



BPA HVAC Incentives: Another Look Under the Hood

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Agenda

HVAC Owner's (Implementation) Manual:

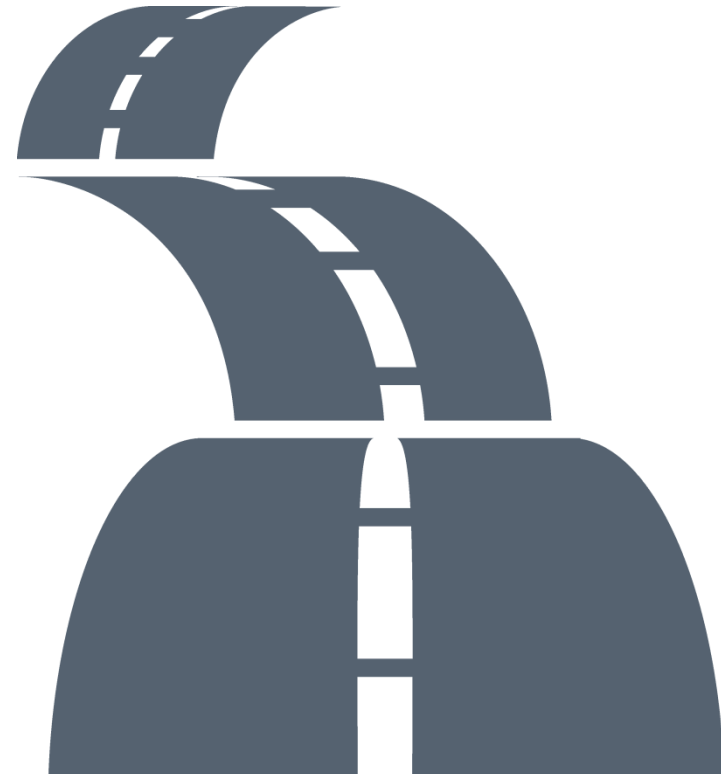
Quick start guide

Frequently Asked Questions:

Know before you go

It's Getting Technical In Here:

Air Northwest 2016-2017 Plans





Commercial HVAC Measures

Pack Your Bag: Commercial HVAC



Advanced Rooftop Unit Controls (ARC) Owner's Manual



Payment:
\$150-225/ton

Retrofit

Electric or gas

> 5 tons

Qualified Products List

Important: See IM for add'l specs & recs

ARC List as of 10/24/2016

Full Retrofit

ARC Type	Manufacturer	Model
Full Retrofit	Transformative Wave	CATALYST with eIQ
Full Retrofit	Pelican	Pelican solution that includes: <ul style="list-style-type: none"> • Pelican TS200 or TS250 Thermostat, • Pelican zone controller Z8 or Z24, or PEARL Economizer, • Pelican Extended Range Wireless Gateway, and • Variable speed drive
Full Retrofit	Bes-Tech	Digi-RTU

ARC-Lite

ARC Type	Manufacturer	Model
ARC-Lite	Transformative Wave	CATALYST Lite
ARC-Lite	Lennox	ARC -with DCV
ARC-Lite	Trane	ARC -with DCV
ARC-Lite	NextRev	DrivePak
ARC-Lite	Pelican	Pelican solution that includes: <ul style="list-style-type: none"> • Pelican TS200 or TS250 Thermostat, • Pelican PEARL Economizer, • Pelican Extended Range Wireless Gateway, and • Variable speed drive

Updated ad-hoc – Typically via calls from manufacturer reps

ARCs | Know Before You Go

1. The IM says to round to the nearest ton. I have a question about that...

Best practice: Sum all units before a single rounding is applied

Scenarios may warrant rounding individual units

Utility discretion

2. It says greater than 5 tons are eligible. What about 5 ton units?

5 tons or greater are eligible



ARCs | Know Before You Go (Cont'd)

3. The Full ARC requirements changed, right? It now requires web-enabled/ monitoring/alarm capabilities? (Yes)

Doesn't inherently impact energy savings, but it facilitates persistence

Intent as reflected in the original ARC pilot

Capabilities vs. commissioned state: IM does not require commissioning (utility discretion)

4. Some Full ARC solutions are expen\$\$\$ive. What can I do?

Choose a different product

ARC Lite

5. What does the future for ARCs look like?

You tell us! Bring us your feedback. We're listening. We're looking at IM updates.



Ductless Heat Pumps (DHPs) Owner's Manual

Retrofit only

The area conditioned by the new DHP:

- Electric – no gas
- Not conditioned by an air source, ground source or ductless heat pump.

Qualified Products List



**Payment:
\$800/ton**

Important: See IM for add'l specs & recs

DHP List

As of 10/1/2016

Applies to both Res & Comm

Ductless Heat Pump Qualified Products List:
8.0 HSPF minimum for multi-head systems; 9.0 HSPF minimum for single head systems
This Qualified Products List is applies to both Residential and Commercial installations.

Please note: If you find an inverter driven ductless heat pump that is not on this list send its AHRI certificate to ResHVAC@bpa.gov so it can be verified and included on the next product list. Other issues with this list should also be sent to ResHVAC@bpa.gov.

***Multiple Interior head installations** require manufacture documentation of matching indoor and outdoor model number combinations.

Version 10/1/2016

AHRI #	Outdoor Unit Manufacturer	Outdoor Unit Model	Indoor Unit Model	HSPF	High Heating 47 F Capacity (Btuh)	Low Heating 17 F Capacity (Btuh)
5620400	AIR-CON	A22CI4H4R09	A22EM4H4R09	9.2	9800	5500
5620401	AIR-CON	A20CI4H4R12	A20EM4H4R12	9.2	13000	7600
5620402	AIR-CON	A18CI4H4R18	A18EM4H4R18	10	19800	12700
9128500	YORK	YUJE48BYJ6AMO-X	YKJE48BXJ6AM-RX	11	50000	35000
9128500	YORK	YHKE12YF6AMHO-X	YHKE12XF6AMH-RX	9	12000	7500

Over 1800 products

Updated quarterly

DHPs | Know Before You Go

1. How do I round tonnage?

Same as ARC

2. How are products added to the QPL?

Quarterly by BPA residential team (AHRI database)

Reviews by request

3. What spaces are eligible?

Different than residential (1 DHP per house)

Commercial: Can install more than 1 DHP at a site

Install what is required to serve the space, so long as existing conditions are met

DHPs | Know Before You Go (Cont'd)

Example: Many DHPs; one space



Heat Pump Upgrades: Owner's Manual



Payment:
\$1,000/unit under 6 tons
\$200/ton for 6-20 tons

Existing building or new construction

50,000 square feet or less conditioned building area

Air to air

CEE Tier performance specifications apply

Important: See IM for add'l specs & recs

HPs | Know Before You Go

1. How do I round tonnage?

Same as ARC – with exception of HP Conversions (sum only)

2. What about the heat pump calculator?

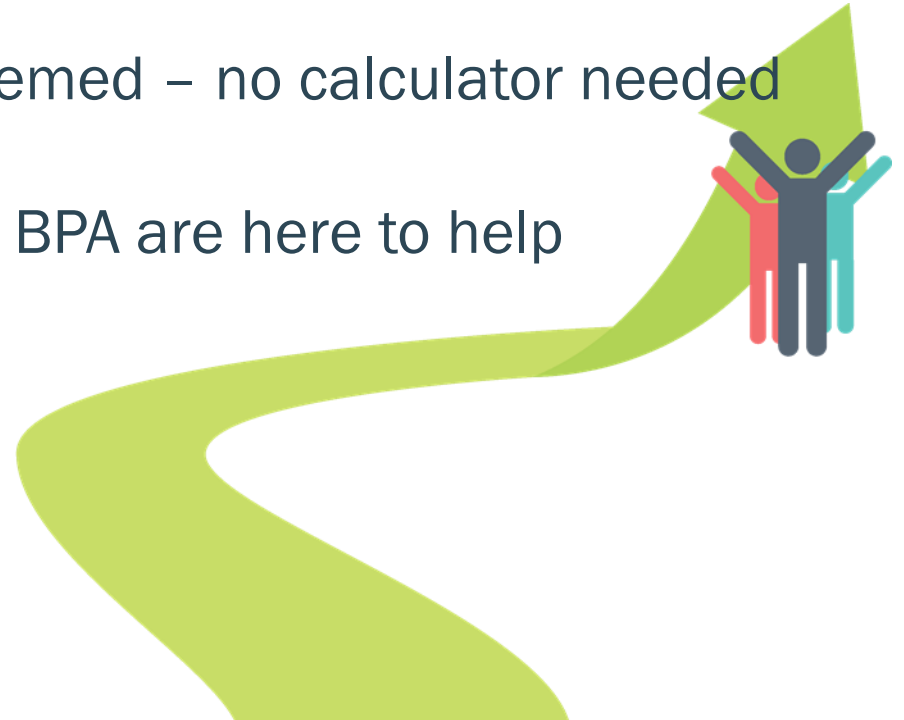
Still required for HP Conversions

HP Upgrade savings now deemed – no calculator needed

HP Conversions: Air NW and BPA are here to help

3. Sizing the project

Best practices apply



HPs | Know Before You Go (Cont'd)

4. How do I use the CEE (Consortium for Energy Efficiency) tiers? Why CEE?

BPA is a CEE member and has committed to this initiative

Unitary Heat Pump Specification

Effective January 12, 2016

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	Test Procedure
Air Cooled (Cooling Mode)	<65,000 Btu/h	All	Split System	15 SEER 12.5 EER	16 SEER 13 EER	AHRI 210/240
			Single Package	15 SEER 12 EER	16 SEER 12 EER	
	≥65,000 and <135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.3 EER 12.2 IEER	11.8 EER 13.6 IEER	AHRI 340/360
		All Other	Split System and Single Package	11.1 EER 12 IEER	11.6 EER 13.4 IEER	
	≥135,000 and <240,000	Electric Resistance (or None)	Split System and Single Package	10.9 EER 11.6 IEER	N/A	
			Split System			

Variable Refrigerant Flow (VRF)

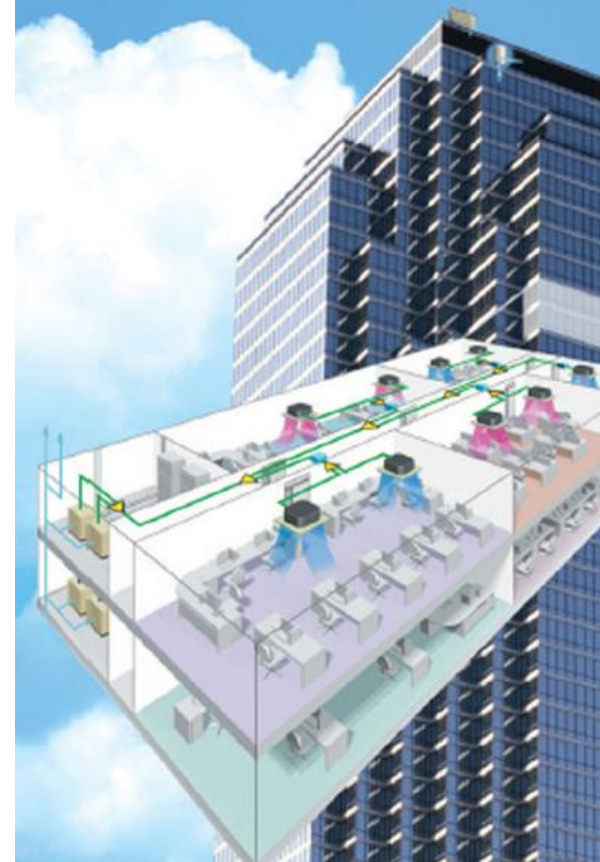
New measure!

Existing building occupancy requirements

Less than 100,000 SF

CEE Tier 1 or better performance

Call BPA if you think you have a VRF Project



Payment: \$800/ton

Important: See IM for add'l specs & recs

VRF | Know Before You Go

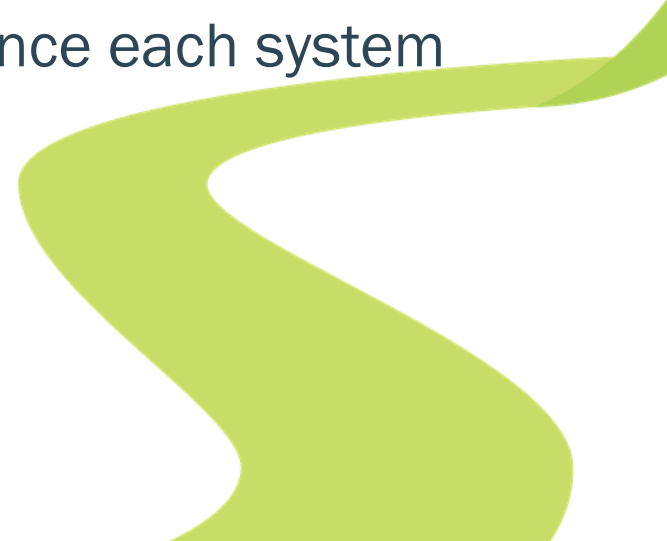
1. It's deemed... but lets work together

Long lead time projects

ANW + BPA is here to help you: Preinstall site visit, pre-inspection, data analysis; Postinstall site visit, etc.

2. Do installers need to be certified?

Most manufacturers require contractors to take classes on installation and product information since each system differs.



VRF | Know Before You Go (Cont'd)

3. What's this I hear about Washington code requiring decoupled ventilation?

Summer 2017: Designers must include dedicated outside air systems in commercial buildings

New construction only

Consequence: moves VRF into market



Connected Thermostats Owner's Manual

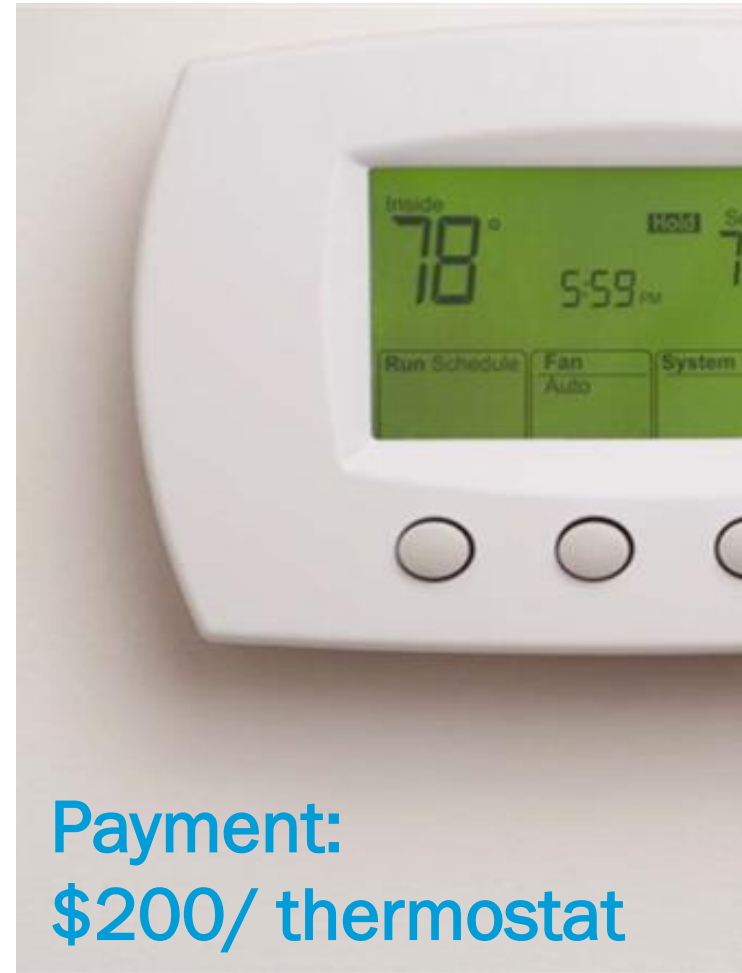
Retrofit

Electric or gas

Replacing existing t-stat that is not web enabled

Existing HVAC unit has supply fan

Qualified Products List



Important: See IM for add'l specs & recs

Tstat List as of 10/14/2016

Manufacturer	Model
Carrier	33CONNECTSTAT, with the fan set to ON during occupied, and AUTO during unoccupied
DreamWatts	Thermostat
Ecobee	Commercial EMS
Ecobee	EMS SI
Honeywell	Vision Pro 8000 with Gateways for web-enabling
Honeywell	WIFI Vision Pro 9000
Honeywell	Prestige Wireless
Kite & Lightning	UNITY System
Pelican Wireless Systems	TS200 with Gateway and Pearl economizer controller
Profile Systems	P1900
Proliphix	Internet Managed Thermostats (IMT) 550 hard-wired wi-fi model
Transformative Wave	CATALYST BMS
Venstar	EMS

Updated ad-hoc – Typically via calls from manufacturer reps

Connected Tstats | Know Before You Go

1. Can it be combined with other measures?

Yes! Great with DHPs, HPs, ARCs, etc.

2. Does it really work with gas?

Yes. The savings are largely from supply fan (electric)

3. I've heard they don't save much energy

Some projects just don't make much sense (utility discretion). Research in progress.

4. Features vs. commissioned state

Example: Supply fan requirement (we added into IM based on utility feedback)





Field Test Opportunities

1. Commercial High Efficiency Pump Systems (CHEPs)

2. RTU Replacement to HRV + Variable Capacity Heat Pumps

Getting started:

- Letter of commitment
- Project description
- Project information form



Contact Erik Boyer for more information
ebboyer@bpa.gov

Commercial HVAC Efficient Pumping System (CHEPS) Emerging Technology Field Test

*BPA seeks utilities to participate in Commercial HVAC Efficient Pumping System (CHEPS)
Emerging Technology Field Test*

<https://www.bpa.gov/EE/Technology/EE-emerging-technologies/Projects-Reports-Archives/Field-Tests/Pages/default.aspx>

***Stay tuned for another ET Brown Bag in early 2017
Looking to get sites identified by February 2017***

Emerging Technology Field Test

*BPA seeks utilities to participate in RTU Replacement to HRV + Variable Capacity Heat Pumps
Emerging Technology Field Test*

Bonneville Power Administration (BPA) is seeking a limited number of utilities to participate in an Emerging Technology (ET) Field Test. This ET Field Test could fully fund up to 4 Rooftop Unit (RTU) Replacements to Heat Recovery Ventilation plus Variable Capacity Heat Pumps (HRV + VCHP), using simplified grants and custom project incentives. This ET Field Test will research cost effectiveness





Air Northwest: Getting Technical

Air Northwest is **YOUR** Commercial HVAC Trade Ally Network

Workshops

**100+
Air Allies**

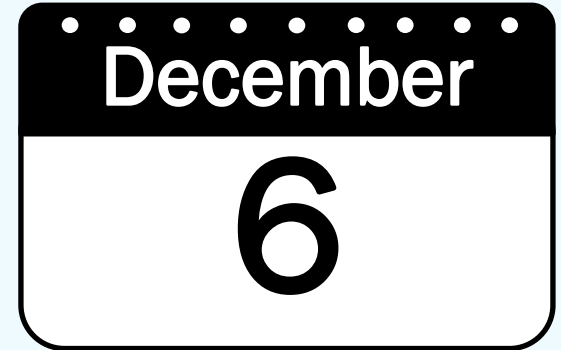
**Field
Support**



You're Invited! (Invite Your Contractors!)

EWEB & Air Northwest Joint Training

@ EWEB's offices




NORTHWEST

Accelerating HVAC efficiency in the Northwest

When

Tuesday December 6, 2016 from 7:30 AM to 10:30 AM

PST

 [Add to Calendar](#)

Where

EWEB

500 East Fourth Avenue
Eugene, OR 97401



EWEB & Air Northwest Contractor Training and Breakfast

Join **Air Northwest**, **EWEB** and **your local utilities** for a hearty breakfast and short training on VRF best practices presented by Genscol

EWEB and your local utilities will also go over program and incentive updates.

Roadside Assistance

Do you have prescriptive incentive questions?

Don't know what to do with custom?

Need us to come on site?

**Air Northwest
field support
is ramping up!**



Stay Tuned!

Air Northwest website launch: December 2016

New Air Ally and Incentive Lookup Tools (Zip & Keyword)

Incentive and Technology Guides

Best Practices

Blog

AIR NORTHWEST



Driving local, energy-efficient HVAC solutions

Training and Events

Technologies

Blog

Learn More

Air Northwest is a free preferred network that connects commercial HVAC contractors with local utilities offering cash incentives for installing energy-

Key Takeaways

1. HVAC installations are on the move
2. Trade Allies are allies
3. We're listening



BPA Commercial Sector

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Air Northwest

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A close-up photograph of a hand holding a set of keys. The hand is positioned in the upper right quadrant of the frame. The keys include a black remote control with a silver keychain. The background is a soft, out-of-focus light blue and white, suggesting an outdoor setting with natural light. The overall tone is professional and positive.

Q&A + Thank You!