HPWHs in the Northwest: Where have they been and where are they going?

Jill Reynolds
Agenda

• NEEA Overview
• Why HPWHs?
• Advanced Water Heater Specification
• Barriers and Upstream Strategies
• Questions
Northwest Energy Efficiency Alliance (NEEA)

- Northwest Energy Efficiency Alliance (NEEA) - Nonprofit organization using market transformation to maximize energy efficiency and meet future energy needs

- Funded by:
  » Bonneville Power Administration (BPA)
  » Energy Trust of Oregon
  » More than 100 Northwest utilities

- Covers Idaho, Montana, Oregon and Washington

- Energy efficiency is now the region’s third largest power resource
NEEA harnesses the power of 13 million energy consumers in four Northwest states.
Why HPWHs?

Residential Measure Categories

- Lighting
- Heat Pump Water Heater
- Advanced Power Strips
- Weatherization
- Ductless Heat Pump
- Showerheads
- Other Res Measures
- Heat Pump Upgrades & Conversions
- Appliances
- Behavior
- Computers & Monitors
- Duct Sealing

Cost-Effective Achievable Potential (aMW)

- 2021
- 2026
- 2035
**Characterization of the NW market**

- **55%** of all water heaters in the NW are electric.
- Water heaters are replaced roughly every **13** years.
- More HPWHs sold through retail than contractors and most are planning replacement – **86%**.
- On track to achieve over **16,000** HPWH installations by end of year.
Advanced Water Heater Specification

• Developed to ensure energy savings & customer satisfaction in cooler “Northern” climates
  • Ensure customer satisfaction for hot water delivery, performance, noise, reliability, etc.
  • Reliable energy savings in real world, real climate conditions
  • Performance that lead to incentives to promote efficiency
  • Create volume for manufacturers to achieve economies of scale, improved pricing and market support.
SPECIFICATION EVOLUTION

2008: National stakeholders develop Advanced Water Heater Specification

2010: ENERGY STAR® recognizes heat pump water heaters

2012: Product Tiers (QPL) and detailed testing requirements

2014: Spec updates. Qualification process updated, disqualification/requalification process defined

2016: Draft v6 released to market and stakeholder partners. AWHs 6.0 Active clarity, expansion of tiers and inclusion of DR language
## Product Tier Overview

<table>
<thead>
<tr>
<th>TIER 1</th>
<th>TIER 2</th>
<th>TIER 3</th>
<th>TIER 4</th>
<th>TIER 5</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Manage condensation</td>
<td>Intake and exhaust ducting</td>
<td>Intake and exhaust ducting</td>
<td>Heat pump only down to -5°F</td>
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<tr>
<td>ENERGY STAR compliant</td>
<td>Conditioned installations</td>
<td>Conditioned installations</td>
<td>Conditioned installations</td>
<td>Limited use of resistance element</td>
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<td>Semi-conditioned installations</td>
<td>Semi-conditioned installations</td>
<td>Semi-conditioned installations</td>
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<tr>
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<td>Unconditioned installations</td>
<td>Unconditioned installations</td>
<td>Unconditioned installations</td>
<td>Demand response capable</td>
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Primary Market Barriers

- Consumer familiarity
- Engaged installer base
- Upfront cost
- Not aligned with market needs
Barrier: Consumer Familiarity
Consumer Research

Key product influencers (in order of influence)
- Utilities
- Peers
- Contractors/plumbers

Motivating messaging
- Saving money on energy bills
- Saving energy
- Durability/reliability of equipment

Key consumer insights
- Consumers want known, reliable products
- Advanced/new tech is scary
- When in emergency replacement scenarios, consumers are not open to researching or considering new technology
Hot Water Solutions

Heat Pump Water Heater Retailers

Visit a retailer to buy a heat pump water heater. Enter your location for retailers near you.
Is a HPWH Right for Me?

Tell us about your home!

It's a [Choose] bed, [Choose] bath home

My water heater is powered by

- Electricity
- Natural Gas
- Solar
Consumer Awareness Video Messages:

- HPWHs offer the **same reliable hot water**, but can cut your electric water-heating costs by up to **60%** by working more efficiently than their standard electric counterparts.
- Additional **utility incentives may be available**, so you can save even more with a HPWH.
HPWH Awareness: Educational Materials

- Technology information
- Do-It-Yourself Installation Tips Sheet
- Homeowner Quick Reference Guide
- ‘Is a HPWH Right for You?’ Tool
- Utility incentive listings
Barrier: Engaged Installer Base*

*This is critical
Emergency Replacements

• Will wait maximum 1-3 days to get a new water heater
• Few open to researching new technology in emergency situations
• Look to installers to provide immediate guidance and solutions
Everyone Likes Rewards

ENTER ANY FIVE (5) STATE HEAT PUMP WATER HEATER CODES AND EARN A $500 VISA CARD!
Barrier: Upfront Cost
Go Upstream

- **Hot Water Solutions**
  - Creates agreements with manufacturers
  - Funds manufacturer price reductions to retail customers

- **Rheem**
  - Sells reduced-price product to retail
  - Invoices NEEA for product through retail for reimbursement

- **Retailer**
  - Purchases product at reduced price and builds stock
  - Sells higher volumes of product at reduced-price to customers
Go Upstream: Retail Model

- NEEA offers instant markdown funding on Tier 2 and above; current funding:
  - $200 on tanks <55 gallons
  - $300 on tanks >55 gallons
- Instant product markdowns increase sales volume 400-600%

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**NEEA**
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**PUMP UP CUSTOMER SAVINGS**

Save up to $400 now on A. O. Smith Tier 3 Voltex® hybrid electric heat pump water heaters. They could reduce your customers’ electric heating costs by up to 77% and save them an additional $380 in federal tax credits.*

Contact your local A. O. Smith distributor for more information.

**FEATURES**
- HIGH EFFICIENCY
- 4 OPERATING MODES
- QUIET OPERATION
- AIR DUCT ADAPTER KIT
- RELIABLE HOT WATER
- ENERGY STAR® QUALIFIED

**GET UP TO $400 OFF AT PARTICIPATING DISTRIBUTORS**

**VOLTEX HYBRID ELECTRIC HEAT PUMP WATER HEATERS**

Advanced Water Heater Specification Tier 3 Qualified

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Gallon Capacity</th>
<th>Maximum Climate Energy Factor</th>
<th>First Hour Rating (HYBRID mode)</th>
<th>Height</th>
<th>Diameter</th>
<th>Shipping Weight (lbs.)</th>
<th>Warranty Term</th>
<th>Instant Discount</th>
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<tr>
<td>HPTU-50V</td>
<td>50</td>
<td>2.43</td>
<td>70</td>
<td>63''</td>
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<td>$400</td>
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To learn more about the Northern Climate Energy Factor, reference the Advanced Water Heater Specification at neea.org/advancedwaterheaterspec.

**UTILITY INCENTIVES FOR CUSTOMERS**

In addition to manufacturer discounts and tax credits, your customers may qualify for utility incentives. Use the table on the back of this flyer as a quick reference for incentives on Tier 2 and above electric heat pump water heaters provided by utilities in your area. Incentive amounts and availability are subject to change; this information is current as of May 2016. Please contact the utility to verify availability, amount and requirements for incentive eligibility prior to installation.

*Based on a national electricity rate average of $0.12 per kWh. State and federal tax credits available. Learn more at doenergy.gov.

**LIMITED TO TANKS 55 GLAST LESS ***INCENTIVES PROVIDED BY ENERGY TRUST OF OREGON**

**NEEA**

25
Targeted Marketing

Savings That Make a Splash

CUT ELECTRIC WATER-HEATING COSTS BY UP TO 66%

Grover Electric is offering a fantastic price of $XXX on an efficient Reliance 50-gallon hybrid electric heat pump water heater for a limited time. You may also be eligible for tax credits and rebates from your electric utility. Don’t miss this chance to save now and for years to come.
Targeted Marketing

SEE HOW MUCH YOU COULD SAVE

Reliance 50-Gallon Hybrid Electric Heat Pump Water Heater  Model Number: 10 50 DHPH NE

$1,169

$XXX

Promotion Price

Utility Rebates and Tax Credits

Save Up to 66% on Electric Water-Heating Costs

Amazing Deal!

UTILITY REBATES

<table>
<thead>
<tr>
<th>50-Gallon</th>
<th>66- and 80-Gallon</th>
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<tr>
<td>Clark Public Utilities</td>
<td>$500</td>
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<tr>
<td>Cowlitz PUD</td>
<td>$500</td>
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</table>

Additional promotional discounts are available on Reliance 66- and 80-gallon heat pump water heaters. Visit your local Grover to learn more.

Sale ends March 31, 2017. Visit groverelectric.com to find a participating store near you.

Grover Electric and Plumbing Supply
Barrier: Not Aligned with Market Needs
The Future: Achieving Alignment

- Continued product advancement:
  - Split systems electric water heaters
  - CO2 water heaters
- Leveraging HPWH connectivity for demand response
- Instant/point-of-sale utility rebate programs
- Increased large-tank uptake
- Updated standards for small tank
Thank You & Questions?