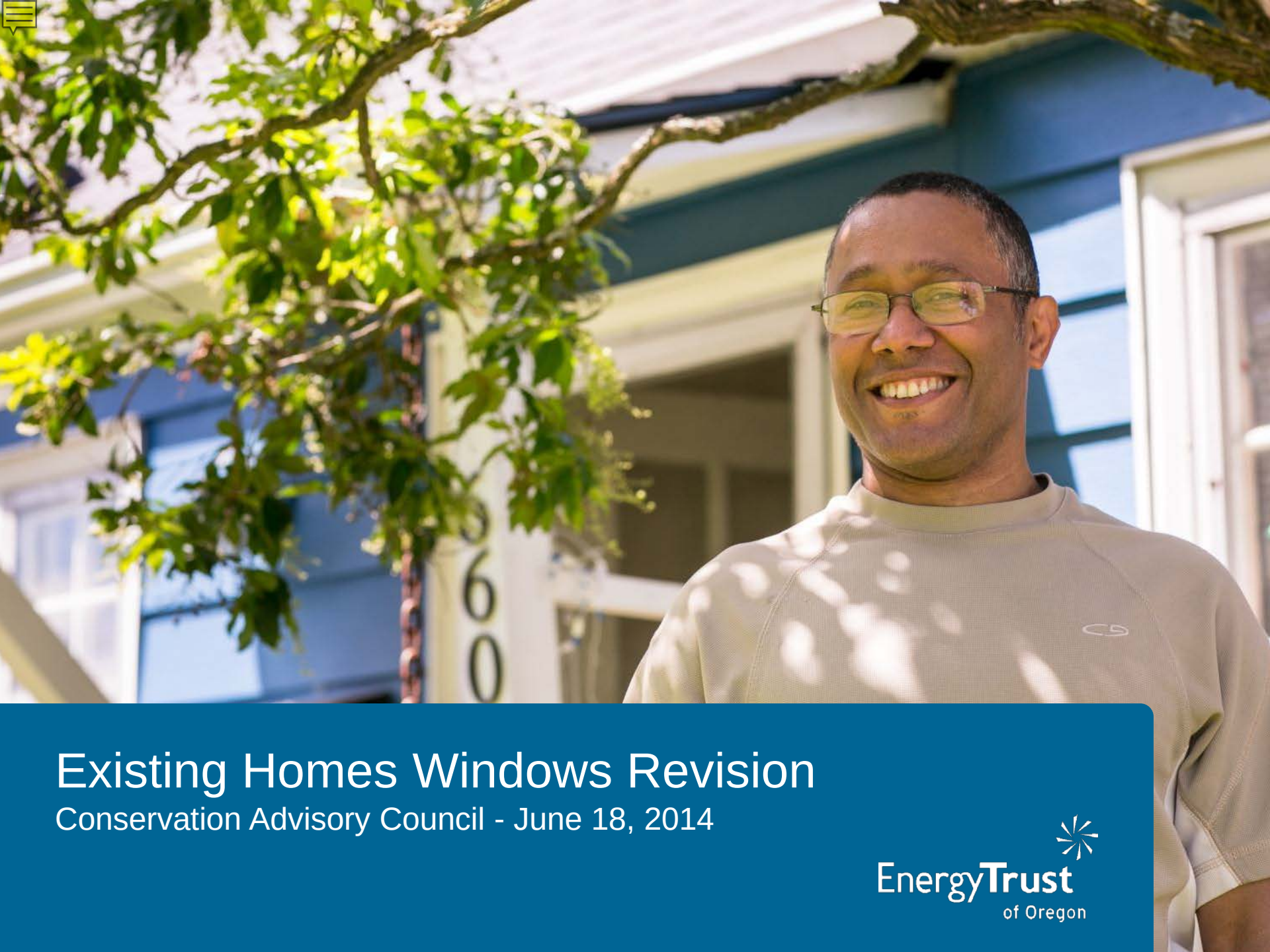


Existing Homes Windows Revision

Conservation Advisory Council - June 18, 2014

EnergyTrust of Oregon

Summary

- Background—ENERGY STAR® changes
- Windows Market Study
- Program Adjustments

Background

- Current window measures:

	U-value	Incentive (per sq ft)
Tier 1 Windows	0.26 - 0.30	$2.25
Tier 2 Windows	≤ 0.25	$3.50

- Current measure assumptions:
  - Last updated in 2009
  - Regional Technical Forum (RTF) savings
  - 0.35 baseline U-value assumed
  - 25th percentile Energy Trust program costs (used by RTF)

- Reasons for measure review:
  - High market share of ENERGY STAR windows (81%) nationally
  - Anecdotal market evidence
  - 2016 ENERGY STAR specification change from U-value ≤ 0.30

Energy Star Update

Climate Zone	U-factor	SHGC
Northern (prescriptive)	≤0.27	Any
Alternative 1	=0.28	≥0.32
Alternative 2	=0.29	≥0.37
Alternative 3	=0.30	≥0.42

- Anticipated release January 2016
- Alternative specification based on equivalent criteria

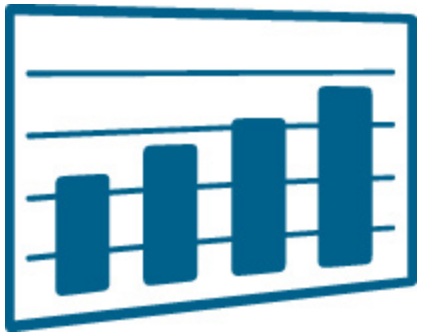
Windows Market Study

Windows Market Study

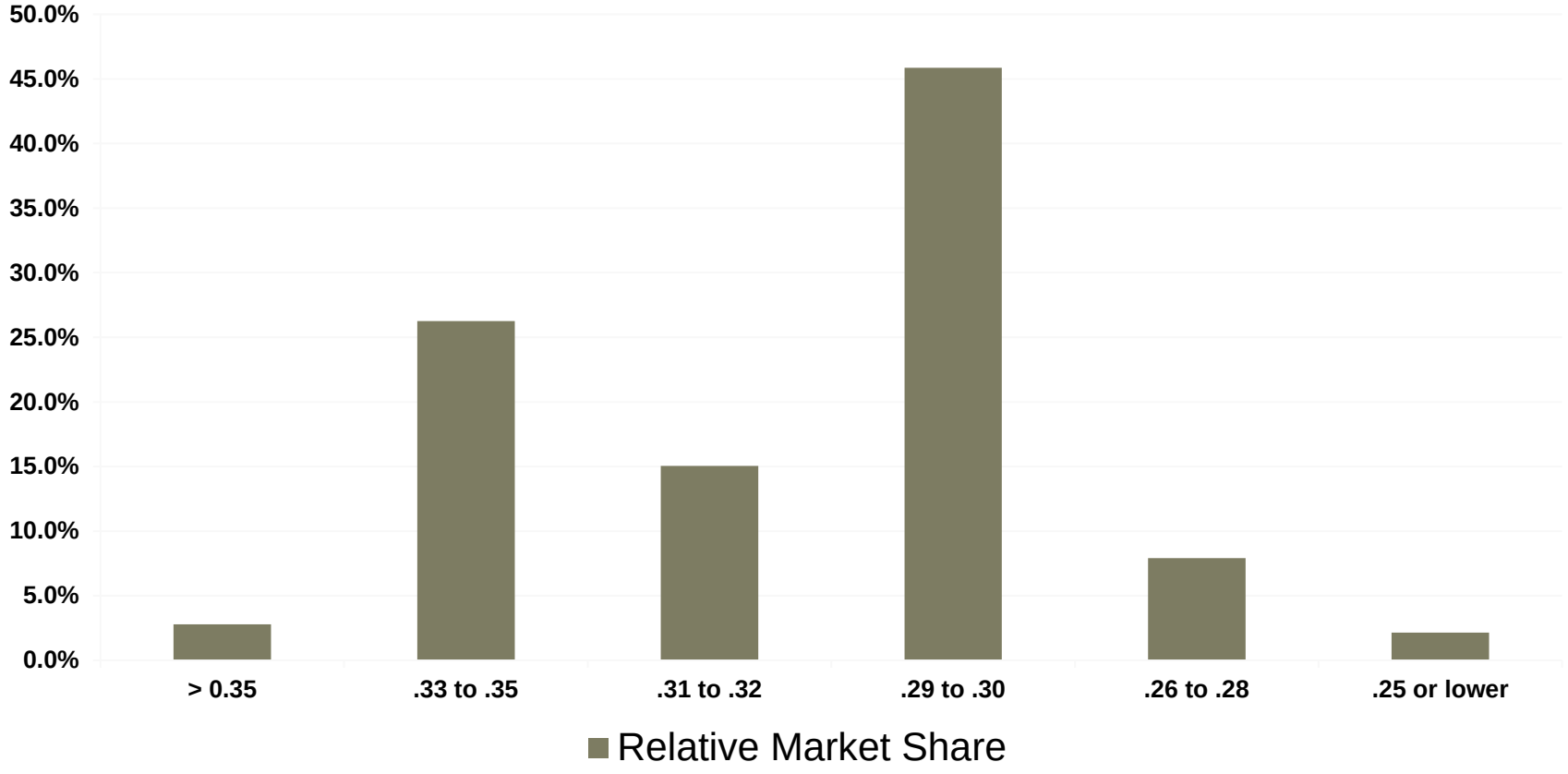
- A third-party contractor collected data through interviews with window manufacturers (n=7)

- Data collected through manufacturer interviews included:
  - Northwest market share
  - Percent of sales by efficiency tier
  - Incremental cost by efficiency tier

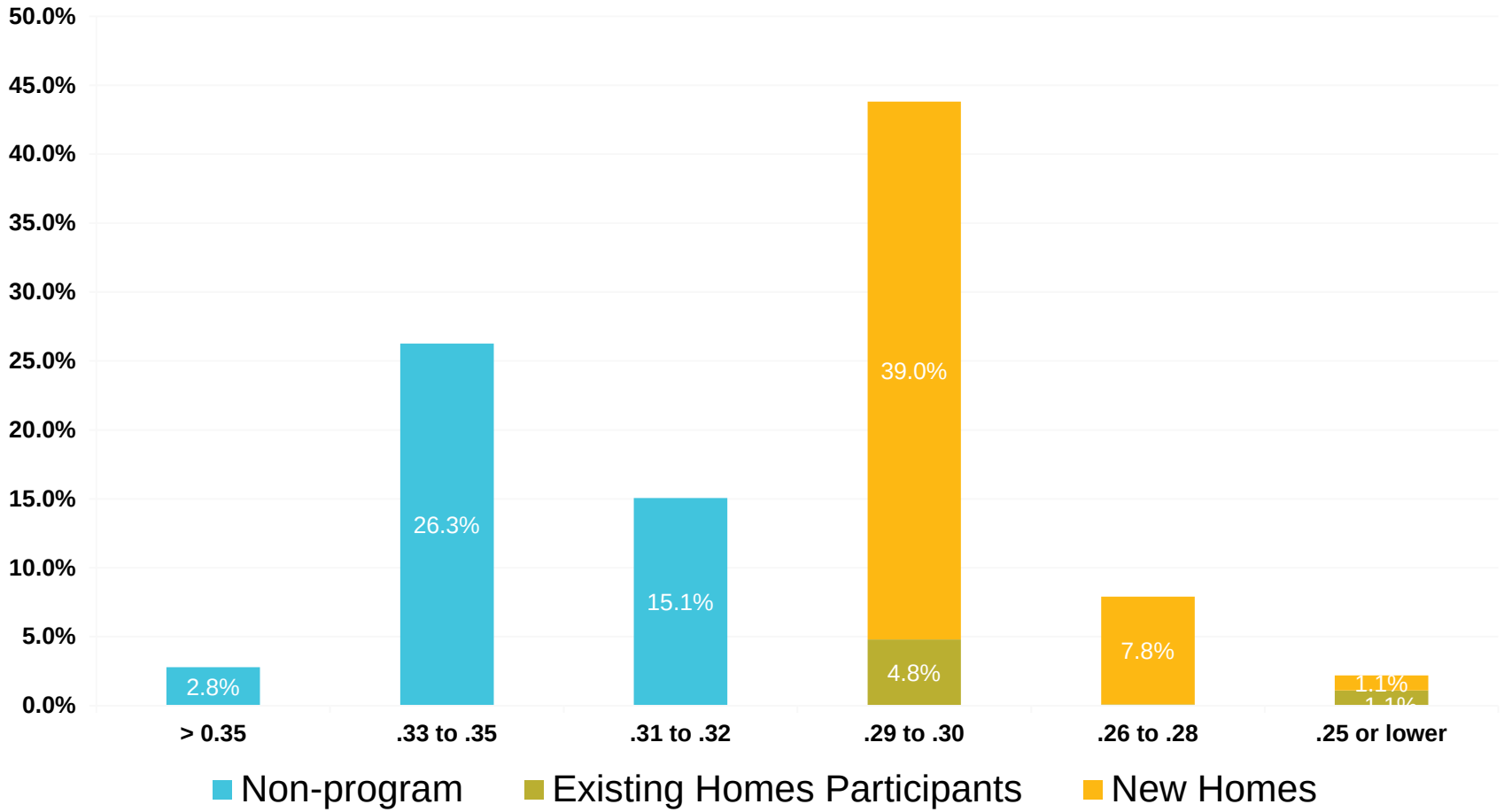
- Efficiency tiers were defined as follows:
  - ≥ 0.35
  - 0.33 to 0.35
  - 0.31 to 0.32
  - 0.29 to 0.30
  - 0.26 to 0.28
  - ≤ 0.25



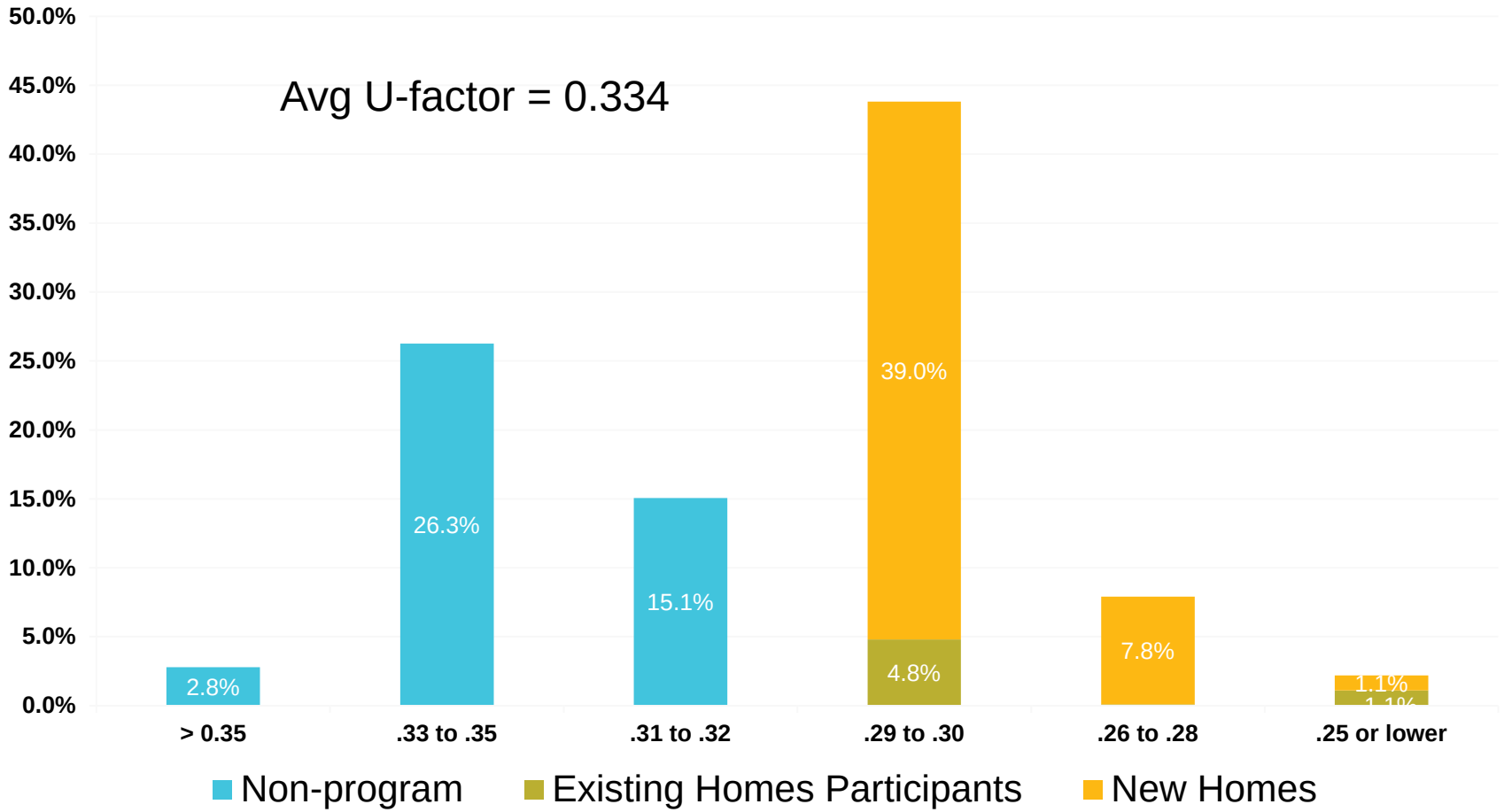
Baseline U-factor



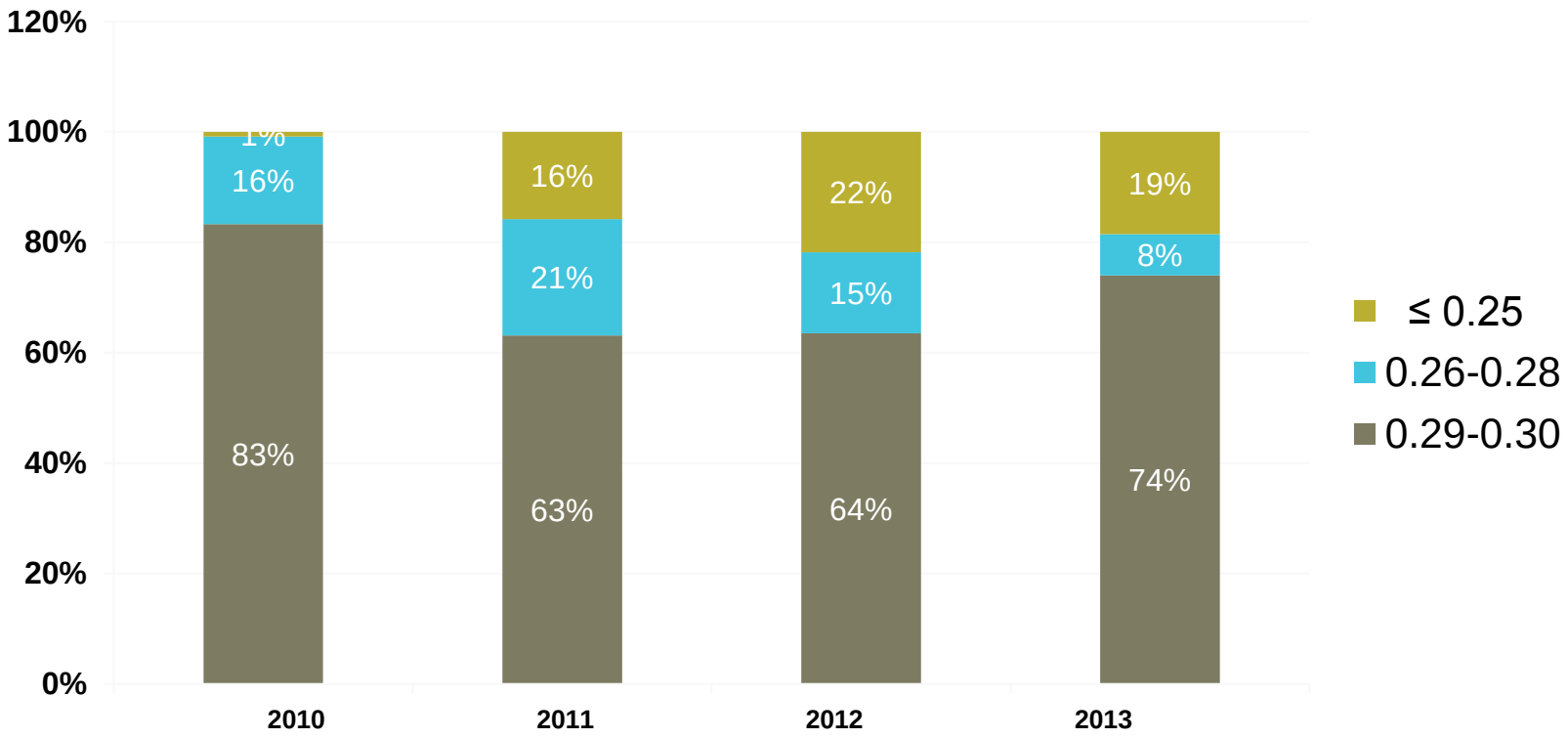
Baseline U-factor (Adjusted)



Baseline U-factor (Adjusted)



Window Trends 2010-2013

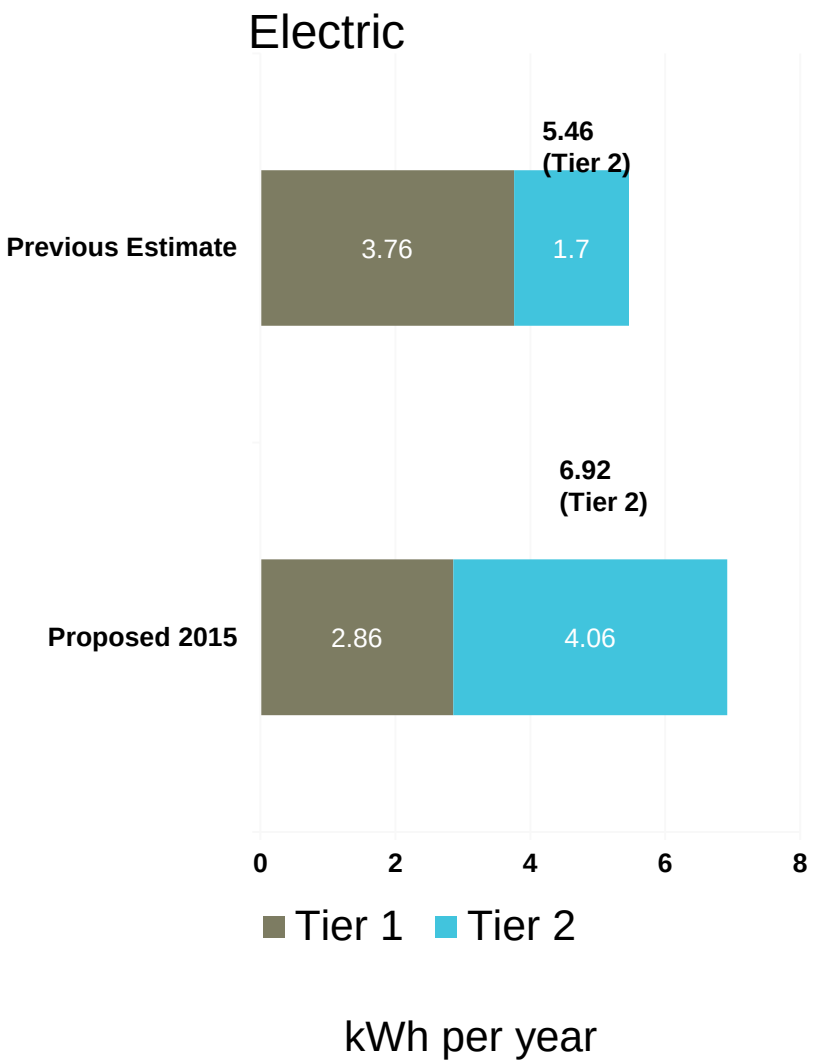


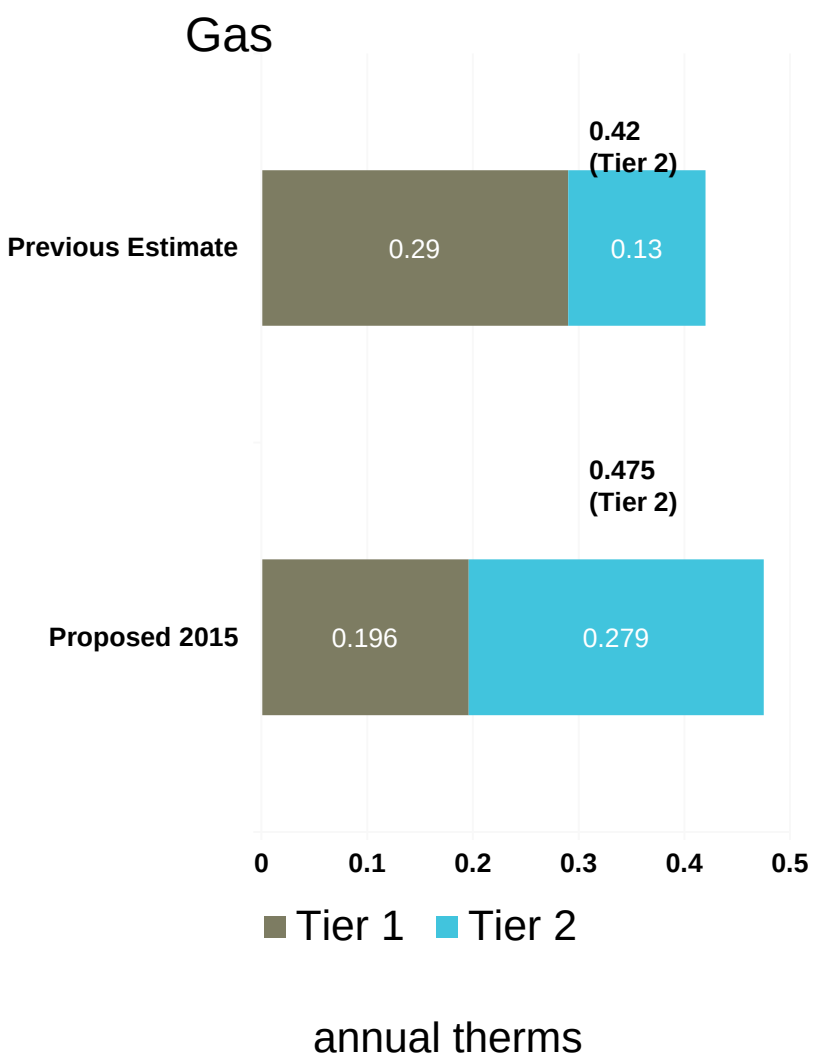
Total sq ft	77,512	280,274	474,599	546,435

Savings Methodologies

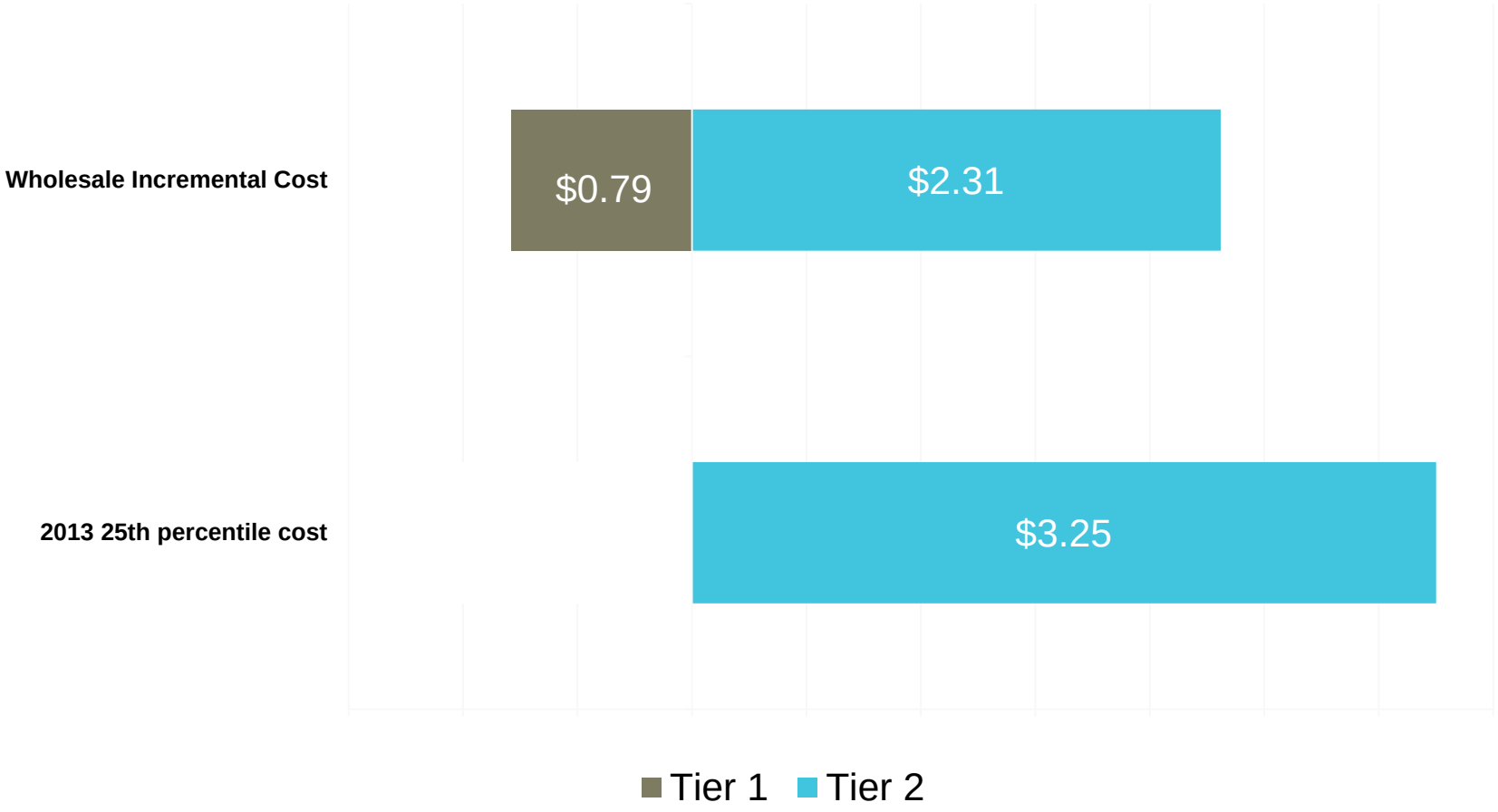
- Little data prior to 2010 for tier 2 windows in the program.
- Until billing analysis is completed for 2010 and later, we can use RTF modeled data or extrapolate from program data.
- Until now, Energy Trust has used RTF modeled data for windows with a U-factor of 0.25.
- As the Energy Trust baseline is now different than the RTF, we must select another method. The measure savings in this presentation are based on a presumed direct relationship to the change in U-factor.

Energy Savings

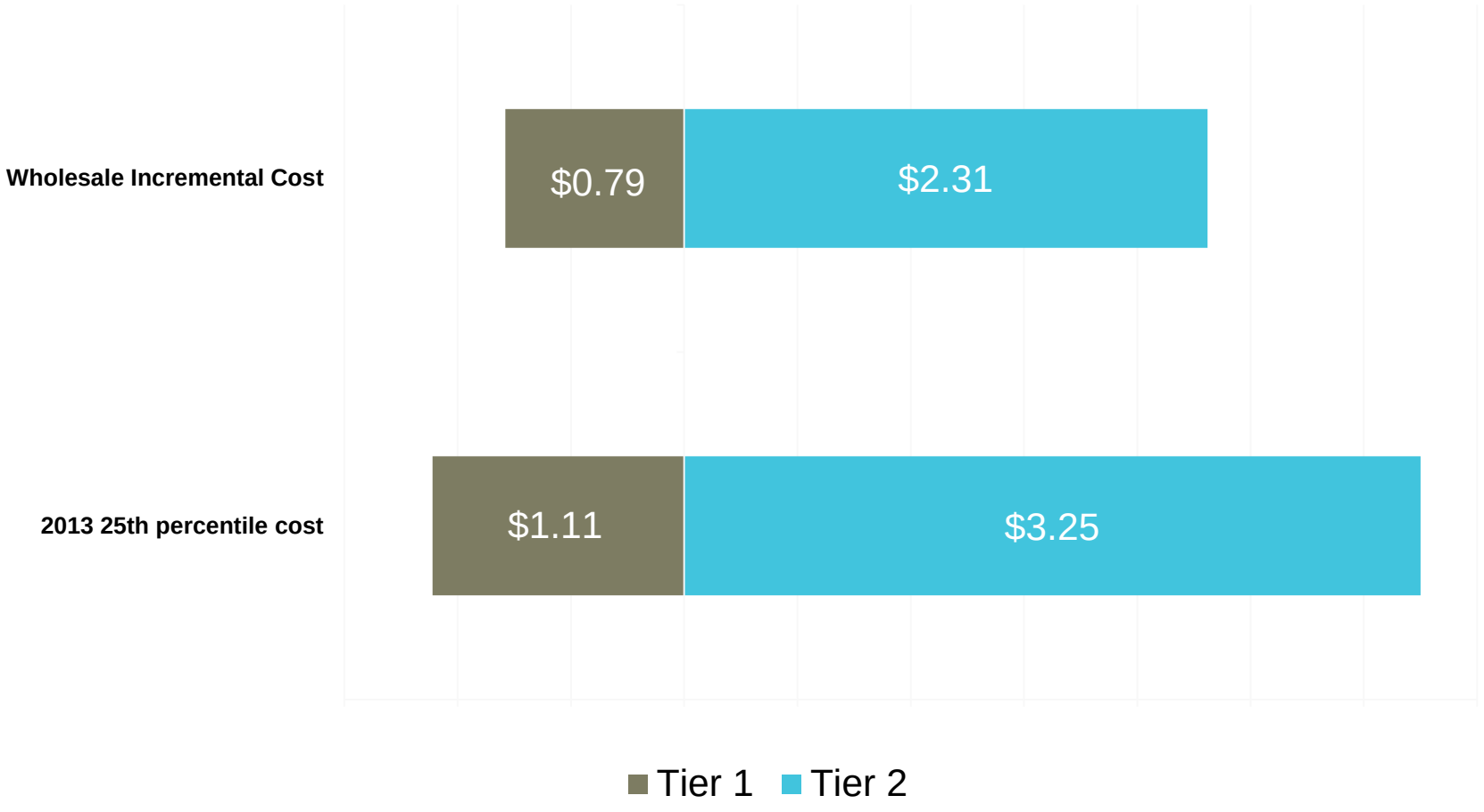




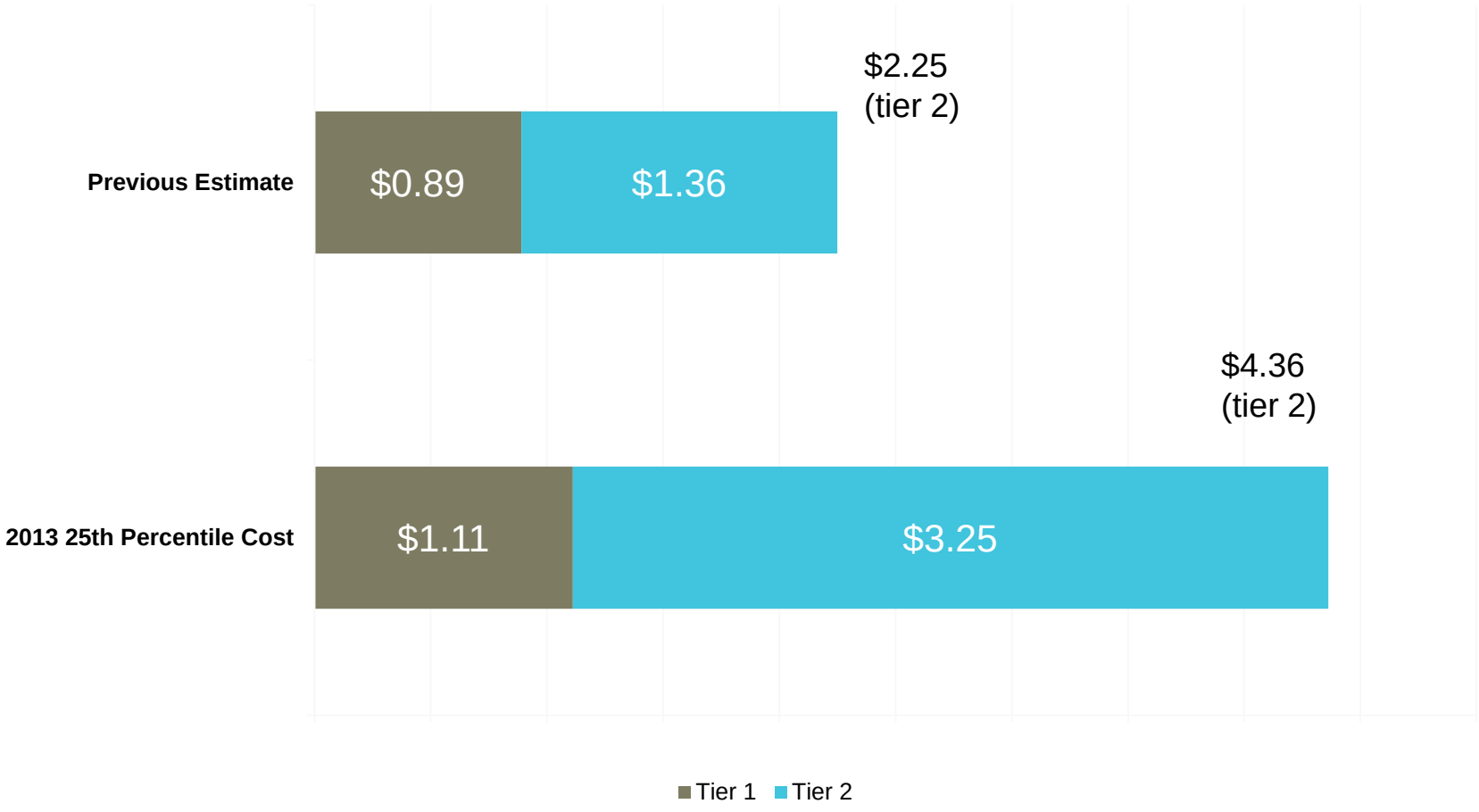
Measure Cost



Measure Cost



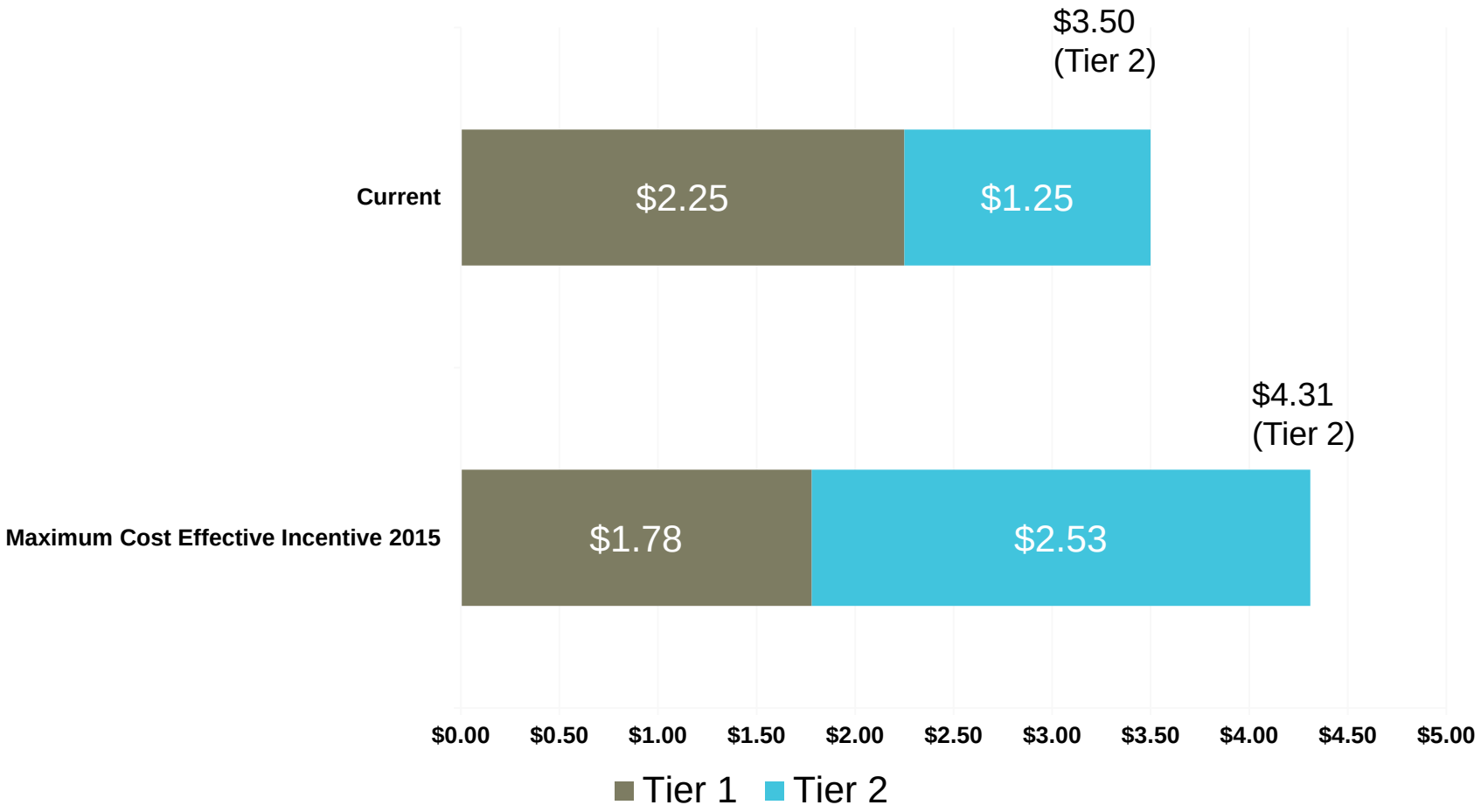
Measure Cost



Cost Effectiveness Tests

Project	Measure Lifetime (Maximum 70 yrs)	Annual Electricity Savings, kWh	Annual Gas Savings, therm	Total Cost	Max ETO Incentives	Combined Utility System BCR	Combined Societal BCR
U-factor 0.30 to 0.28	45	2.86		$1.11	$1.78	3.0	4.8
U-factor 0.30 to 0.28	45		0.196	$1.11	$1.78	1.0	1.6
U-factor equal to or less than 0.27	45	6.92		$4.36	$4.31	3.0	3.0
U-factor equal to or less than 0.27	45		0.475	$4.36	$4.31	1.0	1.0

Incentives


$3.50
(Tier 2)
Current
$2.25
$1.25
$4.31
(Tier 2)
Maximum Cost Effective Incentive 2015
$1.78
$2.53
$0.00
$0.50
$1.00
$1.50
$2.00
$2.50
$3.00
$3.50
$4.00
$4.50
$5.00
Tier 1
Tier 2

Program Adjustments

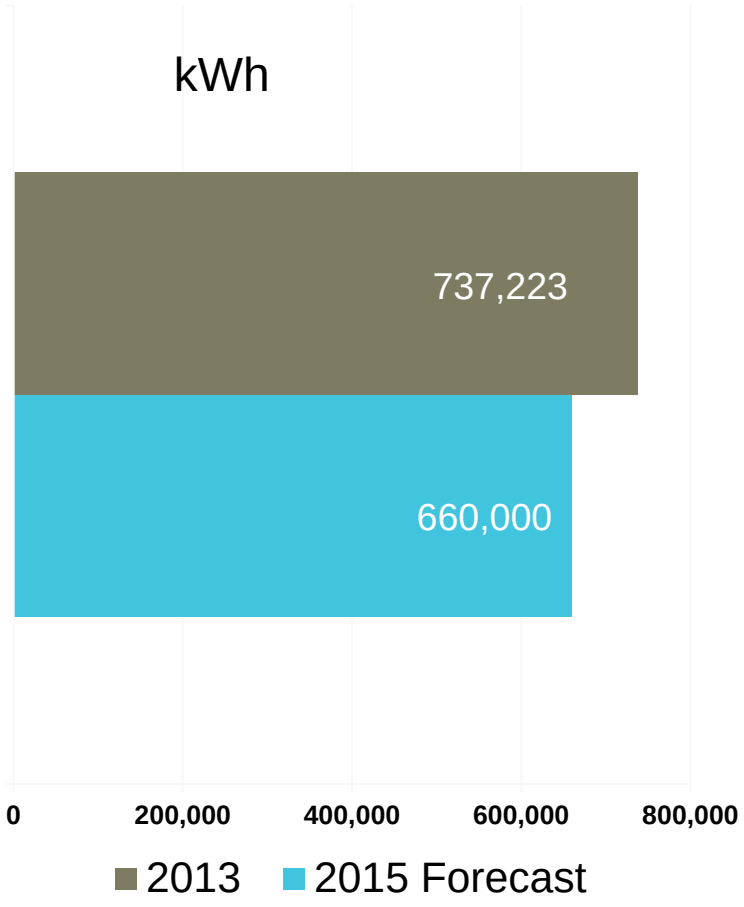
Modify Windows Tiers

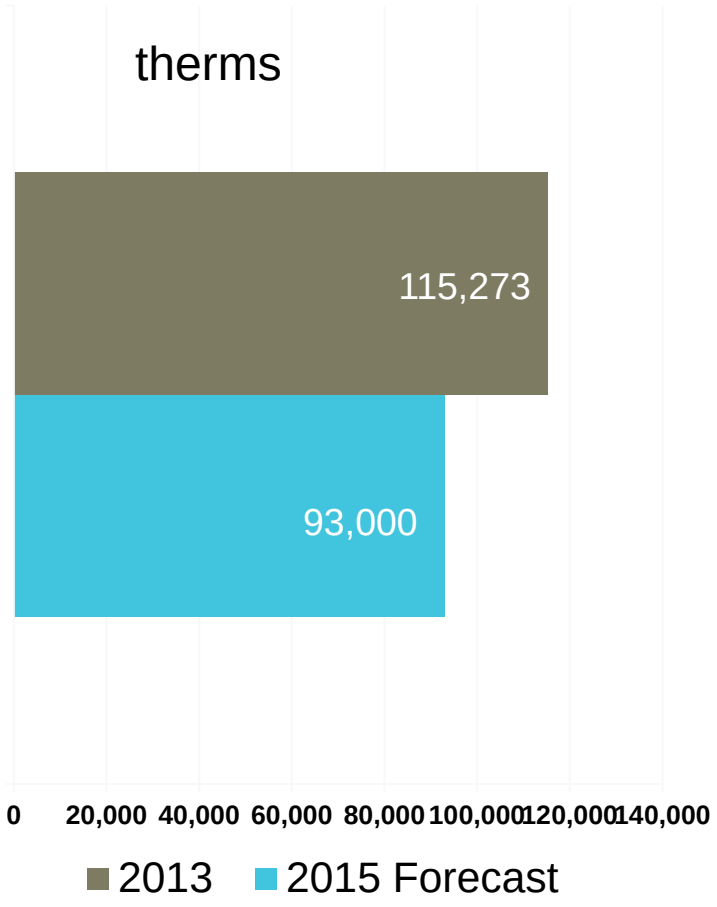
	Tier 1	Tier 2
Current	U. 30-.26	U.25 and lower
Proposed	U .30-.28	U.27 and lower*
*or equivalent energy performance as defined by ENERGY STAR		

Continued Evaluation

- Compare standalone window installation savings from 2010 impact analysis.
- Establish framework to evaluate future movement of baseline.
- NEEA tracks market transformation from windows in electrically heated homes. Energy Trust plans to explore market transformation justifications for gas heated homes.

Impact on Program Savings





Next Steps

- Windows incentive structure will change for 2015
- Final plan and incentive details to be released in fall 2014

Thank You

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503.445.2947

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