What’s cooking?

Using a targeted approach to selling ENERGY STAR® certified commercial water heaters.

February 24, 2016
The Commercial Water Heater Market

• Commercial shipments roughly 2% of residential shipments
  – Almost all storage – but percent tankless growing
• Storage mostly gas – 94,247 commercial gas storage vs. 73,458 commercial electric storage units shipped in 2014¹
• ENERGY STAR covers gas storage and gas tankless only
  – 42% of units shipped are ENERGY STAR certified²

• Market structure simple: makers sell directly to distributors who sell to installers
• Barriers are similar to RWH:
  – Almost all emergency replacements
  – Higher first cost for capital and installation: generally cost 30% more
  – Building owners/managers, and design engineers unaware of benefits

¹AHRI Historical CWH Shipment Data: http://www.ahrinet.org/site/494/Resources/Statistics/Historical-Data/Commercial-Storage-Water-Heaters-Historical-Data
### ENERGY STAR Certified Commercial Water Heaters – The Basics

#### Eligible Product Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Storage</td>
<td>&gt; 75,000 BTU/hr input; &lt;= 140 gallons storage capacity</td>
</tr>
<tr>
<td>Gas Tankless</td>
<td>&gt;= 4,000 BTU/hr per gallon of stored water; industrial equipment</td>
</tr>
</tbody>
</table>

#### Efficiency Requirements

<table>
<thead>
<tr>
<th>Metric</th>
<th>Type</th>
<th>Requirement</th>
<th>Federal Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Efficiency (TE)</td>
<td>Storage; Tankless</td>
<td>TE &gt;= 0.94</td>
<td>TE &gt;= 0.80</td>
</tr>
<tr>
<td>Maximum Standby Loss (BTU/hr)</td>
<td>Storage</td>
<td>&lt;= 0.84 * [(Input Rate / 800) + 110(Volume)^{1/2}]</td>
<td>&lt;= [(Input Rate / 800) +110(Volume)^{1/2}]</td>
</tr>
</tbody>
</table>
Manufacturer Participation is Excellent

- 19 different brands
- 409 certified models
  - 334 gas storage models
  - 75 gas tankless models
- Searchable (type, size, brand) list online
Savings for ENERGY STAR Commercial Gas Storage Water Heater

Over $1,000 in annual savings for full service restaurants

![Bar chart showing annual savings for different facilities with gallons per day (GPD)]
Paybacks less than a year for full service restaurants

**Paybacks for ENERGY STAR Commercial Gas Storage Water Heater**

**ENERGY STAR Gas Storage Commercial Water Heater:**
Payback versus Standard Model
(100 Gallon; 250 kBTU/hr; TE=96% for ES; TE=80% for non-ES)
Considerations for Energy Efficiency Programs for CWH

- Utilize ENERGY STAR specification for CWH programs
- Target food full-service restaurants
- Upsell on $1000 annual energy savings and less than 1 year payback
Contact:

Steve Ryan
U.S. EPA, ENERGY STAR
202-343-9123
ryan.steven@epa.gov

Mark Michalski
Cadmus, contractor in support of U.S. EPA, ENERGY STAR
207-536-2424
Mark.Michalski@cadmusgroup.com