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

## Keystone HELP® GEOTHERMAL Loan Program Guidelines

April 1, 2011

Pennsylvania homeowners can improve the energy efficiency of their homes with special Keystone HELP® financing for **geothermal systems and other “whole house” improvements** using *Home Performance with Energy Star*. 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 eligible Pennsylvanians. 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 participate in one Keystone HELP loan program (either geothermal or energy efficiency) 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 loans in future years, as long as the additional projects comply with the published guidelines current at the time of application.



## Loan Option 1:

### **UNSECURED KEYSTONE HELP GEOTHERMAL LOAN with OPTIONAL TAX CREDIT ANTICIPATION LOAN**

#### **1. Unsecured 4.99% Geothermal Heat Pump System Loan**

**An unsecured loan with a fixed interest rate of 4.99%, subject to eligibility, maximum \$15,000**

This is a simple interest, fixed rate unsecured loan with no closing costs or penalty for pre-payment with **repayment terms of three, five or ten years** used for the purchase and installation of a permanently-affixed qualifying residential geothermal loop and heat pump system installed by either a Trained Geothermal Contractor or a Certified Geothermal Contractor.

#### **Optional Additional Tax Credit Anticipation Loan - Keystone HELP Makes the First 12 Monthly Payments**

**An optional, additional unsecured loan for the estimated amount of the borrower's Federal Income Tax Credit for the purchase and installation of a qualifying geothermal system, subject to eligibility, calculated at 30% of the cost of the system, maximum \$10,000**

#### **PLEASE NOTE: The Tax Credit Anticipation Loan is only available when made in conjunction with an unsecured Geothermal Heat Pump Loan**

This is a simple interest, fixed rate loan with no closing costs or penalty for pre-payment used for the purchase and installation of a permanently-affixed qualifying residential geothermal loop and heat pump system installed by either a Trained Geothermal Contractor or a Certified Geothermal Contractor. The first twelve regular payments of principal and interest on a Tax Credit Anticipation Loan will be made on the borrower's behalf through the Keystone HELP Geothermal Loan Program. It is the borrower's option to begin making the regular monthly payments after the initial twelve month period or to repay the Tax Credit Anticipation Loan in full, without penalty, at any time during its term. The optional Tax Credit Anticipation Loan is available at conventional interest rates through the Fannie Mae Energy Loan or similar program administered by AFC First Financial Corporation, currently ranging from 14.99 to 15.99% for qualifying borrowers with monthly payments based on a term of ten years.

## Loan Option 2:

### **SECURED KEYSTONE HELP "WHOLE-HOUSE" GEOTHERMAL LOAN**

#### **1. Secured Loan for Geothermal Heat Pump plus Whole House Energy Improvements**

**A home equity loan to 120% of your home's value, 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> lien with a fixed interest rate ranging from 2.875% to 5.375%, maximum \$35,000 with Energy Audit credit of \$325**

This is simple interest, fixed rate secured loan (rate is based on your available home equity and selected loan term) with minimal closing cost and no penalty for pre-payments with **repayment terms of 10, 15 and 20 years** for a project consisting of the purchase and installation of a permanently-affixed qualifying residential geothermal loop and heat pump system plus a comprehensive whole-house evaluation and implementation of recommended Energy Conservation Measures (ECMs) to achieve required minimum projected energy reductions of 15 to 25%, depending on your home's energy profile. Project must include proper air sealing and insulation installation. All work shall be done by a Certified Geothermal Contractor.

## Who is Eligible?

Pennsylvania homeowners who own and are making qualifying improvements to their 1 to 2 unit primary residence located in Pennsylvania are eligible to apply for a loan under the Keystone HELP Geothermal Loan Program. Improvements must be made to owner-occupied dwellings. Work under the "Secured Keystone HELP Geothermal "Whole House" Improvement Loan" 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.
- 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® Approved Contractors who have met additional geothermal system installation standards may perform the work. Visit [www.keystonehelp.com](http://www.keystonehelp.com) or call (888) 232-3477 to find Approved 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 an Approved Contractor.

There are two levels of contractors and one level of certified energy auditors who are approved to perform work under the Keystone HELP Geothermal Loan 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.

### **Trained Geothermal Contractors may perform work only under Loan Option 1.**

Trained Geothermal Contractors have met the financial, ethical and other requirements as Approved Keystone HELP contractors, and 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).

A Trained Geothermal Contractor also meets the following requirements, or is working under contract with a firm or individual that:

- Offers a warranty that completed work, at a minimum, must be free of significant defects, be installed in accordance with manufacturer or International Ground Source Heat Pump Association specifications, and must perform properly for a period of at least 1 year from the installation date; and
- Is licensed with the Pennsylvania Department of Conservation and Natural Resources by the Pennsylvania Water Well Drillers License Act of 1956 (Act 610 of 1956); and
- Is certified as an Accredited Loop Installer by the International Ground Source Heat Pump Association (IGSHPA); and
- Cooperates in a quality installation program through which geothermal installations may be inspected and system improvements or modifications may be recommended by an independent inspector selected by DEP, Treasury, or its designated investment manager.

### **Certified Geothermal Contractors may perform work under both Loan Options 1 and 2**

A Certified Geothermal Contractor has met qualifications of a Trained Geothermal Contractors. In addition, a Certified Geothermal Contractor has either achieved BPI (Building Performance Institute) certification or accreditation, which is the nationally recognized designation for building and energy professionals who have undergone rigorous training on “Whole House” energy improvements or is listed as an “Accredited Installer” through the International Ground Source Heat Pump Association (IGSHPA), is performing the interior HVAC work, and has entered into a contractual agreement pursuant to which a Certified Auditor will provide on-site oversight of any whole-house energy efficiency work.

### **Certified Auditors**

A Certified Auditor has met the financial, ethical and other requirements as an Approved Keystone HELP contractor, is certified by both BPI (Building Performance Institute) and RESNET (Residential Energy Services Network) to conduct home energy audits and has 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. An applicant must have an audit performed by a Certified Auditor to utilize the “Secured Keystone HELP Geothermal ‘Whole House’ Improvement Loan” program. Certified Auditors may work independently from your contractor or they may be Certified Geothermal Contractors who have also met the qualifications to perform as Certified Auditors.

*Trained or Certified Geothermal Contractors are permitted to use sub-contractors in the normal course of their business, providing that your contract for work is only with a Trained or Certified Geothermal Contractor. An applicant may, however, enter into a separate contract with a Certified Auditor for a home energy audit.*

# What Improvements Are Eligible?

## Loan Option 1:

### **UNSECURED KEYSTONE HELP GEOTHERMAL LOAN with OPTIONAL TAX CREDIT ANTICIPATION LOAN**

**Eligible Improvements for the *Geothermal Heat Pump Loan*** means an appropriate geothermal heat pump installation utilizing (except where otherwise provided below under Additional Qualifying Improvements), individually or in combination, only equipment and only materials evaluated by ENERGY STAR ), having ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program, and meeting the following performance criteria. ***A Geothermal Heat Pump Loan may include additional Qualifying Improvements so long as the cost of the Qualifying Improvements, including installation cost, does not exceed 25% of the loan amount.***

#### **Geothermal Heat Pump System**

1. ENERGY STAR Tier 2 Specifications with ***CLOSED LOOP GEO-EXCHANGE SYSTEMS (Open loop or DGX (Direct Exchange) systems are not permitted).***

**EER ≥ 16.1 COP ≥ 3.5**

2. All heat pump system installations must have **a total installed capacity of 5.5 tons or less.**
3. For the purposes of this loan product, an “appropriate geothermal heat pump installation” will consist of: a) a geothermal “loop” installed in accordance with IGSHPA standards and b) a geothermal heat pump installed in accordance with IGSHPA and/or BPI standards.

**Work must be performed by a:** Certified Geothermal Contractor or a Trained Geothermal Contractor

#### **Additional Qualifying Improvements**

Includes equipment or materials that, except as provided below, have ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program.

##### **A. Building Products**

- Weather Sealing/Air Sealing (ENERGY STAR not required)
- Insulation (ENERGY STAR not required)
- Replacement Windows and Doors
- High efficiency shower and faucet upgrade (ENERGY STAR not required, Watersense rated [epa.gov/watersense](http://epa.gov/watersense))

##### **B. ENERGY STAR Rated Appliances**

- Clothes Washers
- Dishwashers
- Freezers, Refrigerators
- Heat Pump Water Heaters
- High Efficiency Gas Storage Water Heaters
- Whole Home Gas Tankless Water Heaters

##### **C. ENERGY STAR Rated Lighting**

- LED Light Bulbs
- Light Fixtures
- Residential LED Lighting

- D. Desuperheaters installed for domestic hot water heating (ENERGY STAR not required)

## What Improvements Are Eligible? (Continued)

### Loan Option 2:

## **SECURED KEYSTONE HELP “WHOLE-HOUSE” GEOTHERMAL LOAN**

**Required Improvements for the *Geothermal Whole-House Loan*** means i) an appropriate geothermal heat pump installation utilizing, individually or in combination, equipment or materials that, except as provided below, have ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program and that meet the following performance criteria and ii) a comprehensive whole-house evaluation and implementation of recommended Energy Conservation Measures (ECMs), including proper air sealing and insulation installation, to achieve required minimum projected energy reductions of 15 to 25%, depending on your home's energy profile. ***A Whole House Geothermal Loan may include additional Qualifying Improvements so long as the cost of the Qualifying Improvements, including installation cost, does not exceed 25% of the loan amount.***

### Geothermal Heat Pump System

1. ENERGY STAR Tier 2 Specifications with ***CLOSED LOOP GEO-EXCHANGE SYSTEMS (Open loop or DGX Direct Exchange systems are not permitted).***

**EER ≥ 16.1 COP ≥ 3.5**

2. All heat pump system installations must have **a total installed capacity of 5.5 tons or less.**
3. For the purposes of this loan product, an “appropriate geothermal heat pump installation” will consist of: a) a geothermal “loop” installed in accordance with IGSHPA standards and b) a geothermal heat pump installed in accordance with IGSHPA and/or BPI standards.

**Work must be performed by a:** Certified Geothermal Contractor

**Energy Audit must be performed by a:** Certified Auditor

### Comprehensive Whole-House Evaluation

1. For the purposes of this product, a “comprehensive whole-house evaluation” will consist of: a) a benchmarking whole-house energy audit performed by a Certified Auditor prior to loan origination that recommends ECMs ranked by savings-to-investment ratios (SIRs) and includes a pre-construction home energy index (HERS) for the house, and b) a post-installation inspection and audit performed by a Certified Auditor following project completion that provides a post-construction HERS index.

### Proper Air Sealing and Insulation Installation

1. For the purposes of this product, “proper air sealing and insulation installation” will consist of: a) blower door directed air sealing and combustion appliance testing (when applicable to the home), and b) insulating attics, walls, and floors in accordance with the 2009 International Energy Conservation Code, or filling to capacity in areas that cannot achieve IECC 2009 standards due to the structural limitations or areas of finished attics, walls, and floors. ENERGY STAR certification is not required, provided all of the following are accomplished: a) Air sealing of the home and air distribution systems is performed, in accordance with ENERGY STAR recommended air sealing practices, BPI Technical Standards for Envelope or BPI Technical Standards for Building Analyst, b) Unfinished Wall, Ceiling, and Floor insulation installed achieves (2009 IECC Levels)\*: R – 20 Walls, R – 38 Ceilings (R-49 for residents in IECC Climate Zone 6; Cameron, Clearfield, Elk, McKean, Potter, Susquehanna, Tioga, and Wayne Counties), R – 30 Floors, and c) Finished Walls, Ceilings, and Floors insulation are filled to capacity using dense-packed insulation (3.5 lb./ft<sup>3</sup>) or other insulation that significantly reduces air movement.\*Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum achievable R-value is required, complete fill of walls, ceiling, and floor cavities with insulation (i.e. no voids) at a minimum.\* Insulation must be installed in 100% of “accessible” and applicable surface areas and include a minimum of 75% of the total applicable surface area.

## What Improvements Are Eligible? (Whole House Continued)

### Energy Conservation Measures

1. For purposes of this product, the ECMs selected for the installation must be from among those recommended under the Comprehensive Whole-House Evaluation, and must project (*exclusive* of any decrease attributable to installation of the Geothermal Heat Pump System):
  - a) a minimum 25% decrease from an original HERS index greater than 100, or
  - b) a minimum 15% decrease from an original HERS index of 100 or less.
2. Only those ECMs listed below under “Qualifying Improvements” shall be eligible for financing under this program.

### Additional Qualifying Improvements

Includes equipment or materials that, except as provided below, have ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program.

#### A. Building Products

- Weather Sealing/Air Sealing (ENERGY STAR not required)
- Insulation (ENERGY STAR not required)
- Replacement Windows and Doors
- High efficiency shower and faucet upgrade (ENERGY STAR not required, Watersense rated [epa.gov/watersense](http://epa.gov/watersense))

#### B. ENERGY STAR Rated Appliances

- Clothes Washers
- Dishwashers
- Freezers, Refrigerators
- Heat Pump Water Heaters
- High Efficiency Gas Storage Water Heaters
- Whole Home Gas Tankless Water Heaters

#### C. ENERGY STAR Rated Lighting

- LED Light Bulbs
- Light Fixtures
- Residential LED Lighting

#### D. Desuperheaters installed for domestic hot water heating (ENERGY STAR not required)

# 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 installing new ductwork, your project must be reviewed by the State Historic Preservation Office before you may apply.
- If your project is not using vertical wells your project must 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.*

<p style="text-align: center;"><u>Loan Option 1:</u></p> <p style="text-align: center;"><b>UNSECURED KEYSTONE HELP GEOTHERMAL LOAN with OPTIONAL TAX CREDIT ANTICIPATION LOAN</b></p>	<p style="text-align: center;"><u>Loan Option 2:</u></p> <p style="text-align: center;"><b>SECURED KEYSTONE HELP "WHOLE- HOUSE" GEOTHERMAL LOAN</b></p>
<p><b>Apply online</b> at <a href="http://www.keystonehelp.com">www.keystonehelp.com</a>, <b>by phone</b> at (888) 232-3477, <b>by fax</b> at (610) 433-7488, or <b>complete the application and give it to your Trained or Certified Geothermal Contractor for submission.</b></p> <p>Advise us if you are applying for just the Geothermal Loan or the combination of Geothermal Loan and Tax Credit Anticipation Loan</p> <p>We'll have a quick decision on your loan application, and are happy to answer any of your questions.</p> <p>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.</p> <p>Get an estimate for qualifying improvements from your <b>Trained or Certified Geothermal Contractor</b> and <b>sign the Keystone HELP Specification Sheet your Contractor will provide you</b> that details the qualifying improvements.</p> <p>Sign the Keystone HELP® Loan Agreement, utility bill release form, and auto-payment authorization provided to you.</p> <p>When the work is done to your satisfaction, sign the Completion Certificate your Contractor will provide you.</p> <p>We'll call you to confirm and pay the contractor upon your authorization.</p>	<p><b>Apply online</b> at <a href="http://www.keystonehelp.com">www.keystonehelp.com</a>, <b>by phone</b> at (888) 232-3477, <b>by fax</b> at (610) 433-7488, or <b>complete the application and give it to your Trained or Certified Geothermal Contractor for submission.</b></p> <p>We'll have a quick decision on your loan application, and are happy to answer any of your questions.</p> <p>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.</p> <p>Obtain your energy audit from a Certified Auditor and select qualifying improvements in addition to the geothermal system 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 –exclusive of any energy savings from your geothermal system.)</p> <p>Get an estimate for selected qualifying improvements from a <b>Certified Geothermal Contractor</b> and <b>sign the Keystone HELP Specification Sheet your Approved Contractor will provide you</b> that details the qualifying improvements.</p> <p>For a <u>Secured</u> Whole House Improvement Loan, 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.</p> <p>A Certified Auditor will conduct a post-construction audit.</p> <p>When the work is done to your satisfaction, sign the Completion Certificate your Contractor will provide you.</p> <p>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.</p>



# SPECIFICATION SHEET for Keystone HELP Geothermal Heat Pump System Loan

*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 GEOTHERMAL HEAT PUMP SYSTEM LOAN				
IMPROVEMENT	MANUFACTURER	MODEL	RATINGS	PRICE
<b>ENERGY STAR Tier 2 Specifications with CLOSED LOOP GEO-EXCHANGE SYSTEMS (Open loop or DGX (Direct Exchange)) systems are not permitted.</b>  Minimum EER ≥ 16.1 COP ≥ 3.5  <b>All heat pump system installations must have a total installed capacity of 5.5 tons or less.</b>  For the purposes of this loan product, an "appropriate geothermal heat pump installation" will consist of: a) a geothermal "loop" installed in accordance with IGSHPA standards, and b) a geothermal heat pump installed in accordance with IGSHPA and/or BPI standards.			_____ EER _____ COP	\$
Air Sealing & Insulation			_____ R Ceiling _____ R Floor	\$
Air Sealing & Insulation – ADVANCED			_____ R Ceiling _____ R Floor	\$
Other Whole House Recommendation				\$
Other Whole House Recommendation				\$
Other Improvements (Non-Qualifying)				\$
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 agrees to a quality assurance inspection after the work is completed if their project is selected. 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.

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

\_\_\_\_\_  
CUSTOMER

\_\_\_\_\_  
CUSTOMER

## QUALIFYING IMPROVEMENTS AND INSTALLATION STANDARDS

### Loan Option 1:

#### UNSECURED KEYSTONE HELP GEOTHERMAL LOAN with OPTIONAL TAX CREDIT ANTICIPATION LOAN

**Eligible Improvements for the *Geothermal Heat Pump Loan*** means an appropriate geothermal heat pump installation utilizing (except where otherwise provided below under Additional Qualifying Improvements), individually or in combination, only equipment and only materials evaluated by ENERGY STAR, having ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program, and meeting the following performance criteria. *A Geothermal Heat Pump Loan may include additional Qualifying Improvements so long as the cost of the Qualifying Improvements, including installation cost, does not exceed 25% of the loan amount.*

##### Geothermal Heat Pump System

1. ENERGY STAR Tier 2 Specifications with *CLOSED LOOP GEO-EXCHANGE SYSTEMS (Open loop or DGX (Direct Exchange) systems are not permitted).*

**EER ≥ 16.1 COP ≥ 3.5**

2. All heat pump system installations must have a **total installed capacity of 5.5 tons or less.**

3. For the purposes of this loan product, an "appropriate geothermal heat pump installation" will consist of: a) a geothermal "loop" installed in accordance with IGSHPA standards and b) a geothermal heat pump installed in accordance with IGSHPA and/or BPI standards.

**Work must be performed by a:** Certified Geothermal Contractor or a Trained Geothermal Contractor

##### Additional Qualifying Improvements For Both Loan Options

Includes equipment or materials that, except as provided below, have ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program.

###### A. Building Products

- Weather Sealing/Air Sealing (ENERGY STAR not required)
- Insulation (ENERGY STAR not required)
- Replacement Windows and Doors
- High efficiency shower and faucet upgrade (ENERGY STAR not required, Watersense rated [epa.gov/watersense](http://epa.gov/watersense))

###### B. ENERGY STAR Rated Appliances

- Clothes Washers
- Dishwashers
- Freezers, Refrigerators
- Heat Pump Water Heaters
- High Efficiency Gas Storage Water Heaters
- Whole Home Gas Tankless Water Heaters

###### C. ENERGY STAR Rated Lighting

- LED Light Bulbs
- Light Fixtures
- Residential LED Lighting

D. Desuperheaters installed for domestic hot water heating (ENERGY STAR not required)

### Loan Option 2:

#### SECURED KEYSTONE HELP "WHOLE-HOUSE" GEOTHERMAL LOAN

**Required Improvements for the *Geothermal Whole-House Loan*** means i) an appropriate geothermal heat pump installation utilizing, individually or in combination, equipment or materials that, except as provided below, have ENERGY STAR labels certifying that they meet the ENERGY STAR standards in place on the effective date of this program and that meet the following performance criteria and ii) a comprehensive whole-house evaluation and implementation of recommended Energy Conservation Measures (ECMs), including proper air sealing and insulation installation, to achieve required minimum projected energy reductions of 15 to 25%, depending on your home's energy profile. *A Whole House Geothermal Loan may include additional Qualifying Improvements so long as the cost of the Qualifying Improvements, including installation cost, does not exceed 25% of the loan amount.*

##### Geothermal Heat Pump System

1. ENERGY STAR Tier 2 Specifications with *CLOSED LOOP GEO-EXCHANGE SYSTEMS (Open loop or DGX Direct Exchange systems are not permitted).*

**EER ≥ 16.1 COP ≥ 3.5**

2. All heat pump system installations must have a **total installed capacity of 5.5 tons or less.**

3. For the purposes of this loan product, an "appropriate geothermal heat pump installation" will consist of: a) a geothermal "loop" installed in accordance with IGSHPA standards and b) a geothermal heat pump installed in accordance with IGSHPA and/or BPI standards.

**Work must be performed by a:** Certified Geothermal Contractor

**Energy Audit must be performed by a:** Certified Auditor

##### Comprehensive Whole-House Evaluation

For the purposes of this product, a "comprehensive whole-house evaluation" will consist of: a) a benchmarking whole-house energy audit performed by a Certified Auditor prior to loan origination that recommends ECMs ranked by savings-to-investment ratios (SIRs) and includes a pre-construction home energy index (HERS) for the house, and b) a post-installation inspection and audit performed by a Certified Auditor following project completion that provides a post-construction HERS index.

##### Proper Air Sealing and Insulation Installation

For the purposes of this product, "proper air sealing and insulation installation" will consist of: a) blower door directed air sealing and combustion appliance testing (when applicable to the home), and b) insulating attics, walls, and floors in accordance with the 2009 International Energy Conservation Code, or filling to capacity in areas that cannot achieve IECC 2009 standards due to the structural limitations or areas of finished attics, walls, and floors. ENERGY STAR certification is not required, provided all of the following are accomplished: a) Air sealing of the home and air distribution systems is performed, in accordance with ENERGY STAR recommended air sealing practices, BPI Technical Standards for Envelope or BPI Technical Standards for Building Analyst, b) Unfinished Wall, Ceiling, and Floor insulation installed achieves (2009 IECC Levels): R – 20 Walls, R – 38 Ceilings (R-49 for residents in IECC Climate Zone 6; Cameron, Clearfield, Elk, McKean, Potter, Susquehanna, Tioga, and Wayne Counties), R – 30 Floors, and c) Finished Walls, Ceilings, and Floors insulation are filled to capacity using dense-packed insulation (3.5 lb./ft<sup>3</sup>) or other insulation that significantly reduces air movement.\*Unless structural limitations prevent achievement of these insulation levels, in which instances the maximum achievable R-value is required, complete fill of walls, ceiling, and floor cavities with insulation (i.e. no voids) at a minimum.\* Insulation must be installed in 100% of "accessible" and applicable surface areas and include a minimum of 75% of the total applicable surface area.

##### Energy Conservation Measures

For purposes of this product, the ECMs selected for the installation must be from among those recommended under the Comprehensive Whole-House Evaluation, and must project **(exclusive of any decrease attributable to installation of the Geothermal Heat Pump System)**: a) a minimum 25% decrease from an original HERS index greater than 100, or b) a minimum 15% decrease from an original HERS index of 100 or less. Only those ECMs listed below under "Qualifying Improvements" shall be eligible for financing under this program.