



PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
PENNSYLVANIA TREASURY DEPARTMENT  
PENNSYLVANIA HOUSING FINANCE AGENCY

## Keystone HELP® ENERGY EFFICIENCY Loan Program Guidelines May 18, 2011

Pennsylvania homeowners can improve the energy efficiency of their homes with special financing for windows, doors, insulation, and **high efficiency heating and air conditioning equipment**. Homeowners can improve the energy efficiency of their homes even more dramatically by choosing whole house improvements through unsecured loans based on the CAPP (*Conservation Audit and Performance Protocol*) or secured loans based upon Home Performance with Energy Star, each of which offers even lower financing rates. Principally supported by the **Department of Environmental Protection, Pennsylvania Treasury Department** and the **Pennsylvania Housing Finance Agency**, the Keystone HELP® program helps make affordable energy efficiency available to all eligible Pennsylvania homeowners. Keystone HELP is administered by AFC First Financial Corporation, a Pennsylvania energy efficiency lender.

- All installed equipment and material must be new.
- Loans are available only for projects initiated after the program's effective date.
- An Eligible Applicant is permitted to receive only one rebate or loan during each fiscal year, which is defined as the period from each July 1 until the following June 30. Eligible Applicants may apply for additional rebates or loans in future years, as long as the additional projects comply with the published guidelines current at the time of application.



# Keystone HELP<sup>®</sup> Energy Efficiency Loans

## Available in All Pennsylvania Counties

Special rates available in **Bucks, Chester, Delaware, Montgomery and Philadelphia** counties through the EnergyWorks program and in the **City of Allentown**. Additional Keystone HELP and AFC First EnergyLoan programs for **other types of improvements including geothermal and solar** and programs for **homeowners whose income exceeds the amount shown below** are also available at standard rates. Please see the relevant program sheet for details.

## Energy Improvements with BPI Air Sealing & Insulation (CAPP) **\$1,000 to \$15,000** UNSECURED

HEATING, COOLING, WINDOWS, DOORS and other qualifying improvements that are ENERGY STAR qualified and are part of a comprehensive project of blower door directed AIR SEALING, INSULATION and other energy saving measures as recommended by a Certified Contractor (BPI) and meet minimum program qualifications utilizing the CAPP Checklist. *0.99 EnergyWorks loan subject to process guidelines.	<b>2.99% Statewide</b>	<ul style="list-style-type: none"> <li>- No Lien</li> <li>- No Pre Payment Penalty</li> <li>- 3, 5 or 10 Year Term</li> <li>- \$150,000 Maximum Household Income</li> </ul>
	<b>0.99%*</b> available in <i>Bucks, Chester, Delaware, Montgomery and Philadelphia</i> counties through the EnergyWorks program and in the <i>City of Allentown</i> .	

## Equipment & Improvements - ADVANCED PERFORMANCE **\$1,000 to \$15,000** UNSECURED

HEATING, COOLING, INSULATION and other qualifying improvements that exceed ENERGY STAR or meet program ADVANCED PERFORMANCE standards. *Cooling not eligible for 4.99 EnergyWorks program.	<b>7.99% Statewide</b>	<ul style="list-style-type: none"> <li>- No Lien</li> <li>- No Pre Payment Penalty</li> <li>- 3, 5 or 10 Year Term</li> <li>- \$150,000 Maximum Household Income</li> </ul>
	<b>4.99%*</b> available in <i>Bucks, Chester, Delaware, Montgomery and Philadelphia</i> counties through the EnergyWorks program and in the <i>City of Allentown</i> .	

## Equipment & Improvements – ENERGY STAR **\$1,000 to \$15,000** UNSECURED

HEATING, COOLING, WINDOWS, DOORS, INSULATION and other qualifying improvements that are ENERGY STAR qualified or meet program standards. *Cooling & Windows not eligible for 5.99 EnergyWorks program.	<b>8.99% Statewide</b>	<ul style="list-style-type: none"> <li>- No Lien</li> <li>- No Pre Payment Penalty</li> <li>- 3, 5 or 10 Year Term</li> <li>- \$150,000 Maximum Household Income</li> </ul>
	<b>5.99%*</b> available in <i>Bucks, Chester, Delaware, Montgomery and Philadelphia</i> counties through the EnergyWorks program and in the <i>City of Allentown</i> .	

## Major Whole House Improvements with BPI/RESNET Audit **\$5,000 to \$35,000** SECURED

HEATING, COOLING, INSULATION and other qualifying Whole House energy improvements that are recommended by a Certified BPI/RESNET Energy Audit. Predicted minimum energy savings of 15% to 25% required, depending on home's energy profile.	<b>3.875% to 6.375%</b> <i>Based on Home's Equity and Loan Term</i>  <b>Plus \$325 Energy Audit Credit</b>	<ul style="list-style-type: none"> <li>- Up to 120% of Home's Value</li> <li>- 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> Mortgage</li> <li>- No Pre Payment Penalty</li> <li>- 10, 15 or 20 Year Term</li> <li>- \$150,000 Maximum Household Income</li> </ul>
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## Who is Eligible?

Pennsylvania homeowners who own and are making qualifying improvements to their 1 to 2 unit primary residence located in Pennsylvania and whose combined annual household income is \$150,000 or less are eligible to apply for a loan under the Keystone HELP Energy Efficiency Loan program. *Please Note that Keystone HELP loans for Geothermal Heat Pump Systems have no income limits. Loans For Non-Qualifying Keystone HELP Improvement Types & Borrowers With Higher Income Than Permitted for Keystone HELP Energy Efficiency Loans may be eligible for loans under AFC First's EnergyLoan program.* Work under the secured "Whole House Improvement Loan" or EnergyLoan Renovate and Repair Loan for programs must be done on a 1-2 unit owner occupied, deeded property. Applicants must meet the credit eligibility standards of the program. Applicants also agree to:

- Complete or provide data on your energy usage for completion of the Energy Star Home Energy Yardstick or equivalent;
- Grant access to your utility and fuel consumption data to the Department of Environmental Protection or its designees for 12 months from the date of your loan (not applicable for Renovate and Repair ENERGY STAR Loan); and
- Complete a follow up survey in approximately 12 months from the date of your loan; and
- Agree to permit a Quality Assurance inspection after the work is completed if your project is selected.

## Who Can Perform the Work?

Only Keystone HELP® Participating Contractors may perform the work. Visit [www.keystonehelp.com](http://www.keystonehelp.com) or call (888) 232-3477 to find Participating Contractors in your area. If you would like to use a contractor who is not currently approved, have them contact AFC First to inquire about becoming a Participating Contractor.

There are three levels of contractors and one level of energy auditor certification under the program. Please note that Keystone HELP does not endorse any particular contractor, but maintains a directory of contractors who have applied and been authorized to participate in the program at these different levels. While the contractors in our directory have been screened and qualified to the best of our ability, you will be entering into a direct relationship with the contractor of your choice and it is important that you review their credentials, qualifications and references to make an informed decision.

**Approved Contractors** have been reviewed for financial and ethical stability and are currently authorized to perform work under all loan programs except the "CAPP" and "Whole House Improvement Loan" programs. **Please note that as of September 30, 2011 all contractors must be either "Trained" or "Certified" in order to participate in the program.**

**Trained Contractors** are Approved Contractors who are not BPI (Building Performance Institute) certified or accredited but have undergone additional training on building science and "Whole House" energy improvements (including RESNET certification or satisfactory completion of the Keystone HELP sponsored "Home Performance 101" course), and are currently authorized to perform work under all loan programs. If they are performing work under the "Whole House Improvement Loan" program, they must be working under a Certified Auditor who provides on-site oversight of their work.

**Certified Contractors** are Approved Contractors who have achieved BPI (Building Performance Institute) certification or accreditation. BPI is the nationally recognized designation for building and energy professionals who have undergone rigorous training on "Whole House" energy improvements. Certified Contractors are authorized to perform work under all loan programs.

**Certified Auditors** are Approved Contractors certified by BPI (Building Performance Institute) and RESNET (Residential Energy Services Network) to conduct home energy audits and must have a HERS rater number, be operating under a HERS provider, or be an approved audit provider under the PA Home Energy Home Performance with ENERGY STAR program. You must have an audit performed by a Certified Auditor to utilize the "Whole House Improvement Loan" Program. Certified Auditors may work independently from your contractor or they may be Certified Contractors who have also met the qualifications to perform as Certified Auditors.

*You may have a contract with only one Approved, Trained or Certified Contractor for the unsecured loan programs. Multiple Approved, Trained or Certified Contractors are permitted under secured loan program. Approved, Trained or Certified Contractors are permitted to use sub-contractors in the normal course of their business, providing that your contract for work is only with an Approved, Trained or Certified Contractor. You may, however, enter into a separate contract with a Certified Auditor for a home energy audit.*

## What Improvements Are Eligible?

<b><u>Unsecured Loan for ENERGY STAR</u></b>	<b><u>Unsecured Loan for ADVANCED PERFORMANCE</u></b>
<p>All work can be financed if at least 75 percent of the project consists of qualifying improvements as listed below.</p> <p>ENERGY STAR Air Source Heat Pumps</p> <p>ENERGY STAR Central AC Systems</p> <p>ENERGY STAR Boilers (All Fuels)</p> <p>ENERGY STAR Furnaces (All Fuels) <u>Must be ENERGY STAR certified</u> except for <i>indoor solid fuel burning furnaces</i> (wood, coal etc.), which must have a minimum 78% AFUE.</p> <p>ENERGY STAR Water Heaters</p> <p>ENERGY STAR Ceiling Fans</p> <p>ENERGY STAR Programmable Thermostats</p> <p>ENERGY STAR Ventilating Fans</p> <p>ENERGY STAR Windows/Doors <u>With NFRC label, U factor .30 or less</u></p> <p><b>Air Sealing and Insulation</b> (ENERGY STAR certification not required) all of the following must be completed:</p> <ul style="list-style-type: none"><li>• Air sealing of the home and ducts is performed, and</li><li>• Ceiling insulation installed achieves R-38 or better*, and</li><li>• Floor insulation installed achieves R-25 or better*</li></ul> <p>* Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum R-value that can be achieved is required, with complete fill of ceiling and floor cavities with insulation (i.e. no voids) at a minimum.</p> <p><u>Work must be performed by an:</u></p> <ul style="list-style-type: none"><li>• Approved Contractor (until 9/30/2011) or</li><li>• Trained Contractor or</li><li>• Certified Contractor</li></ul>	<p>All work can be financed if at least 75 percent of the project consists of qualifying improvements as listed below.</p> <p><b>Air Source Heat Pump (Split Systems)</b> SEER ≥ 15.0, EER ≥ 12.5, HSPF ≥ 8.5</p> <p><b>Air Source Heat Pump (Package Systems)</b> SEER ≥ 14.0, EER ≥ 12.0, HSPF ≥ 8.0</p> <p><b>Central AC System Split Systems</b> SEER ≥ 16.0, EER ≥ 13.0</p> <p><b>Central AC Package Systems</b> SEER ≥ 14.0, EER ≥ 12.0</p> <p><b>Boilers (Natural Gas, Oil or Propane)</b> AFUE ≥ 90</p> <p><b>Furnaces (Natural Gas or Propane)</b> AFUE ≥ 95</p> <p><b>Furnaces (Oil)</b> AFUE ≥ 90</p> <p><b>Water Heater (Gas, Oil or Propane):</b> Energy Factor ≥ 0.82 OR thermal efficiency ≥ 90%</p> <p><b>Water Heater (Electric Heat Pump):</b> Energy Factor ≥ 2.0</p> <p><b>R- 5 WINDOWS OR LOW-E STORM WINDOWS</b></p> <p><b>Air Sealing and Insulation</b> (ENERGY STAR certification not required) all of the following must be completed:</p> <ul style="list-style-type: none"><li>• Air sealing of the home and ducts is performed, and</li><li>• Ceiling insulation installed achieves R-38 or better*, and</li><li>• Floor insulation installed achieves R-25 or better*</li><li>• Wall insulation installed achieves R-15 or better.*</li></ul> <p>* Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum R-value that can be achieved is required, with complete fill of ceiling and floor cavities with insulation (i.e. no voids) at a minimum.</p> <p><u>Work must be performed by an:</u></p> <ul style="list-style-type: none"><li>• Approved Contractor (until 9/30/2011) or</li><li>• Trained Contractor or</li><li>• Certified Contractor</li></ul>

## Unsecured Loan for **ENERGY IMPROVEMENTS WITH AIR SEALING (CAPP)**

CAPP (Conservation Audit and Performance Protocol) is designed to identify and perform many of the most common and effective cost and energy-efficient Energy Conservation Measures (ECMs) that can be expected to provide annual energy savings for your home. ECMs are assigned point values based upon their relative effectiveness in saving energy. Qualifying Major Blower Door Guided Air Sealing (to BPI standards) improvements and related services must be provided prior to the installation of any other qualifying improvements by a Certified Contractor (BPI), with Appropriate "Test In" and "Test Out" Protocols. To qualify, improvements must complete the prescribed steps on the CAPP Checklist.

### **REQUIRED MEASURES**

Utility Bill Analysis and Consumer Education Checklist

Health & Safety Review

Blower Door Guided Air Sealing (BPI)

Insulation to Ensure Continuous Thermal Building Envelope

Seal & Insulate Ducts in Unconditioned Spaces *(if applicable)*

Combustion Appliance Checkup and Maintenance *(if applicable)*

### **ADDITIONAL ITEMS WHICH MAY BE INCLUDED IN CAPP LOAN**

*Upon Completion of Required Measures Above*

ENERGY STAR Windows, Doors and Skylights, R-5 Windows and Low-e Storm Windows

ENERGY STAR / ADVANCED ENERGystar Heating And Cooling (HVAC)

Energy Recovery Exhaust and Ventilation (ERV); or Heat Recover and Ventilation (HRV)

Replacement of Major Appliances (Refrigerators, Clothes Washer, Water Heaters)

Cool Roof

Work must be performed by a:

- Certified Contractor

## Secured Loan for **WHOLE HOUSE IMPROVEMENT**

Qualifying Improvements consist of the comprehensive "Whole House" energy audit conducted by a Certified Auditor and the recommended energy improvements presented by the Certified Auditor as a result of the audit. Work must be performed by a Certified Contractor, or a Trained Contractor under the on-site oversight of a Certified Auditor.

An initial energy audit is conducted, which recommends energy conservation measures and includes an overall home energy rating (HERS) index. Qualifying improvements are those that predict a minimum decrease of 25% from an original HERS index of more than 100 or a minimum decrease of 15% from an original HERS index of less than 100.

A post construction audit is also conducted.

*Eligible Applicants will receive \$325 towards the cost of the energy audit from Keystone HELP upon completion of the post-construction audit.*

Work must be performed by a:

- Certified Contractor or
- Trained Contractor under the on-site oversight of a Certified Auditor

Audit must be performed by a:

- Certified Auditor

# How Does A Homeowner Get a Keystone HELP® Loan?

## Important Considerations Before You Apply

- If your home is 50 years old or less you are automatically eligible to apply for a loan under this program. **If your home is older than 50 years and you are making exterior improvements to your home (such as windows), your project may need to be reviewed by the State Historic Preservation Office before you may apply.** *To get your project reviewed by the State Historic Preservation Office, you must submit a completed "Request to Initiate Consultation" form to the PA Historical and Museum Commission. AFC will be able to assist you in this process.*

### Unsecured Loan for ENERGY STAR or ADVANCED PERFORMANCE

Apply online at [www.keystonehelp.com](http://www.keystonehelp.com), by phone at (888) 232-3477, by fax at (610) 433-7488 or complete the application and give it to your Approved Contractor for submission. We'll have a quick decision on your loan application, and are happy to answer any of your questions.

Complete the Home Energy Yardstick on our website or provide us or your contractor with how much energy you used and how much you paid for energy for the past 12 months so we can complete the Yardstick for you.

Get an estimate for qualifying improvements from your Approved Contractor and sign the Keystone HELP Specification Sheet your Approved Contractor will provide you that details the qualifying improvements.

Sign the Keystone HELP® Loan Agreement, utility bill release form, and auto-payment authorization provided to you.

When the work is done to your satisfaction, sign the Completion Certificate your Contractor will provide you.

We'll call you to confirm and pay the contractor upon your authorization.

### Unsecured Loan for ENERGY IMPROVEMENTS WITH AIR SEALING (CAPP)

Have a Blower Door Test, conducted to BPI standards, by a Certified Contractor or Auditor

Apply online at [www.keystonehelp.com](http://www.keystonehelp.com), by phone at (888) 232-3477, by fax at (610) 433-7488 or complete the application and give it to your Certified Contractor for submission. We'll have a quick decision on your loan application, and are happy to answer any of your questions.

Complete the Home Energy Yardstick on our website or provide us or your contractor with how much energy you used and how much you paid for energy for the past 12 months so we can complete the Yardstick for you.

Get an estimate for qualifying improvements from your Certified Contractor and sign the Keystone HELP Specification Sheet your Contractor will provide you that details the qualifying improvements.

Complete the CAPP Checklist with your contractor to ensure that your project has included the minimum required energy measure.

Sign the Keystone HELP® Loan Agreement, utility bill release form, and auto-payment authorization provided to you.

A Certified Auditor will conduct a post-construction Blower Door Test.

When the work is done to your satisfaction, sign the Completion Certificate your Contractor will provide you.

We'll call you to confirm and pay the contractor upon your authorization.

### Secured Loan for WHOLE HOUSE IMPROVEMENT

Apply online at [www.keystonehelp.com](http://www.keystonehelp.com), by phone at (888) 232-3477, by fax at (610) 433-7488 or complete the application and give it to your Approved Contractor for submission.

We'll have a quick decision on your application, and are happy to answer any of your questions.

Complete the Home Energy Yardstick on our website or provide us or your contractor with how much energy you used and how much you paid for energy for the past 12 months so we can complete the Yardstick for you.

Obtain your energy audit from a Certified Auditor and select improvements from those recommended. (To be eligible your energy audit must recommend and you must install improvements that predict a minimum 25% reduction for an initial HERS index greater than 100 or a minimum 15% reduction for an initial HERS index of 100 or lower.)

Get an estimate for selected qualifying improvements from a Certified Contractor or a Trained Contractor working under the supervision of a Certified Auditor and sign the Keystone HELP Specification Sheet your Approved Contractor will provides you that details the qualifying improvements.

We will send you disclosure information and a closing agent will come to you at a mutually convenient time and location to close your loan and have you sign the utility release form.

A Certified Auditor will conduct a post-construction audit.

When the work is done to your satisfaction, sign the Completion Certificate your Contractor will provide you.

We'll call you to confirm and pay the contractor upon your authorization and send you a check for \$325 toward the cost of the audit.



# CAPP SPECIFICATION CERTIFICATION SHEET & CHECKLIST

## Keystone HELP Energy Improvements with AIR SEALING (CAPP)

Contractor	Contractor Sales Person
Customer Name(s)	Contract Date
Customer(s) Street Address, City, State, and Zip Code	

<b>REQUIRED MEASURES</b>	Check if Completed
Utility Bill Analysis and Consumer Education Checklist	
Health & Safety Review	
Blower Door Guided Air Sealing (BPI)	
Insulation to Ensure Continuous Thermal Building Envelope	
Seal & Insulate Ducts in Unconditioned Spaces <i>(if applicable)</i>	
Combustion Appliance Checkup and Maintenance <i>(if applicable)</i>	
<b>ADDITIONAL ITEMS WHICH MAY BE INCLUDED IN CAPP LOAN</b>	
<i>Upon Completion of Required Measures Above</i>	
ENERGY STAR Windows, Doors and Skylights, R-5 Windows and Low-e Storm Windows	
ENERGY STAR / ADVANCED ENERGYSTAR Heating And Cooling (HVAC)	
Energy Recovery Exhaust and Ventilation (ERV); or Heat Recover and Ventilation (HRV)	
Replacement of Major Appliances (Refrigerators, Clothes Washer, Dryers, Water Heaters)	
Cool Roof	

The Customer(s) listed above hereby jointly and severally agree, to the best of their knowledge, that the items listed above is the work I (we) directed to be done and are agreeing to pay for as described in the Specification Sheet and Contractor's work order (jointly, the "Agreement"). See Reverse and the Specification Sheet for Qualifying improvements & Installation Standards. Contractor certifies that the qualifying improvements listed above were made in accordance with the installation standards on the reverse and the accompanying Specification Sheet. Contractor makes this certification not only to the Customer, but also to the Commonwealth of Pennsylvania and its agencies and to any third-party bank, credit institution, finance company or other entity that will participate in the Keystone HELP program in connection with or as part of a transaction involving this Agreement between Contractor and Customer. Customer(s) has read the front and reverse of this Qualification Sheet and has received a completed, signed, and dated copy of this Agreement on the date first written above.

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CONTRACTOR'S AUTHORIZED REPRESENTATIVE

\_\_\_\_\_  
CUSTOMER

5/18/11

\_\_\_\_\_  
CUSTOMER

## CAPP QUALIFYING IMPROVEMENTS AND INSTALLATION STANDARDS

UTILITY BILL ANALYSIS AND CONSUMER EDUCATION CHECKLIST	Use Utility Bill Analysis & Consumer Education Checklist
HEALTH & SAFETY REVIEW	Homeowner must be notified of any health and safety hazards identified during the course of inspections and installations in the home, in accordance with the <a href="#">US DOE Workforce Guidelines for Home Energy Upgrades</a> and all applicable BPI standards. These hazards include, but are not limited to: indoor air contaminant sources, moisture problems, structural problems, electrical problems, and fire protection issues.
BLOWER DOOR GUIDED AIR SEALING	Conduct extensive blower door guided air sealing to reduce air leakage and improve occupant comfort, in accordance with the <a href="#">US DOE Workforce Guidelines for Home Energy Upgrades</a> and all applicable BPI standards
INSULATION TO ENSURE CONTINUOUS THERMAL BUILDING ENVELOPE	<p>Insulate all of the following areas to the greatest extent necessary to create a well-insulated, continuous thermal building envelope (or, where appropriate, confirm that existing insulation levels satisfy this standard). A well-insulated, continuous thermal building envelope shall exist when or insulation levels meet or exceed the residential building envelope thermal requirements (Chapter 4) of the 2009 IECC (International Energy Conservation Code). All insulation materials shall be installed in accordance with the US DOE Workforce Guidelines for Home Energy Upgrades and all applicable BPI standards. See DOE/CE-0180 2008 Insulation Fact Sheet and Figure 1 (below) for additional clarification on where to insulate (<a href="http://www.ornl.gov/sci/roofs+walls/insulation/ins_08.html">http://www.ornl.gov/sci/roofs+walls/insulation/ins_08.html</a>).</p> <ol style="list-style-type: none"> <li>a. Attic ceilings, knee walls, accessible attic floors, enclosed attic floors, attic openings and attics general</li> <li>b. Accessible exterior walls, enclosed exterior walls</li> <li>c. Accessible floors</li> <li>d. Vented crawl spaces, closed crawl spaces, band joists, basement walls</li> <li>e. Access hatches and doors.</li> </ol>
SEAL & INSULATE DUCTS (UNCONDITIONED SPACE)	Seal and insulate supply and return ducts in unconditioned spaces, in accordance with the <a href="#">US DOE Workforce Guidelines for Home Energy Upgrades</a> and all applicable BPI standards
COMBUSTION APPLIANCE CHECKUP AND MAINTENANCE	Tune-up and/or repair combustion appliances (for all existing combustion appliances to remain) in accordance with all applicable BPI standards and manufacturers recommendations.
WINDOWS, DOORS AND SKYLIGHTS	Must be replaced with ENERGY STAR Qualified products, use BPI Envelope Professional Standards.
R- 5 WINDOWS OR LOW-E STORM WINDOWS	Purchase and installation of qualified residential glazing products participating in the U.S. Department of Energy (DOE) Highly-Insulating (R-5) Windows and Low-e Storm Windows Volume Purchase Program (see: <a href="http://www1.eere.energy.gov/buildings/windowsvolumepurchase/">www1.eere.energy.gov/buildings/windowsvolumepurchase/</a> and <a href="http://www.windowsvolumepurchase.org/">www.windowsvolumepurchase.org/</a> for specifications and requirements). (1 Point for every 10 windows replaced or storm windows installed, up to a maximum of 2 points)
HEATING AND COOLING (HVAC)	Replace existing HVAC equipment. Must be ENERGY STAR qualified and properly sized for spaces serviced. installed in accordance with ACCA Standard 5 HVAC Quality Installation Specification ( <a href="http://www.energystar.gov/ia/home_improvement/home_contractors/qispec.pdf">www.energystar.gov/ia/home_improvement/home_contractors/qispec.pdf</a> ), US DOE Workforce Guidelines for Home Energy Upgrades and all applicable BPI standards.
ERV (ENERGY RECOVERY VENTILATOR) OR HRV (HEAT RECOVERY VENTILATOR)	Size and install equipment based on ASHRAE 62.2-2007: Suggested minimum occupant ventilation rate under natural conditions of 15CFM + 15CFM per bedroom or 0.35 air changes per hour, whichever is greater. Include any necessary ventilation requirements for combustion appliances.
WATER HEATING REPLACEMENTS	Must be ENERGY STAR qualified.
REFRIGERATOR REPLACEMENT	Must be ENERGY STAR qualified.
CLOTHES WASHER	Must be ENERGY STAR qualified.
CLOTHES DRYER	Must be ENERGY STAR qualified. Clothes Dryer Improvements. Replacement of flex duct with smooth metal pipe. Ensure proper venting to the outside. New replacement dryers must have moisture sensors and must be installed using smooth metal pipe.
COOL ROOF	Purchase and installation of ENERGYSTAR qualified roof products, entire roof surface (see: <a href="http://www.energystar.gov/index.cfm?c=roof_prods.pr_crit_roof_products">www.energystar.gov/index.cfm?c=roof_prods.pr_crit_roof_products</a> for specifications and requirements).

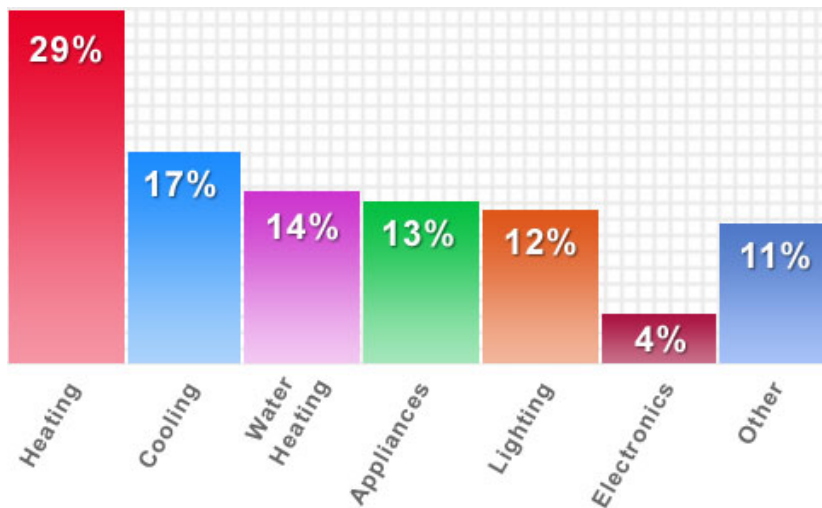
## Utility Bill Analysis & Consumer Education Checklist Conservation Audit and Performance Protocol (CAPP)

**Utility Bill Analysis:** Work with your auditor or home energy professional to evaluate how you use energy in your home and where your utility dollars are going<sup>1</sup>. This is a critical step for prioritizing energy improvements during the audit.

- Utility bill analysis using ENERGY STAR Home Energy Yardstick**
  - Compare your energy use to others across the country and get recommendations for improvement; [www.energystar.gov](http://www.energystar.gov)
  - Keystone HELP program requires Home Energy Yardstick analysis to compare your energy usage before and after (1 year after) the installation. This information is used to provide you with a measure of success, as well as important program analysis for Keystone HELP.

### Where Is My Money Going<sup>1</sup>?

The annual energy bill for a typical single family home is approximately \$2,200.



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**Consumer Education Checklist:** This checklist includes a few no cost or low cost measures that can be applied to many homes. These measures provide some basic (but often overlooked) opportunities to save you additional money.

#### 1. Turn off lights, appliances, electrical devices and equipment when not in use:

Turn lights off in unoccupied rooms and use Compact Fluorescent Lights (CFLs) or Solid State Lighting (SSL) aka LEDs (Light Emitting Diodes) in your most frequently used fixtures.

- Review ENERGY STAR's CFL [Buyers Guide](#) for details on selecting the proper CFLs or replacement lamp for your application, [www.energystar.gov](http://www.energystar.gov)
- Recycle all CFLs properly. Visit <http://earth911.com/> for recycling information.
- Consider eliminating your halogen floor lamps or torchieres for higher energy efficiency and improved fire safety.
- Try using efficient Solid State or LED Lights.

Eliminate vampire loads: Unplug appliances (TV's, DVD players, computers, kitchen appliances, etc.) that are not being used or control multiple devices with a conveniently located power strip that can easily be switched on and off.

Don't run ceiling or room fans when you are not in the room. Fans cool people, not rooms, so they won't do you any good when you're not at home.

Activate "sleep" features on computers. Do not use screen savers, as this feature requires both the monitor and the computer's CPU to operate and use more energy.

<sup>1</sup> *Where Does My Money go?* Source: Typical House memo, Lawrence Berkeley National Laboratory, 2009 and Typical house\_2009\_Reference.xls spreadsheet. Average price of electricity is 11.3 cents per kilo-watt hour. Average price of natural gas is \$13.29 per million Btu. "Other" represents an array of household products, including stoves, ovens, microwaves, and small appliances like coffee makers and dehumidifiers

## 2. Run your appliances more efficiently:

- Use your microwave oven to save energy. Microwaves heat foods faster and use less energy than standard electric ranges and cook tops. Cover dishes to help keep the heat in and reduce the amount of energy used to heat or reheat food.
- Give your refrigerator a physical and keep it clean to save energy.



### Refrigerator Maintenance:

- Once a year, clean the coils on the back of the refrigerator. Brush off any dirt, lint, dust or hair that might be restricting air flow on the coils.
- Leave an air gap between the refrigerator and the wall to allow good air flow and circulation.
- Use a thermometer to check the temperature of your freezer and refrigerator. Freezers operate best when set between 0°F and 5°F and refrigerators between 36°F and 40°F.
- If you have two or more refrigerators, try to make do with one.
- Recycle all refrigerators properly, see <http://earth911.com/> for recycling information.

- Remove dryer lint after each load, line dry whenever possible, and wash full loads.

- Skip the dishwasher's energy-intensive drying cycle and choose the "air-dry" option.

- An electric heating element is generally used to dry dishes at the end of the final rinse cycle, consuming about 7% of dishwasher energy use. Most new dishwashers offer an energy-saving no-heat drying feature. At the end of the rinse cycle, if the feature is selected, room air is circulated through the dishwasher by fans, rather than using an electric heating element to bake the dishes dry.

- Use ENERGY STAR [www.energystar.gov](http://www.energystar.gov) , Energy Savers [www.energysavers.gov](http://www.energysavers.gov) , or American Council for an Energy Efficient Economy [www.aceee.org/consumer](http://www.aceee.org/consumer) buying guides when shopping for new appliances.



## 3. Change with the Seasons:

- At the start of the heating season, close all windows and replace screens with storm windows.
- Close any vents or openings that you may have used only for the summer.

## 4. Use shades, blinds and curtains to let warm winter sun in and keep hot summer sun out.

- In winter, let the sun in during the day, especially on the south facing side of your home. Close window coverings or use window blankets at night to slow heat escaping back out of the home.
- During hot summer months, keep window coverings closed, especially on the south, east and west windows to minimize uncontrolled heat gain from direct sunlight.

## 5. Run your furnace and air conditioner more efficiently:

- Turn your thermostat down in winter and raise it up in the summertime, based on your lowest (or highest) practical comfort setting. Set it back (or up) when you are away from home.
- If you have forced air heat or central air conditioning, make sure the fan control is set on automatic to turn off when no heat or cooling is being distributed. Ask your heating contractor to do this if you're not sure how to properly set your fan control.
- Regularly check and replace furnace and outside air filters.

Clean the registers, baseboards and radiators and make sure they're not being blocked by furniture, carpets or drapes.

Don't heat or cool unoccupied rooms. **Maintenance Alert:** HVAC systems vary and closing off rooms can sometimes have adverse effects. For example, sometimes closing off too many registers to a warm air furnace can over pressurize the system causing mechanical problems or increase system inefficiencies. Cold rooms can sometimes lead to condensation and mold problems in the home. If you have questions, you should consult an HVAC specialist or Certified Auditor to determine your options for closing off unoccupied rooms.

**6. Use room fans, ceiling fans and whole house fans to help keep cool:**

Fans cost less to operate than air conditioning, therefore use fans whenever possible instead of air conditioning.

Fans cool people by creating a low-level "wind chill" effect throughout a room. As long as indoor humidity isn't stifling, they can be quite effective. Just remember that a fan cools people — it doesn't actually reduce room temperature — so turn it off when you leave the room. Using fans to supplement the air conditioning allows you to raise the thermostat temperature, using less energy. One exception is at night when you can use fans to exchange hot indoor air with cooler night air to cool your house and reduce or eliminate the need for air conditioning.

**7. Fireplaces and supplemental heat stoves:**

Close dampers when not in use and install fireproof gaskets to prevent air leakage. Make sure the fireplace or stove doors are shut and the flue damper seal is snug. **Safety Alert:** Remember to open the flue damper the next time you operate the stove or fireplace.

When you use the fireplace, open dampers in the bottom of the firebox (if provided) to reduce heat loss and use circulators (if installed) to spread the warmth.

Add heat capacity (humidity) to your home's indoor air in the winter by placing a container of water near your stove or fireplace. Use only fire and flame resistant containers and keep them at least half full, refilling frequently.

**8. Minimize humidity in the summertime:**

When running air conditioners, try to reduce indoor humidity by only running hot-water appliances in the evening and minimize taking hot showers during the day.

Use your bathroom exhaust fans when showering.

Cook with lids on pots and use your ventilation range hoods.

Use a dehumidifier, especially in damp locations to minimize humidity load, remember to empty the pan frequently.

**9. Heating water:**

Lower the temperature on your water heater to the warm setting (120°F). You'll not only save energy, you'll avoid scalding your hands. **Safety Alert:** You should avoid setting your water heater any less than 115° F due to potential risk of Legionella bacteria growth.

Take five-minute showers instead of baths.

Do full loads when washing clothes or dishes, and use cold water.

Repair leaky faucets and other water leaks promptly. A faucet dripping at a rate of two drops per second wastes 100 gallons of water per month.

=====  
By signing and dating this "Utility Bill Analysis and Consumer Energy Checklist" you are acknowledging that this checklist was reviewed as part of the audit process for the Keystone HELP Whole House Improvement – Unsecured Loan.

Signature of Homeowner/Purchaser: \_\_\_\_\_ Date: \_\_\_\_\_

Auditor Signature: \_\_\_\_\_ Date: \_\_\_\_\_



# SPECIFICATION SHEET for Keystone HELP Energy Efficiency Loan Improvements

*Please note that a household may receive only one Keystone HELP loan each fiscal year, which is defined as the period from July 1 until the following June 30.*

Contractor	Contractor Sales Person
Customer Name(s)	Contract Date
Customer(s) Street Address, City, State, and Zip Code	
Approximate Start Date of Work	Approximate Completion Date of Work

The Customer(s) listed above hereby jointly and severally agree to the installation of the goods listed below, in accordance with the terms described below and the Contractor's work order (jointly, the "Agreement"). See Reverse for Qualifying improvements & INSTALLATION Standards.

QUALIFYING IMPROVEMENTS FOR KEYSTONE HELP LOAN				
IMPROVEMENT	MANUFACTURER	MODEL	RATINGS	PRICE
Air Source Heat Pumps – ENERGY STAR			____SEER ____EER ____HPSF	\$
Air Source Heat Pumps Split Systems – ADVANCED			____SEER ____EER ____HPSF	\$
Air Source Heat Pumps Package Systems–ADVANCED			____SEER ____EER ____HPSF	\$
Central AC Systems – ENERGY STAR			____SEER	\$
Central AC System Split Systems - ADVANCED			____SEER ____EER	\$
Central AC Package Systems - ADVANCED			____SEER ____EER	\$
Boilers (All Fuels) - ENERGY STAR			____AFUE Fuel _____	\$
Boilers (All Fuels) - ADVANCED			____AFUE Fuel _____	\$
Furnaces (All Fuels) – Must be ENERGY STAR (Except for Indoor Solid Fuel Wood, Coal etc. min 78% AFUE)			____AFUE Fuel _____	\$
Furnaces (All Fuels) - ADVANCED			____AFUE Fuel _____	\$
Water Heaters – ENERGY STAR			____EF Fuel _____	\$
Water Heaters – ADVANCED			____EF Fuel _____	\$
Ceiling Fans – ENERGY STAR				\$
Programmable Thermostats – ENERGY STAR				\$
Ventilating Fans – ENERGY STAR				\$
Windows & Doors – ENERGY STAR <u>With NFRC label, U factor .30 or less</u>				\$
Air Sealing & Insulation			____R Ceiling ____R Floor	\$
Air Sealing & Insulation – ADVANCED			____R Ceiling ____R Floor ____R Wall	\$
Other Qualifying Improvements				\$
Other Qualifying Improvements				\$
Other Qualifying Improvements				\$
Other Improvements (Non-Qualifying)				\$
Other Improvements (Non-Qualifying)				\$
<b>TOTAL PROJECT COST</b>				\$
<b>TOTAL FINANCED with KEYSTONE HELP LOAN</b>				\$

Contractor hereby promises and agrees to install the qualifying improvements listed above in accordance with the installation standards on the reverse. Contractor makes this promise not only to the Customer, but also to the Commonwealth of Pennsylvania and its agencies and to any third-party bank, credit institution, finance company or other entity that will participate in the Keystone HELP program in connection with or as part of a transaction involving this Agreement between Contractor and Customer. Customer(s) has read the front and reverse of this Specification Sheet and has received a completed, signed, and dated copy of this Agreement on the date first written above.

**Estimated total project work / labor hours:** \_\_\_\_\_

\_\_\_\_\_  
CONTRACTOR'S AUTHORIZED REPRESENTATIVE

\_\_\_\_\_  
CUSTOMER

\_\_\_\_\_  
CUSTOMER

## QUALIFYING IMPROVEMENTS AND INSTALLATION STANDARDS

The Keystone HELP® program is for ENERGY STAR® rated and other high efficiency energy improvements. All work can be financed if at least 75 percent of the project consists of qualifying improvements as follows (CAPP program must be 100% qualifying improvements).

<b>UNSECURED LOAN for ENERGY STAR</b>	<b>UNSECURED LOAN for ADVANCED PERFORMANCE</b>	<b>UNSECURED LOAN for ENERGY IMPROVEMENTS WITH AIR SEALING (CAPP)</b>
<p>ENERGY STAR Air Source Heat Pumps  ENERGY STAR Central AC Systems  ENERGY STAR Boilers (All Fuels)  ENERGY STAR Furnaces (All Fuels)  <u>Must be ENERGY STAR certified</u>  except for <i>indoor solid fuel burning furnaces</i> (wood, coal etc.) which must have a minimum 78% AFUE.  ENERGY STAR Water Heaters  ENERGY STAR Ceiling Fans  ENERGY STAR Programmable Thermostats  ENERGY STAR Ventilating Fans  ENERGY STAR Windows/Doors  <u>With NFRC label, U factor .30 or less</u></p> <p><b>Air Sealing and Insulation</b>  (ENERGY STAR certification not required), provided that all of the following must be completed:</p> <ul style="list-style-type: none"> <li>• Air sealing of the home and ducts is performed, and</li> <li>• Ceiling insulation installed achieves R-38 or better*, and</li> <li>• Floor insulation installed achieves R-25 or better*</li> </ul> <p>* Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum R-value that can be achieved is required, complete fill of ceiling and floor cavities with insulation (i.e. no voids) at a minimum</p> <p><u>Work must be performed by an:</u></p> <ul style="list-style-type: none"> <li>• Approved Contractor or</li> <li>• Trained Contractor or</li> <li>• Certified Contractor</li> </ul>	<p>Air Source Heat Pump Split Systems  SEER ≥ 15.0, EER ≥ 12.5, HSPF ≥ 8.5  Air Source Heat Pump Package Systems  SEER ≥ 14.0, EER ≥ 12.0, HSPF ≥ 8.0  Central AC System Split Systems  SEER ≥ 16.0, EER ≥ 13.0  Central AC Package Systems  SEER ≥ 14.0, EER ≥ 12.0  Boilers  Natural Gas, Oil or Propane AFUE ≥ 95  Furnaces  Natural Gas or Propane AFUE ≥ 95; Oil AFUE ≥ 90  Water Heater  Natural Gas, Oil or Propane Energy Factor ≥ 0.82 or thermal efficiency ≥ 90%; Electric Heat Pump Energy Factor ≥ 2.0  Geothermal Heat Pumps  SEE GEOTHERMAL LOAN PROGRAM GUIDELINES</p> <p>R-5 WINDOWS OR LOW-E STORM WINDOWS</p> <p><b>Air Sealing and Insulation</b>  (ENERGY STAR certification not required), provided that all of the following must be completed:</p> <ul style="list-style-type: none"> <li>• Air sealing of the home and ducts is performed, and</li> <li>• Ceiling insulation installed achieves R-38 or better*, and</li> <li>• Floor insulation installed achieves R-25 or better*, and</li> <li>• Wall insulation installed achieves R-15 or better.*</li> </ul> <p>* Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum R-value that can be achieved is required, complete fill of ceiling and floor cavities with insulation (i.e. no voids) at a minimum.</p> <p><u>Work must be performed by an:</u></p> <ul style="list-style-type: none"> <li>• Approved Contractor or</li> <li>• Trained Contractor or</li> <li>• Certified Contractor</li> </ul>	<p>SEE CAPP PROGRAM GUIDELINES AND QUALIFICATION SHEET  <u>Work must be performed by a:</u></p> <ul style="list-style-type: none"> <li>• Certified Contractor</li> </ul> <hr/> <p style="text-align: center;"><b>SECURED LOAN for WHOLE HOUSE IMPROVEMENTS WITH BPI /RESNET AUDIT</b></p> <p>Qualifying Improvements consist of the comprehensive "Whole House" energy audit conducted by a Certified Auditor <u>and</u> the recommended energy improvements presented by the Certified Auditor as a result of the audit. Work must be performed by a Certified Contractor, or a Trained Contractor under the on-site oversight of a Certified Auditor.</p> <p>An initial energy audit is conducted, which recommends energy conservation measures and includes an overall home energy rating (HERS) index. Qualifying improvements are those that predict a minimum decrease of 25% from an original HERS index of more than 100 or a minimum decrease of 15% from an original HERS index or less than 100. A post construction audit is also conducted. <i>Eligible Applicants will receive \$325 towards the cost of the energy audit from Keystone HELP upon completion of the post-construction audit.</i></p> <p><u>Work must be performed by a:</u></p> <ul style="list-style-type: none"> <li>• Certified Contractor or</li> <li>• Trained Contractor under the on-site oversight of a Certified Auditor</li> </ul> <p><u>Audit must be performed by a:</u>  Certified Auditor</p>

**Installation Standards:**

1. All equipment installations and the work of all trades shall be performed in accordance with applicable codes, manufacturers' written instructions and recommendations, industry best practices and standards, and federal, state, and local requirements.
2. Installation best practices shall include:
  - The Air Conditioning Contractors of America, "HVAC Quality Installation Specification," Standard Number ANSI/ACCA 5 QI-2007 <http://www.cee1.org/resid/rs-ac/HVACQI/spec.pdf>
  - Technical standards developed by The Building Performance Institute <http://www.bpi.org/content/contractors/standards.php>
  - The American Society for Testing Materials, ASTM E 2112-07, "Standard Practice for Installation of Exterior Windows, Doors, and Skylights," [www.astm.org](http://www.astm.org)
  - The Energy and Environmental Building Association (EEBA) Builder Guides, [www.eeba.org/](http://www.eeba.org/)
  - BPI/RESNET "Standard for Conducting a Comprehensive Home Energy Audit," [http://www.resnet.us/bpi/audit\\_standard/Home\\_Energy\\_Audit.pdf](http://www.resnet.us/bpi/audit_standard/Home_Energy_Audit.pdf)
  - The Insulation Contractors Association of America (ICAA), "25 Checkpoints for Inspecting Insulation," <http://www.insulate.org/ckpts.html>
  - "Guide to Sealing and Insulating with ENERGY STAR" [http://www.energystar.gov/index.cfm?c=diy.diy\\_index](http://www.energystar.gov/index.cfm?c=diy.diy_index)
3. Proper equipment sizing, controls, airflow, and fuel connections must be verified for all combustion appliances.
4. Sealed combustion appliances only.
5. All indoor solid-fuel burning furnaces must be certified under UL-391, and must be installed by an Approved Contractor with NFI certification.

