

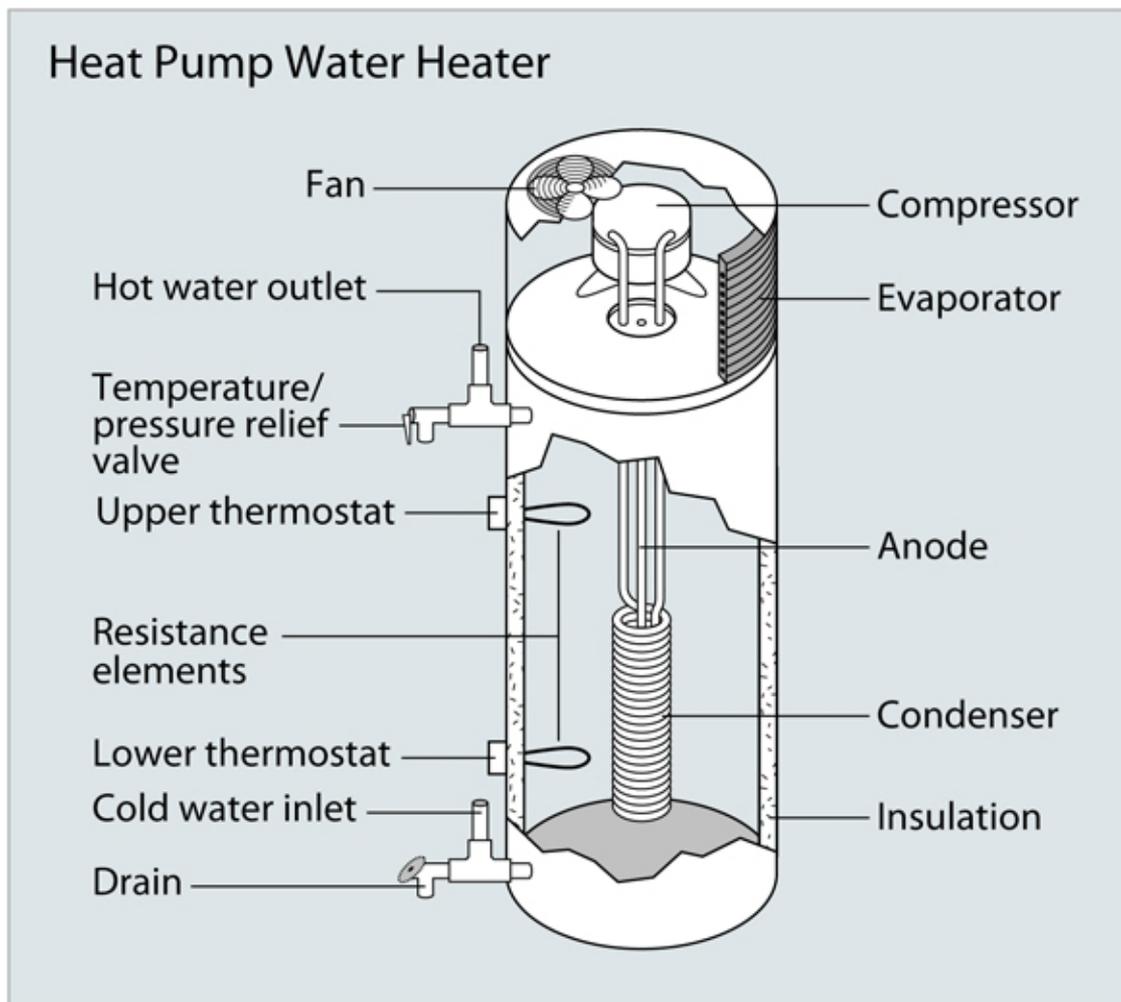
Heat Pump Water Heater – New residential measures

BPA Brown Bag presentation
March 20, 2012

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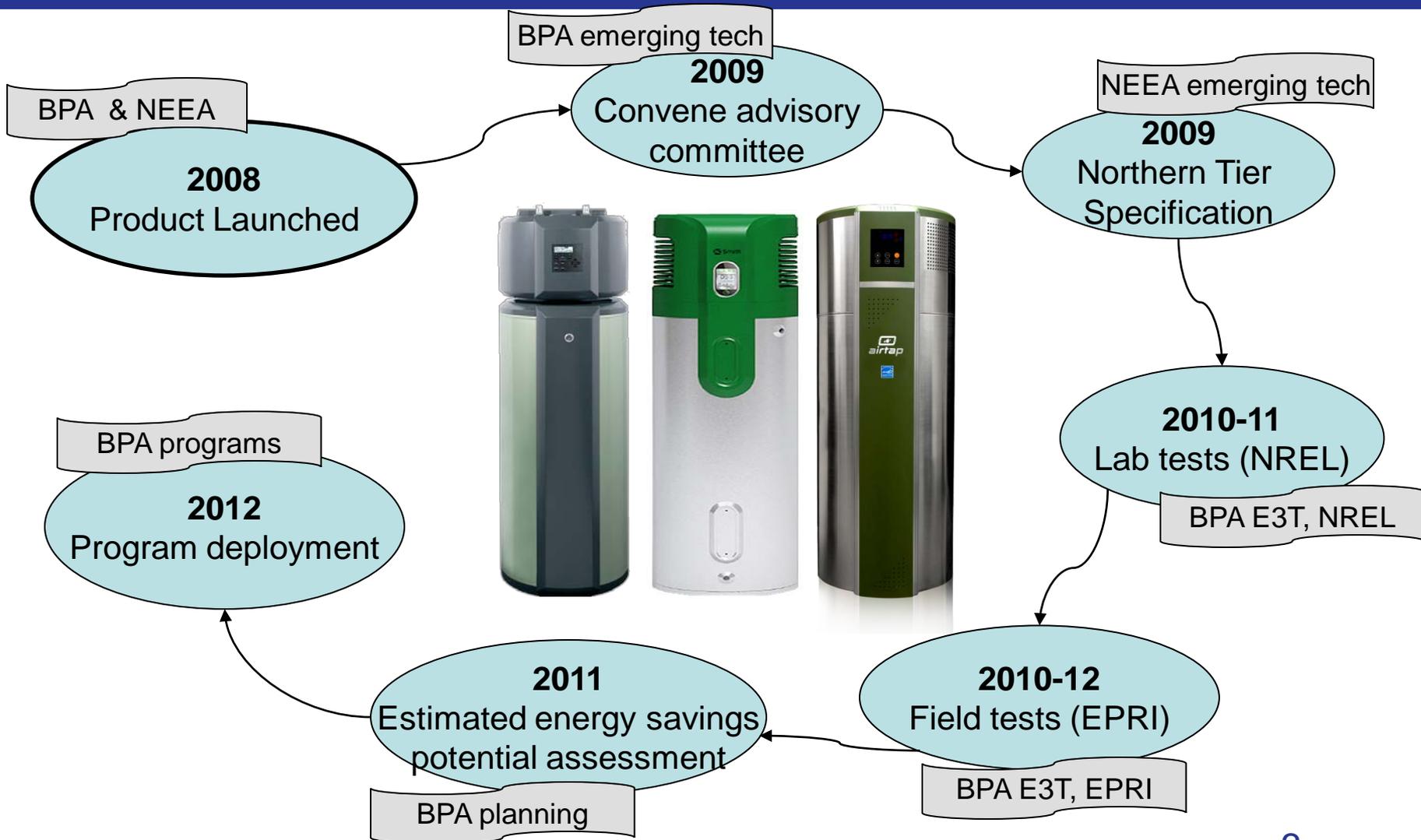


Heat Pump Water Heater



http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12840

A Long Road...



Research

■ Raising Questions

- Do they provide energy savings?
- Are they cost effective?
- Are they reliable?
- Will consumers like/buy them?
- What are the qualifying specs?

■ Two Studies

- HPWH Laboratory Testing (NREL)
- EPRI Field Test



RTF Provisional Status – Tier 1

- Tier 1 HPWH are unducted, integrated units
 - Provisionally deemed by RTF October 4, 2011
 - All heating and cooling zones
 - Additional data required via BPA HPWH form
- BPA measures available April 1
 - Field research through 3/10/2012
 - Collecting data necessary for an official UES



RTF Provisional Status – Tier 2

- Tier 2 HPWH are ductable, integrated units
 - Provisionally deemed by RTF February 14, 2012
 - All heating and cooling zones
 - Additional field testing underway
 - Qualifies for BPA reimbursement when not ducted
- NEEA's Smart Water Heat Project
 - Conducting field research
 - Collecting installation data for UES



BPA HPWH measures

HPWH Tank Size (gallons)	Installation Location, Home Heating Source	Busbar Energy Savings (kWh/yr)	Reimbursement
50-75 gal	Unheated buffer space,* any home heat	960	\$300.00
	Interior, non-electric home heat	1687	
	Interior, heat pump	1297	
	Interior, zonal electric resistance	707	
	Interior, electric forced air furnace	607	
Greater than 75 gal	Unheated buffer space, any home heat	1975	\$500.00
	Interior, non-electric home heat	2366	
	Interior, heat pump	1839	
	Interior, zonal electric resistance	1044	
	Interior, electric forced air furnace	908	

BPA Requirements

- Single family only (New construction & existing)
- In existing homes, HPWH must replace an electric storage water heater
- Installer must complete manufacturer training
- Must be listed on BPA's qualified products list
 - Northern Climate Specification, Tier 1
 - Integrated units only
- Ducted units do not qualify (still being tested)
- Utilities must retain the following:
 - HPWH Form
 - Copy of invoice or receipt
 - Manufacturer's installation checklist

Heat Pump Water Heater Materials

www.bpa.gov/Energy/N/HPWH.cfm

All materials will be available here soon

- BPA HPWH form
 - Utility must add form submittal instructions
 - Stephanie can help
- BPA Qualified Products list
 - Aligns with NEEA's NCS qualified products
- Homeowner Fact sheet
- Manufacturer-trained techs list

HPWH Form – Household Info

All sections must be filled out by the installer at the time of installation. A copy of this completed form, the purchase receipt or invoice, and the manufacturer’s Installation Checklist must be promptly submitted to the homeowner’s utility in accordance with utility policy. *Last updated: January 2011.*

Household information

Program Use Only Project ID:

Customer Name	Installation Address	City	State	Zip
Phone	Mailing Address	City	State	Zip
Email:		Year Built: _____	Heated Area (sqft) _____	
Heating system	<input type="checkbox"/> Electric Furnace <input type="checkbox"/> Zonal Electric Resistance <input type="checkbox"/> Ductless Heat Pump <input type="checkbox"/> Ducted Heat Pump <input type="checkbox"/> Fireplace/Woodstove/Pellet stove <input type="checkbox"/> Gas Furnace <input type="checkbox"/> Other (specify): _____			
Air Conditioning	<input type="checkbox"/> None <input type="checkbox"/> Central <input type="checkbox"/> Zonal (window and/or wall units) <input type="checkbox"/> Evaporative cooler			
Number of occupants:	Number of water heaters:			

HPWH Form – Installation Info

Installation Information

Date of Installation:

Existing Water heater	Fuel <input type="checkbox"/> Electric <input type="checkbox"/> Gas	Age(years):	Size (gallons):	Functional? <input type="checkbox"/> yes <input type="checkbox"/> no
Brand Installed	Model		Size (gallons):	CO Monitor Location: <input type="checkbox"/> n/a
Other Appliances in installation room: <input type="checkbox"/> clothes dryer <input type="checkbox"/> fridge or freezer <input type="checkbox"/> furnace <input type="checkbox"/> other (specify):				
Where was this water heater purchased? <input type="checkbox"/> installer <input type="checkbox"/> retailer <input type="checkbox"/> online <input type="checkbox"/> Other:				
Total installed cost (before rebates): \$_____ Break down cost into the categories below: Equipment: \$_____ Labor: \$_____ Electrical: \$_____ Other: \$_____ Specify: _____				
Installation location: <input type="checkbox"/> Conditioned space <input type="checkbox"/> Unconditioned space Specify: <input type="checkbox"/> Garage <input type="checkbox"/> Basement <input type="checkbox"/> Closet <input type="checkbox"/> Utility room <input type="checkbox"/> Laundry room <input type="checkbox"/> Other:				
Ducted out of conditioned space? <input type="checkbox"/> Yes <input type="checkbox"/> No		Length of intake duct (ft): _____ Length of exhaust duct (ft): _____		
Installation room size: (length _____) x (width _____) x (height _____) = _____ cu.ft.				
Installation clearances: _____air inlet side (ft) _____air outlet side (ft) _____back (in) _____front (ft) _____top (in)				

HPWH Form – Installation Checklist

- Remind contractor to review instructions! These aren't a typical water heater.
- Form checklist does not replace Manufacturer checklist.

Installation Checklist *(complete in addition to the manufacturer's checklist)*

Follow the manufacturer's installation instructions exactly. Failure to do so will result in disqualification from the program, may void the manufacturer's warranty, and may result in lower than expected energy savings.

- | | |
|--|---|
| <input type="checkbox"/> There is adequate clearance to remove the air filter | <input type="checkbox"/> Homeowner is aware of cooling effect and noise levels to expect in the installation area |
| <input type="checkbox"/> Earthquake strapping is installed | <input type="checkbox"/> Homeowner understands the safety instructions |
| <input type="checkbox"/> Installation complies with code | <input type="checkbox"/> Temperature and Pressure relief valve is installed and not plugged |
| <input type="checkbox"/> Condensate line drains at a slope to a drain or exterior location | |

HPWH Form - Signatures Required

By signing below, the homeowner certifies that they understand and agree that they may be contacted for the purpose of scheduling an on-site installation quality assurance visit by a representative of the Heat Pump Water Heater (HPWH) program. This form must be signed by the person whose name appears on the electric utility account. ENERGY INFORMATION RELEASE: The undersigned utility customer requests and authorizes the specified utility to release billing and usage information for the account listed below to the HPWH program. With this authorization, the HPWH program can request billing information for up to two years pre-installation and two years post-installation. The utility customer also hereby releases the utility company from any and all liability arising from or connected with providing this information.

A copy of the purchase receipt or installer's invoice is included with this application.

A completed copy of the manufacturer's Installation Checklist is included with this application.

Electric Utility:	Account #:
Account holder name:	
Account holder signature:	Date:
By signing below, installer certifies that this form and any accompanying documentation are complete and accurate; that all measures associated with this project were completed as of the signature date below; and that all equipment was installed according to the manufacturer's specifications and any additional specifications required by Bonneville Power Administration.	
Installer name:	<input type="checkbox"/> Check if not a company (will not affect eligibility)
Installer signature:	Date:

Frequently Asked Questions

- What is an unheated, buffer location?
 - Any space that is adjacent to the conditioned space but not under thermostatic control.

- Will BPA-approved products perform well in the garage?
 - An Electric Power Research Institute (EPRI) study found that PNW garages usually stay above 40° F, even when the outdoor temperature is in the 20's. BPA-approved units were found to perform well in PNW garages.

- Can unducted units be installed inside the home?
 - RTF found cost effective savings for interior installations
 - Best suited to heat pump or gas heated homes

- Why no reimbursement for ducted units?
 - RTF approval February 14 not in time for April 1 I.M.
 - Some key calculations and guidance still to come

Questions

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