HEAT PUMP WATER HEATERS AND THE NORTHWEST MARKET

Where we have been and where we are headed

ACEEE – Hot Water Forum
February 22, 2016
AGENDA

• Overview
• Efficiency program perspective - NEEA
• Manufacturer’s perspective - GE
• Utility perspective – PGE
• What does the future hold?
• Q&A
OVERVIEW - 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
WHY HEAT PUMP WATER HEATERS?

- Prime choice for market transformation
  - 55% of NW homes have electric water heaters
  - 6.3% of existing homes replace their water heater yearly
  - One of the largest energy saving measure for the Northwest residential portfolio
WHY HEAT PUMP WATER HEATERS?
WHY HEAT PUMP WATER HEATERS?

• The heat pump water heater (HPWH) opportunity
PRIMARY MARKET BARRIERS

- Upfront cost
- Limited consumer awareness and demand
- Limited availability in supply channel
- Lack of trained and motivated installer base
OVERVIEW – HOT WATER SOLUTIONS

- Hot Water Solutions – NEEA’s market facing program
- Working to influence federal standards requiring HPWHs for all electric storage tanks greater than 45 gallons
- Influenced over 10,000 HPWH sales to-date
OVERVIEW – HOT WATER SOLUTIONS

- Manufacturer promotions
- Utility support
- Supply chain engagement
- Marketing support
Save hundreds with rebates from Lowe’s® and your local electric utility.

**Lowe’s**

Lowe’s® limited-time offers good until July 31, 2015

**GE® GeoSpring™ 50-gallon model GEH500FE/SR**
- Regular price: $1,199
- After Lowe’s® instant savings: $699

**GE® GeoSpring™ 80-gallon model GEH800FE/SR**
- Regular price: $1,899
- After Lowe’s® instant savings: $1,599

**ADDITIONAL UTILITY MAIL-IN REBATES**

<table>
<thead>
<tr>
<th>50-gal</th>
<th>80-gal</th>
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</thead>
<tbody>
<tr>
<td>Idaho County Light and Power</td>
<td>$500</td>
</tr>
<tr>
<td>Kootenai Electric Coop.</td>
<td>$500</td>
</tr>
<tr>
<td>Rocky Mountain Power</td>
<td>$350</td>
</tr>
</tbody>
</table>

To learn more, visit GeoSpring.com

**GE APPLIANCES**

**PARTICIPATING UTILITIES**

*Rewards amounts and eligibility requirements vary by electric utility and installation conditions; contact your local electric utility to confirm the rebate amount and eligibility. Some utilities require professional installation by an approved contractor. Some utilities require units installed in conditioned space to be ducted out of conditioned space to be eligible.*
YOUR STANDARD ELECTRIC WATER HEATER gives you hot water. Unfortunately, it also drains your wallet. Heat pump water heaters give you the same reliable hot water, but they can reduce your electric water-heating costs by up to 50%. It’s like comparing apples to apples, except one of the apples is costing you a lot of money.
We’ve Teamed Up To Help You
STOP WASTING MONEY!

SAVE UP TO $200/YEAR
in energy bills with GE GeoSpring.

Starting Price $1899*
Utility Rebate: up to $800
(depending on utility)
Manufacturers Discount $300
Fast Special $100
INSTALLED PRICE $699**

* Pricing shown for 50-gallon unit. 80-gallon units as low as $1,199 installed.
** Utility rebate cannot exceed purchase price.
• Must have an existing electric water heater.
• Unit must be located in an unheated space.

UP TO $1200 IN TOTAL SAVINGS NOW
Call for more info: 800-804-7861
Based on your selection, these heat pump water heaters are recommended for installation in your home (recommended units are determined by the number of bedrooms and bathrooms in your home, not by the number of occupants):

- A.O. Smith 60 gallons (PHPT-60)
- A.O. Smith 80 gallons (PHPT-80)
- A.O. Smith 50 gallons (SHPT-50)
- A.O. Smith 66 gallons (SMPT-66)
- A.O. Smith 80 gallons (SHPT-80)
- American 60 gallons (HEP10260H045DV)
- American 80 gallons (HEP10260H045DV)
- American 50 gallons (HEP10250H045DV)
- American 66 gallons (HEP10266H045DV)
- American 80 gallons (HEP10280H045DV)
- Bradford White 50 gallons (RE2H50R108)
- Bradford White 80 gallons (RE2H80R108)
- General Electric 50 gallons (GEH50DEE1XXX)
- General Electric 50 gallons (GEH50DEE2XXX)
- General Electric 80 gallons (GEH80DEE1XXX)
- General Electric 80 gallons (GEH80DEE2XXX)
- General Electric 50 gallons (GEH50DEEDSC)
- General Electric 50 gallons (GEH50DEEDSR)
- Kenmore 50 gallons (15332116)
- Kenmore 50 gallons (15332115)
- Kenmore 80 gallons (15332118)
- Lochinvar 66 gallons (HPA066XD)
- Lochinvar 80 gallons (HPA080XD)
- Reliance 50 gallons (10 50 DHPST)
- Reliance 66 gallons (10 66 DHPST)
- Reliance 80 gallons (10 80 DHPST)
- Reliance 80 gallons (10 80 DHPT)
- Rheem 50 gallons (HB50R)
- Rheem EcoSense 50 gallons (HB50ES)
- Richmond 50 gallons (HB50RM)
- Ruud 50 gallons (HB50RU)
- State 60 gallons (EPX60 DHPT)
- State 80 gallons (EPX 80 DHPT)
- State 50 gallons (SPX 50 DHPT)
- State 66 gallons (SPX 66 DHPT)
- State 80 gallons (SPX 80 DHPT)
- Stiebel Eltron 58 gallons (Accelera 220E)
- Stiebel Eltron 80 gallons (Accelera 300)
- U.S. Craftmaster 60 gallons (HEP2K60HD045V)
- U.S. Craftmaster 80 gallons (HEP2K80HD045V)
- U.S. Craftmaster 50 gallons (HEP10250H045V)
- U.S. Craftmaster 66 gallons (HEP2K56HD045VJ)
- U.S. Craftmaster 80 gallons (HEP2K80HD045VJ)
- Whirlpool 60 gallons (HEP2K60HD045V)
- Whirlpool 80 gallons (HEP2K80HD045V)
- Whirlpool 50 gallons (HEP2K30HD045V)
- Whirlpool 66 gallons (HEP2K66HD045V)
- Whirlpool 80 gallons (HEP2K80HD045V)
WEBSITE INSTALLER FINDER

FIND AN INSTALLER

Find an installer in your area who can answer your questions and help you schedule an in-home consultation. Enter your location for installers near you.
RECENT RESEARCH FINDINGS

Market Progress Evaluation Report

• Most HPWH sales are planned purchases
• Current HPWH purchasers are more educated and have higher incomes
• Rebates are important in purchase decisions
• HPWHs meet the majority of consumer expectations
• The new construction market may be a large opportunity
RECENT RESEARCH FINDINGS

NEEA Consumer Messaging Research

• Most consumers plan to replace their water heater when it breaks
• The most motivating HPWH messages were reported to be:
  • Saving money on energy bills
  • Saving energy
  • Durability of equipment

Key Purchasing Influencers

• Utility endorsement
• Peer reviews/testimonials
• Contractors
WHAT’S NEXT FOR HOT WATER SOLUTIONS

• Continue influencing **planned replacements** through product markdowns and marketing campaigns

• Begin influencing **emergency replacements** by:
  • Continuing to overcome cost barriers
  • Increasing consumer awareness and familiarity
  Increasing installer and retail sales associate education and buy-in

• Explore opportunities in the **new construction market**
HPWH TECHNOLOGY READY FOR PRIME TIME
HEAT PUMP IS CHEAPEST TO OPERATE
HEAT PUMP WATER HEATERS PROVIDE BIG SAVINGS

2-4 people
$160 - $330 Savings

5-6 people
$410 - $490 Savings

A SMART INVESTMENT

Source: https://www.energystar.gov/index.cfm?c=heat_pump.pr_savings_benefits
2015 ENERGY STANDARDS
STANDARD ELECTRIC > 55 GALLON ARE GONE

50 Gallons

- Energy Factor: 95% ~0.95
- Standard electric
- GeoSpring 50G 3.25 EF

80 Gallons

- Energy Factor: 200% ~2.0
- Must now use heat pump technology!
- GeoSpring 80G 3.12 EF

$300 FEDERAL TAX CREDIT

GEOSPRING™ HEAT PUMP WATER HEATER

GEOSPRING QUALIFIES FOR A $300 FEDERAL TAX CREDIT IN 2015 & 2016!

Get a $300 Federal Tax Credit for any GeoSpring installed between January 2015 and December 31, 2016. File IRS forms 5695 line 22a with your 2015 or 2016 tax filings along with the product purchase receipt and a copy of the GeoSpring manufacturer’s Certification Statement.

PLUS
GeoSpring heat pump water heaters qualify for many State Tax Credits and utility rebate programs, so you may save even more!

Check for Rebates in Your Area
FORMIDABLE BARRIERS TO ADOPTION REMAIN
HEADWINDS....UPFRONT COST AND CONSUMER
NOT AWARE OF ENERGY SAVINGS, INCENTIVES

FAILURE BASED UNPLANNED PURCHASE
CRISIS EMERGENCY

Why Bought Product

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>2015 Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old one didn't work at all</td>
<td>53.7</td>
</tr>
<tr>
<td>Old one required service</td>
<td>30.0</td>
</tr>
<tr>
<td>Other reason</td>
<td>4.2</td>
</tr>
<tr>
<td>Just wanted a new one</td>
<td>6.5</td>
</tr>
<tr>
<td>Moved to a new home</td>
<td>3.3</td>
</tr>
<tr>
<td>Remodeled my kitchen</td>
<td>2.3</td>
</tr>
<tr>
<td>Wanted an additional one</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: Stevenson Company - Traqline
HEADWINDS....SUPPLY CHAIN NOT PROACTIVE ENOUGH

HPWH lack of awareness/training among the trade

HPWH not stocked by major plumbing distributors, retailers

NAECA work-arounds:
- Down size
- 55G standard electric
- Commercial grade large tanks > 55G
- Mixing valves
- 2 small tanks
- Tankless electric booster

MAINTAIN/INCREASE INCENTIVES ON HPWH > 55G

Source: Stevenson Company - Traqline
HEADWINDS....SWITCH TO MARKDOWN INCENTIVES TOO SLOW

MARKDOWN LIFT 4X TO 6X OVER MAIL-IN REBATES

Markdown incentives in WA, OR, ID, MT, CT, VT, CA (SDG&E)

Solve for leakage concerns:
- Regional coordination of mostly Statewide programs in the Northeast
- Split rebates – Markdown + mail-in
- Promote Wi-fi connected solutions to capture consumer data
THE ROAD AHEAD
NORTHWEST BLUEPRINT FOR SUCCESS

Advances in energy benefits, comfort

Inclusion in new construction

Specification by energy raters

Local stock at distribution locations

Instant Utility markdowns

Consumer advertising
DEMAND RESPONSE AND THERMAL STORAGE

Load shifting, peak shaving, integration of renewables

Static Storage Capacity (w/ 20F rise)

- 50 gal 2015 model: ~2.2KW
- 80 gal 2015 model: ~3.6KW

Static Storage Capacity (w/ 40F rise & Mixing Valve)

- 50 gal 2015 model: ~4.4KW
- 80 gal 2015 model: ~7.2KW
UTILITY PERSPECTIVE

- Insert slides from Utility representative
- What’s worked so far and future focus
WHAT DOES THE FUTURE HOLD FOR HPWH

- Continued product advancement
- Leveraging HPWH connectivity for demand response
- Increasing number of utility rebate programs
- Instant in-store rebates
- Improved consumer awareness
- More market promotions
- Increased large-tank uptake
- Updated standards for small-tank
QUESTIONS?
THANK YOU

Jill Reynolds, NEEA

Francois LeBrasseur, GE

Roch Naleway PGE