Tankless Gas Water Heaters

Cost-effectiveness Results & Response

Conservation Advisory Council
September 14, 2011

EnergyTrust of Oregon

Tankless Water Heater

- Energy Trust currently offers tankless gas water heater incentives to both the existing and new home markets
- Tankless water heater incentives ($200) have been offered since 2007 for units that meet a minimum efficiency of 0.80 EF
- A $340 tax credit has also been available through the Oregon Department of Energy's Residential Energy Tax Credit (RETC)
- Federal Tax credits for 0.82 EF units in existing homes have been available since 2006 and are due to expire December 31st, 2011
- This analysis concerns only the existing homes program measures

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Since 2007:

- 4,300 incentives paid in the existing homes program
- 185k annual therms saved
- $860K in incentives paid

Energy Trust Evaluations:

- Original engineering estimate of working savings: 102 annual therms
  - Engineering estimate based on excessively high domestic hot water gas usage
- 2007, 2008, and 2009 program year evaluations have shown stable savings averaging 65 therms – 36% less than original working savings estimates
- Studies conducted by Stellar Processes, Michael Blasnik & Associates and Energy Trust evaluation staff

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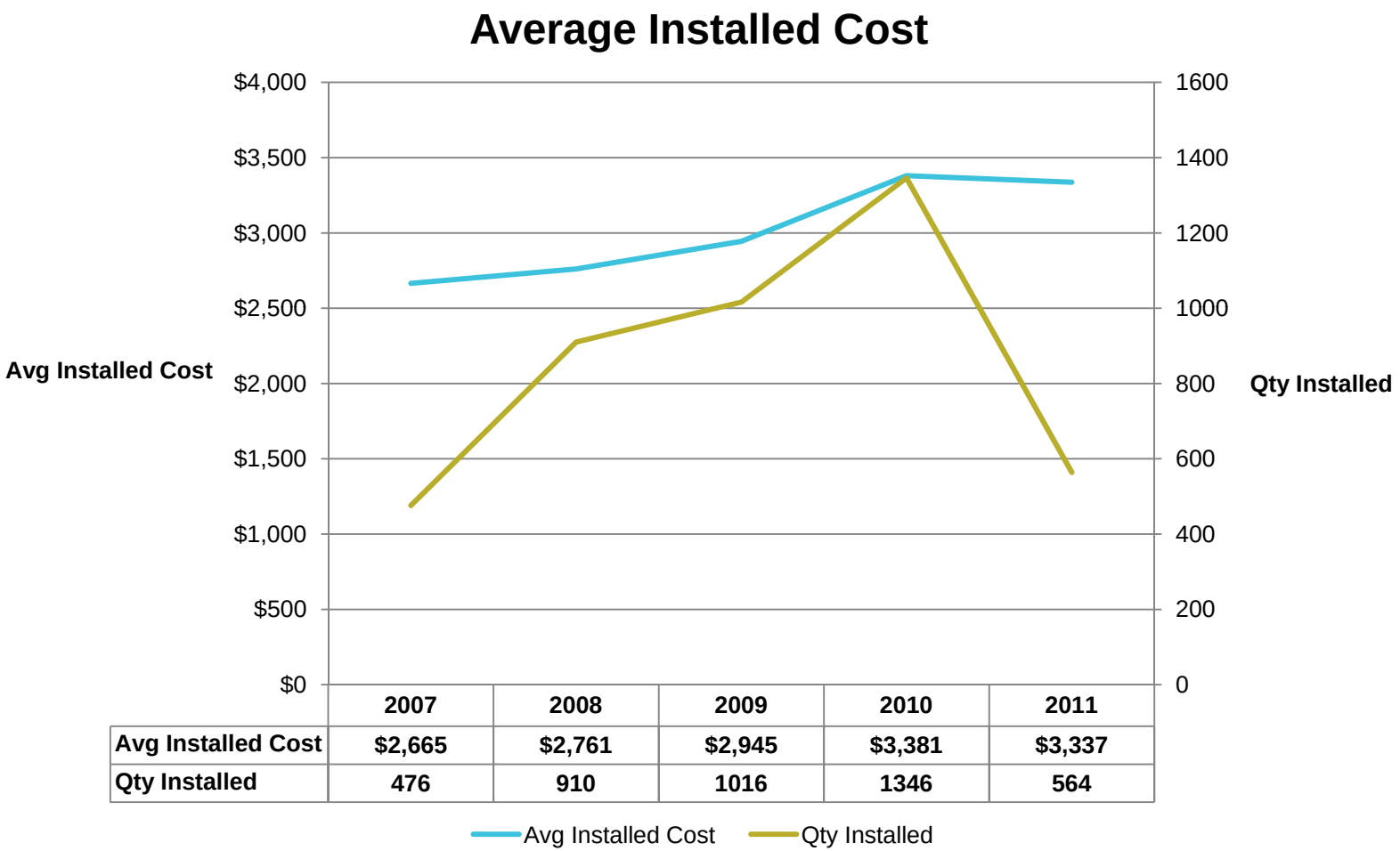

	2007	2008	2009	2010	2011
Avg Installed Cost	**$2,665**	**$2,761**	**$2,945**	**$3,381**	**$3,337**
Qty Installed	**476**	**910**	**1016**	**1346**	**564**

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Measure Benefit Cost Test Results:

Project	Gas Measure Description	Measure Life	Annual Therms Saved	Total Cost of Efficiency	Energy Trust Incentive	PV of Energy Savings	Gas Utility BCR	Gas Societal BCR
Tankless	Residential Hot Water	15	65	$2,363	$200	$582	2.91	0.25

- Utility BCR Test: Present value of energy savings divided by Energy Trust Incentive
- Societal BCR Test: Present value of energy savings divided by the total cost of efficiency
- The Total Cost of Efficiency in the table is the average installed cost minus $700, which is the installation cost of a minimum standard tank gas water heater
- Tankless water heaters in residential retrofits are not cost-effective under the societal test

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- Planning and Evaluation recommendation based on 4 years of experience and 3 evaluations for the Existing Homes program:
  - Remove the incentive for the tankless water heater
- After several evaluations, the tankless units are showing stable savings of 65 annual therms:
  - These evaluated savings are 36% less than originally assumed
- Installation costs have steadily increased:
  - Market expansion and experience has not driven down prices to consumers
    - Prices have risen with the number of incentives paid
  - Economic value to consumers has has worsened
  - Simple payback for the consumer is 39 years
  - In order to be cost-effective for the societal test (the consumer perspective):
    - The cost of efficiency would need to decline by a factor of 4

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- Existing Homes program response:
  - Transition gas water heater efforts from tankless:
    - Decrease incentive from $200 to $100, effective January 1, 2012
      - » Budgets will be monitored and managed to control an over acceleration of demand
    - End tankless water heater incentive—effective May 1, 2012
    - End promotions and reduce web presence beginning Fall 2011
    - Immediately notify partners in OR ACCA, CEWO and HPw/ES

- Transition focus:
  - Continue to drive activity of .67 as cost-effective water heat choice
    - Expanded outreach and marketing
    - Consider requiring as a bid option to accommodate any tankless recommendation in HPw/ES and CEWO
  - Work with installation contractors and trade organizations
    - Outreach and training
    - Mid-stream incentives

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