seize the ways!
innovation + opportunity

ENERGY STAR®
10th Annual Appliance Partner Meeting
Hotel Sax, Chicago
September 21-23, 2009
The Water Heater Market – A New Opportunity

David Ryan
D&R International
September 22, 2009
Agenda

- Potential, Potential, Potential
- Installed Base
- Market Overview
  - Distribution Channels
  - Purchase Drivers
- Program Design Considerations
## Potential: Large Energy Savings

<table>
<thead>
<tr>
<th>Technology</th>
<th>Energy Savings (per year)</th>
<th>$ Savings (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothes Washers</td>
<td>9 therms + 14 kWh; 224 kWh</td>
<td>$54; $45</td>
</tr>
<tr>
<td>Dishwashers</td>
<td>2 therms + 33 kWh; 74 kWh</td>
<td>$8; $10</td>
</tr>
<tr>
<td>Refrigerators</td>
<td>105 kWh</td>
<td>$12</td>
</tr>
<tr>
<td>Room ACs</td>
<td>45 kWh</td>
<td>$5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology</th>
<th>Energy Savings (per year)</th>
<th>$ Savings (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Storage</td>
<td>19 therms</td>
<td>$28</td>
</tr>
<tr>
<td>Gas Condensing</td>
<td>73 therms</td>
<td>$109</td>
</tr>
<tr>
<td>Gas Tankless</td>
<td>78 therms</td>
<td>$116</td>
</tr>
<tr>
<td>Solar – Gas</td>
<td>130 therms</td>
<td>$194</td>
</tr>
<tr>
<td>Heat Pump</td>
<td>2,662 kWh</td>
<td>$295</td>
</tr>
<tr>
<td>Solar – Electric</td>
<td>2,429 kWh</td>
<td>$269</td>
</tr>
</tbody>
</table>
Aggregate Savings Potential

- **“Low” savings**
  - 1.16 Quads
  - 28 Power Plants

- **“High” savings**
  - 1.85 Quads
  - 45 Power Plants

Note: Assumes 62.5 million gas homes acquire high-efficiency gas storage units (EF=0.82) in the low savings scenario and solar water heaters with gas backup in the high savings scenario. Assumes 40.3 million electric homes acquire solar water heaters with electric backup in the low savings scenario and heat pump water heaters in the high savings scenario. Estimates of primary energy savings potential assume a 3.18 site-to-source conversion factor for electricity.

Source: Analysis by D&B International, Ltd. using data from *Residential Energy Consumption Survey 2005,* Energy Information Administration, Table HC2.8 and *Annual Energy Outlook 2006,* Energy Information Administration, Table 4.
Installed Base

- Nearly every home in the U.S. has a water heater.
  - 53% gas
  - 40% electric
  - Rest propane, oil, wood fired, etc.
  - Significant regional variation

U.S. Installed Base by Year of Manufacture

Note: Secondary water heaters are not included in the installed base in this analysis.
Source: Analysis by D&R International, Ltd. of data from Residential Energy Consumption Survey 2005, Energy Information Administration, Table HC2.8.
Purchase Drivers

• Why did you buy your current water heater?

• Comparison shopping, and complicated installation are much more difficult in emergency replacement situations
Water Heater Distribution Channels

- Wholesalers/Distributors (50%)
- Plumbers (44%)
- Homeowner buys and installs (26%)
- Property Owners (6%)
- Remodelers (2%)
- Builders (1%)

Source: D&R International, Ltd. based on interviews with water heater manufacturers.
Program Considerations

• Key points of influence:
  – Plumbers!
  – Consumers
  – Retailers and Distributors
  – New home builders
Program Options

• Add water heater to existing programs!

• Appliances
  – Rebate or upstream incentive
  – Tiered rebates
  – Encourage planned replacement

• New homes
  – Require or offer additional incentive

• Home Improvement Programs

• Weatherization Programs
The time is now

• Leverage Federal Tax Credits
  – Significantly improve payback.
  – All except solar expire at the end of 2010!

• Perfect opportunity for ARRA rebate funding
  – Few programs now
  – Easy to tier incentives to ensure “supplement and not supplant”
QUESTIONS?