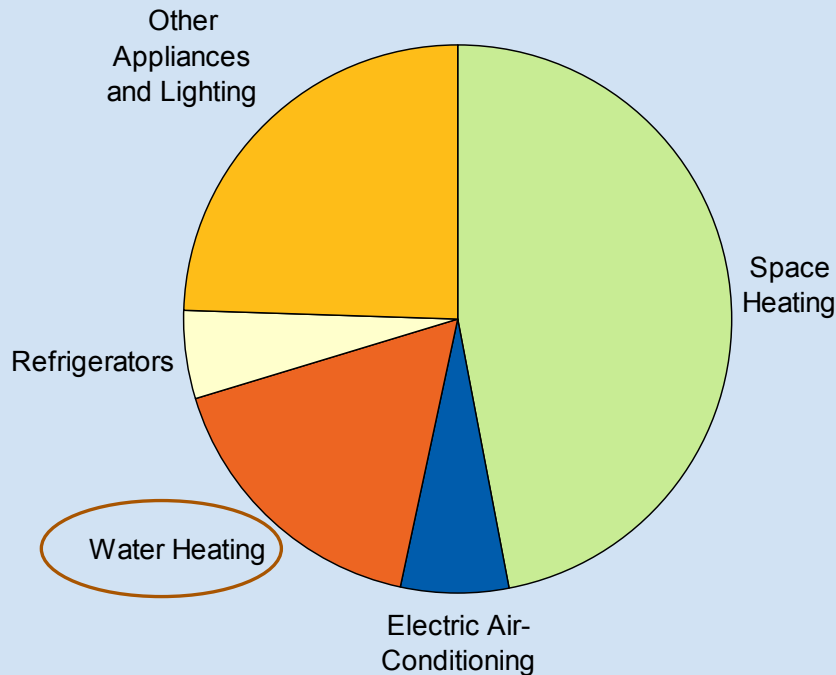


# Overview of Water Heating Programs by Gas Utilities

Kara Rodgers, Consortium for Energy Efficiency  
June 2, 2008

# Water Heating is a Major End Use in U.S...

## Household Energy Consumption by End Use

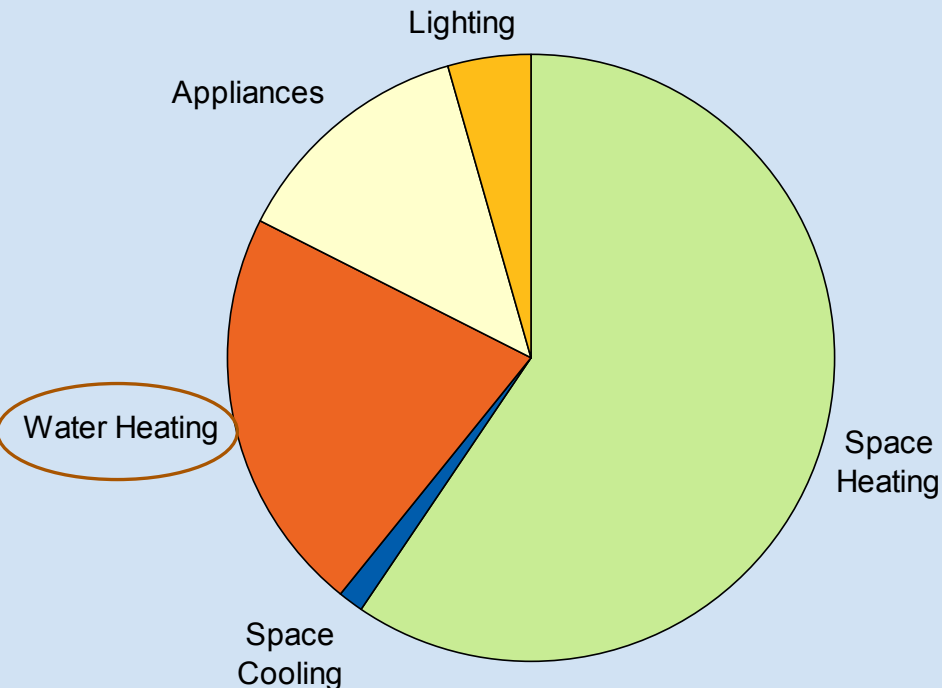


## Number of Water Heaters Fueled by...

|             |     |
|-------------|-----|
| Natural Gas | 54% |
| Electricity | 38% |
| Oil         | 4%  |
| Propane     | 3%  |

# ...And Canada

## Household Energy Consumption by End Use



## Total Energy Consumed for Water Heating

|             |     |
|-------------|-----|
| Natural Gas | 59% |
| Electricity | 35% |
| Other Fuels | 6%  |

# Rebate Programs Have Been Challenged

- 2004 NAECA raised minimum standards from 0.55 to 0.59 EF
- Cost effectiveness ratios changed, i.e. savings offered by 0.62 EF water heater is smaller
- Some programs had to stop offering rebates because they couldn't be justified to regulators
- Most consumers replace water heaters on an emergency basis

# Rising Gas Prices & New Technologies Have Helped Programs

## Number of CEE Member Programs that Offer Rebates for...

|                                         |    |
|-----------------------------------------|----|
| Storage Water Heaters                   | 16 |
| Tankless Water Heaters                  | 11 |
| Both Storage and Tankless Water Heaters | 6  |
| Integrated or Indirect Systems          | 6  |
| Drain Water Heat Recovery               | 2  |
| Solar Water Heaters                     | 2  |

[http://www.cee1.org/gas/gs-ht/07\\_progsum\\_wh.pdf](http://www.cee1.org/gas/gs-ht/07_progsum_wh.pdf)

# Some Program Administrators Favor Storage Water Heaters



- Offer lower first cost
- Have lower retrofit cost
- Tankless may require upgraded gas lines
- Tankless may cause pressure problems in gas distribution systems
- Tankless may increase consumption of water

# Some Program Administrators Favor Tankless Water Heaters

- Tankless offer higher savings than storage



# New Technologies Are Attractive

- Programs hope new technologies will help solve this savings vs. cost trade off
- They also want technologies that have been proven effective
- Finally, conversations with manufacturers have indicated that it's not just technology that's a problem—we need to change the behavior of consumers and the distribution channels

# CEE's Initiative Seeks to Address These Issues on a National Scale

|        | Storage <75,000 Btu/h |
|--------|-----------------------|
| Tier 0 | $\geq 0.62$ EF        |
| Tier 1 | $\geq 0.67$ EF        |
| Tier 2 | $\geq 0.80$ EF        |

|        | Tankless<br>>50,000 and <200,000 Btu/h  |
|--------|-----------------------------------------|
| Tier 1 | $> 0.82$ EF<br>(w/ electronic ignition) |

- Common Efficiency Specifications
- Consistent Messaging
- Outreach to Installers and Contractors
- Some programs have had success offering rebates to the “mid-stream”

# ENERGY STAR® Is a Valuable Tool

- In effect January, 1 2009
- Easy way for consumers to recognize efficient water heaters
- A branding platform used by many program administrators
- Aligns with CEE Initiative

| <b>FINAL ENERGY STAR® Residential Water Heaters: Criteria</b> |                    |
|---------------------------------------------------------------|--------------------|
| <b>Technology</b>                                             | <b>Efficiency</b>  |
| Gas Storage                                                   | 0.62 EF            |
| Gas Condensing                                                | 0.80 EF            |
| Gas Tankless                                                  | 0.82 EF            |
| HPWH                                                          | 2.0 EF             |
| Solar                                                         | 0.5 Solar Fraction |

# Questions?

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