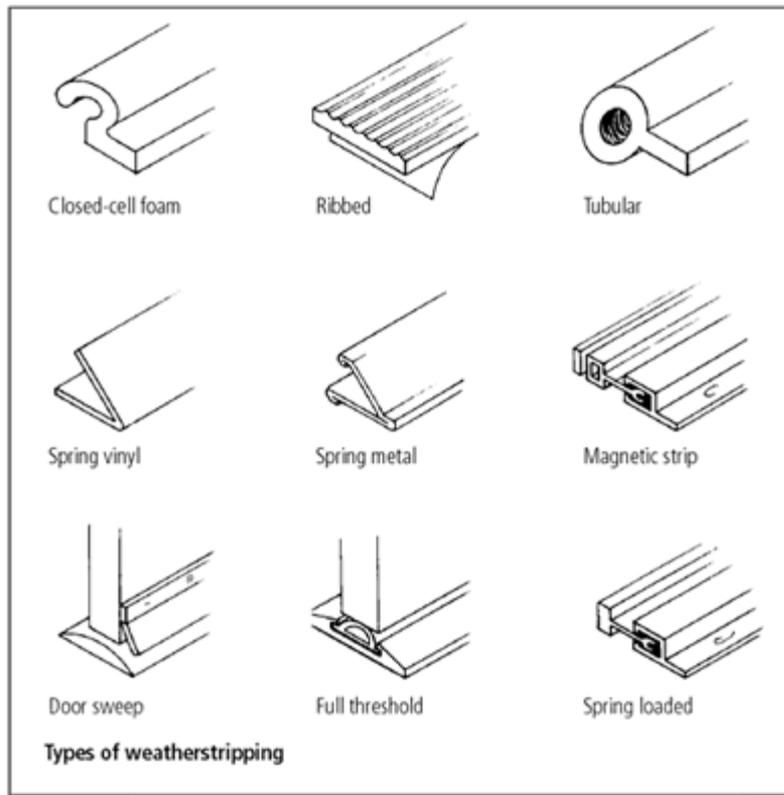
## Spray Foam



- Fill larger cracks and gaps with foam inside and outside your home
- Dried foam trims easily
- \$4 to \$6 per 16 oz. can

# Reducing Air Infiltration

## Weatherstripping Exterior Doors



# Reducing Air Infiltration



## Window Solutions

- For homes without storm windows, install plastic window coverings – inside or out
- Or, install storm windows



# Reducing Air Infiltration

## Attic Door



- Make sure the door or hatch to the attic seals well and closes tightly
- A gap around this door can leak worse than others due to stack effect
- Sealing it will slow or prevent outside air from coming in at other cracks

# Reducing Air Infiltration

## Wall Plate Gaskets



- Install foam gaskets behind wall plates
- Exterior walls especially; maybe all on old homes
  - \$2 to \$3 per dozen
  - Will reduce infiltration of cold air

# Reducing Air Infiltration

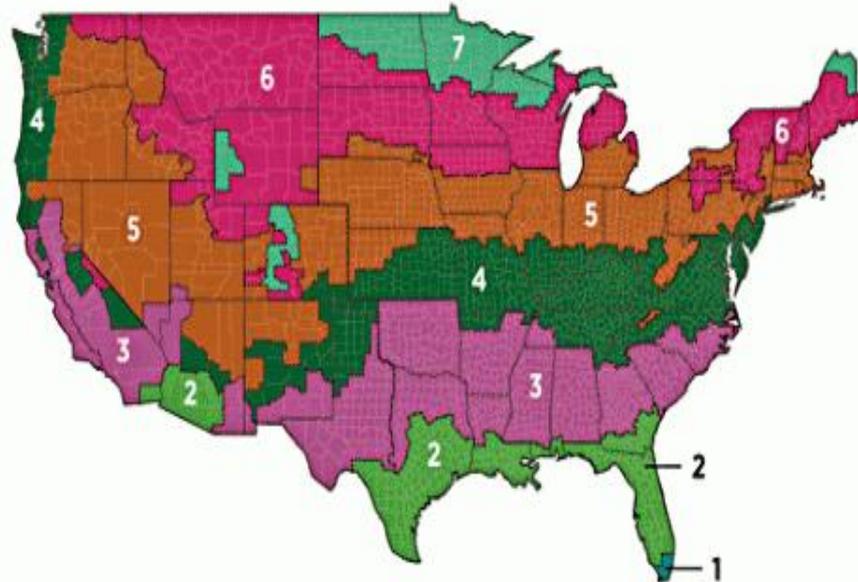


## Household Exhaust Fans

- Don't run bath or stove fans any longer than necessary, they exhaust heated air from the house
- Make sure bath moisture is exhausted
- Close the bathroom door or open a window, it only displaces bathroom air

# Insulation Recommendations

U.S. Department of Energy Recommended\*  
Total R-Values for New Wood-Framed Houses



# Insulation Recommendations

## HOW MUCH INSULATION DOES MY HOME NEED?

For insulation recommendations tailored to your home, visit the [DOE Zip Code Insulation Calculator](#).

Zone	Gas	Heat Pump	Fuel Oil	Electric	Attic	Cathedral Ceiling	Cavity	Insulation Sheathing	Floor
1	•	•	•	•	R30 to R49	R22 to R38	R13 to R15	None	R13
2	•	•	•		R30 to R60	R22 to R38	R13 to R15	None	R13
				•	R30 to R60	R22 to R38	R13 to R15	None	R19 - R25
3	•	•	•		R30 to R60	R22 to R38	R13 to R15	None	R25
				•	R30 to R60	R22 to R38	R13 to R15	R2.5 to R5	R25
4	•	•	•		R38 to R60	R30 to R38	R13 to R15	R2.5 to R6	R25 - R30
				•	R38 to R60	R30 to R38	R13 to R15	R5 to R6	R25 - R30
5	•	•	•		R38 to R60	R30 to R38	R13 to R15	R2.5 to R6	R25 - R30
				•	R38 to R60	R30 to R60	R13 to R21	R5 to R6	R25 - R30
6	•	•	•	•	R49 to R60	R30 to R60	R13 to R21	R5 to R6	R25 - R30
7	•	•	•	•	R49 to R60	R30 to R60	R13 to R21	R5 to R6	R25 - R30
8	•	•	•	•	R49 to R60	R30 to R60	R13 to R21	R5 to R6	R25 - R30

# Thermostat Setbacks

## Set back the thermostat

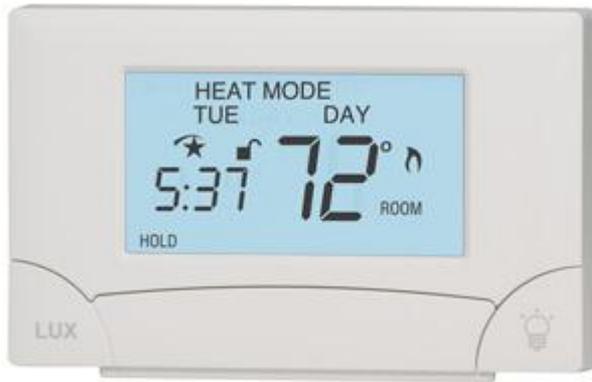
- While you're away
- While you sleep
- Unless there are health issues



**Each degree lowered can  
save up to 3 percent on  
heating**

# Programmable Thermostats

## Replace manual with programmable thermostat

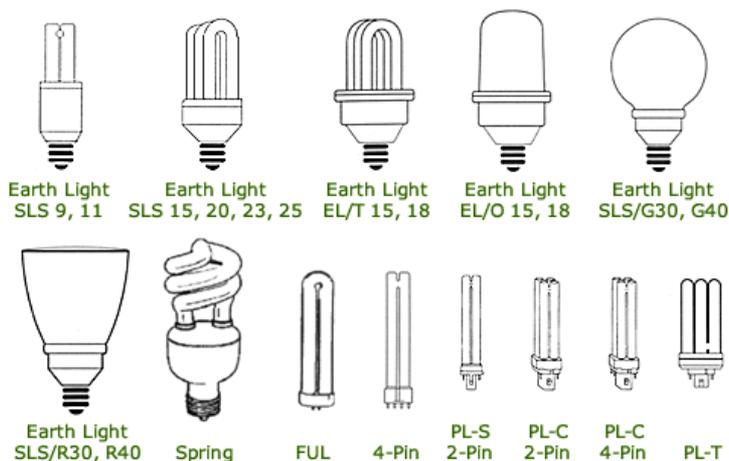


- Costs \$20 to \$70
- Auto temp setback for overnight
- Setbacks during “away” hours
- ALWAYS pays for itself within months

# Energy Efficiency Lighting

## Replace high use incandescent bulbs with compact fluorescent lamps

- Consumes 75 percent less energy than incandescent bulbs
- Last up to 10 times longer than incandescents

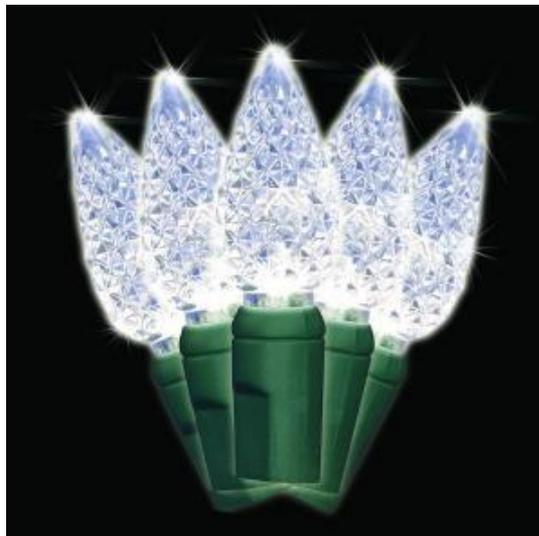


# Energy Efficiency Lighting

## Begin using LEDs (light-emitting diodes)

- Use less energy than compact fluorescents
- Last up to 25 times longer than incandescents

*\* Be sure to purchase LED light strings for the upcoming holiday season!*



# No-Cost Energy Savers

## Water Heater Setting

- Lower the water heater thermostat to the lowest level that meets your hot water needs
- 10 degree drop saves 5 percent on water heating costs
- Check the hot water temperature – 120 degrees should work
- Check the dishwasher manual for temperature recommendation



# No-Cost Energy Savers

## Refrigerators



- Check the temperature settings
- Too low a setting uses extra energy
- Freezer section should be 0 to 5 degrees
- Refrigerated section should be 35 to 40 degrees
- Clean the condenser coils in the back
- Clean the door gaskets to ensure good seal

# No-Cost Energy Savers

## Computers



- Make sure Energy Management software is installed and operating
- Set the software to make the PC hibernate or sleep after 20 to 30 minutes.
- Turn the PC power off if not used for more than a day

# No-Cost Energy Savers

## Fireplaces



- Avoid fireplaces that don't use outside air for fueling the fire
- Standard fireplaces remove warm air from the home
- When not in use, tightly close the flue draft.

# Low-Cost Energy Savers

## Dripping Faucets



- Replace gaskets or seals, especially hot water
- Costs \$2 to \$5
- Leaks can cost up to \$4 per month!

# Low-Cost Energy Savers

## Showerheads



- Install a low flow shower head
- A family could save more than 370 kilowatt hours of electricity annually, enough to power a house for 13 days



# Low-Cost Energy Savers

## HVAC Air Filters



- Replace air filters regularly
- Plugged filters require more fan energy
- Slower air flow makes furnace run longer
  - \$4 to \$8 per filter
  - Will clean air using less energy

# Low-Cost Energy Savers

## Furnace



- Have furnace burner serviced and tuned
- Costs \$50 to \$100
- Almost always a 10 percent fuel reduction
- Not the lowest cost – but big payback

# Weatherization Program

- The Weatherization Program was created to train homeowners on ways to reduce energy use by having trained professionals conduct energy audits
- Residents can make upgrades or repairs based on the recommendations of the energy audit
- The program is funded by state and federal government
- There are several county-based weatherization teams

# Weatherization Program

## What are the Benefits?

- Average savings of \$250 a year
- Reduced dependence on foreign oil
- Reduces pollution

## Who is Eligible?

- Homeowners or renters
- Family income guidelines
  - One person \$14,355
  - Two persons \$19,245
  - Three persons \$34,135
  - Four persons \$29,025
  - \$4,890 per dependent thereafter

# Weatherization Program

## Application Process

To apply for this program, please contact your local administering agency at the following location:

<http://www.newpa.com/community/energy-conservation-and-weatherization>

## Program Contact Information

For more information, please visit the Pennsylvania Weatherization Assistance Program website at:

<http://www.newpa.com/community/energy-conservation-and-weatherization>

# Low-Income Home Energy Assistance Program (LIHEAP)

- LIHEAP is a financial assistance program created to offset the costs of home heating
- The program is facilitated by the Pennsylvania Department of Public Welfare and funded by the Commonwealth of Pennsylvania
- There is a LIHEAP office in every county

## Who is Eligible?

- Homeowners or renters
- Household income guidelines
  - One person           \$12,920
  - Two persons         \$17,321
  - Three persons      \$21,722
  - \$4401 for each additional dependent thereafter



# Electric Choice



- In Pennsylvania, you can choose which company supplies your electricity - shopping for the “generation” portion of your electric bill
- Your utility will always deliver the electricity, respond to emergencies and provide a bill with your new supplier’s charges

# Electric Choice



- Saving just half a cent per kilowatt hour (kWh) could translate into material savings, for example, if you use 1000 kWh per month, you would save \$60 per year
- To learn more and compare rates, log onto [www.PAPowerSwitch.com](http://www.PAPowerSwitch.com) – the PUC’s one-stop shop for electric shopping

# Keystone Home Energy Loan Program (HELP®)

- Keystone HELP is a loan program designed to finance home improvements that increase energy efficiency
- The loans range from \$1,000 to \$35,000 and offer a fixed rate, all backed by the Commonwealth of Pennsylvania
- What Projects are Eligible?
  - “Single Measure Installed Energy Improvements” such as upgraded HVAC, windows and insulation (up to \$15,000)
  - “Whole House Energy Improvements” (up to \$15,000)
  - Geothermal heat pumps (up to \$15,000)
  - Solar and other improvements (up to \$35,000)

## Who is Eligible?

- **Pennsylvania homeowners who own their one to two unit primary residence located in Pennsylvania**
- **Applicants must have qualifying credit and demonstrate the ability to repay**
- **Applicants can make up to \$250,000**

# Other Incentive Programs

## Federal Tax Incentive Program

- Go to [www.energystar.gov](http://www.energystar.gov) and click on the this icon on bottom of home page
- Tax credit covers geothermal heat pumps, small wind turbines, solar energy systems, and fuel cells



## Electric and Natural Gas Utility Incentive Programs

# Residential Energy Conservation

## Additional Resources:

- [www.energystar.gov](http://www.energystar.gov)
- [www.eere.energy.gov/topics/homes.html](http://www.eere.energy.gov/topics/homes.html)
- [www.dsireusa.org](http://www.dsireusa.org)
- [www.bpi.org](http://www.bpi.org)
- [www.resnet.us](http://www.resnet.us)

# Farm Show Display

**Visit DEP at the Farm Show!**





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# QUESTIONS?

Please type your questions into  
the chat window.



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DEP at Home



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