

# **Navigating a Sea of Change:**

## **How Utilities are Addressing the Evolving Water Heater Market**

**ACEEE Hot Water Forum - 2018**

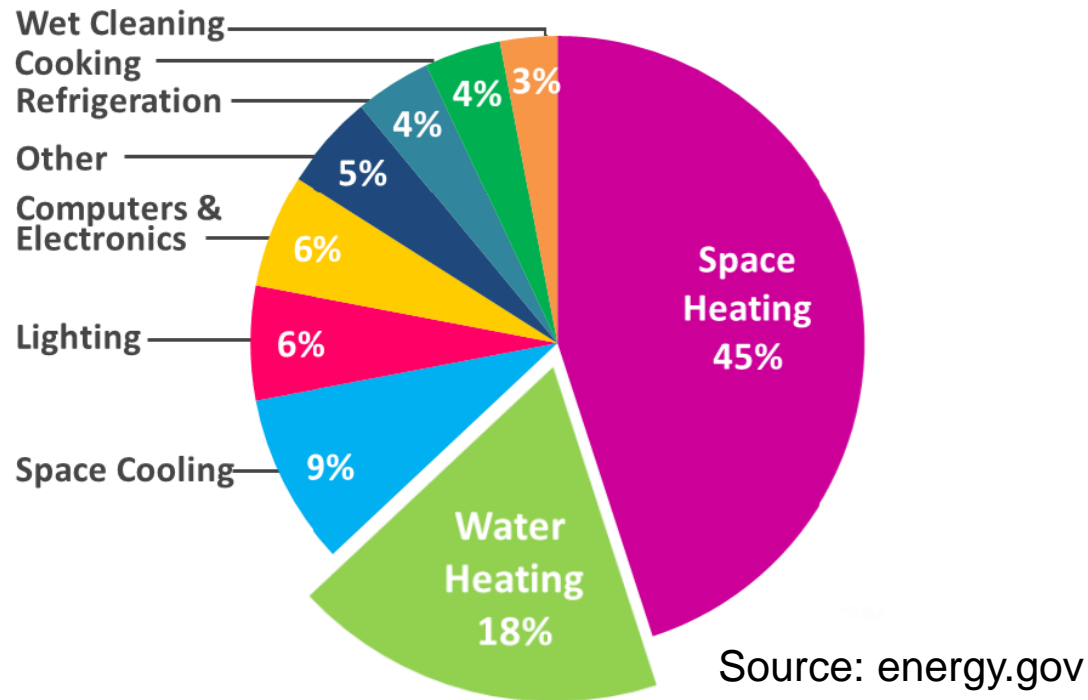
# Agenda

- Background and Context – [Jake Marin](#)
- Program Collaboration to Drive Market Transformation - [George Chapman](#)
- A Comprehensive Strategy to Deploy Efficient Water Heaters at Scale - [Howard Merson](#)
- Q&A

# The Evolving Water Heater Market

- Highly efficient options available
- High energy savings potential
- Minimum standards increased (2015)
- Many barriers to adoption remain

# Water Heating is a Big Deal



- **8.5M** Storage Water Heaters purchased in the US each year

# The Opportunity Exists

Telephony	3,818	19%	
<i>Analog</i> <sup>17</sup>	2,796	22%	
VOIP	1,021	14%	
Televisions	33,879	89%	Version 7.0 – October 30, 2015
LCD	33,827	89%	
LCD < 40	12,691	81%	
LCD ≥ 40	21,135	94%	
OLED	53	73%	
Uninterruptible Power Supply	2,184	N/A	
Vending Machines	52	21%	
Ventilating Fans	3,203	N/A	
Water Coolers	1,474	2%	Revision Planned 2017
Water Heaters <sup>18</sup>	330	4%	Version 3.0 – April 16, 2015
Gas Storage	275	6%	
Gas Tankless	297	N/A	
Heat Pump	55	1%	
Solar	8	N/A	
Windows, Doors and Skylights <sup>19</sup>	48,681	82%	Version 6.0 – January 1, 2015 January 1, 2016 (for northern zone windows)

# The Savings are There

## Savings and Paybacks for ENERGY STAR Heat Pump Water Heaters

Household Size	Annual kwh Savings	Annual \$ Savings	Payback (Years)
2	1,350	\$ 160	4.9
3	2,020	\$ 240	3.3
4	2,690	\$ 330	2.5
5	3,370	\$ 410	2.0
6	4,040	\$ 490	1.6

*Assumes: 12 cents/kWh; Incremental Cost = \$800; 13 - year lifespan*

Source: energystar.gov

# New Federal Minimum Standards, Gas - Common Sizes

<i>Size Category</i>	<i>Tankless</i>	<i>20 – 55 Gallons</i>			<i>&gt; 55 Gallons</i>		
<i>Rated Storage Volume</i>	<i>N/A</i>	<i>30</i>	<i>40</i>	<i>50</i>	<i>60</i>	<i>65</i>	<i>75</i>
<i>Pre-Change Standard</i>	.62	.61	.59	.58	.56	.55	.53
<i>2015 Standard</i>	.82	.63	.62	.60	.75	.75	.74

# New Federal Minimum Standards, Electric - Common Sizes

<i>Size Category</i>	<i>20 – 55 Gallons</i>				<i>&gt; 55 Gallons</i>		
<i>Rated Storage Volume</i>	<i>20</i>	<i>30</i>	<i>40</i>	<i>50</i>	<i>65</i>	<i>80</i>	<i>120</i>
<i>Pre-Change Standard</i>	<i>.94</i>	<i>.93</i>	<i>.92</i>	<i>.90</i>	<i>.88</i>	<i>.86</i>	<i>.81</i>
<i>2015 Standard</i>	<i>.95</i>	<i>.95</i>	<i>.95</i>	<i>.95</i>	<i>1.98</i>	<i>1.97</i>	<i>1.92</i>



# Efficiency Costs More

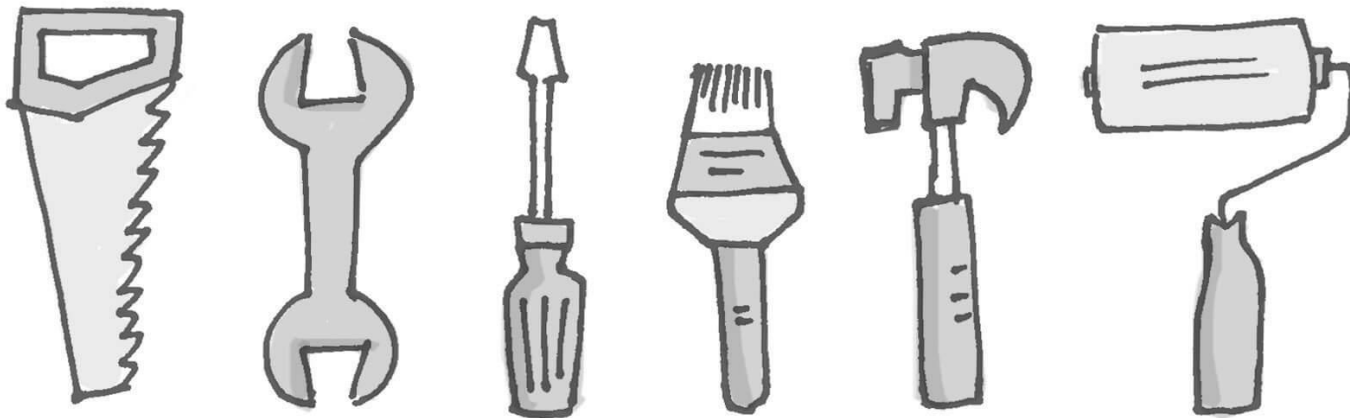
**“GOOD WORK  
AIN’T CHEAP,  
CHEAP WORK  
AIN’T GOOD.”**

- NORMAN “SAILOR JERRY” COLLINS

- First cost is most visible
- Operational costs less but harder to see
- Lack (or apparent lack) of financing

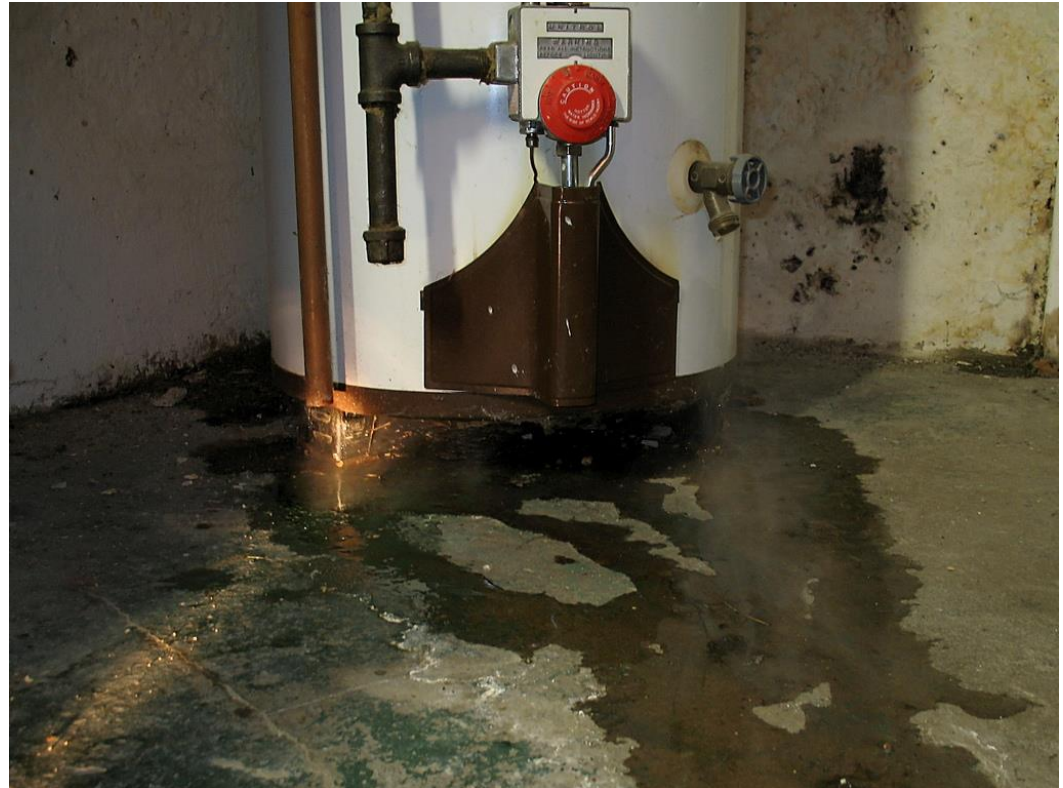
# Lack of Tools

- Contractors, installers, designers, etc. not equipped with tools/resources to communicate lifecycle value of efficiency
- Marketing and sales training lacking



# Lack of Value on Efficiency

- Countertops and nice bath fixtures, yes
- Efficient water heaters...not so much
- No one thinks about their water heater...until they need to



# Emergency Replacement

- Water heater replacement 95% emergency
- Snap decisions are often **uninformed**
- Products not **in stock** are not an option
- Value is placed on getting back hot water as **quickly as possible**



# EMERGENCY

# Low Energy Costs = Long Paybacks



- Gas – US average  
\$1.00/therm
- Electric – US average  
\$0.12/kWh
- Many places even less expensive
- Makes efficiency a tough sell!

# Apprehensive Contractors

- Poor reliability of early equipment
- No one wants call-backs
- Focus is on getting hot water quick, not efficiency
- Competitive, price-focused marketplace

