

Klickitat PUD Commercial HVAC Energy Efficiency Program Participation Requirements and Instructions

Thank you for your interest in our Commercial HVAC Energy Efficiency Program. We are pleased that we have the opportunity to offer this service to you through our association with Bonneville Power. Because of this collaboration of funds the information we collect from you is required to help determine your eligibility and may also be used to evaluate and audit data about energy use and the conservation program as a whole. With that, your information may be requested for certain site visits to evaluate the performance of the program and is to be kept available for three years. No personal information will be issued to the public.

The Commercial Sector includes service-providing facilities and equipment of businesses; federal, state, and local governments; and other private and public organizations. The Commercial Sector is generally defined as non-manufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, health, social and educational institutions.

PROGRAM REQUIREMENTS

All commercial HVAC measures must be installed according to KPUD, BPA, and manufacturer standards & specifications and are subject to inspection for the approval process. KPUD reserves the right to make changes to all programs and rebates are subject to the availability of funds through the Energy Efficiency Program.

NOTE TO CONTRACTORS: Please contact KPUD's Energy Services to obtain specifications and requirements as each measure may require special forms and procedures to be followed. All contractors must be licensed and bonded in the state of Washington and are responsible for following all local codes and laws.

Ductless Heat Pumps (DHP): Also commonly referred to as a mini-split

Qualifying Business: Are available for retrofits and upgrades.

Existing Heating System Requirements: To be eligible, businesses must have an existing heating system as the primary system listed below:

For: Retro-fits

1. The space is conditioned by a permanently installed system with zonal or forced-air, electric-resistance heat as the primary heating source.
2. No other heating sources are eligible.
3. A failed heat pump system operating with electric resistance back-up heat is not considered electric-resistance for the purposes of meeting pre-condition requirements.

For: Upgrades

1. No pre-conditions exist. This may be used for any project where the post-condition requirements are met including new construction/major renovation projects, retrofits replacing existing heat pumps, retrofits replacing equipment using a fuel source other than electric, and retrofits that qualify for the DHP Retrofit measure.
2. The DHP Upgrade measure can be claimed for a project that also claims the DHP Retrofit measure, as long as all applicable pre- and post-conditions are met.

Qualifying Specifications:

Ductless heat pumps are defined as:

Mini-Split: Systems that have a single outdoor compressor and one or more indoor heads. Multi-head (or multi-zone) systems are considered mini-splits as long as they are served by a single outdoor compressor. Mini-split systems may be ducted or non-ducted.

- **Non-ducted:** An indoor unit that directly heats or cools air within the conditioned space without attached distribution ductwork. The following types of indoor units are considered non-ducted: Wall-mounted, floor-mounted, ceiling-suspended, and ceiling cassette (standard and compact).
- **Ducted:** An indoor unit that heats or cools air within the conditioned space through the use of distribution ductwork. Though ducted indoor units can be ceiling-suspended, they are typically ceiling-concealed and consist of short duct runs serving multiple zones from the single indoor unit.
- **Mixed:** A combination of ducted and non-ducted indoor units served by a single outdoor section.

Additional Requirements (for both retrofit or upgrade):

1. The installed DHP must have an AHRI certificate of product rating.
2. The DHP outdoor condenser must meet the below efficiency requirements and apply to both single and multi-head systems

INDOOR UNIT TYPE	EFFICIENCY REQUIREMENT
Non-Ducted	10.40 HSPF2 or 11.0 HSPF
Ducted or Mixed	9.4 HSPF2 or 10.0 HSPF

Ductless heat pumps must be installed on a dedicated electrical circuit, according to manufacturers' specifications and the Best Practices for Installing Ductless Heat Pumps Guide and by a HVAC installer listed on the KPUD Participating Contractors list or listed within the online portal at www.comfortreadyhome.com.

Payment is based on whole tons of outdoor capacity and shall be calculated at a project level using one of the following methods:

1. Sum the ton from all heat pumps installed, then round to the nearest whole ton; or
2. Round each individual heat pump to the nearest whole ton, the sum all the rounded tons.

The Contractor is responsible for ductless heat pump installations passing KPUD/BPA approval criteria such as, but not limited to: warranted by manufacturer against defects in materials and workmanship.

Required Documentation:

1. Completed and signed Non-Residential Project Rebate Application by customer,
2. AHRI certified with proof of AHRI number,
3. Detailed Invoice showing installed costs including labor, equipment information and date of installation,
4. Commercial Ductless Heat Pump Installation Form. (Contractors completes).

Heat Pumps Retro-fits and Upgrades (Air Source):

For: Retro-fits

1. The space is conditioned by a permanently installed system with zonal or forced-air, electric-resistance heat as the primary heating source.
2. No other heating sources are eligible.

For: Upgrades

1. No pre-conditions exist. The ASHP Upgrade measure may be used for any project where the post-condition requirements are met including: new construction/major renovation projects, retrofits replacing existing heat pumps, retrofits replacing equipment using a fuel source other than electric, and retrofits that qualify for the ASHP Retrofit measure.
2. The ASHP Upgrade measure can be claimed for a project that also claims the ASHP Retrofit measure, as long as all applicable pre- and post-conditions are met.

Post-Condition Qualifying Specifications (Retrofit or Upgrade) must be:

1. Be an air-to-air heat pump,
2. Have an AHRI certificate of product rating'
3. Cannot be used to retrofit packaged terminal air conditioning (PTAC) units, and
3. Meet efficiency requirements for both heating and cooling per the table below:

Equipment Size (Cooling Capacity; BTU/H)	Mode	Sub-Category or Rating Condition	Efficiency Requirement
➤ 65,000	Heating	Split System	8.1 HSPF2 or 9.6 HSPF
		Single Package	7.0 HSPF2 or 8.3 HSPF
➤ 65,000 and < 135,000	Heating	47°F db/43°F wb Outdoor Air	3.5 COP
➤ 135,000 and < 240,000	Heating	47°F db/43°F wb Outdoor Air	3.4 COP
➤ 240,000	Heating	47°F db/43°F wb Outdoor Air	3.4 COP

Payment is based on whole tons of outdoor capacity and shall be calculated at a project level using one of the following methods:

1. Sum the ton from all heat pumps installed, then round to the nearest whole ton; or
2. Round each individual heat pump to the nearest whole ton, the sum all the rounded tons.

The Contractor is responsible for ductless heat pump installations passing KPUD/BPA approval criteria such as, but not limited to: warranted by manufacturer against defects in materials and workmanship.

Required Documentation:

1. Completed and signed Non-Residential Project Rebate Application.
2. AHRI certified with proof of AHRI number.
3. Detailed Invoice showing installed costs including labor, equipment information and date of installation.
4. Commercial Heat Pump installation Form (contractor completes).

Connected Thermostat: Connected thermostats save energy by controlling HVAC usage in single-zone HVAC systems. These thermostats connect to the internet and have features that include online alerts, monitoring and programming and/or control. Energy savings are associated with reduced heating and fan energy, primarily through scheduled temperature setbacks and setting the fan to auto mode during unoccupied hours.

Existing Heating System Requirements & pre-condition Requirements: Must be:

1. Capable of being connected to the web.
2. Support multiple temperature set-back schedules.
3. Support fan-mode scheduling (continuous-on versus auto mode).
4. Support limited-duration overrides (e.g., reverts to programming after 24 hours).
5. Automatically restore programmed settings after power outage.
6. Support multiple cooling stages.

Qualifying Specifications:

1. This measure is available for **retrofits only**.
2. This measure is not eligible for lodging, 24/7 occupancy, or semi-conditioned spaces.
3. Connected Thermostat projects are not eligible for an (ARC) Advanced Rooftop Unit Control payment.
4. This measure provides for both initial installation and verification of programming for eligible connected thermostats and cannot be used for enabling feature sets on existing thermostats.
5. A building is eligible to receive payments for more than one thermostat.
6. Heating fuel type of system to be controlled by new thermostat may be electric or gas.
7. The existing thermostat is not web-enabled
8. Must be listed on KPUD's Qualified Product List (ask for most recent list).

Post-conditions of initial install:

The installed thermostat controls an existing HVAC supply fan and serves a single zone. "Invisible zones" are permitted (e.g., separate rooftop units serving different portions of a large retail space).

The thermostat must be programmed as follows:

1. Thermostat is connected to the web.
2. Temperature setback is used for unoccupied hours (heating and/or cooling, as applicable).
3. Fan schedule uses auto mode for unoccupied hours (e.g., during unoccupied hours or holidays, the fan will only run when there is a demand for heating or cooling).
4. Override duration set to three hours or less.
5. For heat pumps, auxiliary resistance heat lock-out is enabled with appropriate temperature set point.
6. In cases where two or more systems serve spaces that are not separated by physical barriers (e.g., "invisible zones"), simultaneous heating and cooling is eliminated (e.g. by having identical temperature set points and schedules with appropriate dead-bands, or through having network-coordinated controls).

Post-conditions-verification:

Contact KPUD to learn more.

The Contractor is responsible for installations passing KPUD/BPA approval criteria such as, but not limited to: warranted by manufacturer against defects in materials.

Required Documentation:

1. Completed and signed Non-Residential Project Rebate Application.
2. Detailed Invoice showing installed costs including labor, equipment information and date of installation.
3. Commercial Connected Thermostat Installation Form (contractor completes).

Packaged Terminal Heat Pump

Commercial Packaged Terminal Heat Pumps (PTHP's) are an HVAC type commonly used in lodging applications.

Requirements & Specifications: This measure is available for both retrofits and new construction.

Buildings eligible to be installed in are either:

- a. A lodging building type which includes hotel, motel, bed and breakfast, boarding/room house, apartment hotel, dormitory and shelter; or
- b. In a residential care building which includes nursing home, retirement home, and assisted living facilities.
- c. No other buildings are allowed.

Pre-condition PTHP's for retrofit installations must have the following:

- a. Space is conditioned by a PTAC or Zonal electric-resistance heat as the primary source.
- b. No other heating sources are eligible.

Required Documentation:

- 1. Completed and signed Non-Residential Project Rebate Application.
- 2. Detailed Invoice showing installed costs including labor, equipment information and date of installation.
- 3. AHRI Certificate.
- 4. Commercial PTHP Installation Form (contractor completes).

Variable Frequency Drive on Air Handling Unit Fan (VFD on AHU Fan)

Requirements & Specifications: Available for retrofit only, new construction not allowed

- 1. Building characteristics must have the following:
 - a. Existing Heating type is electric or gas,
 - b. VFD must be installed on existing AHU single-speed fan.
- 2. Post-conditions VFD applications must have the following characteristics:
 - a. Retrofit adds a VFD to control the fan with variable-speed operation;
 - b. Any existing AHU throttling or bypass devices (e.g., inlet guide vanes, dampers, etc.) must be removed or permanently disabled.

Required Documentation:

- 1. Completed and signed Non-Residential Project Rebate Application.
- 2. Detailed Invoice showing installed costs including labor, equipment information and date of installation.
- 3. Commercial VFD on AHU Fan Installation Form (contractor completes).

Advanced Rooftop Unit Control (ARC)

ARC Retrofits-Lite: ARC-lite products add one of the following equipment options to the existing RTU:

- 1. A VFD and controller for variable speed fan operation; or
- 2. A multispeed motor and controller for multispeed fan operation.

ARC Retrofits-Full: Full-ARC products add one of the following equipment options to the existing RTU:

- 1. A VFD and controller for variable speed fan operation; or
- 2. A multispeed motor and controller for multispeed fan operation.

ARC-Full products also add a controller with all of the following enabled:

- 1. Digital, integrated economizer control with either differential dry-bulb or differential enthalpy with fixed dry-bulb high-limit shutoff; and
- 2. Demand control ventilation with proportional control, based on CO2 sensor reading.

Requirements & Specifications: Available for **retrofit only**, new construction not allowed

- 1. Pre-condition characteristics must have the following:
 - a. RTU Heating fuel type may be electric or gas,
 - b. ARC projects are not eligible for a Connected Thermostat rebate.
 - c. Existing RTU has the following characteristics:
 - A cooling capacity equal to or greater than 5 (five) tons;
 - A unitary system (split systems are not eligible; and
 - A constant-speed supply fan (RTU's with variable speed fans are not eligible).

2. Post-conditions VFD applications must have the following characteristics:
 - a. Be installed on an existing rooftop unit, and;
 - b. Product must be listed on KPUD Qualified Products list. (ask for details)

Required Documentation:

1. Completed and signed Non-Residential Project Rebate Application.
2. Detailed Invoice showing installed costs including labor, equipment information and date of installation.
3. Commercial Advanced Rooftop Control Installation Form (contractor completes).

Variable Refrigerant Flow System Retrofit

Requirements & Specifications: Available for **retrofits only**, new construction not allowed

1. Pre-condition characteristics must have the following:
 - a. The space is conditioned by electric zonal or forced-air, electric-resistance heat as the primary heating source.
 - b. No other heating sources are eligible.
2. Post-conditions for the installed VFR must have the following characteristics:
 - a. Have an AHRI certificate of product rating.
 - b. Meet the efficiency requirements for both heating & cooling per BPA guidelines (available upon request)
 - c. The installed VRH system may be eligible if it operates in tandem with a ventilation system that uses any fuel for heating ventilation air.

Required Documentation:

1. Completed and signed Non-Residential Project Rebate Application.
2. Detailed Invoice to include installed costs including labor, equipment information and date of installation.
3. Commercial Variable Refrigerant Flow Installation Form (contractor completes).

Contact Klickitat PUD Energy Services at 509-773-7622 for a complete list of requirements and specifications for installing HVAC measures.

IMPLEMENTATION PROCESS

Contact Klickitat PUD’s Energy Services Specialist from KPUD at (509) 773-7622 to start the process.

1. Read the Program Participation Requirements and Instructions pages.
2. Complete Non-Residential Project Rebate Application.
3. Request any additional information needed.
4. Contact KPUD to request if an on-site pre-inspection is required.

BID ACCEPTANCE AND INSTALLATION PROCEDURE

Customer is to secure bids from installer’s. A list of participating Contractors is available through KPUD or at www.comfortreadyhome.com, or if one is not identified on either list. they must be bonded and licensed in Washington and they must contact KPUD to be approved. It is suggested that you obtain at least two (2) bids and no bid be accepted unless the premises have been visited and physically inspected by the bidding contractor. It is easier to evaluate submitted bids if each bidder receives the same description of the measures to be installed. When entering into the contact with your chosen installer, you may need to make them aware of the requirements as contractors are not considered agents of KPUD and we cannot guarantee they keep current with our program requirements.

INSPECTION AND COMPLETION PROCEDURE

1. After the installation of all materials, contact KPUD to schedule an inspection.
2. We request that business owner and/or occupant is present for the inspection.
3. If corrections are needed, KPUD will notify the contractor and customer to clarify changes required comply with installation requirement .and another inspection will need to be scheduled.
4. Once all work is complete and approved by you, KPUD and the appropriate BPA Qualifying Agents; KPUD will then process the rebate request for approval on the next scheduled Commissioner’s meeting or as funds are available.
5. Required paperwork must be submitted for each measure:
 - a. Equipment/contractor invoice showing:

*Manufacturer	* Model numbers	
* Type, size, details	* Purchase date	* Costs
 - b. Measure specific required documentation

NOTICES AND DISCLAIMERS

Kickbacks, rebates, non-authorized discounting of bids or other non-program benefits from the Contractors are prohibited, and may be subject to federal law.

All materials and installations must comply with current KPUD/BPA conservation specifications in order to be eligible for funding.

Contractors, participating in the program shall not be considered officers, agents or employees of BPA or KPUD; therefore, KPUD shall not be liable for the tortuous acts or omissions of the Contractors or other independent contractors.

All installations are subject to Quality Assurance oversight inspections by BPA approved Inspectors.

As KPUD’s rebate program is funded by federal funds, certain limitations must be applied. Unfortunately, if a business is not federally recognized as a legal operation by BPA, then the business will not qualify for rebates.

All measures are subject to being removed without notice.

Questions about this program can be directed to Klickitat PUD Energy Services

Klickitat PUD
1313 S Columbus Ave
Goldendale, WA 98620
(509) 773-7622 or (800) 548-8357

www.klickitatpud.com

**Klickitat PUD Commercial HVAC Energy Efficiency Program
Participation Requirements and Instructions**

REBATE VALUES

Klickitat PUD reserves the right to make changes to all programs and rebates are subject to the availability of funds through the Energy Efficiency Program.

Measure	Description	Rebate Value
Ductless Heat Pump- <u>Retrofit</u>	Retrofit from electric zonal or forced air furnace electric resistance only	\$800/ton Installed
Ductless Heat Pump- <u>Upgrade</u>	Replace an existing ductless heat pump or as part of a building addition project, new construction, or major renovation project.	\$300/ton installed
Heat Pump- <u>Retrofit</u>	Retrofit from electric zonal or forced air furnace electric resistance only	\$500 per whole ton
Heat Pump- <u>Upgrade</u>	Replacing an existing electric air-source heat pump (operational or failed) with a more efficient electric air-source heat pump as part of a building addition, new construction project or major building renovation project.	\$150 per whole ton
Connected Thermostat	Call for more details	\$150 per installed unit
Packaged Terminal Heat Pump (PTHP)	Retrofit	\$600 per whole ton
	New Construction	\$100 per whole ton
VFD on AHU Fan	Based on whole horsepower	\$300 per whole HP
Advanced Rooftop Unit Control (ARC)	Arc-Lite	\$120 per whole ton
	ARC Full	\$250 per whole ton
Variable Refrigerant Flow System retrofit	Based on whole tons	\$800 per whole ton

All requirements, specifications and rebate values are subject to change and subject to availability of funds

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