

Replacement Pages for Ductless Heat Pumps

Please replace the following pages 89-92 to reflect updates to the Ductless Heat Pump Pilot.

HVAC Measures

BPA will provide credits/reimbursements for HVAC measures in electrically-heated homes including high efficiency heat pump upgrades, geothermal heat pump system upgrades and proper installation, sizing, refrigerant charging and duct sealing protocols as specified by Performance Tested Comfort Systems™ (PTCS). PTCS measures must be certified as PTCS and work must be performed by a PTCS certified technician. Either electric or non-electric auxiliary heat systems may be installed with a heat pump; however, an electric heat pump must be the primary system used to meet the heating needs of the house.

The PTCS specifications are available in the PTR, under Downloads.

PTCS forms are available at <http://www.ptcsnw.com>

This section covers the following:

- Ductless Heat Pump Pilot
- PTCS Air Source Heat Pump Upgrade, with minimum HSPF 8.5/SEER 14 ratings (bundled measure)
- PTCS Heat Pump Commissioning & Controls as a stand alone (unbundled) measure (effective retroactive to April 1, 2008)
- PTCS Geothermal (Ground Source) Heat Pump Systems
- PTCS Duct Sealing as a stand alone (unbundled) measure (effective retroactive to April 1, 2008)

Ductless Heat Pump Pilot

BPA is participating in a Northwest Energy Efficiency Alliance (NEEA) led pilot to measure and validate energy savings of Ductless Heat Pumps (DHP) in various existing residential applications, with permanently installed electric resistance heat. The initial period for the pilot is October 1, 2008 to September 30, 2009 for BPA customers. All eligible DHPs must be installed by September 30, 2009. BPA funding is available for this pilot through our existing CRC and CAA structure. This pilot will test DHP installations in a variety of applications. BPA, recognizing the saving values are provisionally deemed, also wishes to ensure the pilot cost and savings risks are managed appropriately. NEEA will keep customers and vendors informed as the pilot progresses. All pilot program materials and updates can be found at www.nwductless.com.

Requirements and Specifications

- BPA customers desiring to participate in the pilot should give notice to NEEA's contractor, Fluid Market Strategies (Fluid) of their intent and should

identify an approximate number of units they anticipate will be installed during the pilot period. Contact Erica Thompson, 503-808-9003 ext. 107, ethompson@fluidms.com. Customers must follow all pilot requirements found at www.nwductless.com.

- All claims made to BPA for DHPs installed must be recorded in the PTR system.
- Cost-effective DHPs in the PTR system, with BPA dollar reimbursement values, may be claimed as deemed measures. (See Table R-2A). All measures shown in Table R-2A apply to existing residences.
- Cost-effective DHPs without BPA dollar reimbursement values may be utility self funded as a deemed measure or submitted for BPA reimbursement using the Custom Project Proposal (CPP) process. (See Table R-2A).
- Utilities choosing to submit CPPs for DHPs should refer to the CPP Process Guidelines and Requirements for information specific to the custom project process. Additionally, the following CPP requirements apply to this pilot:
 - Customers may submit CPPs using the RTF provisionally deemed estimate of site kWh energy savings (3950 kWh) and estimate of incremental cost (\$3409), found in the PTR system, to determine Total Resource Cost Benefit Cost Ratio (TRC B/C) cost-effectiveness.
 - A CPP must be submitted and approved by BPA before the DHP is purchased or installed.
 - Customers may submit a CPP for individual units or multiple units as a batch. If submitted as a batch, all units need to be at one general location, such as several individual units in a single multifamily complex or several units in a single manufactured home park. BPA will make only one payment for all units submitted in an accepted completion report, and payment for batched units will be based on the sum of the energy savings *or* the sum of the total incremental cost, whichever is lower.
 - Completion reports must include information for the individual units that matches the total claimed in the completion report.
 - The responsible BPA engineer will determine the appropriate Measurement and Verification (M&V) required for each CPP.
 - The M&V of energy savings will be accomplished by comparing billing histories, pre and post, collected via the customer's existing meters. At least two months of winter usage (one month minimum between November 1 and March 31) after installation of the DHP at each residence will be compared to the two years' winter heating billing histories prior to its installation. The data shall be normalized for pertinent weather

variances when comparing the measured electric energy use to the baseline average weather use. The savings will be the average baseline usage minus the post installation usage after it has been normalized for weather and pro-rated to reflect the post measurement period. A commercially available weather adjusting software (e.g. PRISM) shall be used to determine the actual electric energy savings.

Reimbursement Strategies and Levels

A customer may fund its participation in this pilot with a CAA, CRC, self funding or Irrigation Rate Management Program (IRMP) credits.

Table R-2A - Eligible Ductless Heat Pump Measures

Measure Description	BPA Dollar Credit shown in PTR (Y/N)	Funding Source Allowed	Savings Determination	BPA Credit
Existing Single Family w/ Zonal Electric Heat	Yes	All	Deemed	\$1,500
Existing Single Family w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	Yes	All	Deemed	\$1,500
Existing Multifamily w/ Zonal Electric Heat	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Multifamily w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Manufactured Homes w/ Zonal Electric Heat	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **
Existing Manufactured Homes w/ Electric Force Air Furnace w/ or w/o Central Air Conditioning	No	Self Funding & CPP only	Deemed if self funded; verified if CPP *	\$0 **

Notes: *This refers to the method of claiming kWh saving. If the unit is being claimed as self funded, the customer can claim the RTF provisionally deemed kWh energy savings estimate. If the customer is claiming the unit via the CPP Process, the kWh energy savings will be determined by a Measurement and Verification (M&V) plan approved by a BPA engineer.

**BPA’s reimbursement for custom projects will be \$0.30/measured first year kWh *or* 70% of the actual incremental cost, whichever is lower.

Additional Documentation Requirements

- The data collection and documentation requirements are the same for all DHPs in this pilot.
- Fluid will collect all required documentation. Contact Erica Thompson, 503-808-9003 ext. 107, ethompson@fluidms.com. Qualified contractors are required to send Fluid all required documentation. Fluid will qualify all eligible installations and perform quality control checks on all submitted forms. The Quality Control work performed when the documentation is collected will satisfy BPA’s documentation requirements. If a unit is on Fluid’s list of qualified units, BPA will accept that as proof that the unit meets the pilot’s requirements.

- Fluid will determine that forms are complete and the install meets all of pilot requirements. The customer will be sent an e-mail, with PDFs of all the program documentation, verifying that the unit can be claimed in the PTR system. In the case of a CP, this notification and documentation should be referenced in the completion report.

PTCS Air Source Heat Pump Upgrade with Minimum HSPF 8.5/SEER 14 Ratings (bundled)

Requirements and Specifications

- a. Heat pump must be installed by a PTCS certified contractor.
- b. Heat pump must be installed according to the version current at the time of heat pump purchase of the “PTCS Air Source Heat Pump Installation Standards,” which is available on the PTR.

Reminder: As a part of the PTCS installation standards, PTCS Commissioned Heat Pump certification is required on all Air Source Heat Pump Upgrades, and PTCS Duct System certification may be required, depending on the location of the ductwork.

- c. Allowable tradeoffs of the HSPF and SEER ratings are as follows:
 - A minimum SEER rating of 13.5 shall be acceptable when HSPF is at least 8.6
 - A minimum SEER rating of 13.0 shall be acceptable when HSPF is at least 8.7
- d. Homes with heated floor area greater than 4,500 square feet, which is twice the size of the prototypes used by the RTF to estimate savings, are allowed to claim up to two heat pump measures when two heat pumps are installed.
- e. BPA requires the newly installed heat pump(s) to be the primary heating source for the entire house.

Where a house has a substantial¹ amount of ductwork in unconditioned space, the heat pump with ducts outside² measure must be claimed. Where a house

¹ BPA interprets “substantial” to mean ~ 75 percent or more of the ducts are outside the conditioned space.

² “Ducts Outside” and “Ducts Inside” are shorthand for homes with ducts outside the conditioned space where duct testing and sealing can result in higher savings gains, and homes without substantial ducting outside the conditioned space, respectively.