



PPL Electric Utilities

The presentation will begin shortly!

PREPARE YOUR HOME FOR WINTER



Hap Haven
PPL Pilot Manager

PREPARING YOUR HOME FOR WINTER

Thank you for coming today. Remember, this is an overview!

- 60 second summary of today's topic.

- Safety projects to do now.
- Energy projects to do now.

- What is the PPL Residential Energy Efficiency program? Incentives?

- Q and A at the end – please type into the box
- No need to take notes – we'll send you the PDF

60 SECOND REVIEW

1st – BETTER AIR QUALITY = BETTER HEALTH

You close your house up for the winter. That means you will be trapping all the pollution inside for the next four months.

Ask yourself - Is my house:

- 1) Clean and Maintained?**
- 2) Poison free?**
- 3) Dry and Mold free? and**
- 4) Pest free?**

**Use only natural products to solve these problems
or you will be adding to your problems!**

60 SECOND REVIEW

2nd – GET AN ENERGY AUDIT

Every house is the same – Every house is different.
An energy assessment helps you prioritize the work.

Your STRUCTURAL SYSTEM (house)

Keeps the heat in during the winter.

An auditor can test to see how well it does its job.

Your MECHANICAL SYSTEM (heater)

Makes the heat and distributes the heat

An auditor can test to see how well it does its job.

1st TOPIC - HEALTHY HOME EQUATION

**A Clean, Maintained, Dry and Mold free Home =
a Pest free and Healthy Home**

The list of household poisons is long:

Carbon monoxide (shortness of breath, flue symptoms, death)

Perfumes (hormone disruptors, asthma triggers, neurotoxins, carcinogens)

Air fresheners (carcinogens)

Household Cleaners (headaches, allergic reactions, lung damage)

Laundry detergents and fabric softeners (hormone disruptors, asthma triggers, neurotoxins, carcinogens)

Pesticides (headaches, allergic reactions, lung damage, cancer)

Pet dander (asthma triggers)

Candles (headaches, allergic reactions, lung damage, cancer)

Radon (lung cancer)



CARBON MONOXIDE

CO is a **colorless, odorless, and tasteless gas**.
CO results from “**incomplete combustion**”:

Here’s the industry secret - Most alarms only sound at 70 ppm, and *within 3 hours of detection*
- If you hear the alarm, don’t waste any time getting out!

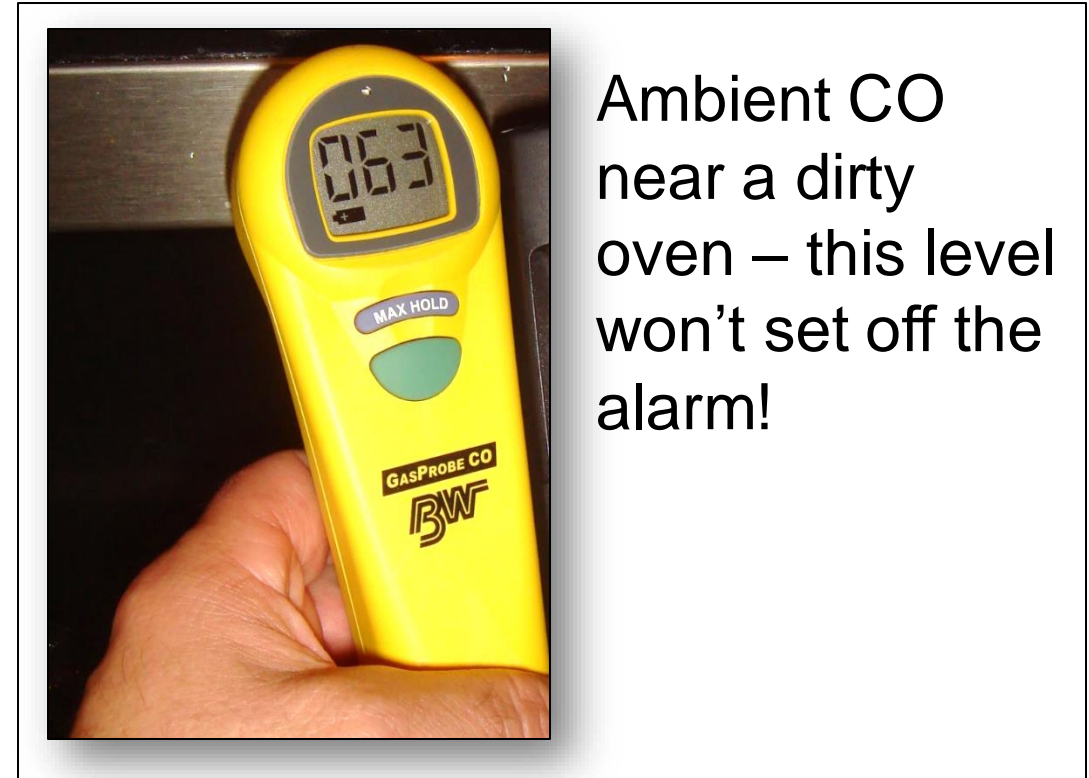
What are Common Sources of CO?

Car, Lawn mower, Snow blower, Generators
Heater and Water Heater
Wood burning stove and space heaters
Oven and range



CARBON MONOXIDE IN THE KITCHEN

“I feel light-headed when I cook”



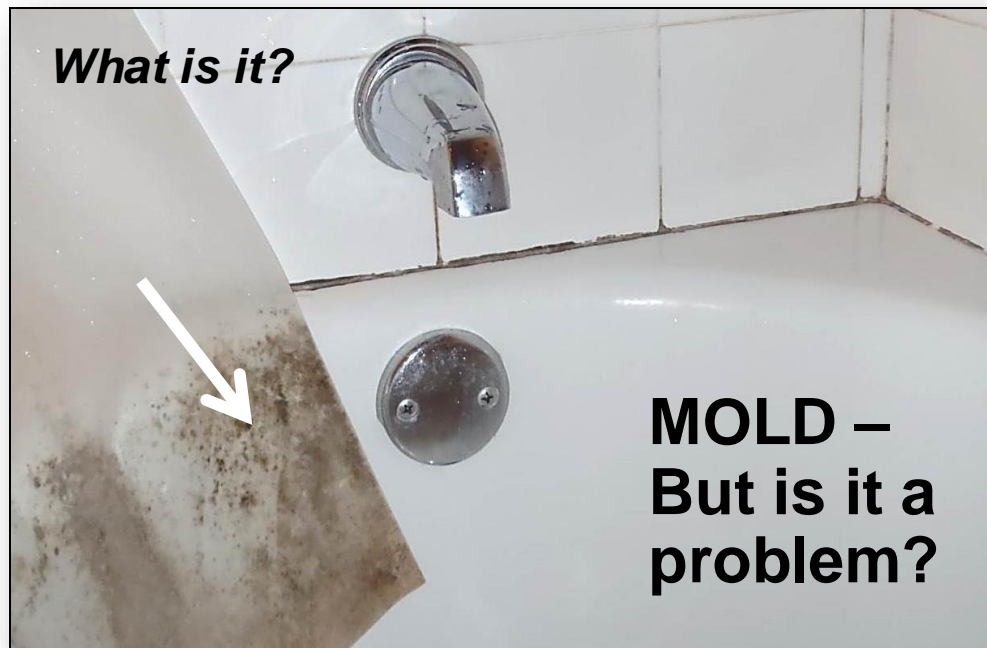
Ambient CO near a dirty oven – this level won't set off the alarm!

Foil in ovens is a common cause of CO.

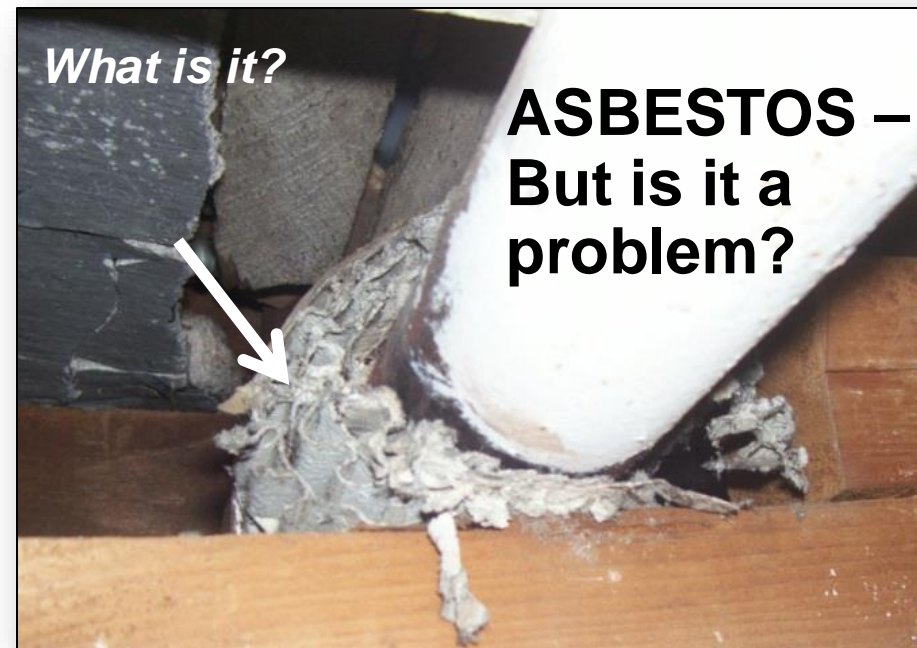
- 1) Make certain that your kitchen fan exhausts outside and
- 2) Use it when you cook

INDOOR AIR QUALITY (IAQ)

**Control the sources of pollution – but learn what is or isn't a problem.
Mold, Asbestos and Lead can be problems but often are not!**



CLEAN WITH: Vinegar, Tea tree oil, hydrogen peroxide, grapefruit seed extract, baking soda, or lemon juice. Check internet for application.



Leave it alone if it's solid and isn't going to be disturbed. Test it if it's loose and might go airborne – you need to know if it's actually asbestos.

2nd TOPIC - ENERGY PROJECTS

The mechanical and structural systems work together to create comfort.

Is the room getting heat or cold? = Distribution through pipes or ducts

Is the room keeping the heat in or out? = Insulation + Air Sealing

Manufacturers want you to think that their product is the solution, but it's rarely that simple.

Insulation manufacturers typically say:

"Add more insulation, to save money and be more comfortable."

Never add insulation without air sealing first.

Heating manufacturers typically say:

"Buy a new system, to save money and be more comfortable."

Your heater may not be the problem - it could be the distribution system.

YOUR HOME'S SHELL HAS HOLES

“People say the windows are drafty. The contractor says add more insulation.”



Both are wrong!
This room is cold because the wall, window molding and the soffit weren't air sealed.

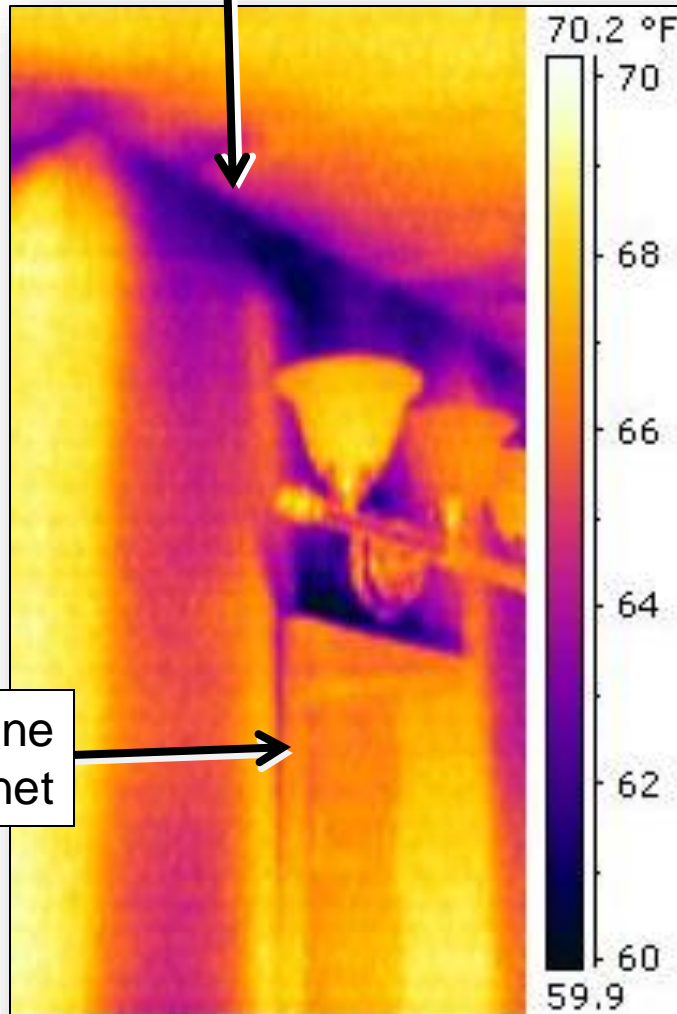
Infrared shows you the problem



SEAL THE ATTIC FLOOR – Top of walls

One of the top priorities in any house is to seal the attic floor.

ISSUE: Open top of wall



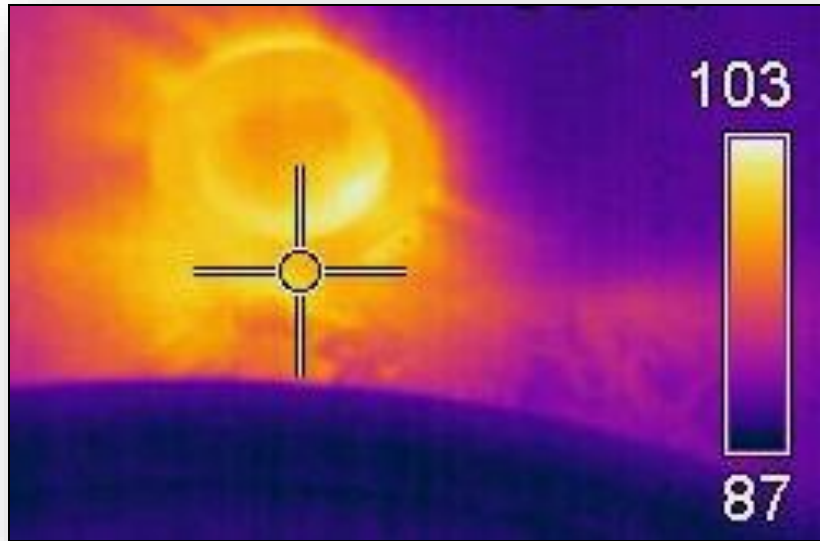
Solution: Caulking or foaming the top of the walls.



Photo shows one-part foam on either side of a wall

SEAL THE ATTIC FLOOR – Recessed lights

Summer air leak seen with IR camera



Solutions:

- LED air-tight replacements (right)
- Air-tight inserts (right)
- Total replacement with Air-tight, insulation contact units
- Replace with track lights



Commercial Electric



Halo #30 Insert



SEAL THE ATTIC FLOOR – Then Insulate

Insulation should never be installed without air sealing first.

14" of cellulose or ~ R49



Top of outside walls and attic baffles foamed

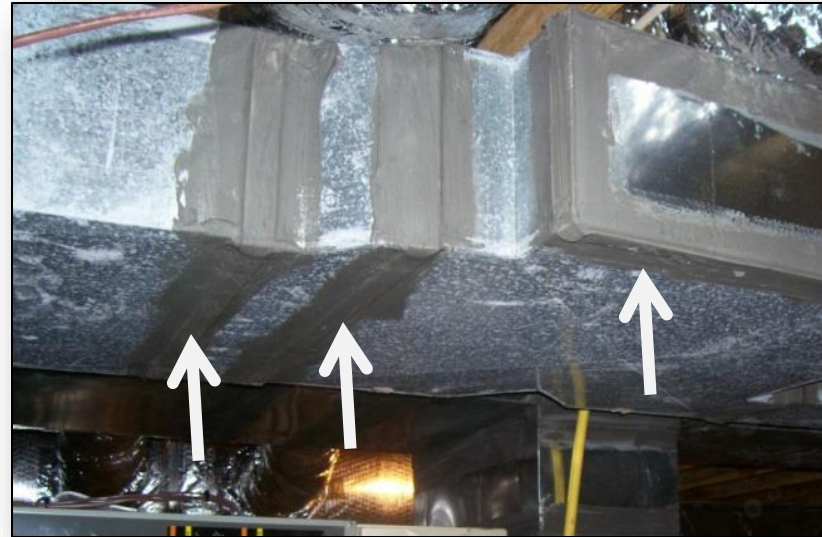
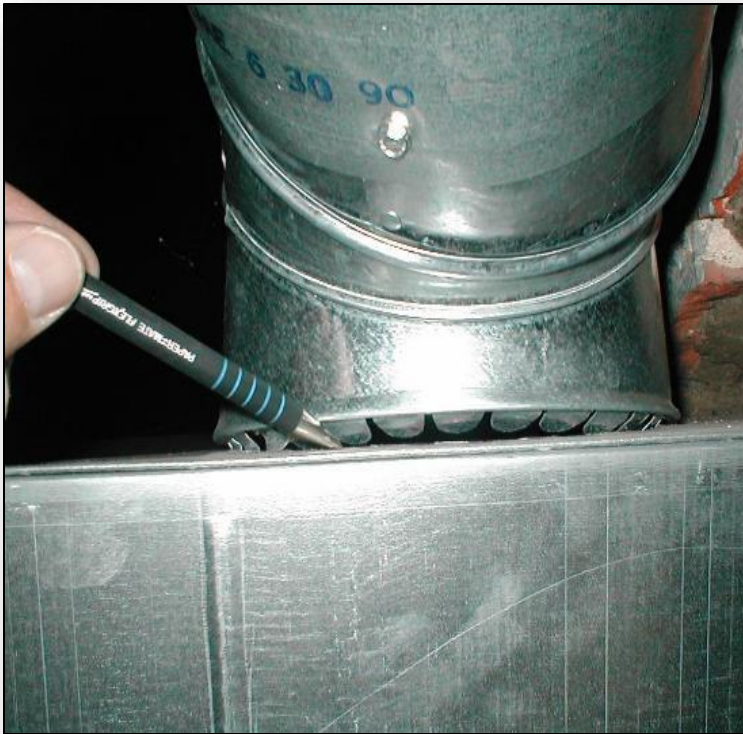


Top of all other walls sealed with two-part foam

MY ROOM IS COLD – The Distribution System?

The problem may not be your home's structural system.

Gaps are common at all duct connections and seams. Air blows out supply side leaks and is sucked in on return side leaks.



Solution:

Coat all connections and seams with duct mastic. Larger gaps need to be covered with mesh tape to guarantee the mastic doesn't crack as it shrinks.

MY ROOM IS COLD – The Distribution System?

Maybe the heating pipes or ducts were installed incorrectly.

Poorly designed ducts:

- Result in low system airflow
- Low air flow = No comfort!
- Poor distribution, especially on long runs
- Comfort complaints
- Hi air flow will create noise.



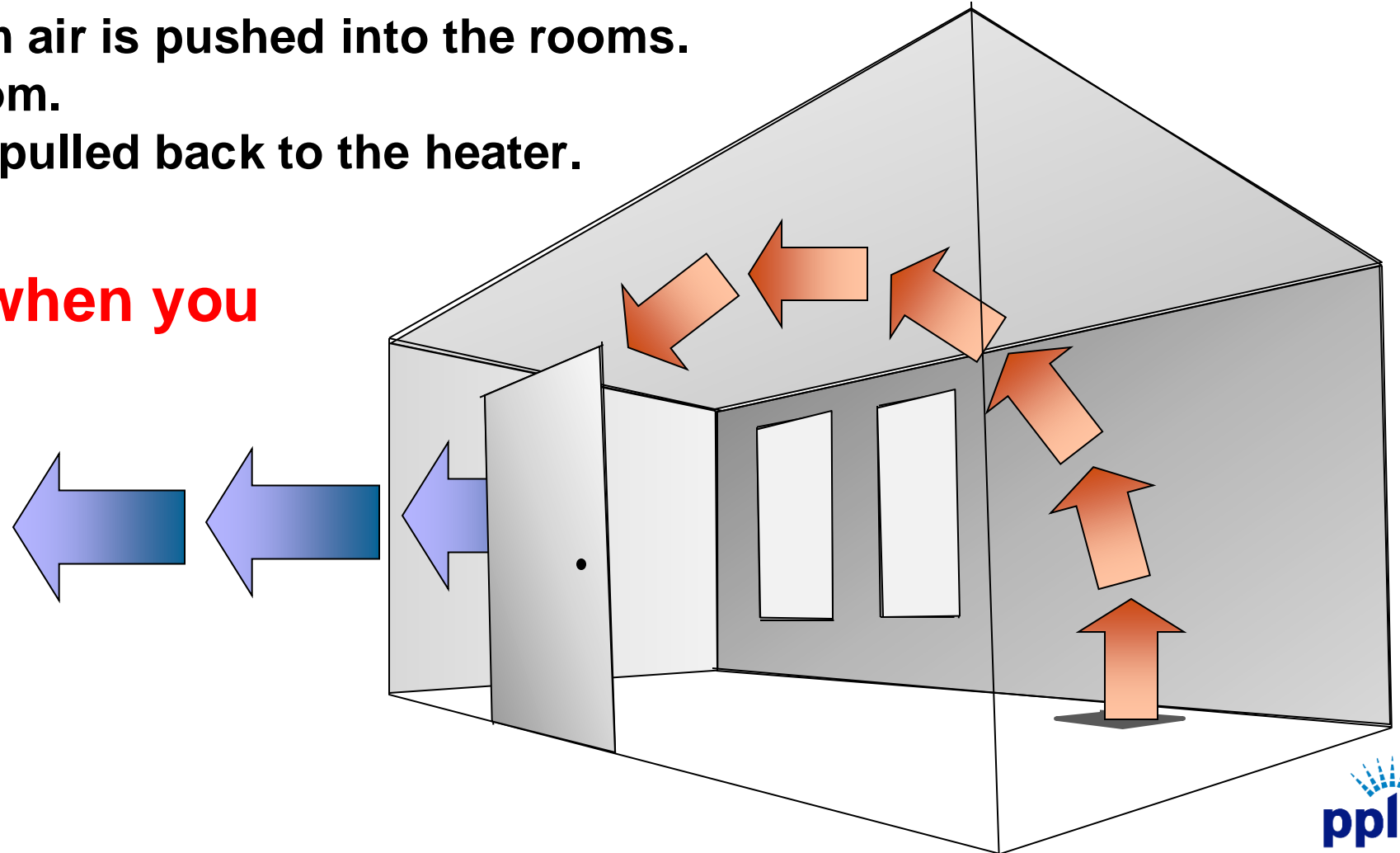
Each 90° Elbow = 30' of straight duct
30 x 4 = 120' Extra feet of duct run.

MY ROOM IS COLD – Bedroom door closed?

Air (or water) needs to return to the source.

- In the winter warm air is pushed into the rooms.
- This heats the room.
- Cooler air is then pulled back to the heater.

What happens when you close the door?



1ST STEP TO GETTING ANSWERS

VIRTUAL ENERGY ASSESSMENT

Your choice – a voice or video call with an Energy Advisor
Free for electric heating or central air customers and comes
with a free energy savings kit mailed to your home.

Call 877-486-9204 to schedule

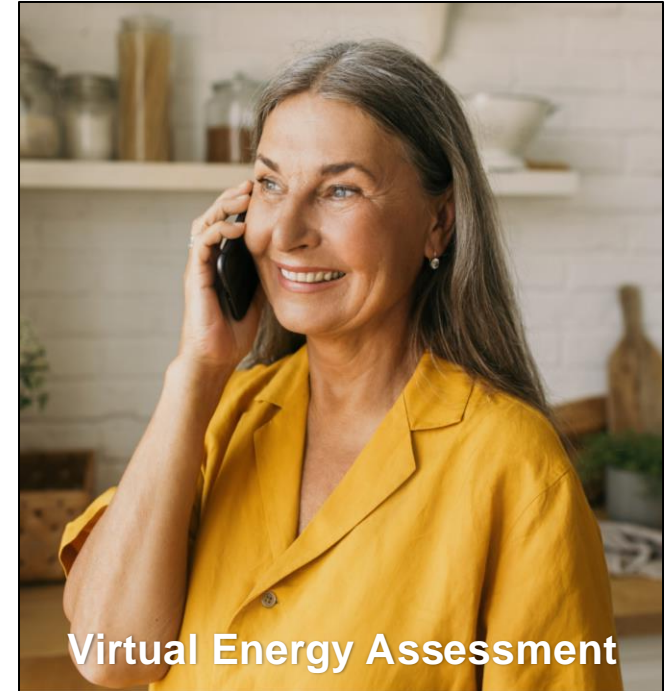
IN-HOME ENERGY AUDIT

\$350 rebate for electric heating and central AC customers

\$200 rebate for electric heating or central AC customers

Check with your independent auditor if the assessment is free
before you schedule an appointment.

<https://www.pplelectricsavings.com//ppl/homeequipment/contractor/>



ENERGY EFFICIENT HOME REBATES

<https://www.pplelectric.com/rebates>

Single Weatherization Upgrades	Rebate	Notes	SHELL SYSTEM
Attic Insulation (electric heat)	\$500	75% of cost up to a max of \$500	
Attic Insulation (central A/C, non-electric heat)	\$200	75% of cost up to a max of \$200	
Basement Wall Insulation (electric heat)	\$500	75% of cost up to a max of \$500	
Basement Wall Insulation (central A/C, non-electric heat)	\$200	75% of cost up to a max of \$200	
Air Sealing	\$200	Air infiltration reduction (@ CFM50) x \$0.25 up to a max of \$200	
Single Efficient Equipment Upgrades	Rebate	Notes	MECHANICAL SYSTEM
Smart Thermostat (self-install)	\$50	ENERGY STAR® certified	
Smart Thermostat (professional install)	\$100	ENERGY STAR certified. Must be installed by a PPL Electric Utilities qualified contractor.	
Heat Pump Water Heater	\$400	Universal Energy Factor (UEF) ≥ 3.3	
Air Source Heat Pump	\$350	≥ 15.2 HSPF2, ≥ 11.7 EER2, ≥ 7.8 HSPF2	
Air Source Heat Pump	\$450	≥ 16.3 SEER2, ≥ 12.9 EER2, ≥ 8.2 HSPF2	
Ductless Mini-Split Heat Pump	\$400 (per outdoor unit)	≥ 15.2 SEER2, ≥ 11.7 EER2, ≥ 7.8 HSPF2	
Central Air Conditioner	\$200	≥ 15.2 SEER2, ≥ 12 EER2	
Central Air Conditioner	\$300	≥ 16.3 SEER2, ≥ 12.9 EER2	

PPL BONUS REBATES

Comprehensive Retrofit Bonus 1 (\$250)

(2 major treatments installed within 12 months) (1 weatherization upgrade + 1 other major upgrade)

Comprehensive Retrofit Bonus 2 (+\$100 or \$350 total)

(3 major treatments installed within 12 months) (Bonus Tier 1 + 1 or more additional major upgrades)

Deep Energy Retrofit Bonus (\$500)

(3 major treatments installed at the same time)

(In-Home audit + 3 treatments with at least 1 shell and 1 mechanical treatments)

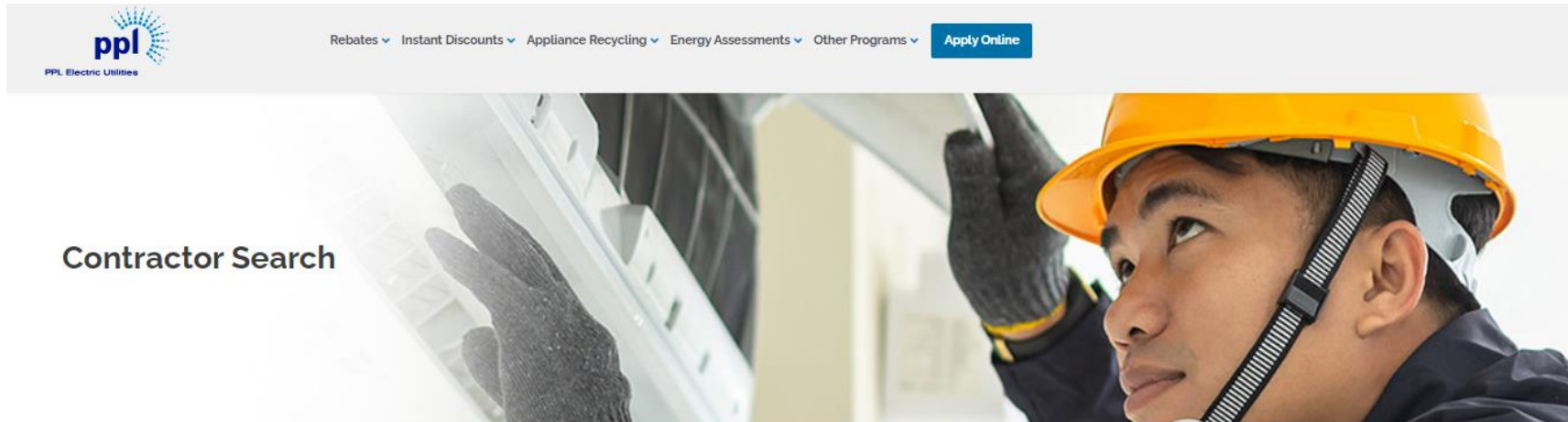
(Cannot be used with Bonus 1 or 2)

DER Bonus webpage: <https://pplelectric.com/retrofit>

CONTRACTORS

Log onto the PPL Electric Utilities website for more program information or to identify a Trade Ally you'd like to hire.

<https://www.pplelectricsavings.com//ppl/homeequipment/contractor/>



The Trade Allies below are qualified to provide In-home Energy Audits with the Deep Energy Retrofit BONUS.

**Advanced Efficiency Worx
Energy Services Group
MT Weatherization**

support@aeworxpa.com
info@energysvc.com
ACastles@tennygroup.com

BUNDLE YOUR SAVINGS

Final Note: Don't forget to bundle your savings.

You may qualify for federal tax credits. It's a maximum of \$3,200 per year from two different "buckets":

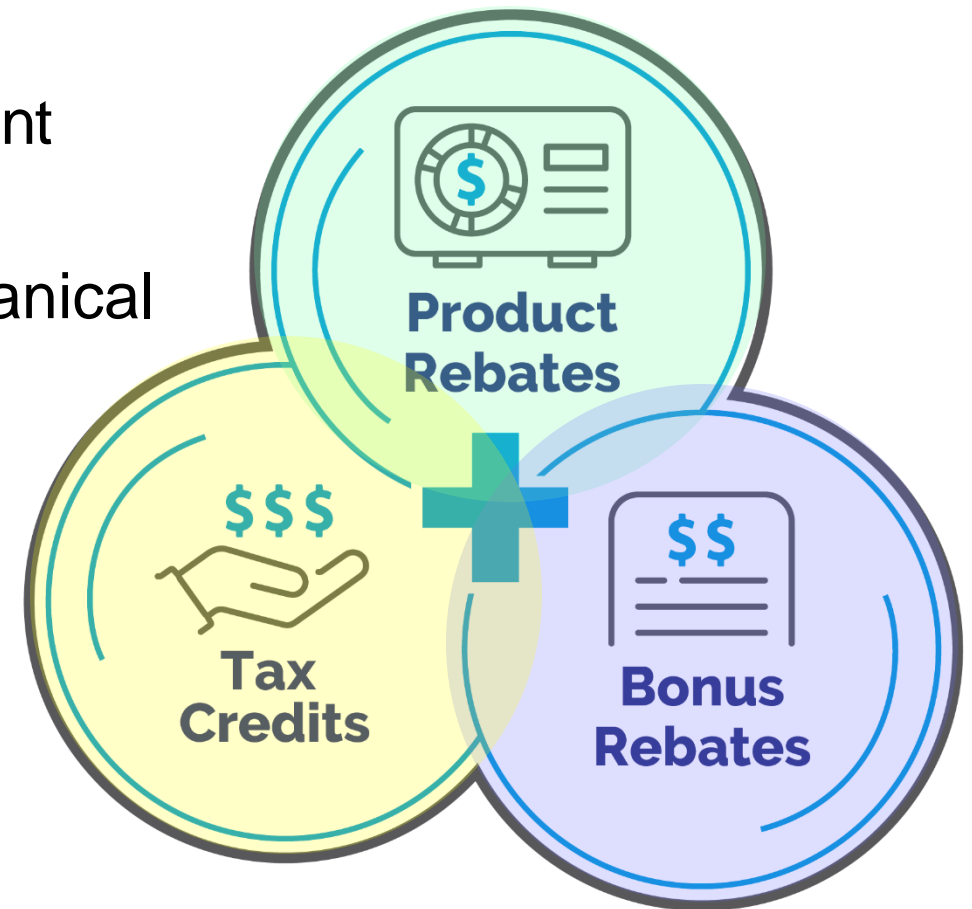
- Up to \$2,000 for higher performance mechanical improvements and
- Up to \$1,200 home improvements.

<https://www.EnergyStar.gov/about/federal-tax-credits>

Example: Air sealing and Insulation

(30% up to \$1,200 for federal tax credit)

(Up to \$200 – PPL rebate)



QUESTIONS and COMMENTS ?

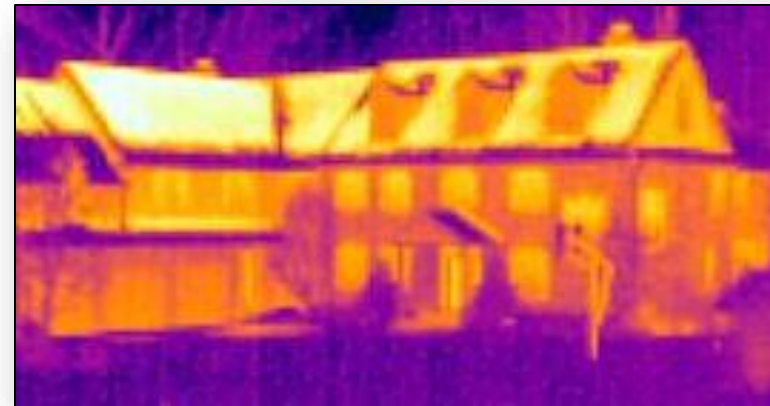
Please type them into the questions box





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Thank you for coming today



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