Pro Eco-Energy

Home Assessment

HOME ENERGY AUDIT REPORT

Prepared for:

[redacted]

Prepared by:

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HOME ENERGY AUDIT REPORT

Audit Date: 1/23/2013

ABOUT THIS REPORT

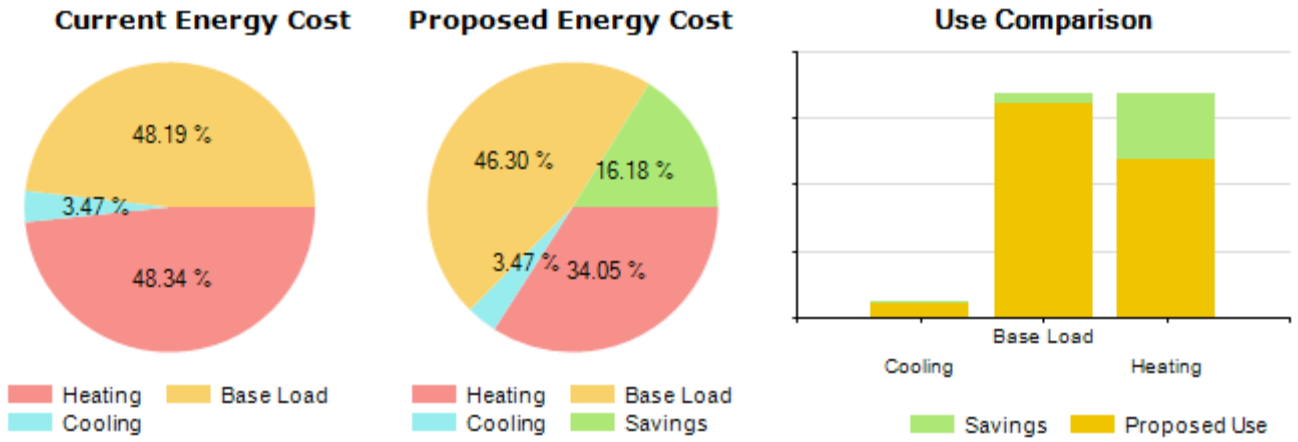
Your in-home evaluation was conducted on 1/23/2013. During the inspection, I evaluated your home's structural elements, heating/cooling equipment, and energy consuming appliances. The information gathered during the home inspection provided input data to benchmark the energy use of your home and develop a strategic plan for the most effective way to reduce that energy usage. The attached report details the proposed improvement measures including expected savings for your home. If you have any questions about your home's energy performance, please contact me. Implementing these recommendations will reduce your energy bills and make your home more comfortable and more valuable. It's important to note that savings estimates provided are approximations to help you prioritize changes. The estimations should not be taken as firm commitments.

BUILDING INFORMATION

Date of Visit	January 23, 2013	Year Built	1978
Conditioned Area	3500	Number Occupants	2
Foundation Type	Conditioned Basement	Number Bedrooms	3
Attic Type	Vented Attic	Number Stories	2

HOW YOUR HOME USES ENERGY

Fuel Type	Use	Unit Price	Cost	Savings
			$2,940	$563
Electricity	30630 kWh	$0.10		
	Total Cost		$2,940	$563



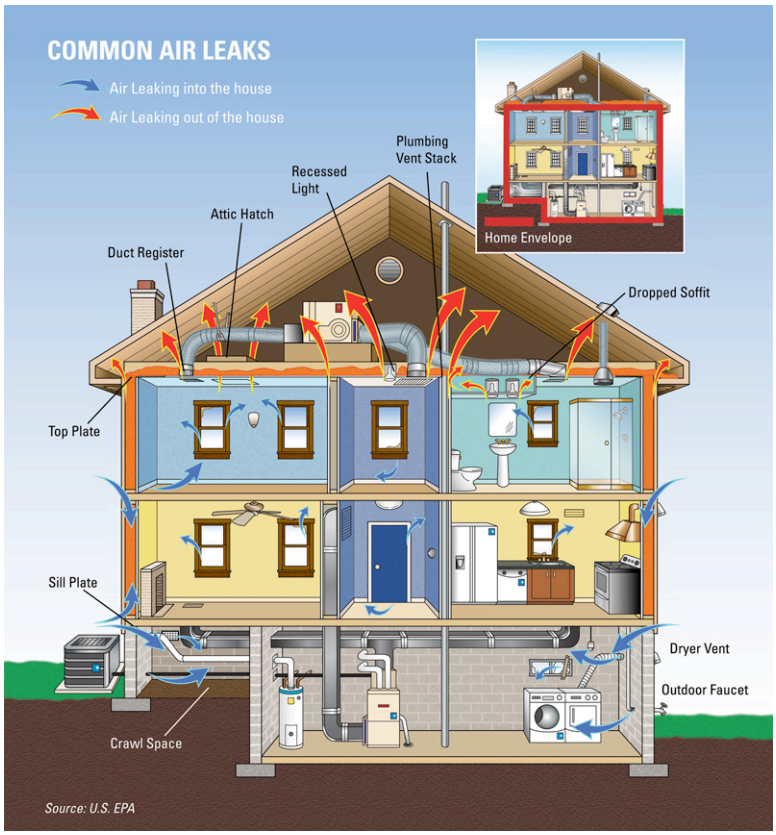
Heating usage includes all energy used to heat your home. Both heating and cooling usage are weather dependent. Base load is the energy use that is independent of the weather. This includes uses like appliances and lighting as well as hot water. This chart shows how your home is currently using energy among these different end uses. Each improvement affects the energy profile of your house in different ways. Insulation will improve both heating and cooling while replacing a refrigerator will only improve the base-load. This chart indicates the proposed energy usage of your house with all the recommended improvements installed to indicate from where your savings will come.

IMPROVEMENT SAVINGS

Improvement	Status	First Year's Savings	Cost	SIR	Payback
Install weather strip kit and sweep on kitchen to garage door	Recommended		$0.00	NC	0.0 yrs
Vent the hallway bath exhaust fan to roof or soffit. Currently the fan throws moisture into the attic.	Recommended		$0.00	NC	0.0 yrs
Air-seal Wire, Pipe and headers in attic floor.	Recommended		$0.00	NC	0.0 yrs
Seal the Fireplace to reduce air-flow through the house. Seal with thermax and safety tag or product like "Chimney Balloon".	Recommended		$0.00	NC	0.0 yrs
Install relief pipe on Domestic Hot Water Heater for Safety.	Recommended		$0.00	NC	0.0 yrs
Add soffit chutes in Attic space.	Recommended		$0.00	NC	0.0 yrs
Install weather strip kit and sweep on train room to garage door.	Recommended		$0.00	NC	0.0 yrs
Box both bathroom exhaust fans in attic space (2). Box recessed lighting.	Recommended		$0.00	NC	0.0 yrs
Bathroom Aerators (1.0 each)	Installed	61 kWh (Electricity) $5.85	$0.00	NC	0.0 yrs
Replace 60W bulbs with 13W CFLs (2 each)	Installed	103 kWh (Electricity) $9.87	$0.00	NC	0.0 yrs
SmartStrip Power Strip (1.0 each)	Installed	184 kWh (Electricity) $17.63	$0.00	NC	0.0 yrs
Improve 128 sq ft of rim joist from Low insulation to High insulation	Recommended	276 kWh (Electricity) $26.51	$0.00	NC	0.0 yrs
Pipe Wrap (27 Ft)	Installed	334 kWh (Electricity) $32.08	$0.00	NC	0.0 yrs
Improve 1,750 sq ft of attic floor insulation from 9 inches to 15 inches.	Recommended	578 kWh (Electricity) $55.48	$0.00	NC	0.0 yrs
Reduce the house air leakage from 4330 CFM50 to 2744 CFM50.	Recommended	4331 kWh (Electricity) $415.74	$0.00	NC	0.0 yrs

Total		5867 kWh (Electricity) $563.27			0.0 yrs

AIR SEALING



Many air leaks and drafts are easy to find because they are easy to feel — like those around windows and doors. But holes hidden in attics, basements, and crawlspaces are usually bigger problems. Sealing these leaks with caulk, spray foam, or weather stripping will have a great impact on improving your comfort and reducing utility bills. A house that has a lot of air leaks is subject to the “stack effect,” which means it tends to pull in unconditioned, outdoor air at the lower levels and then lose air that you have paid to heat or cool at the upper levels -- much like a chimneystack.

Some homeowners are concerned about sealing their house too tightly; however, this is very unlikely in older homes. A certain amount of fresh air is needed for good indoor air quality, and there are specifications that set the minimum amount of fresh air needed for a house. Part of the reason I tested your home for its air leakage rate (called the air infiltration rate), is to be sure you get enough fresh air after implementing your energy improvements.

Blower Door Test	*WholeBuildingMechanicalVentilation*	**Building Pressure**	*-50*
Building Leakage	*4330*	**Airflow Standard**	*2744*

Recommended Improvements

AIR SEALING

Reduce the house air leakage from 4330 CFM50 to 4330 CFM50.

Notes: *Install weather strip kit and sweep on kitchen to garage door*
Priority = High (separating living space from garage is important for safety)

AIR SEALING

Reduce the house air leakage from 4330 CFM50 to 4330 CFM50.

Notes: *Air-seal Wire, Pipe and headers in attic floor.*
Priority = High

AIR SEALING

Reduce the house air leakage from 4330 CFM50 to 4330 CFM50.

Notes: *Seal the Fireplace to reduce air-flow through the house. Seal with thermax and safety tag or product like "Chimney Balloon".*
Priority = High

AIR SEALING

Reduce the house air leakage from 4330 CFM50 to 4330 CFM50.

Notes: *Install weather strip kit and sweep on train room to garage door.*
Priority = High (separating living space from garage is important for safety)

AIR SEALING

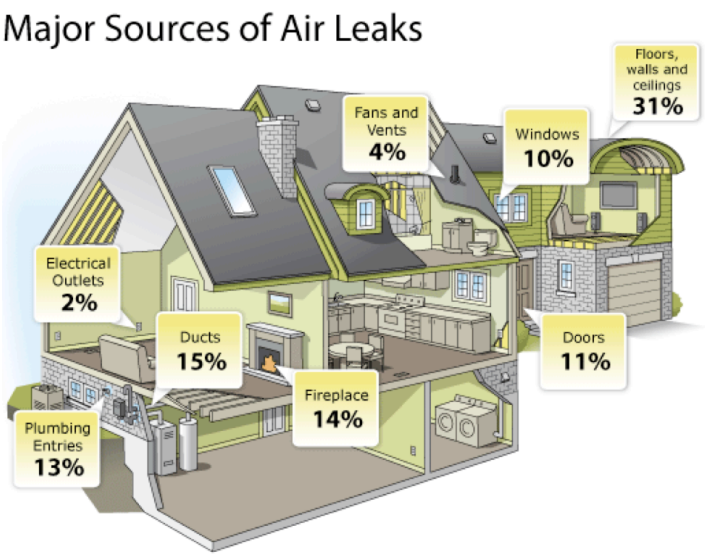
Reduce the house air leakage from 4330 CFM50 to 4330 CFM50.

Notes: *Box both bathroom exhaust fans in attic space (2)*
Priority = High

AIR SEALING

Reduce the house air leakage from 4330 CFM50 to 2744 CFM50.

Notes: *Perform Blower door guided air sealing. Use Blower door results sheet as a guide.*
Priority = High



There are many points of leakage in homes that are leaky and inadequately air sealed.

The thermal image above shows you the sources of air leaks in a typical home. Some are obvious like the red areas around windows and doors. Others, like those in attics, are trickier to both see and seal.

HEATING AND COOLING

During the winter, homeowners expect their heating systems to keep them warm without breaking the bank. ENERGY STAR qualified heating equipment can be up to 15 percent more efficient than standard models.

Benefits of Energy Star Systems

- Lower Utility Bills. ENERGY STAR qualified heating systems are designed to use less energy than standard systems. When properly installed, these heating systems can save money on utility bills.
- Less Risk of Air Quality Problems. ENERGY STAR qualified gas-fired boilers and furnaces are designed to reduce the risk of back-drafting dangerous carbon monoxide exhaust into the home.
- Increased Durability. Most ENERGY STAR qualified boilers, furnaces, and heat pumps employ advanced technologies and high quality components, often resulting in longer equipment life and longer warranties compared to standard models.

Air Conditioner

Most residential central air conditioners are called “split-systems” because they have an outdoor component with a condenser and compressor and an indoor component with an evaporator coil. It’s very important to replace both of these units at the same time. Installing a new outdoor unit without replacing the indoor unit is likely to result in low efficiency, and may lead to premature failure of the system.

- ENERGY STAR qualified central air conditioners have higher SEER (Seasonal Energy Efficiency Ratio) and EER (Energy Efficiency Ratio) ratings than today’s standard models.
- SEER is the most commonly used measurement of efficiency for air conditioners. It measures how efficiently a cooling system will operate over an entire season. EER measures how efficiently a cooling system will operate when the outdoor temperature is at a specific level (95 degrees F).
- The central air conditioner also needs a blower motor—which is usually part of the furnace—to blow the cool air through the duct system. The only way to ensure that your new air conditioner performs at its rated efficiency, is to replace your heating system at the same time. It’s especially recommended if your furnace is over 15 years old. If you purchase a new energy-efficient air conditioner but connect it to an older furnace and blower motor, your system will not perform to its rated efficiency.

Heating System	*Electric Cable Ceiling Heat*	**Year Installed**	*1978*
Heating System Location	*Conditioned Space*	**Heating Fuel**	*Electricity*
Cooling System	*Air Source Heat Pump - Ducted*	**Year Installed**	*2010*
Cooling System Location	*Conditioned Space*		

INSULATION

Insulation is one of the keys to a comfortable, energy-efficient home. But simply having the right amount of insulation is not enough. If insulation is not properly installed, a home can have excessive heat gain during the summer and heat loss in the winter—forcing the heating and cooling systems to work overtime.
Properly installed insulation will completely blanket the home—exterior walls, ceiling, and floors—without gaps, voids, or compressions, and it will be in full contact with the interior air barrier (for example, drywall). Continuous sealing of the air barrier along the insulation is also critical to protecting against moisture damage that can be caused by warm air flow through the insulation to colder surfaces where it can condense.

Benefits of Properly Installed Insulation

- Enhanced Comfort. Properly installed insulation minimizes temperature variability indoors and helps keep rooms warmer in the winter and cooler in the summer.
- Lower Utility Bills. As much as half of the energy used in your home goes to heating and cooling. By preventing heat loss in the winter and heat gain in the summer, a properly installed insulation barrier reduces utility bills year round.
- Improved Durability. When insulation is properly installed, the potential for condensation that can lead to decay of building materials is reduced, helping to improve the durability of your home.
- Better Resale Position. The improved comfort, lower utility bills, and improved durability of a properly installed insulation barrier can translate into higher resale value compared to less efficient homes.

Recommended Improvements

ATTIC INSULATION

Improve 1,750 sq ft of attic floor insulation from 9 inches to 15 inches.

Notes: *Increase existing blown-in fiberglass attic insulation from approximately R-32 to R-48.*
Priority = High

RIM JOIST INSULATION

Improve 128 sq ft of rim joist from Low insulation to High insulation

Notes: *Insulate approximately 170 LF (128 S/f) of Rim joist in basement above drop ceiling.*
Priority = High

DUCT SEALING

Duct Leakage Test	*Pressure Pan* *All ductwork in Conditioned space*	**Duct Leakage**	*0 CFM25*

HOT WATER

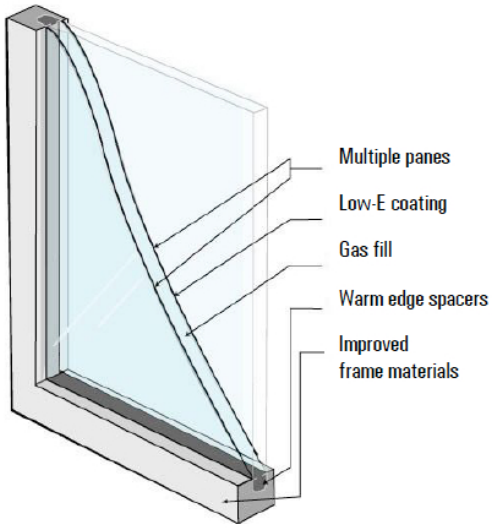
Heating water accounts for about 15 percent of a home's energy use. High efficiency water heaters use 10 to 50 percent less energy than standard models, saving homeowners money on their utility bills. Actual energy savings from high efficiency water heaters depend on family size, heater location, and the size and placement of water pipes.

Hot Water System	*Storage Water Heater*	**Year Installed**	*2012*
Hot Water Fuel	*Electricity*		

WINDOWS

Windows provide natural daylight and views, but homeowners often use drapes or blinds to cover them because of comfort concerns. ENERGY STAR qualified windows and skylights allow owners to enjoy the light and views while saving money on utility bills and protecting valuable furnishings and finishes from sun damage. Independently tested for superior energy performance, ENERGY STAR qualified windows and skylights are also better for the environment because lowering energy use helps reduce the emissions of greenhouse gases and air pollutants at the source.
Benefits of ENERGY STAR qualified windows and skylights include

- Energy Savings
- Improved Comfort
- Protection of Your Home's Interior
- Reduced Condensation



Existing Window Glazing	Double Pane (low-e)		

LIGHTING & APPLIANCES

APPLIANCES

Every appliance comes with two price tags: what it costs to take it home and what it costs to operate and maintain it each month. ENERGY STAR qualified appliances incorporate advanced technologies and use 10 to 50 percent less energy than standard appliances. From refrigerators to clothes washers, ENERGY STAR qualified appliances save energy, save money, and help reduce emissions of greenhouse gases and air pollutants at the source.

Benefits of ENERGY STAR Qualified Appliances

- Lower Utility Bills. Appliances account for nearly 20 percent of the average household's energy use. A comprehensive package of ENERGY STAR qualified appliances can save up to $80 a year in energy costs compared to standard appliances.
- Improved Quality and Durability. Energy-efficient appliances often include quality components surpassing those found in standard appliances. These can result in fewer mechanical problems, longer equipment life, and in many cases extended warranties.
- Enhanced Performance. ENERGY STAR qualified appliances often outperform standard appliances due to improved design and advanced technologies. For instance, some ENERGY STAR qualified appliances include features that decrease operating noise, while others include technologies that reduce water use.

Lightbulbs & Fixtures

Choosing more efficient light bulbs or light fixtures can make a big difference on utility bills and for the environment. Replacing the five most frequently used light fixtures in a home with ENERGY STAR qualified lighting can save about $65 each year in energy costs.

Benefits of ENERGY STAR Qualified Fixtures and Bulbs

- Cost Savings. An ENERGY STAR qualified compact fluorescent light bulb (CFL) uses about 75 percent less energy than a comparable standard incandescent bulb. Replacing a 60-watt incandescent with a 13-watt CFL can save more than $30 in energy costs over the life of the bulb.
- Improved Safety. ENERGY STAR qualified CFLs operate at less than 100 degrees F and are safer than the halogen bulbs typically used in floor lamps or torchieres, which burn at 1,000 degrees F. Halogen bulbs, when improperly handled, can cause burns and fires due to their high heat output.
- Enhanced Comfort. Compared to standard incandescent bulbs, ENERGY STAR qualified CFLs generate about 75 percent less heat. This means they are cool to the touch, help reduce home cooling costs, and keep homes more comfortable.
- Durability. ENERGY STAR qualified fixtures and bulbs meet strict guidelines for longevity. Pin-based fixtures must last 10,000 hours, about 10 times longer than standard. CFLs must last 6,000 hours. In addition, ENERGY STAR qualified fixtures come with a 2-year warranty—double the industry standard.

Cooking Fuel	*Electricity*	**Clothes Dryer Fuel**	*Electricity*
Lighting Usage	*Normal*	**Misc Electric Usage**	*Normal*

RECOMMENDED IMPROVEMENTS

Add soffit chutes in Attic space.

Notes: Add soffit chutes in the attic space to improve existing soffit ventilation.
Priority = Critical (Proper ventilation of attic space prevents structural deterioration and health hazards from moisture build-up)

Install relief pipe on Domestic Hot Water Heater for Safety.

Notes: Install relief pipe on Domestic Hot Water Heater for Safety.
Priority = Critical (The relief pipe is an important safety measure)

Vent the hallway bath exhaust fan to roof or soffit. Currently the fan throws moisture into the attic.

Notes: Vent the hallway bath exhaust fan to roof or soffit. Currently the fan throws moisture into the attic.
Priority = Critical (Moisture venting into the attic can lead to structural failure and create a health hazard)

HEALTH AND SAFETY MEASUREMENTS

In addition to energy savings, your home was checked for any underlying health and safety issues such as proper ventilation, carbon monoxide levels, and proper venting of any combustion appliances. To assess your home, a series of measurements were performed including a blower door test to depressurize the house and assess air leakage levels in addition to safety tests on HVAC equipment, including carbon monoxide levels and combustion appliance back-draft testing (not applicable on an all-electric home). The results of these tests are presented here along with any recommended actions for improving your home where it fails to meet national standards for a healthy and safe home.

Stoves

Fuel	Electricity
Vent Out	false
Action	None (There are no Combustion Appliances)

Blower Door Test Results

Method	Whole Building Mechanical Ventilation
Building Pressure (Pa)	-50
Fan Pressure (Pa)	50
Fan Ring Used	Open
Building Leakage (CFM50)	4330
Building Airflow Standard	2744*
Result	Pass
Action	Air seal as per BPI ASHRAE 62.89 *Give additional allowance for more air flow if a Whole House Humidifier continues to be used.

Distribution System Airflow

Test Results	Pass
Action	All ductwork runs through conditioned space.

Duct Leakage

Test	Pressure Pan
Result (CFM25)	0
Pressure Pan Avg (Pa)	0

Ventilation

Primary Heating Vent Type	
DHW Vent Type	
Dryer Vent	Electric
Dryer Vent Action	
Other Health & Safety Issues	

Home Energy Usage Report

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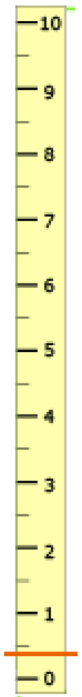
How Does Your Home MEASURE UP?



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EPA ENERGY STAR Home Energy Yardstick Results

Your Yardstick score is calculated against similar homes nationally and is scored between 0 and 10, with 10 being the most energy efficient. 5 is average.

Estimated Annual CO_2 Emissions:
48,000 lbs of CO_2

Your Home

Building Information:
[redacted]

Occupants: 2

Square Footage: 3500

Year Built: 1978

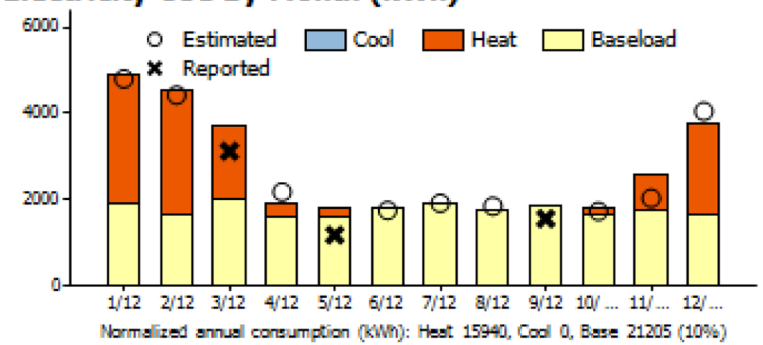
Hot Water Source:
Electricity

Annual Usage:
Electricity: 30600 kWh/yr

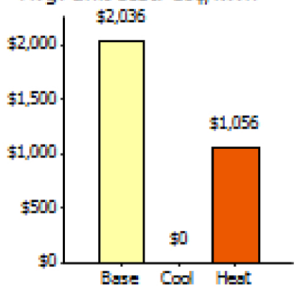
Report Date: January 23, 2013

Your Energy Usage

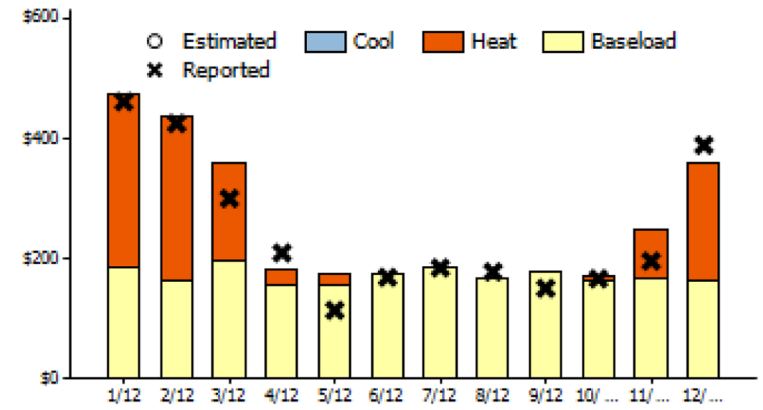
Electricity Use By Month (kWh)



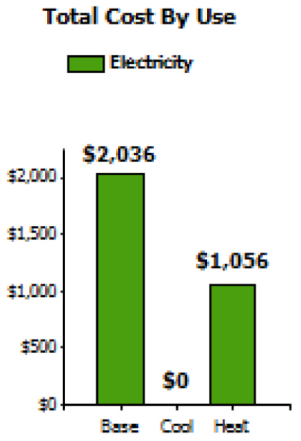
Electricity Cost By Use



Total Energy Cost By Use



Total Cost By Use



Your Savings Potential

Electricity

20% Annual Savings

Heating	$306
Cooling	$0
Baseload	$407

Total Energy

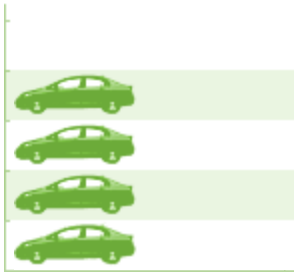
20% Annual Savings

Heating	$306
Cooling	$0
Baseload	$407
Total	$713

Explanation of Terms

Savings are for a typical year
Baseload energy is the energy not affected by outdoor temperature. This includes appliances, lighting, and hot water.
Reported energy is your recorded monthly consumption values.

Your Carbon Footprint



In one year, your home uses the carbon of...

4 cars

Normalized energy Use:
15 Btu/sqft/person

What's a Footprint?

A Carbon Footprint is a snapshot of how much carbon dioxide(CO_2) is produced in a particular span of time by an area, object, or person. In this case, it is a measure of your home's CO_2 production over a 12 month period. Typically the higher this is, the greater potential there is for reduction and savings.

To find out more about your carbon footprint, visit www.nature.org/calculator.

Report Date: January 23, 2013

10 Things You Can Do To Shrink Your Energy Bill

Cost effective energy use reductions of 40% to 50% can be realized when you use a whole house, performance tested approach on your current home.

1. **Set back your thermostat:** Setting thermostats down to 60 degrees when you are in bed or away saves significant energy. Automatic thermostats, adjusted to your schedule, make this very easy.
2. **Stop using unnecessary refrigerators:** Refrigerators are significant energy users. Turn off unused refrigerators that are only needed seasonally, and consolidate the contents of nearly empty refrigerators and freezers.
3. **Lower your water heater tank temperature setting:** Reducing hot water tank temperature down to 120 degrees, or lower, can save significant energy, while reducing the risk of scalding. This lower setting will not reduce your bathing enjoyment.
4. **Use compact fluorescent or LED lighting:** Compact fluorescent light (CFL) bulbs are a very cost effective way to reduce energy consumption. They are available in many sizes and shapes for most any location. LED bulbs are even more efficient than CFL and are extraordinarily effective for many locations.
5. **Use a low flow shower head:** Heating water takes energy, so using half the amount of hot water saves substantial energy. There are a wide variety of low flow shower heads available that provide a satisfying experience while conserving energy.

Seek the help of a professional building performance contractor for these tasks:

1. **Seal against air infiltration:** Reducing the exchange of conditioned air to the outside, or outside air to the inside is a most effective way to reduce energy consumption. A whole house de-pressurization test is the most reliable way to understand the effectiveness of a comprehensive air sealing effort.
2. **Seal and insulate your attic:** Sealing and insulating the ceiling between your attic and living space is often, also, a very good energy saving measure. An inspection by a qualified professional can determine the efficacy of this measure, in relation to others, as part of a whole house energy audit.
3. **Insulate exterior walls and floors:** Increasing the amount and quality of insulation in exterior walls and floors, though it can be difficult, is often necessary to the overall effectiveness of the whole house remediation effort. Specialized equipment of the building performance contractor is useful to pinpoint the exact areas that need work.
4. **Update your heating and cooling equipment:** Efficiency of heating and cooling equipment has been increasing such that the proper sized system may be smaller than your current one. If your equipment is old, or has not been serviced recently, you may benefit by having it serviced or replaced with a new efficient model.
5. **Update your water heater:** Water heating equipment efficiency has been increasing, as well. If your equipment is old, or has not been serviced recently, you may benefit by having it serviced or replaced with a new efficient model.

Carbon Savings Potential

Electricity

20% Annual Savings

Heating	4368 lbs CO_2
Cooling	0 lbs CO_2
Baseload	5810 lbs CO_2

Total Energy

20% Annual Savings

Heating	4368 lbs CO_2
Cooling	0 lbs CO_2
Baseload	5810 lbs CO_2
Total	10178 lbs CO_2

Explanation of Terms

Baseload energy is the energy not affected by outdoor temperature. This includes appliances, lighting, and hot water.
Reported energy is your recorded monthly consumption.

Peer Comparison Report

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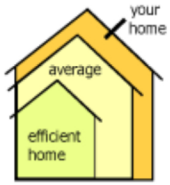
Summary

Total Energy Use for a typical year



Your Home:
416,974 kBtu

Average Home:
336,049 kBtu

Efficient Home:
237,938 kBtu

Average home energy use is calculated based on the homes in your community.

Your Community

The comparison graphs on this page are held against an average of the buildings within your community.

Your selected community:

Homes in PA state with

- Between 1 and 4 occupants
- Between 3,500 and 7,000 square feet of living space

To create a more accurate comparison, your home is compared with other similar homes based on size, occupancy and location.

Your selected community contains **36** homes.

Report Date: January 23, 2013
Building: [redacted]

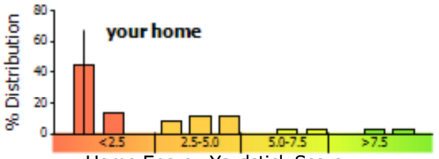
How Are You Doing?

Cost (total for a typical year)

Your Home		$ 3,580
Average Home	*	$ 2,684
Efficient Home	**	$ 1,988

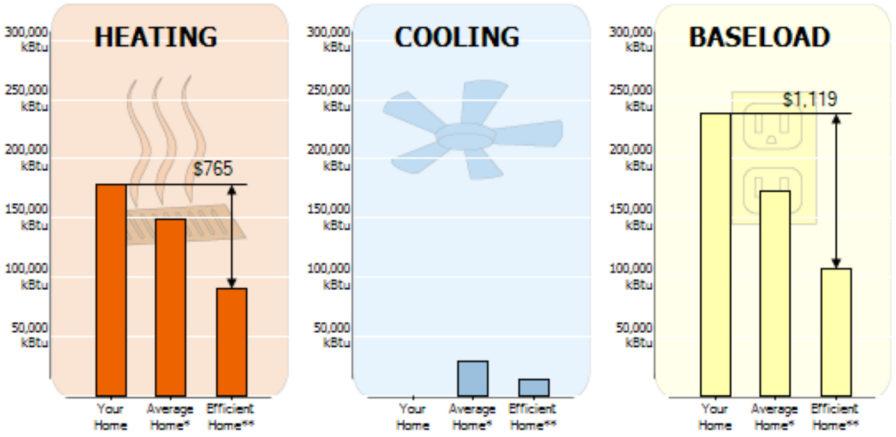
You Could Save $1,592

Scores in Your Community



Home Energy Yardstick Score

Where Your Energy is Used

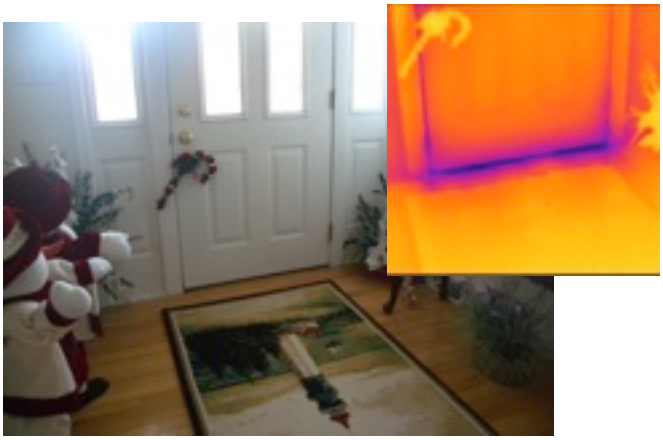


Savings values for the whole house may differ from the end use savings. To achieve the end use savings, your home needs to become efficient for each end use.

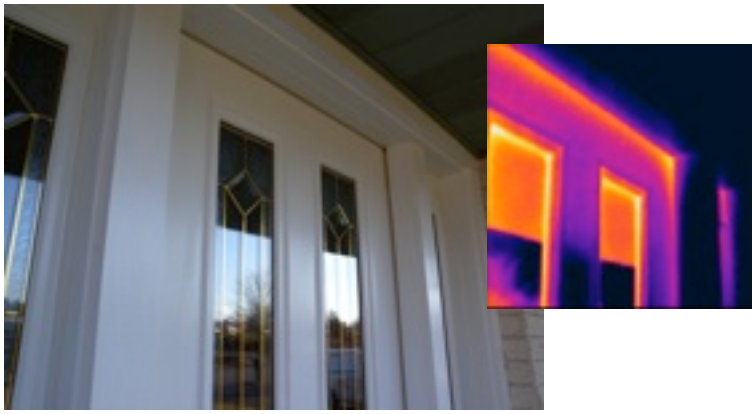
*Average home is calculated as the average of all homes in your selected community group. Efficient home is calculated as the average energy use of the 25% of homes in your community that use the lowest energy.

**Energy values shown on this report include a source energy conversion factor.

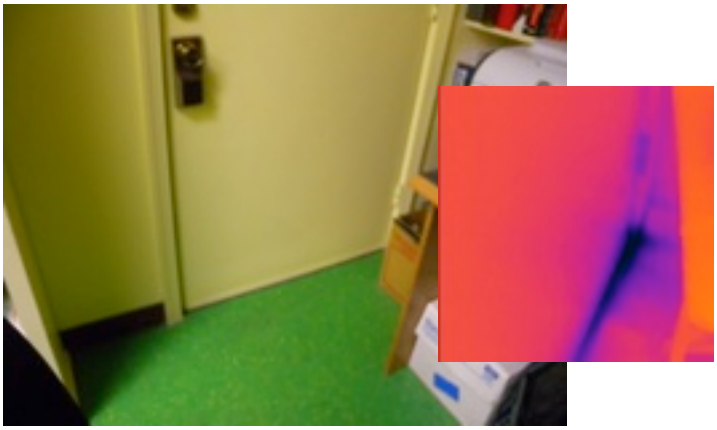
In all thermal images warmer surfaces appear lighter in color and cooler surfaces appear darker



Draft under front door

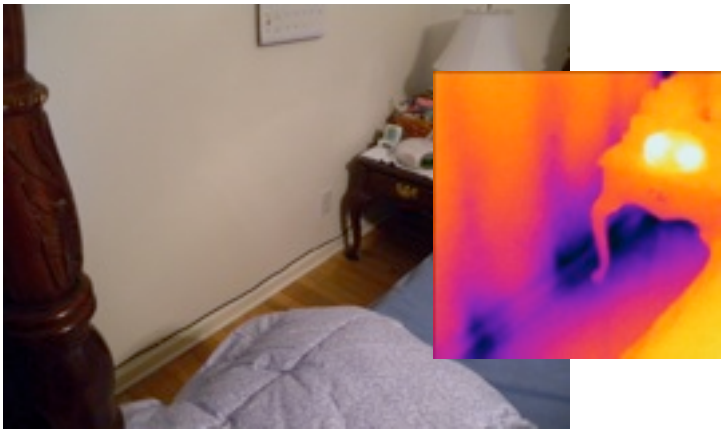


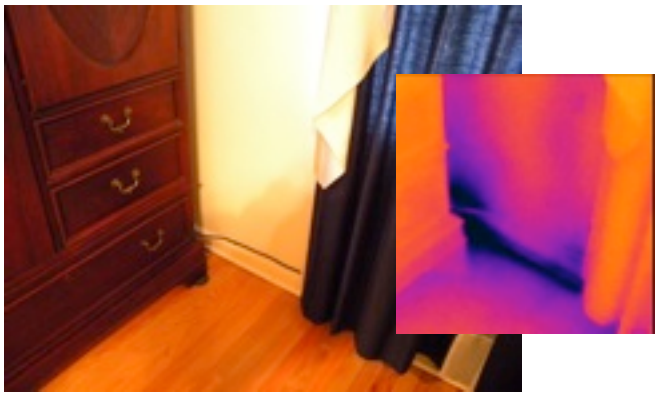
Heat escaping around front door



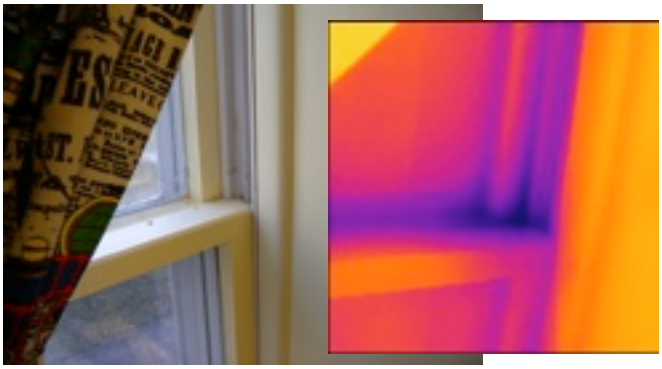
Draft under rear basement door

Cold section of basement below grade wall indicating possible empty cells in block or exterior moisture problem

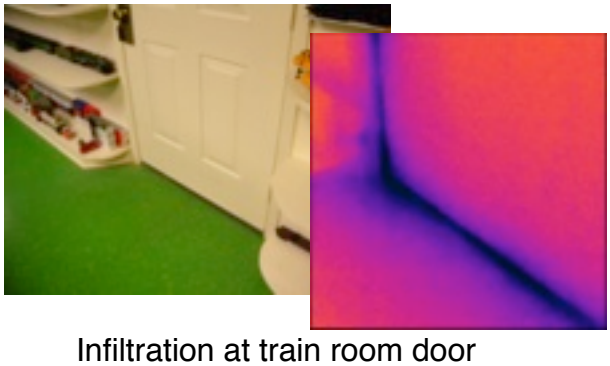




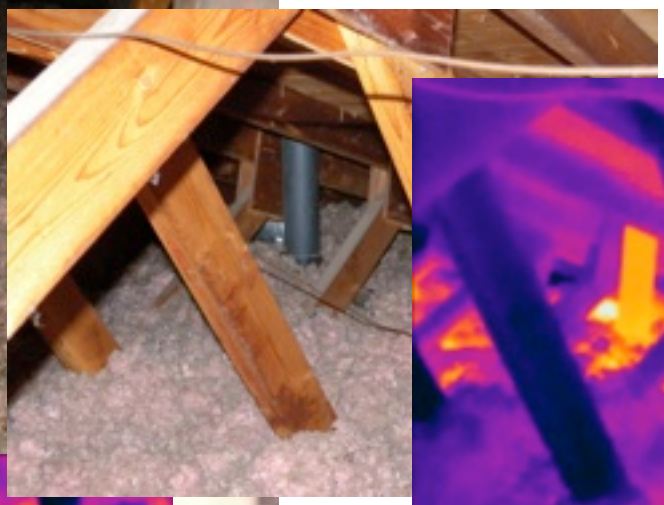
Thermal Bridging at framing members and air movement possibly due to uninsulated rim joists



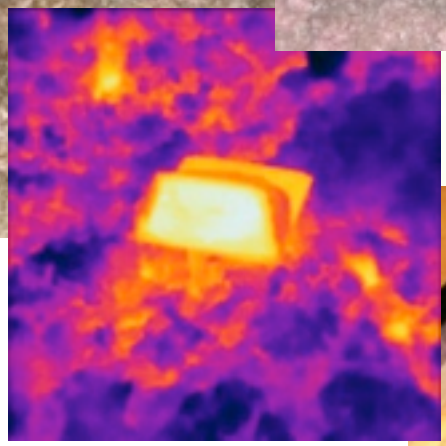
Minimum cold infiltration at windows



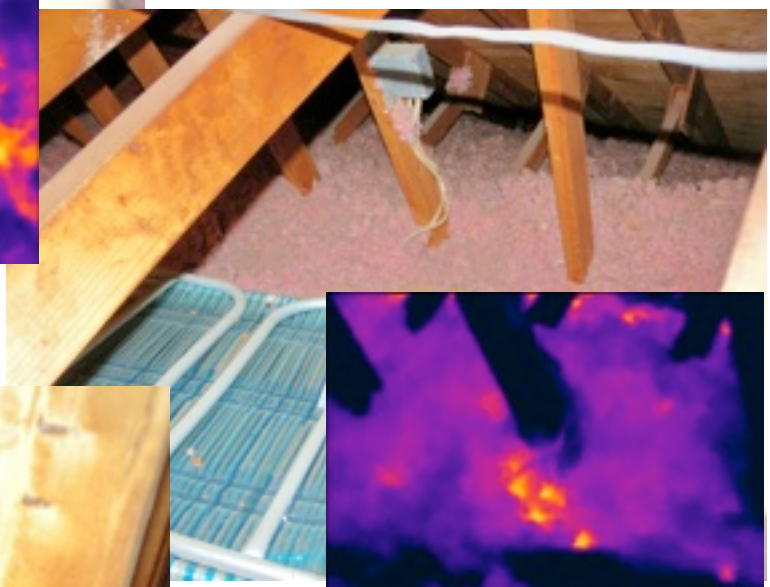
Infiltration at train room door

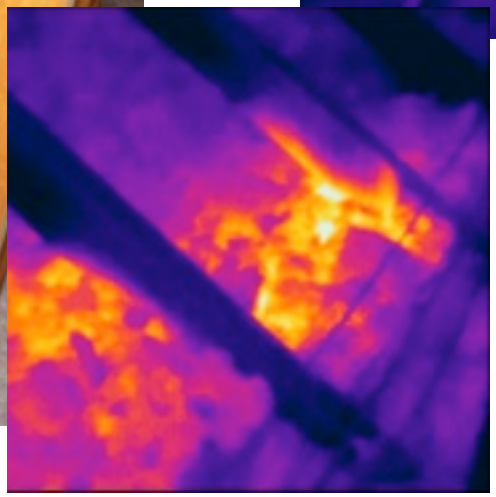


Master Bathroom vent showing heat loss around unboxed fan



Vent from Hallway bath showing heat loss to attic space from unboxed fan and improper venting





Heat loss into attic around unsealed wire and headers

BLOWER DOOR RESULTS

Date of Audit:1/23/2013

Room	Problems / Measures needed	Zonal	Thermal Boundry
Master Bath	Box ceiling vent and light	6.8 pa	In ■ Out ☐
Master Bedroom	Recepticals on exterior walls are drafty	7.2 pa	In ■ Out ☐
End Bedroom	No problems noted	5.6 pa	In ■ Out ☐
Front Bed	No problems noted	4.6 pa	In ■ Out ☐
Hall Bath	Box ceiling fan and light. Vent to exterior	9.2 pa	In ■ Out ☐
Den	Block un-used fireplace	pa	In ■ Out ☐
Kitchen	Box light over sink. Weather strip kit and sweep on door.	pa	In ■ Out ☐
Garage		45.7 pa	In ☐ Out ■
Train Room	Weather strip kit and sweep on door to garage.	4.9 pa	In ■ Out ☐
Utility Room		2.8 pa	In ■ Out ☐
Office	Check seal at bottom of rear exterior door	3.5 pa	In ■ Out ☐
Entry	Adjust or replace weatherstrip and sweep	pa	In ■ Out ☐
Attic	Seal wire, pipe penetrations and headers	-2.0 pa	In ☐ Out ■
	Box 2 bath fans and 3 recessed lights.	pa	In ☐ Out ☐
	Vent at least the hall bath fan to roof or soffit.	pa	In ☐ Out ☐
	Install soffit chutes to assure proper function of low venting	pa	In ☐ Out ☐
		pa	In ☐ Out ☐
		pa	In ☐ Out ☐
		pa	In ☐ Out ☐
	* As per BPI ASHRAE 62.89	pa	In ☐ Out ☐

Target BTL 2744*	**Door Location** Front	**Baseline** -2.0 **pa**
CFM@50 4330	**Ring** ■ Open ☐ A ☐ B ☐ C	**Blower Door setting** -50.0 **pa**

Basement door ☐ **Open** ☐ **Closed** ■ **NA** **Other door** _____ ☐ **Open** ☐ **Closed**

v122612

APPLIANCE MONTHLY COST

Appliance Monthly kWh Cost

APPLIANCE MONTHLY COST

kWh Reading	Cost / Mo
0.089	$6.20

Appliance Monthly kWh Cost

APPLIANCE MONTHLY COST

kWh Reading	Cost / Mo
0.033	$2.30

Appliance Monthly kWh Cost

FirstEnergy Whole House Program - Usage Calculation

Agency: Pro Eco-Energy

Client's Name: [redacted]

Account Number: [redacted]

Date: 1/23/13

Read Type (RT): AV = Average ES = Estimate

Consumption History

Month		YR	Usage (kWh)	RT	Days	Per Day	Rank	Low 3	Baseload (3 lowest months) Usage	Baseload (3 lowest months) Days
January		2012	4,807	ES	33	145.67	11.00	N	0	0
February		2012	4,429	ES	29	152.72	12.00	N	0	0
March		2012	3,131		35	89.46	9.00	N	0	0
April		2012	2,189	ES	28	78.18	8.00	N	0	0
May		2012	1,193		28	42.61	1.00	Y	1,193	28
June	S	2012	1,764	ES	31	56.90	3.00	Y	1,764	31
July	S	2012	1,929	ES	33	58.45	4.00	N	0	0
August	S	2012	1,860	ES	30	62.00	6.00	N	0	0
September	S	2012	1,573		32	49.16	2.00	Y	1,573	32
October		2012	1,740	ES	29	60.00	5.00	N	0	0
November		2012	2,045	ES	30	68.17	7.00	N	0	0
December		2012	4,054	ES	29	139.79	10.00	N	0	0
Total Usage/Days			30,714		367.0				4,530	91
Daily kWh			83.7					Baseload/Day kWh		49.8

Cooling Use Calculation		
Summer Total Use (kWh)	7,126	
Summer Seasonal Use (kWh)	854	> Summer Use over 2000 kWh indicates that Cooling improvements should be recommended
Summer Base Use (kWh)	6,272	

Heating Use Calculation		
Winter Season Total Use (kWh)	23,588	
Winter Seasonal Use (kWh)	11,591	> Winter seasonal use of over 2,000 kWh indicates that improvements should be made to reduce heating load
Winter Base Use (kWh)	11,997	

Total Annual Use (kWh)	30,714	
Annual Base Use (kWh)	18,269	> Estimated Annual Baseload Use
Annual Seasonal Use (kWh)	12,445	

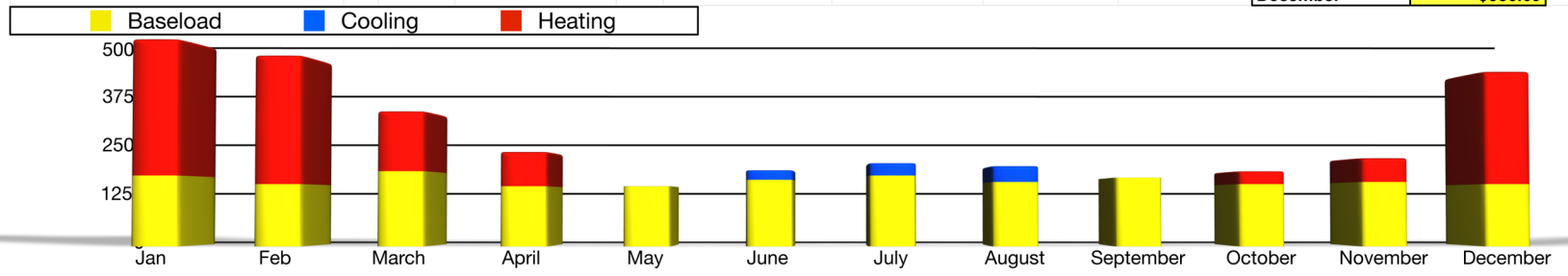
Total Annual Use

< 7,200 kWh	FALSE
7,200 - 9,900 kWh	FALSE
9,901 - 14,000 kWh	FALSE
> 14,000 kWh	TRUE

Estimated Annual Energy Burden	$2,949.67
Estimated Average Monthly Bill	$245.81
Average Cost per kWh	$0.10

Estimated Monthly Costs

January	$457.68
February	$422.04
March	$299.68
April	$210.88
May	$116.98
June	$170.81
July	$186.37
August	$179.86
September	$152.81
October	$168.55
November	$197.30
December	$386.69



Appliance Electric Usage

Appliance:	CPAP Machine (Estimated at 8 hours a day)

Convert wattage to kilowatts

An appliance's wattage is usually stamped on a metal plate (name plate) or in the plastic covering on the back or bottom of the appliance.

Divide wattage by 1000

Wattage	110.00	Divided by 1000 =
Kilowatts	0.11	

Calculate the kilowatt-hours (KWH) the appliance uses

Some appliances, such as refrigerators, water heaters, air conditioners, dryers, skillets, irons and ovens, are controlled by thermostats that cycle on and off automatically, using energy only when the heating element(s) or motor(s) is on. To figure their energy use, you have to estimate the amount of time they are actually at full load.

Multiply the kilowatts by the number of hours the appliance operates at full load.

Kilowatts	0.11	Daily Hours at Full Load	8.00
KWH	0.88	Days Run per Week	7.00

Figure out the cost per KWH

You can calculate the current cost per KWH by checking your electric bill.

Cost per KWH	0.10

Calculate the cost for operating

Now you can figure out the cost for using your appliance for an hour.

Multiply the KWH for the appliance by the cost per KWH.

Cost for Operating is	$0.01	Per hour
	$2.97	Monthly
	$35.59	Yearly

Convert Horsepower to Watts

Horsepower	0.15	Watts	112

Convert Watts to Horsepower

Watts	110.00	Horsepower	0.15

Appliance Electric Usage

Appliance:	Radon Fan

Convert wattage to kilowatts

An appliance's wattage is usually stamped on a metal plate (name plate) or in the plastic covering on the back or bottom of the appliance.

Divide wattage by 1000

Wattage	90.00	Divided by 1000 =
Kilowatts	0.09	

Calculate the kilowatt-hours (KWH) the appliance uses

Some appliances, such as refrigerators, water heaters, air conditioners, dryers, skillets, irons and ovens, are controlled by thermostats that cycle on and off automatically, using energy only when the heating element(s) or motor(s) is on. To figure their energy use, you have to estimate the amount of time they are actually at full load.

Multiply the kilowatts by the number of hours the appliance operates at full load.

Kilowatts	0.09	Daily Hours at Full Load	24.00
KWH	2.16	Days Run per Week	7.00

Figure out the cost per KWH

You can calculate the current cost per KWH by checking your electric bill.

Cost per KWH	0.10

Calculate the cost for operating

Now you can figure out the cost for using your appliance for an hour.

Multiply the KWH for the appliance by the cost per KWH.

Cost for Operating is	$0.01	Per hour
	$7.28	Monthly
	$87.36	Yearly

Convert Horsepower to Watts

Horsepower	0.12	Watts	89

Convert Watts to Horsepower

Watts	90.00	Horsepower	0.12

Appliance Electric Usage

Appliance:	Radon Fan

Convert wattage to kilowatts

An appliance's wattage is usually stamped on a metal plate (name plate) or in the plastic covering on the back or bottom of the appliance.

Divide wattage by 1000

Wattage	90.00	Divided by 1000 =
Kilowatts	0.09	

Calculate the kilowatt-hours (KWH) the appliance uses

Some appliances, such as refrigerators, water heaters, air conditioners, dryers, skillets, irons and ovens, are controlled by thermostats that cycle on and off automatically, using energy only when the heating element(s) or motor(s) is on. To figure their energy use, you have to estimate the amount of time they are actually at full load.

Multiply the kilowatts by the number of hours the appliance operates at full load.

Kilowatts	0.09	Daily Hours at Full Load	24.00
KWH	2.16	Days Run per Week	7.00

Figure out the cost per KWH

You can calculate the current cost per KWH by checking your electric bill.

Cost per KWH	0.10

Calculate the cost for operating

Now you can figure out the cost for using your appliance for an hour.

Multiply the KWH for the appliance by the cost per KWH.

Cost for Operating is	$0.01	Per hour
	$7.28	Monthly
	$87.36	Yearly

Convert Horsepower to Watts

Horsepower	0.12	Watts	89

Convert Watts to Horsepower

Watts	90.00	Horsepower	0.12

Appliance Electric Usage

Appliance:	Whole House Humidifier (Estimated Cost)

Convert wattage to kilowatts

An appliance's wattage is usually stamped on a metal plate (name plate) or in the plastic covering on the back or bottom of the appliance.

Divide wattage by 1000

Wattage	274.00	Divided by 1000 =
Kilowatts	0.27	

Calculate the kilowatt-hours (KWH) the appliance uses

Some appliances, such as refrigerators, water heaters, air conditioners, dryers, skillets, irons and ovens, are controlled by thermostats that cycle on and off automatically, using energy only when the heating element(s) or motor(s) is on. To figure their energy use, you have to estimate the amount of time they are actually at full load.

Multiply the kilowatts by the number of hours the appliance operates at full load.

Kilowatts	0.27	Daily Hours at Full Load	8.00
KWH	2.19	Days Run per Week	7.00

Figure out the cost per KWH

You can calculate the current cost per KWH by checking your electric bill.

Cost per KWH	0.10

Calculate the cost for operating

Now you can figure out the cost for using your appliance for an hour.

Multiply the KWH for the appliance by the cost per KWH.

Cost for Operating is	$0.03	Per hour
	$7.39	Monthly
	$88.65	Yearly

Convert Horsepower to Watts

Horsepower	0.37	Watts	276

Convert Watts to Horsepower

Watts	274.00	Horsepower	0.37