



Trade Ally Forum
April 14, 2017



OREGON
DEPARTMENT OF
ENERGY



Residential Program Results and Trends

Marshall Johnson

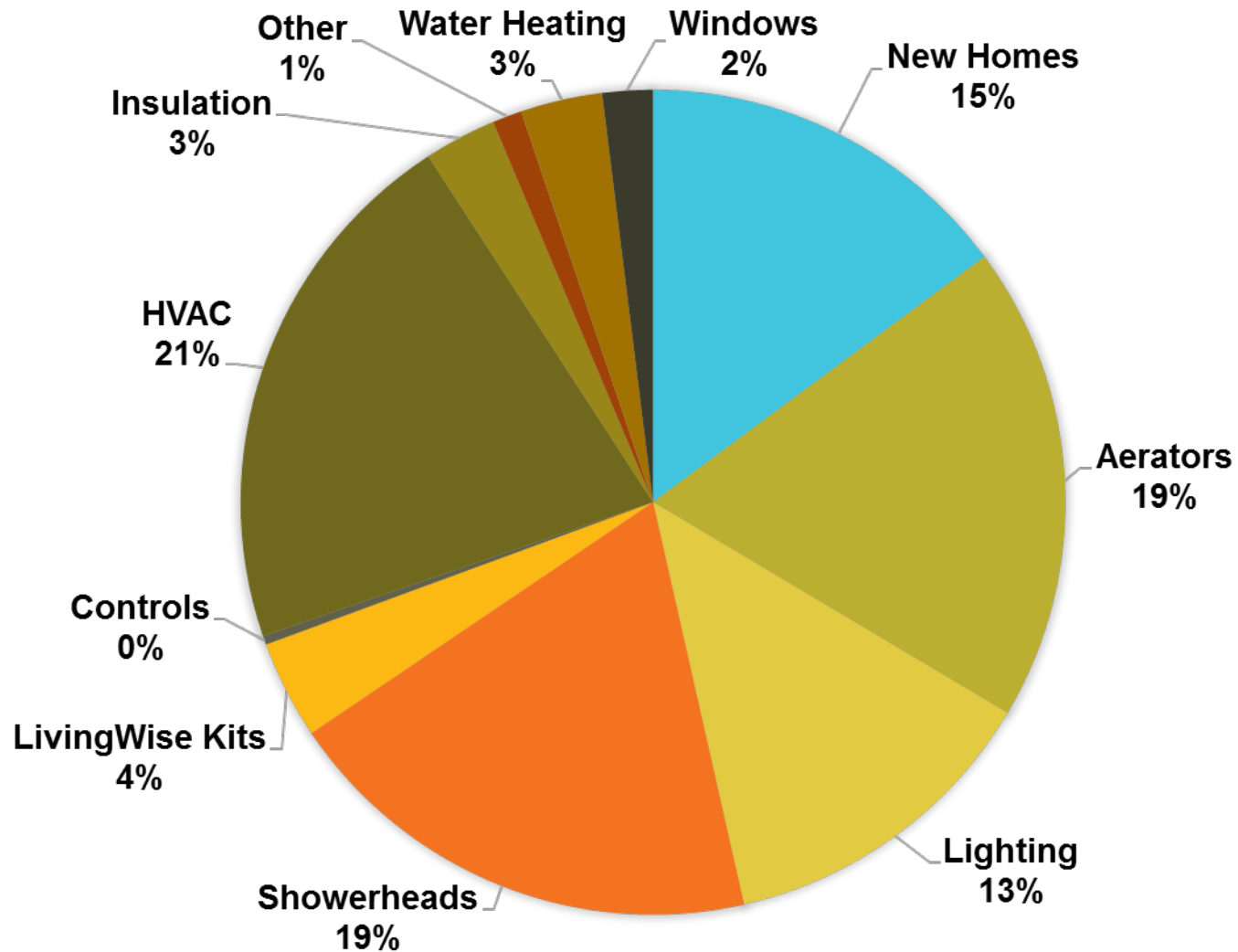
2016 Program Results

- Over 18,000 energy upgrades in existing single family homes
- 4,224 EPS new homes
- Energy savings
 - More than 42.5 million kWh saved
 - More than 2.3 million therms saved

Results are for New Homes and Existing Homes in Oregon & SW Washington

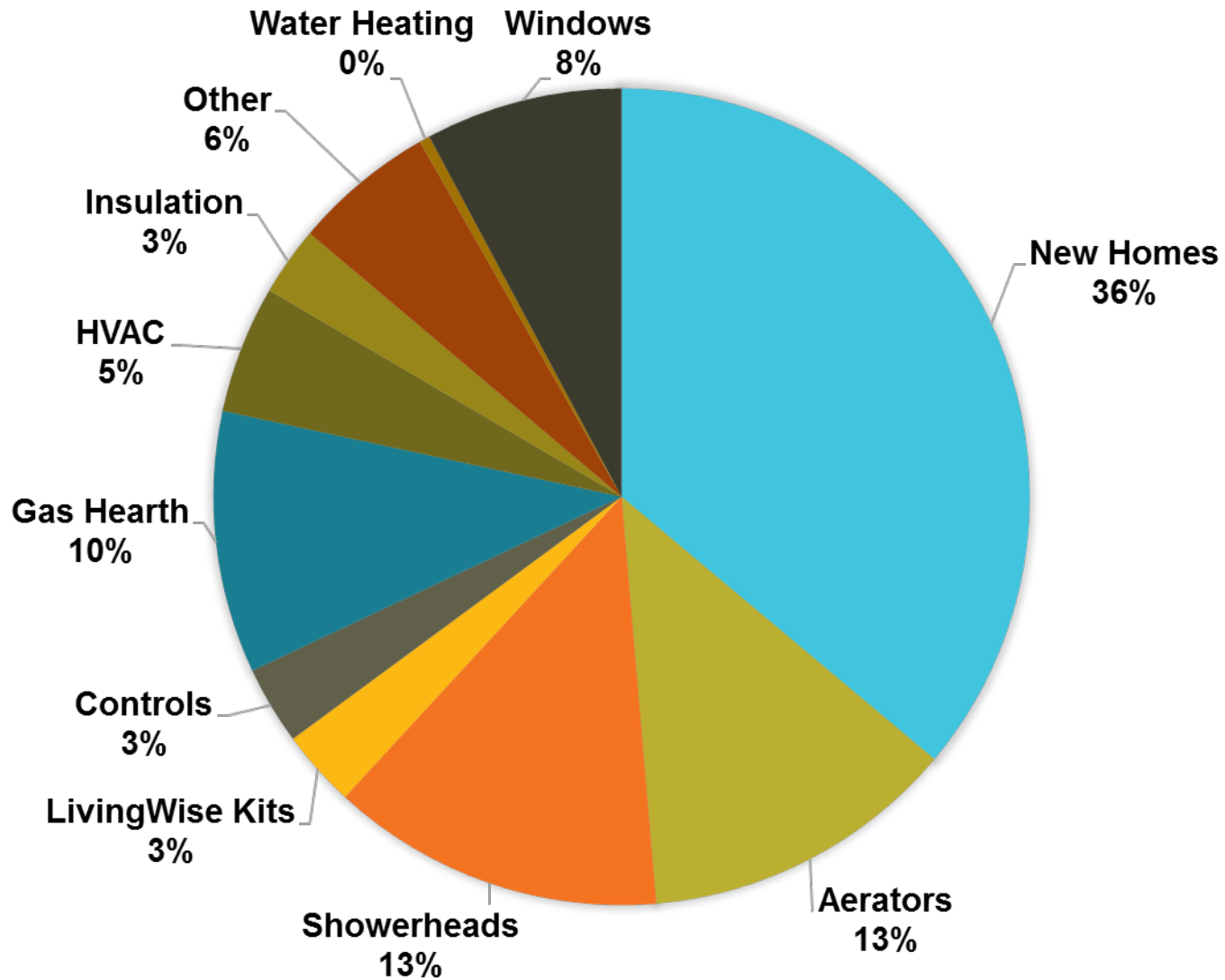


Electric Savings—2016



Results are for New Homes and Existing Homes in Oregon & SW Washington

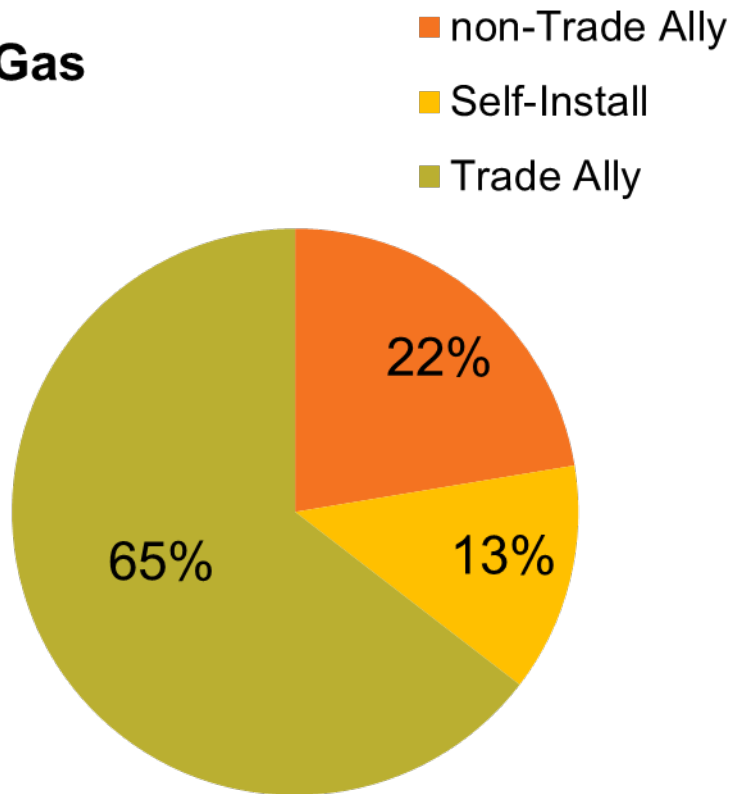
Gas Savings—2016



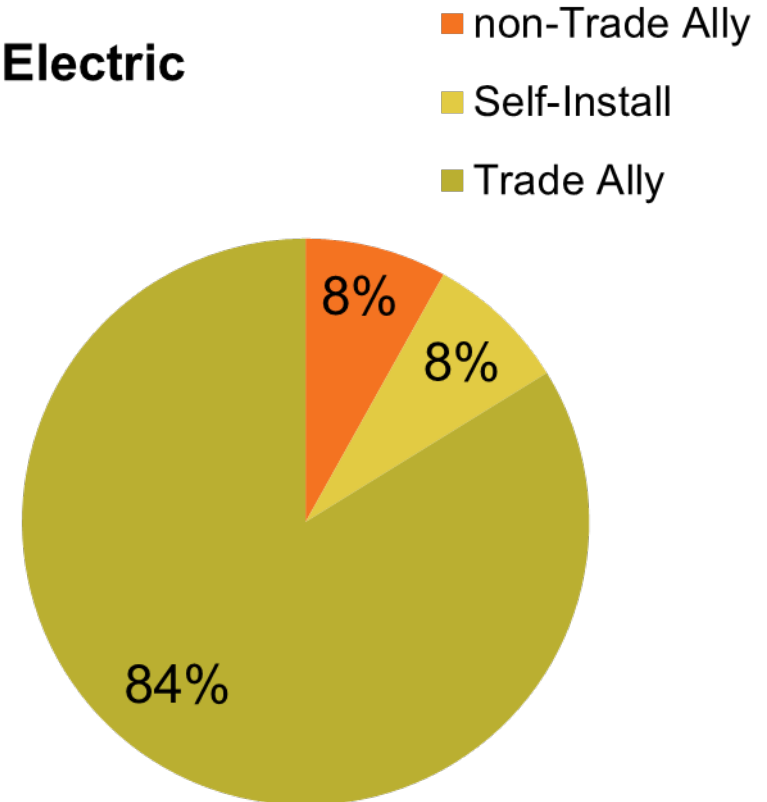
Results are for New Homes and Existing Homes in Oregon & SW Washington

Existing Homes Project Installations

Gas

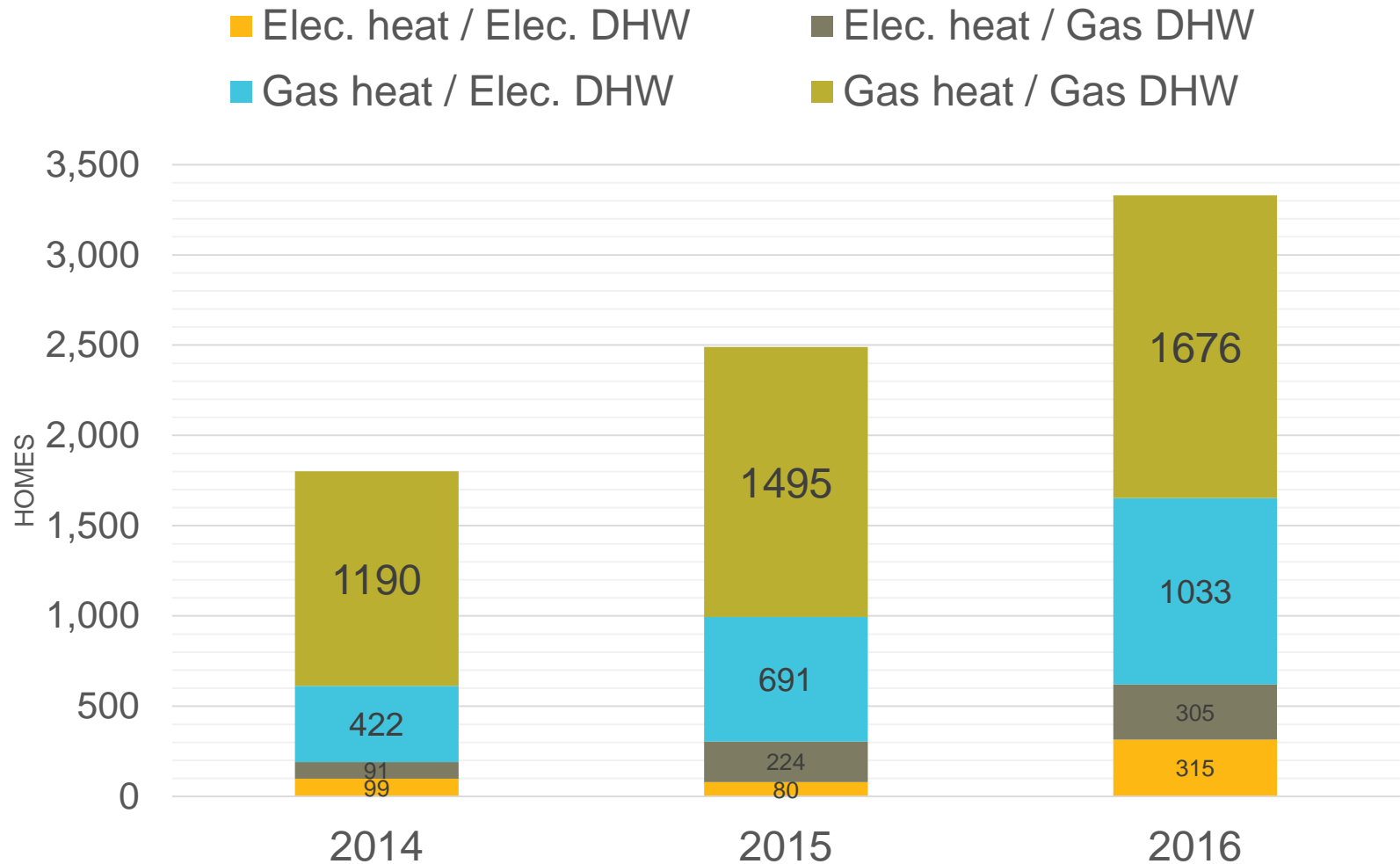


Electric

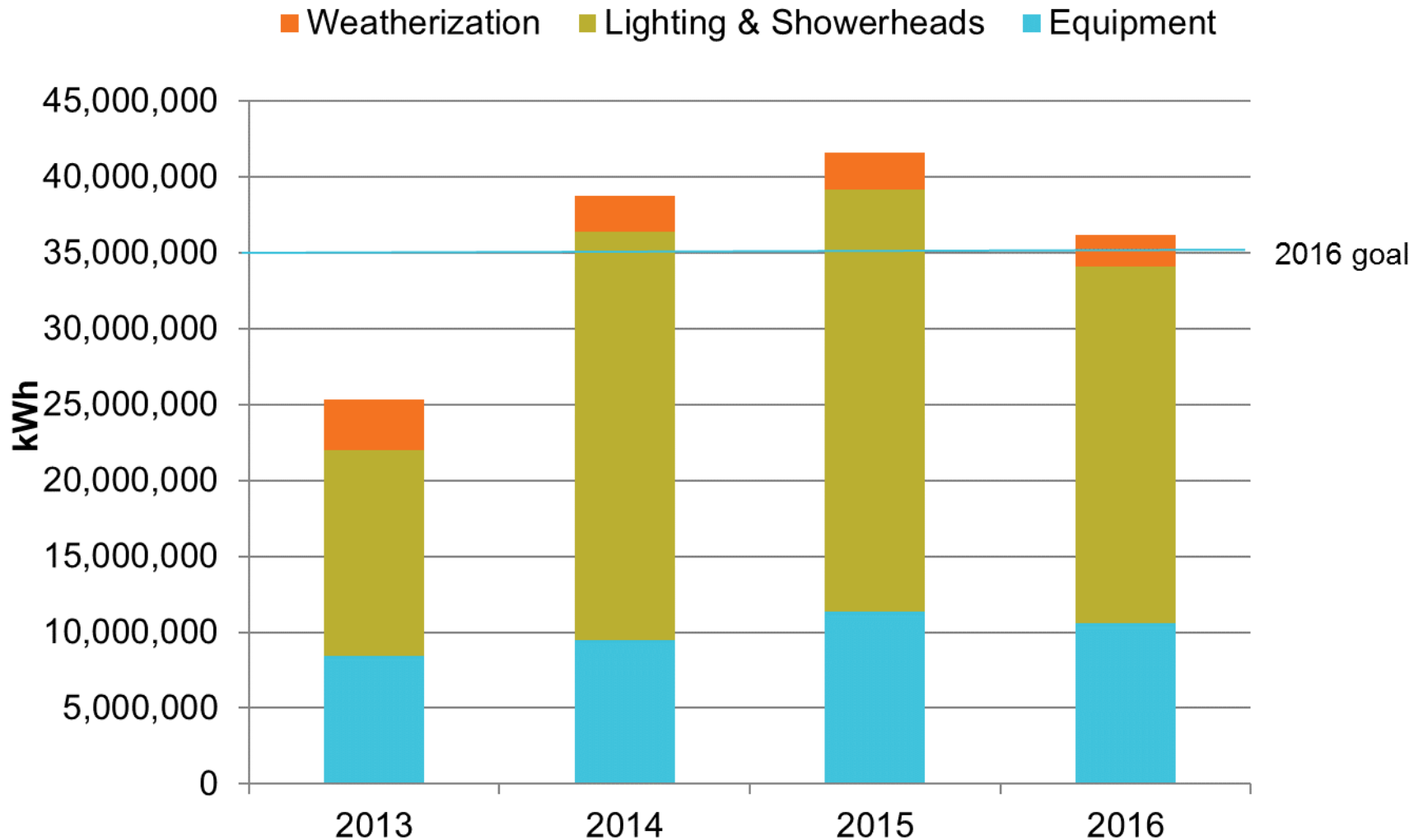


2016 Trends

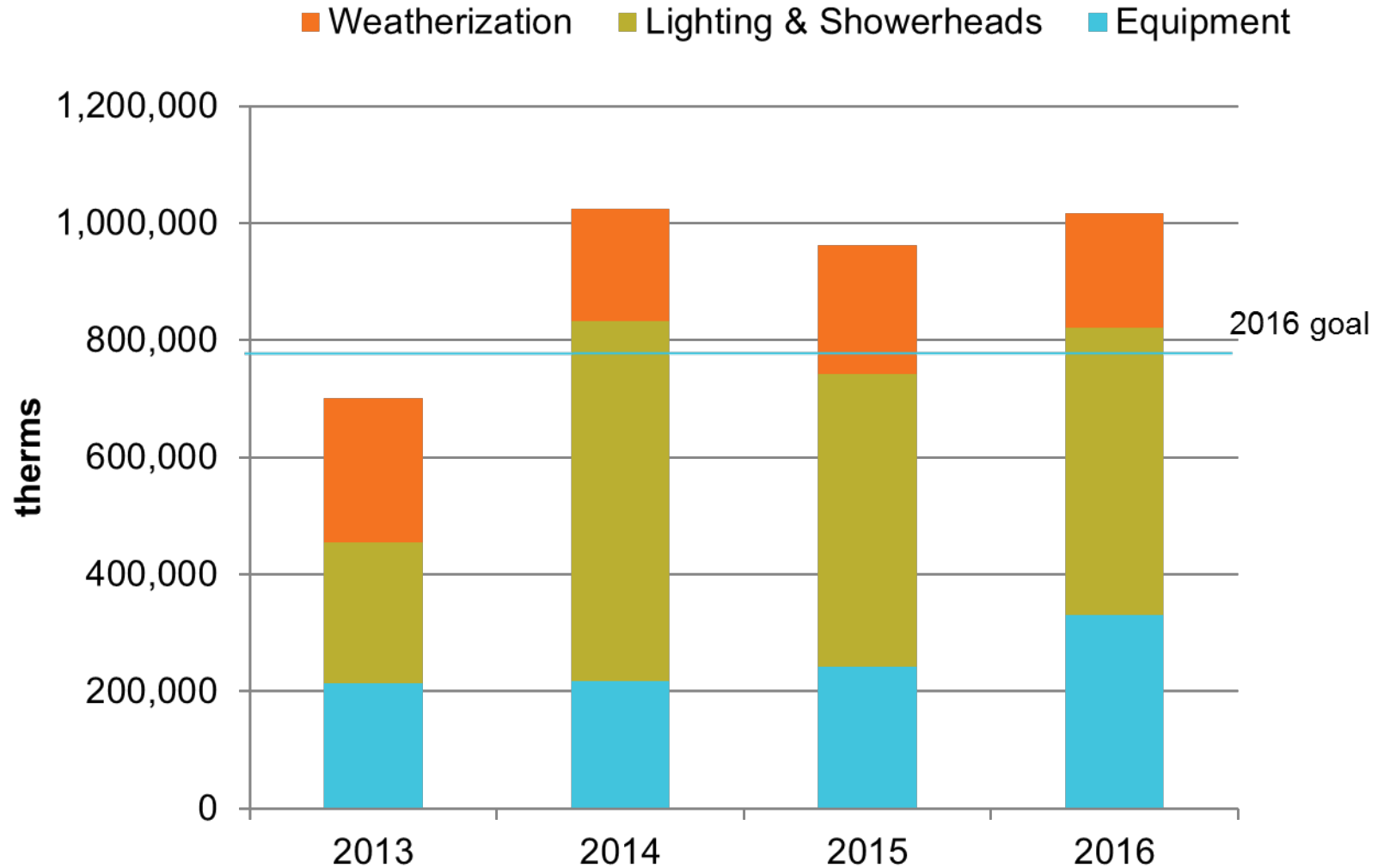
EPS New Homes Trends



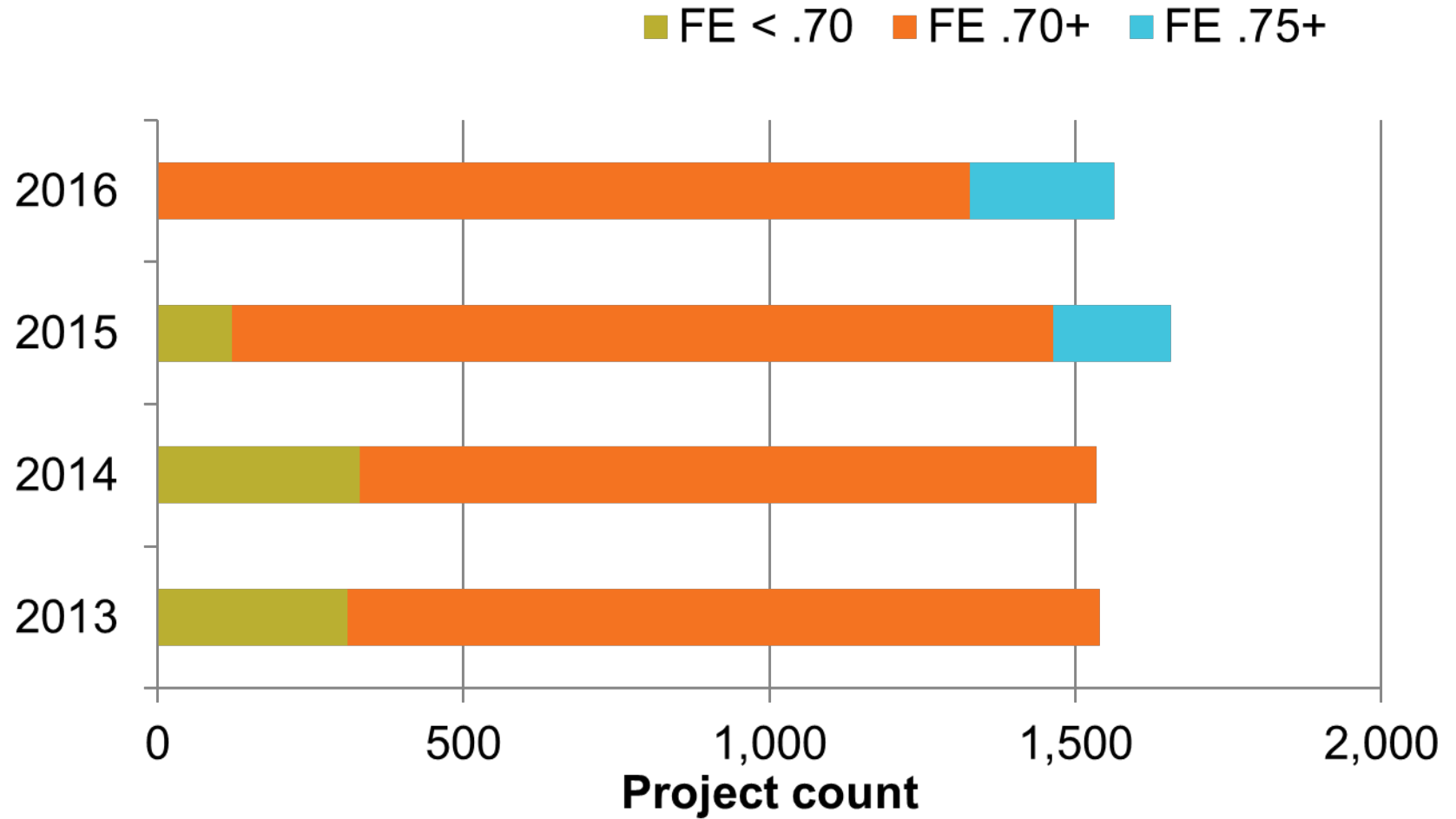
Existing Homes Trends—Electric



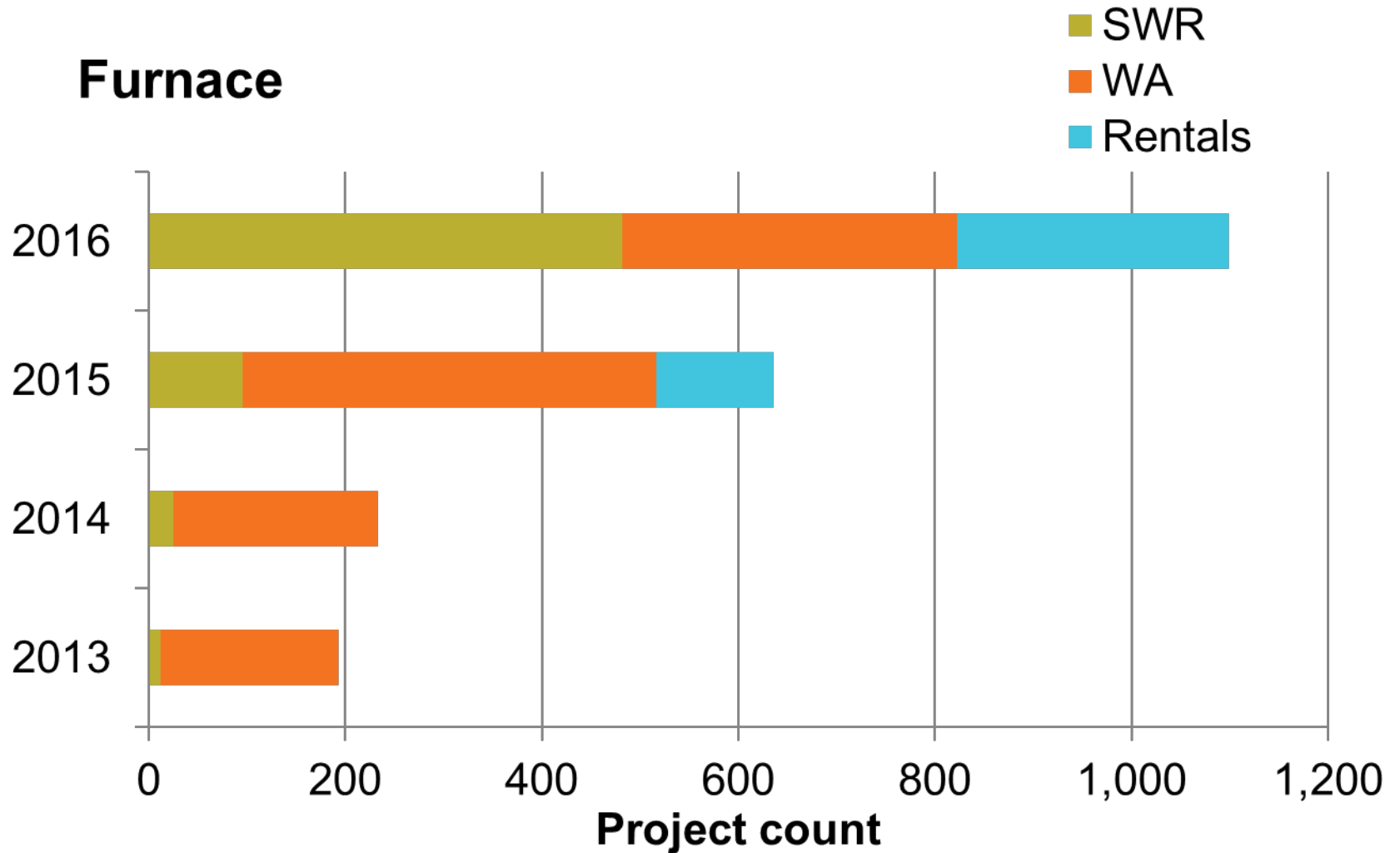
Existing Homes Trends—Gas



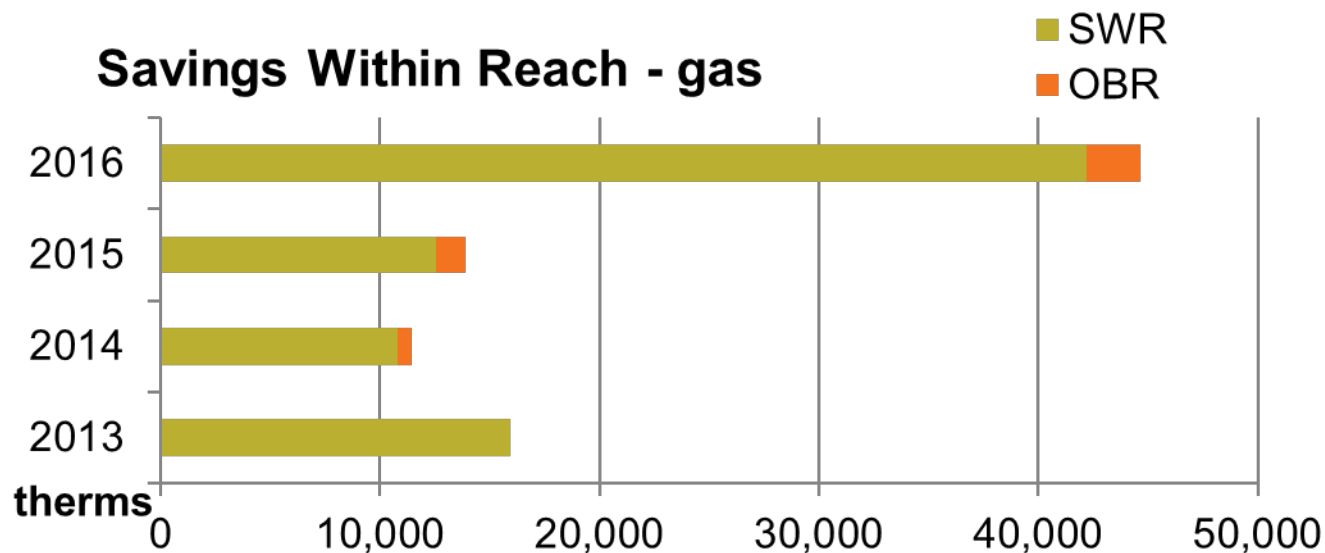
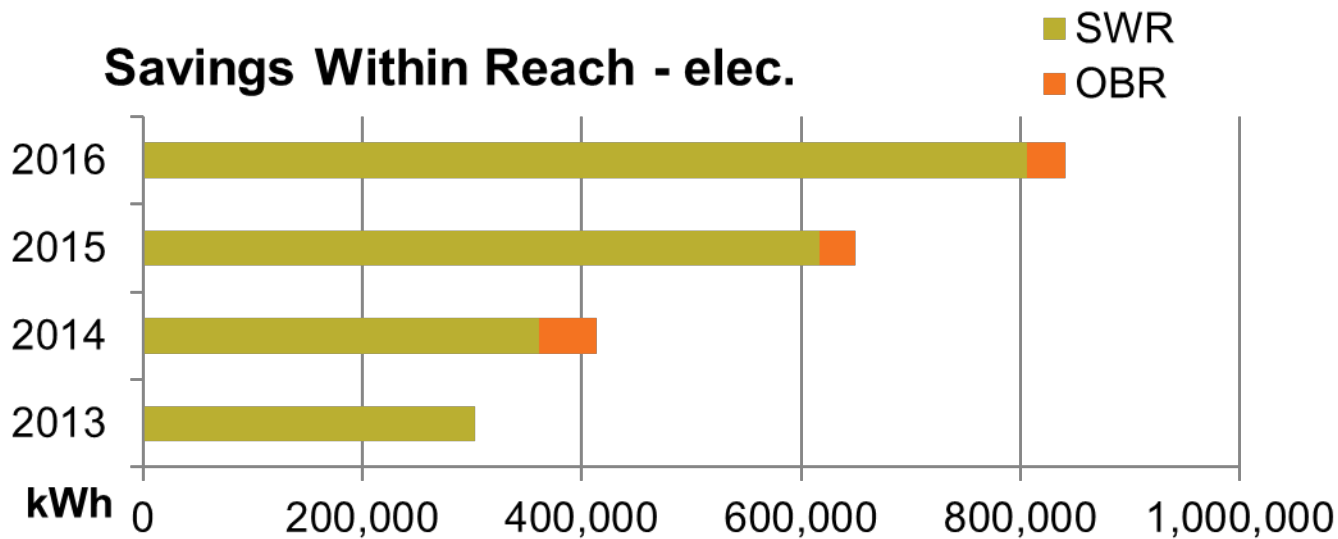
Gas Hearth Trends



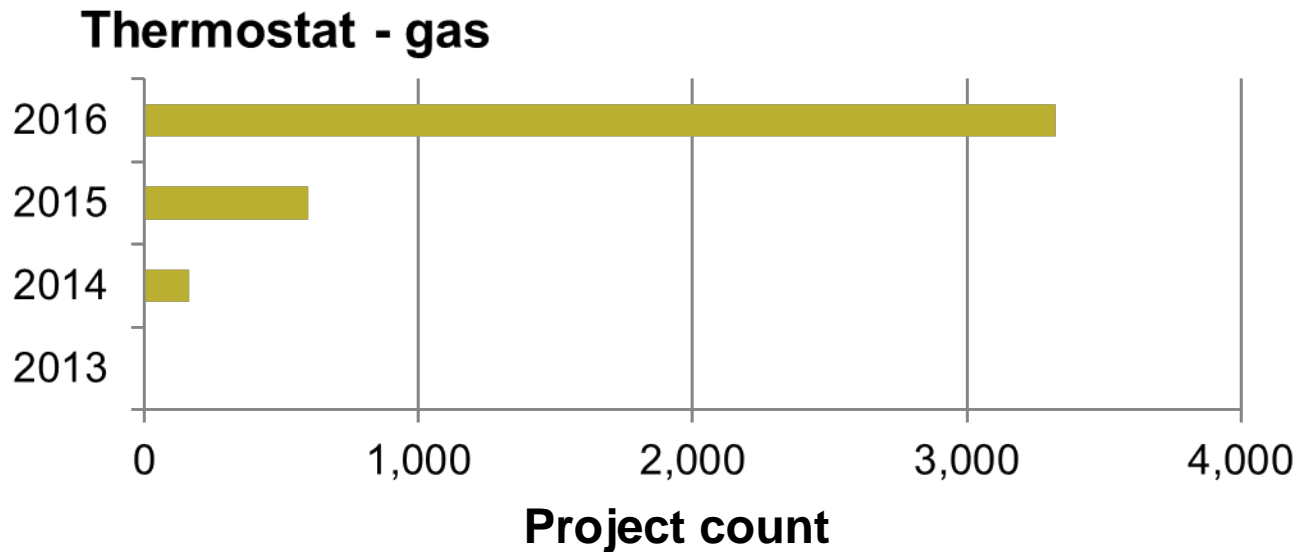
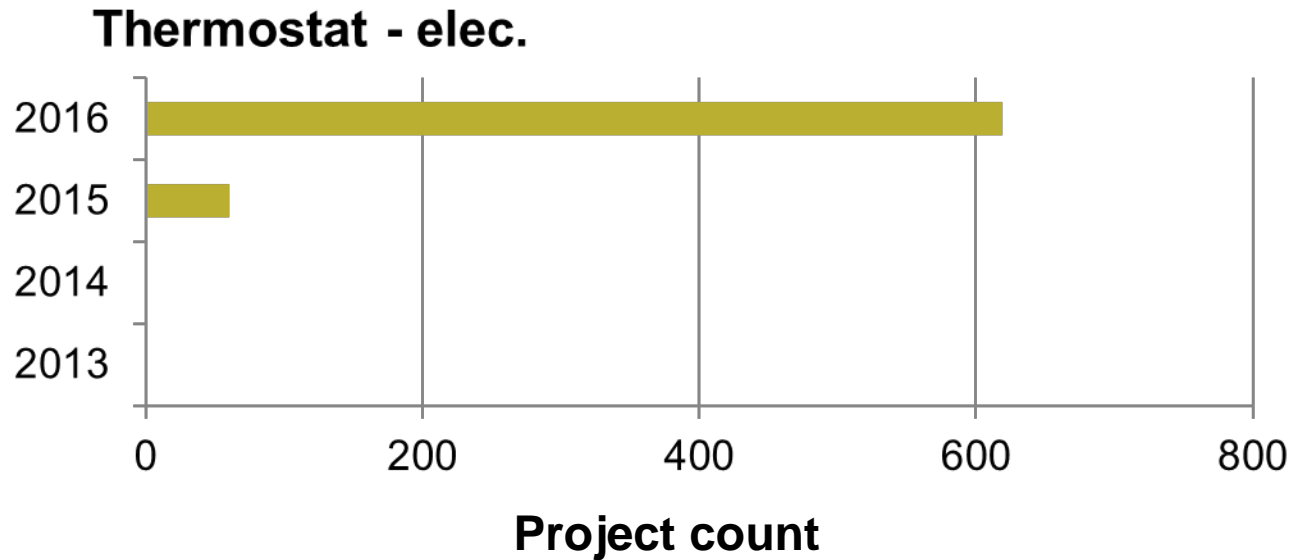
Gas Furnace Trends



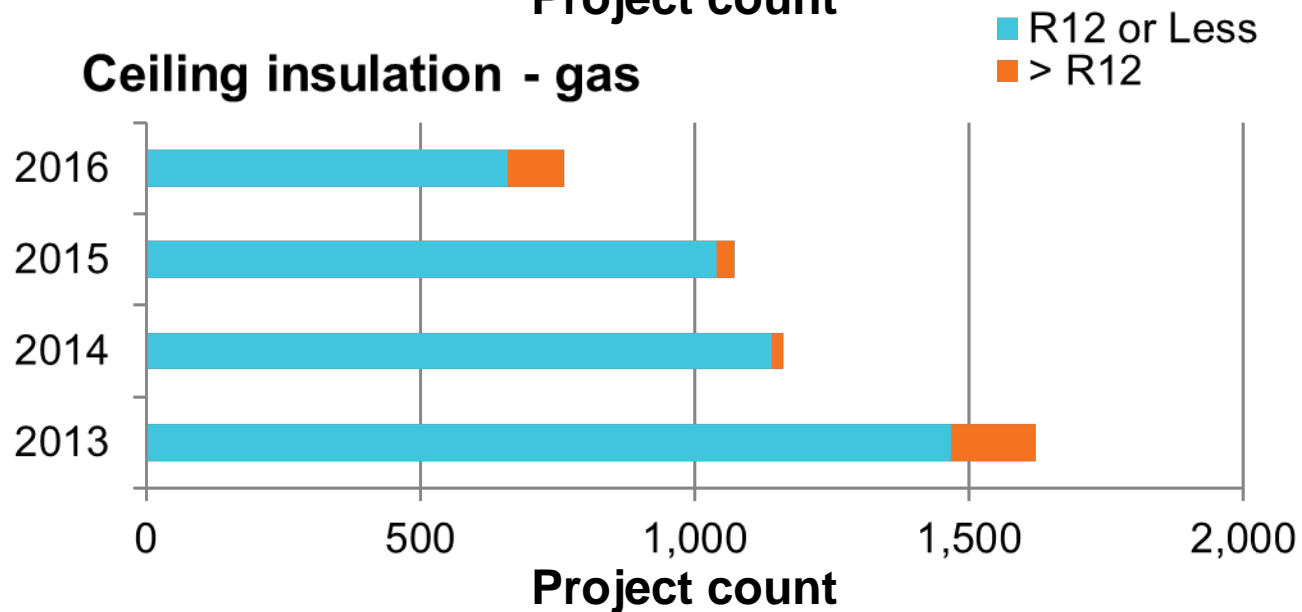
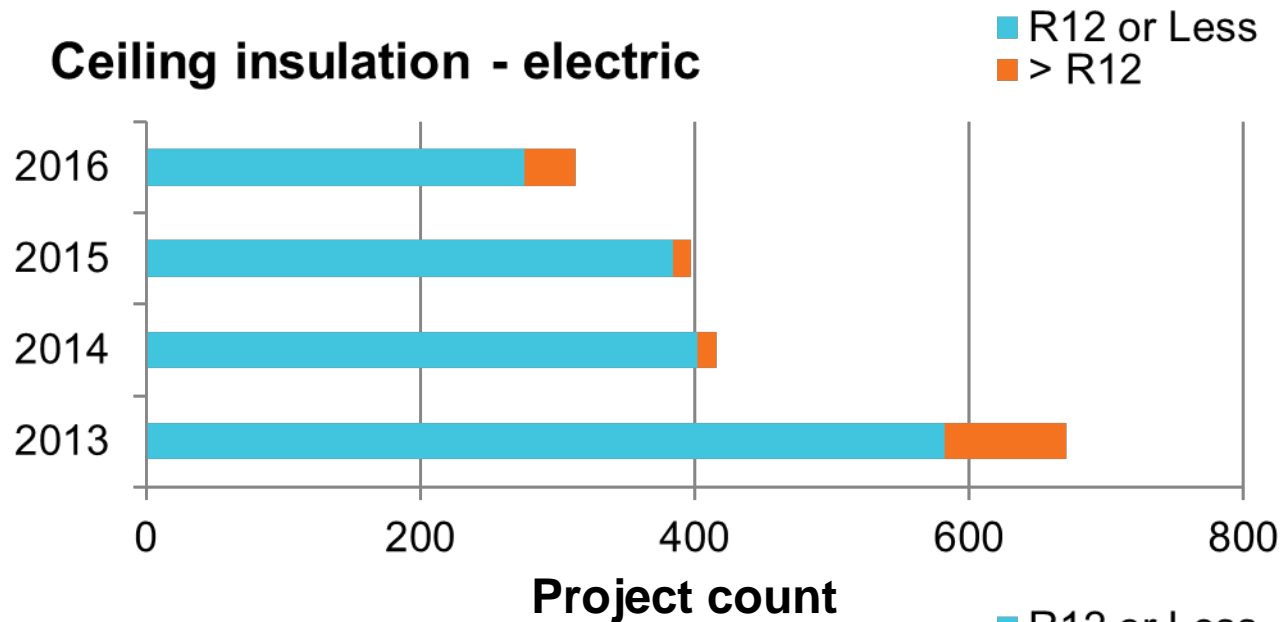
Savings Within Reach Trends



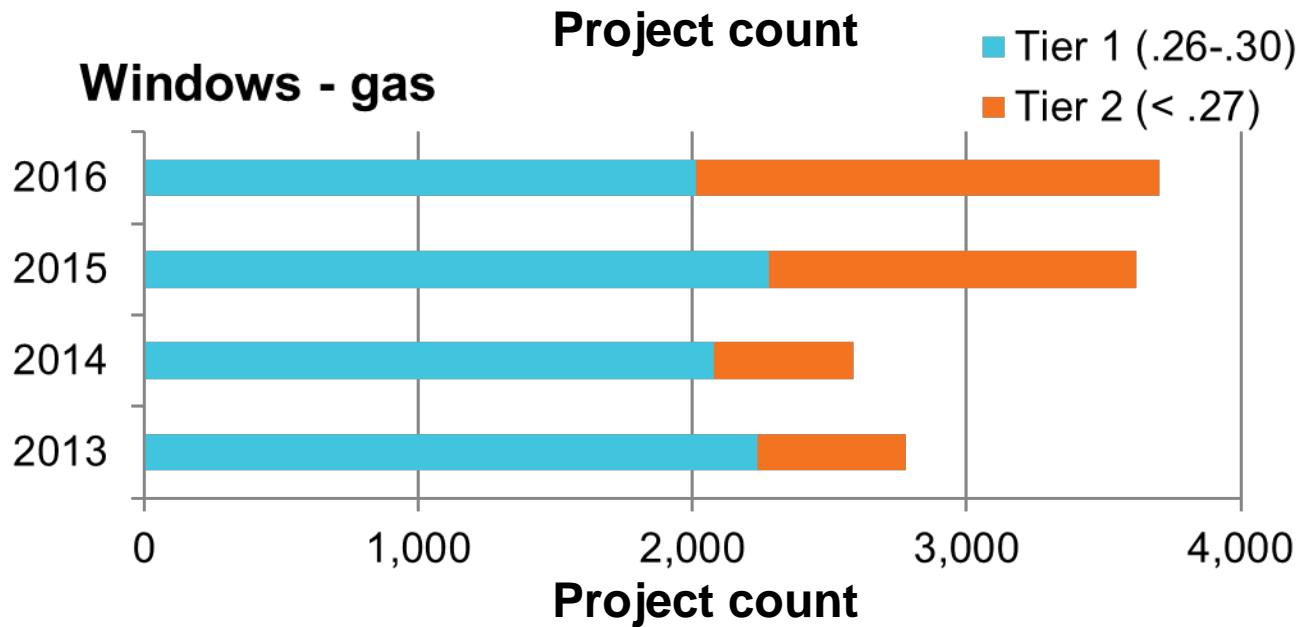
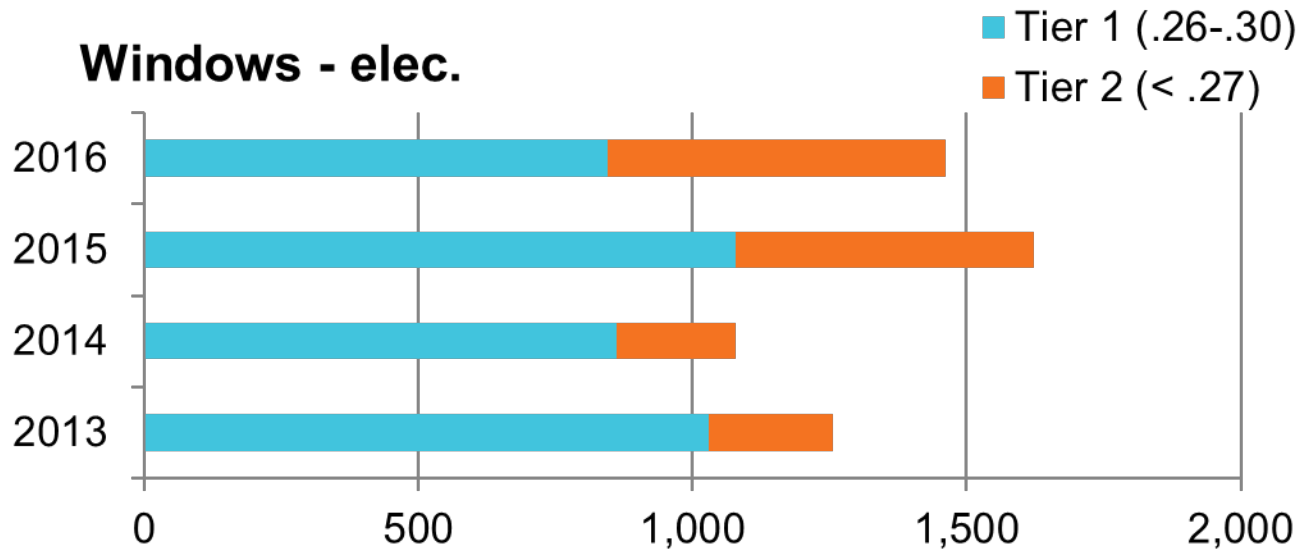
Thermostat Trends



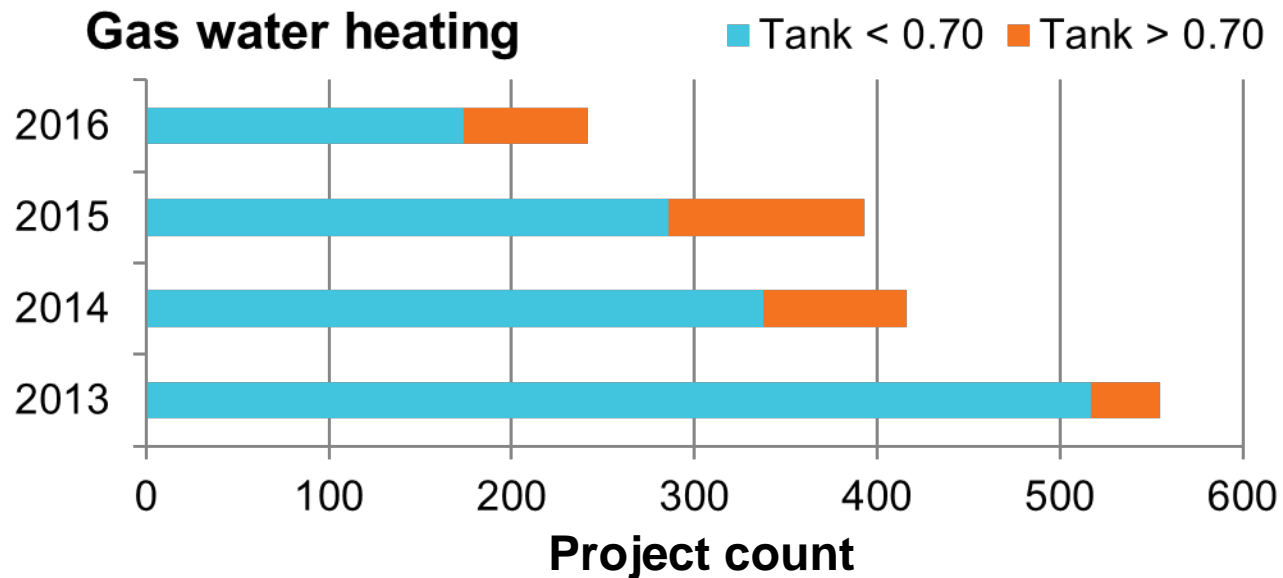
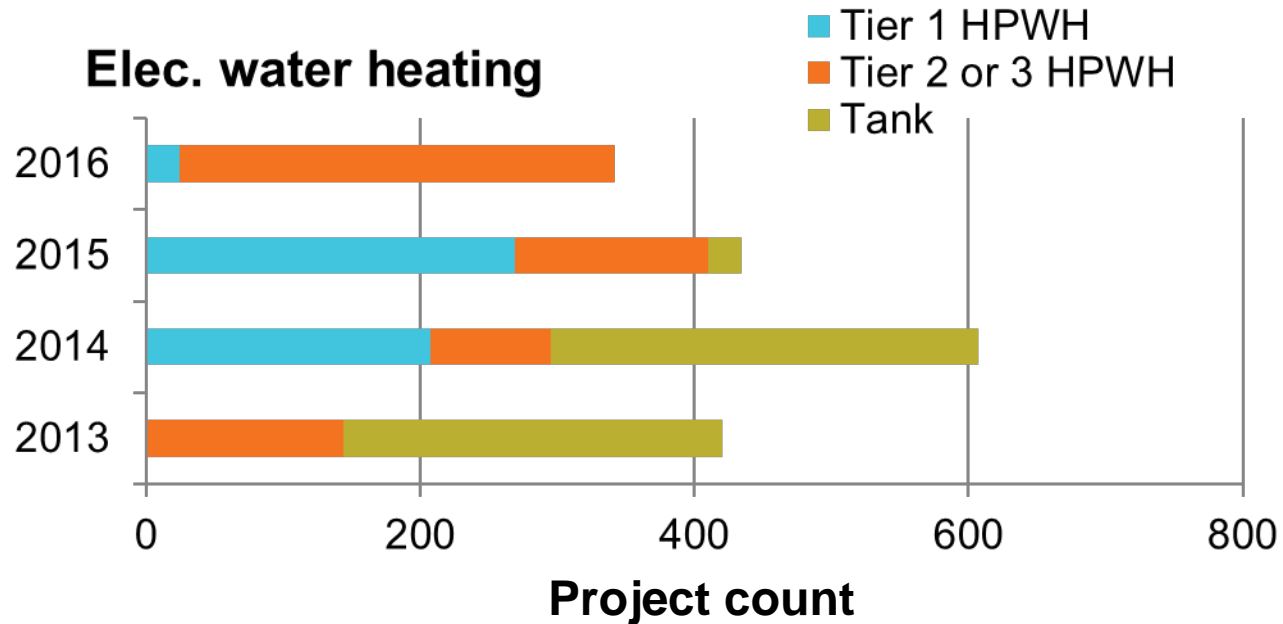
Insulation Trends



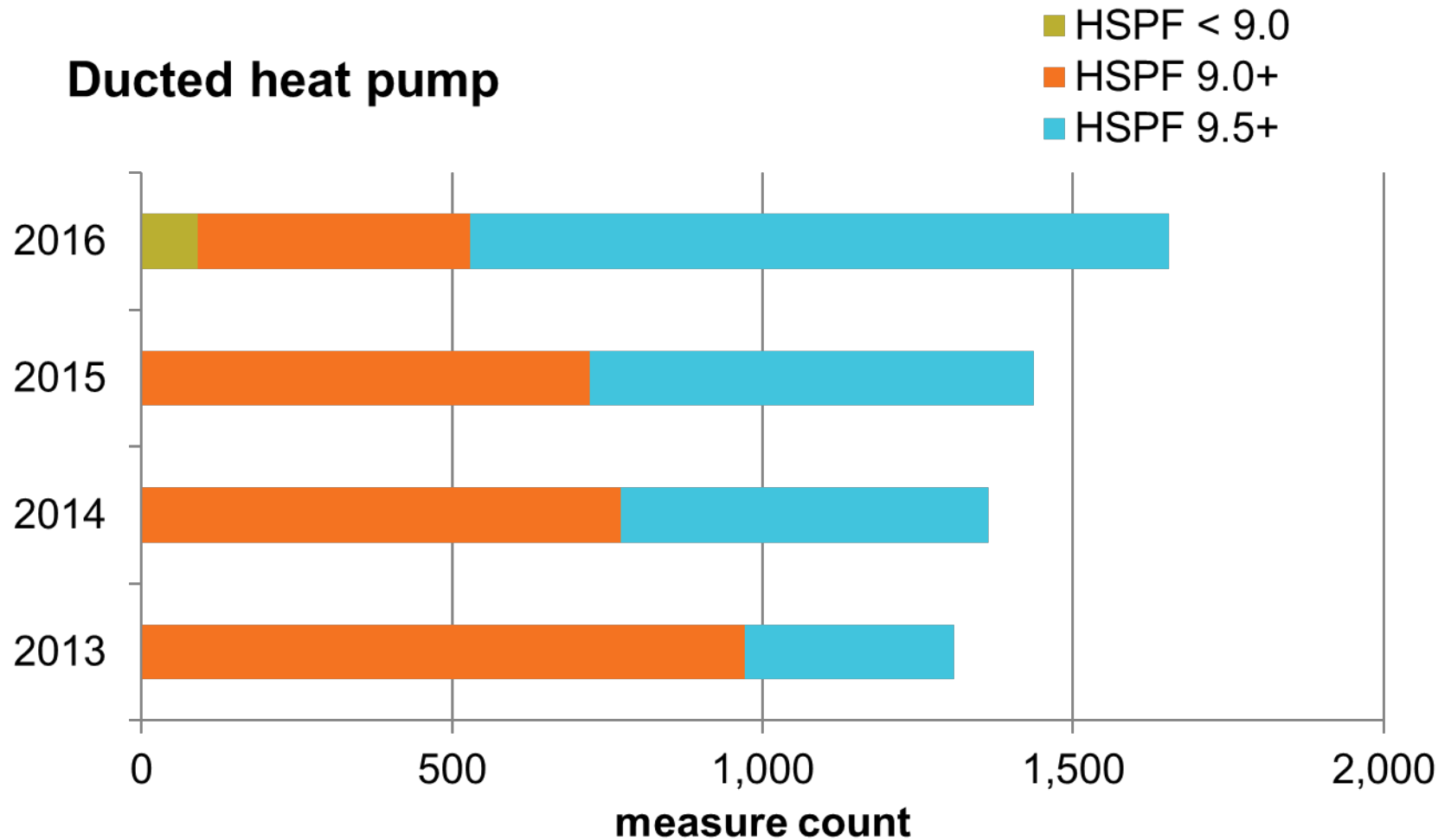
Windows Trends



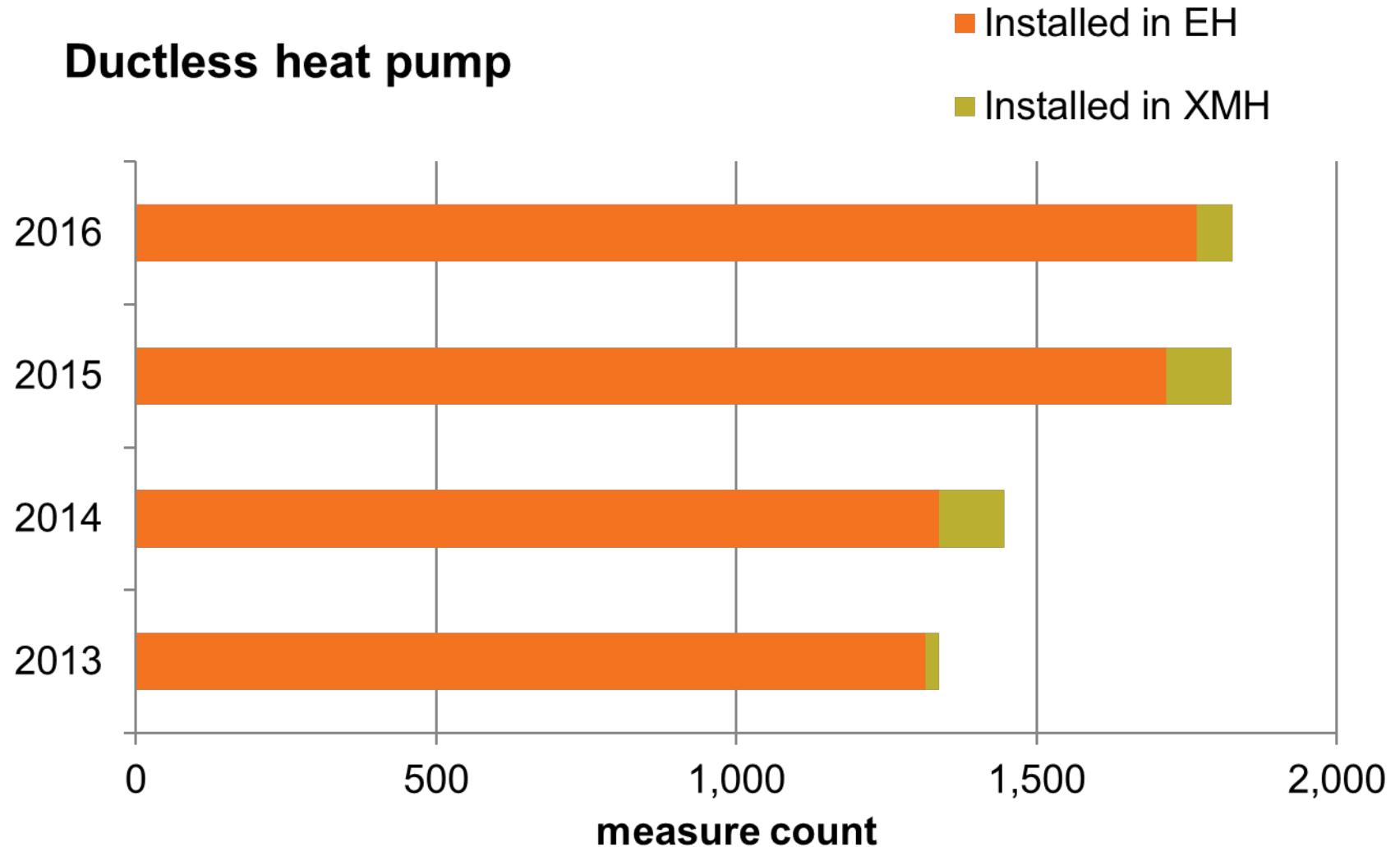
Water Heating Trends



Ducted Heat Pump Trends



Ductless Heat Pump Trends



2017 Areas of Focus

2017 Electric Savings Goals—Existing Homes

Program Category	2017 Electric Savings (kWh)	% of Portfolio	% Change Allocated Savings 2017 v 2016
Controls	471,756	1%	0%
HVAC	10,243,492	30%	2%
Insulation	681,195	2%	-1%
Other	1,734,171	5%	1%
Water Heating	5,371,270	16%	11%
Windows	722,337	2%	0%
XMH Free Service	458,266	1%	0%
Aerators	4,643,550	14%	-6%
Lighting	4,505,376	13%	-2%
Showerheads	5,131,906	15%	-6%
Total	33,963,318		

2017 Gas Savings Goals – Existing Homes

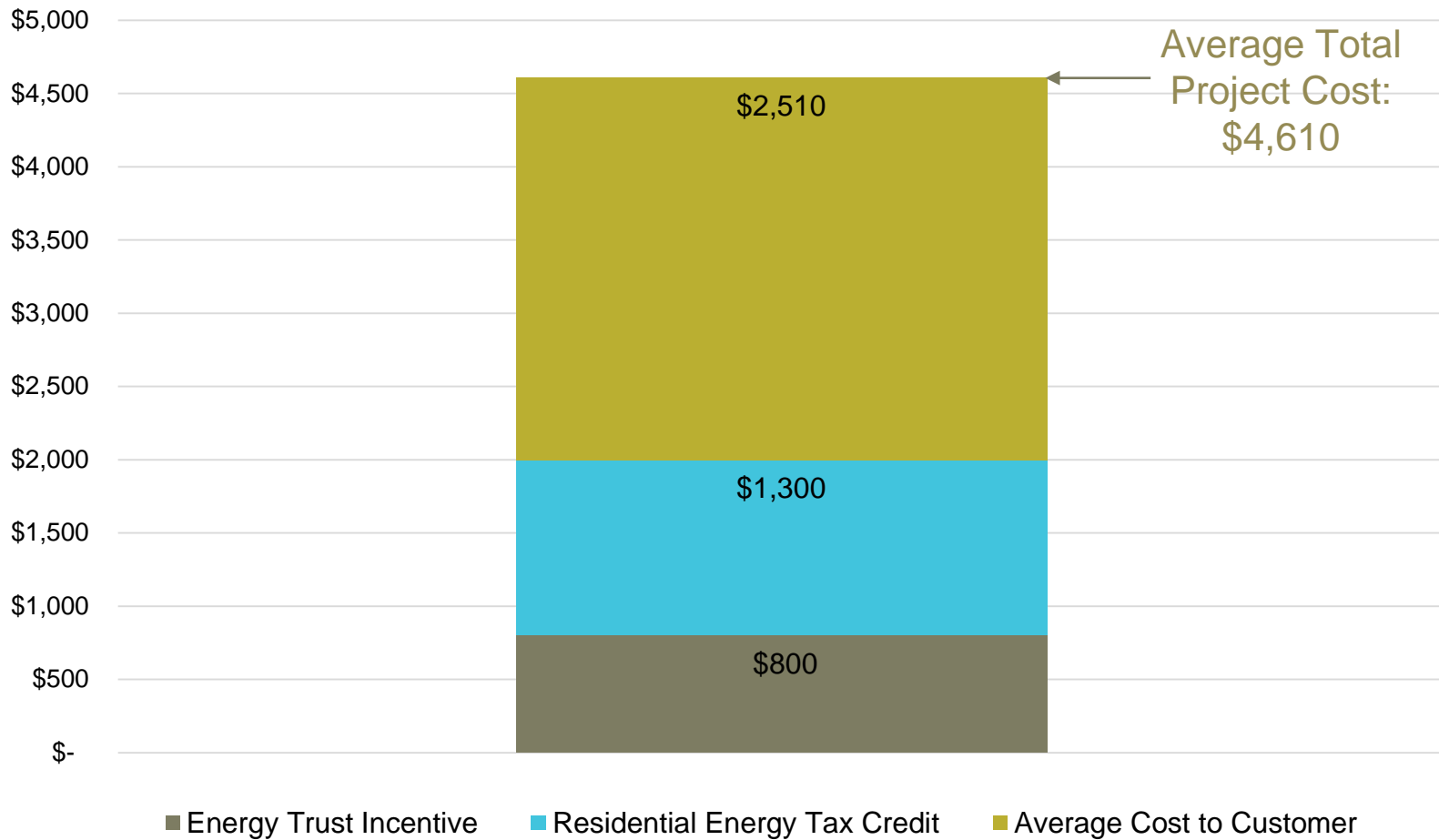
Program Category	2017 Gas Savings (therm)	% of Portfolio	% Change Allocated Savings 2017 v 2016
Controls	178,528	14%	10%
Gas Hearth	208,890	17%	0%
HVAC	134,328	11%	3%
Insulation	56,284	5%	1%
Other	96,679	8%	5%
Water Heating	54,659	4%	3%
Windows	144,787	12%	1%
XMH Free Service	571	0%	0%
Aerators	145,869	12%	-11%
Showerheads	175,545	14%	-4%
Total	1,238,266		

2017 Regional Focus – New Homes

Region	2017 Targets
1 - North Coast	17
2 - South Coast	0
3 - Portland Metro	2,555
4 - Mid Willamette Valley	32
5 - Southern Willamette Valley	108
6 - Southern	133
7 - Columbia Basin	26
8 - Central	368
9 - Klamath Basin	0
10 - Northeast	5
11 - Eastern	0
12 - Southwest Washington	593
Total	3,837

Example Project Cost

Average Ductless Heat Pump Equipment and Installation Cost





Thank You

Marshall Johnson
Sr Residential Program Manager
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Existing Multifamily Program Results and Trends

Nate Collins

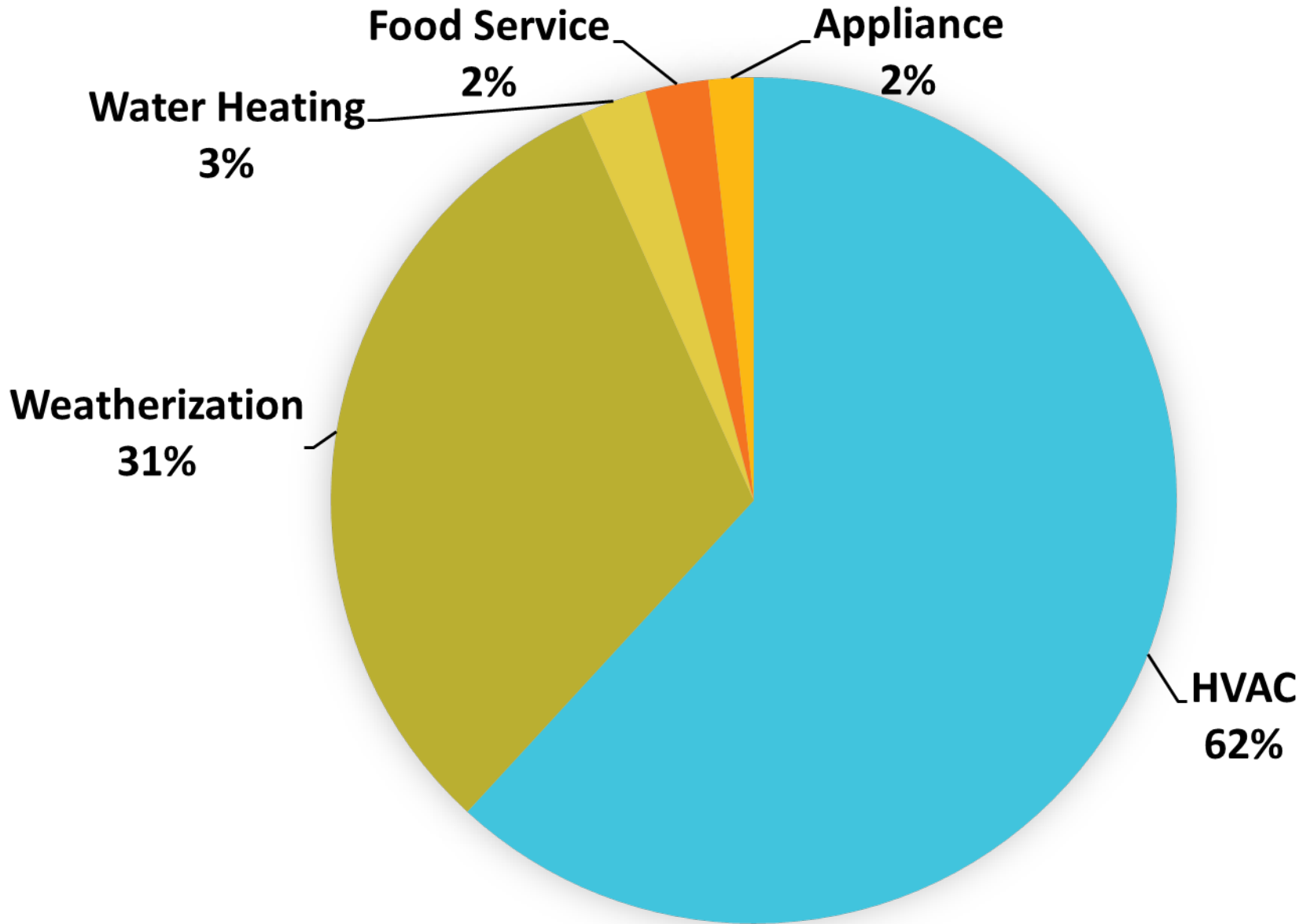
April 14, 2017

2016 Multifamily Program Results

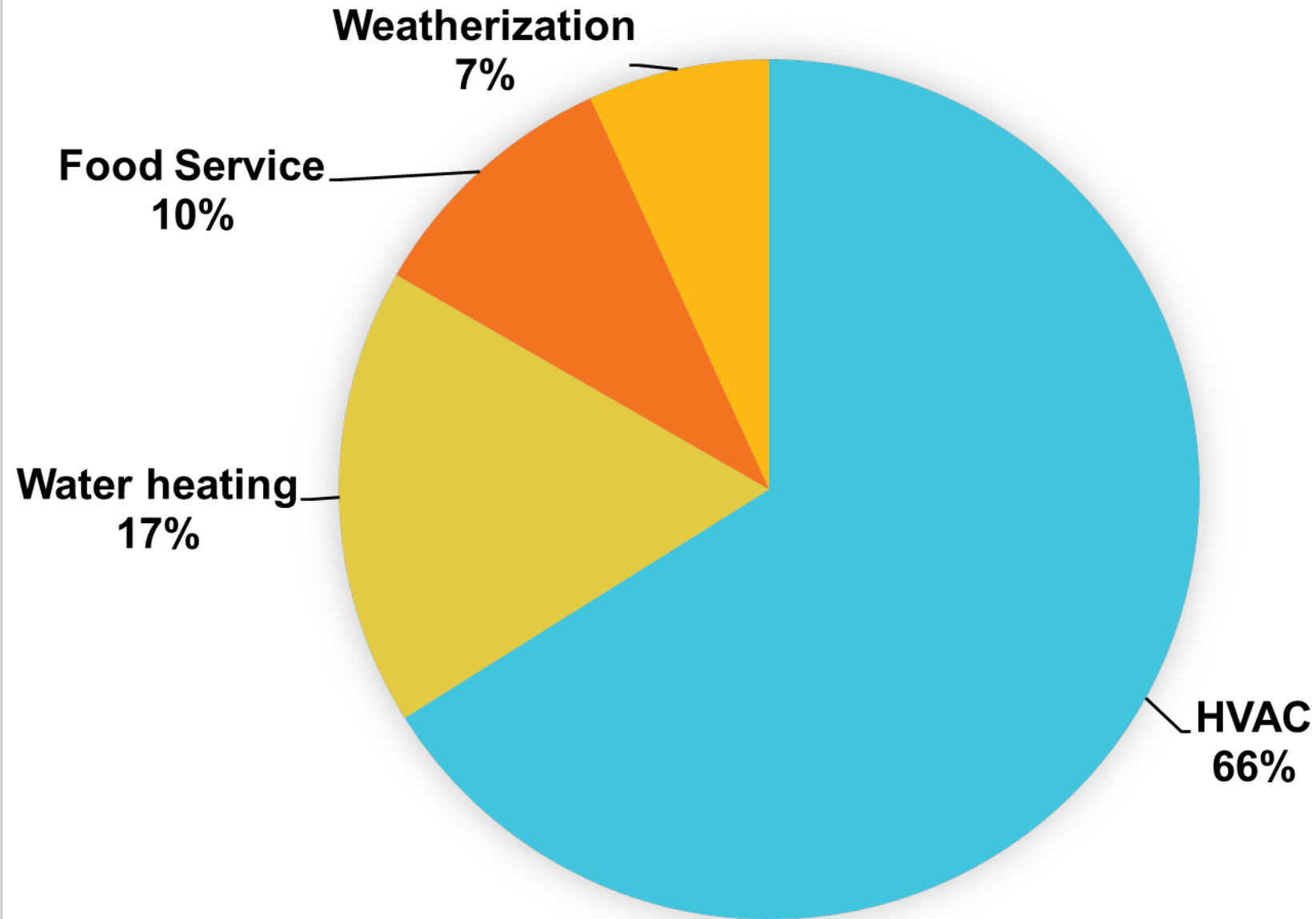
- 2,840 projects completed
- 1,807 sites served
- \$4,448,902 paid in incentives
- Energy Savings
 - 20,787,800 kWh
 - 252,900 therms



2016 Prescriptive Electric Savings



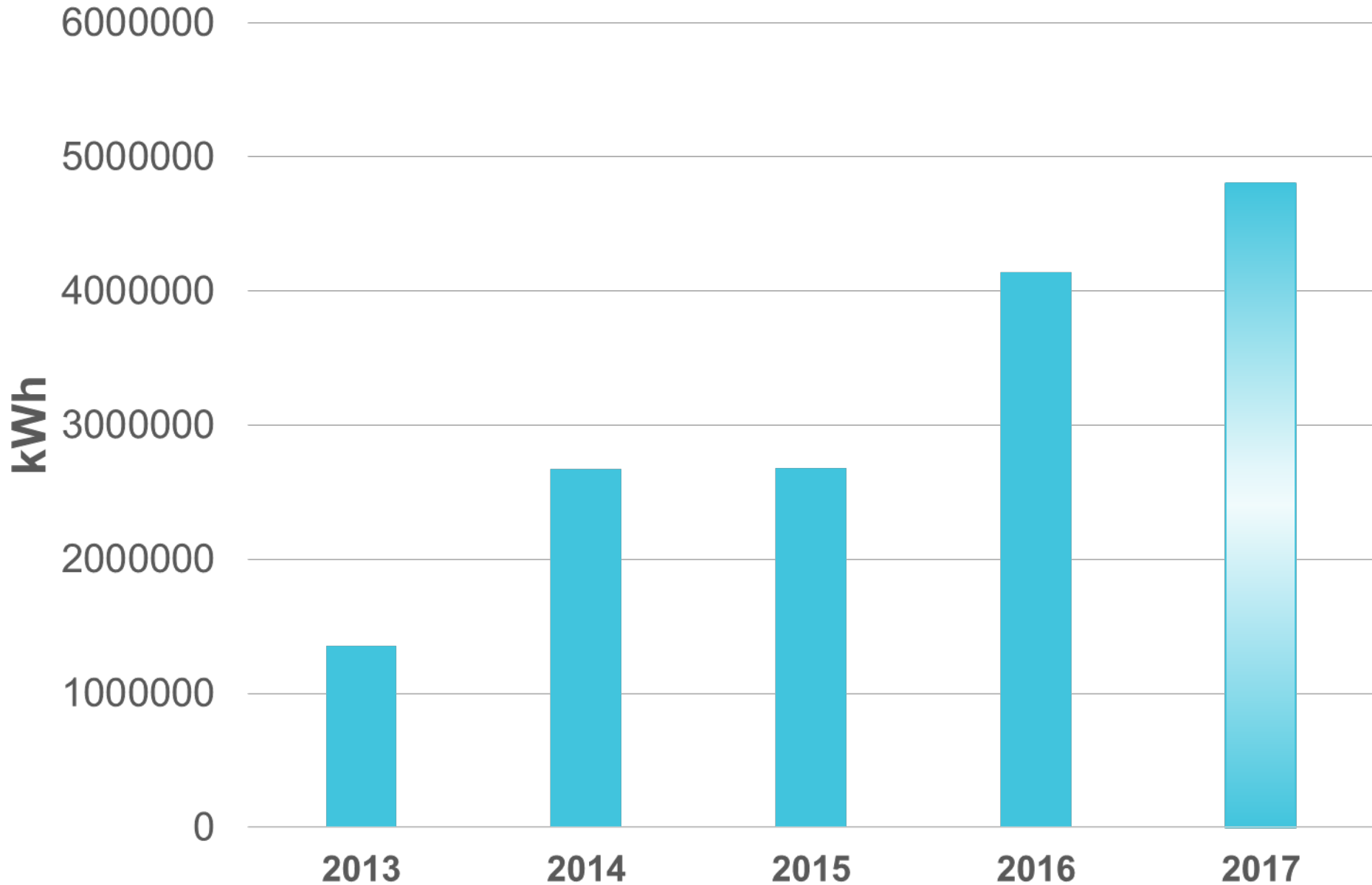
2016 Prescriptive Gas Savings



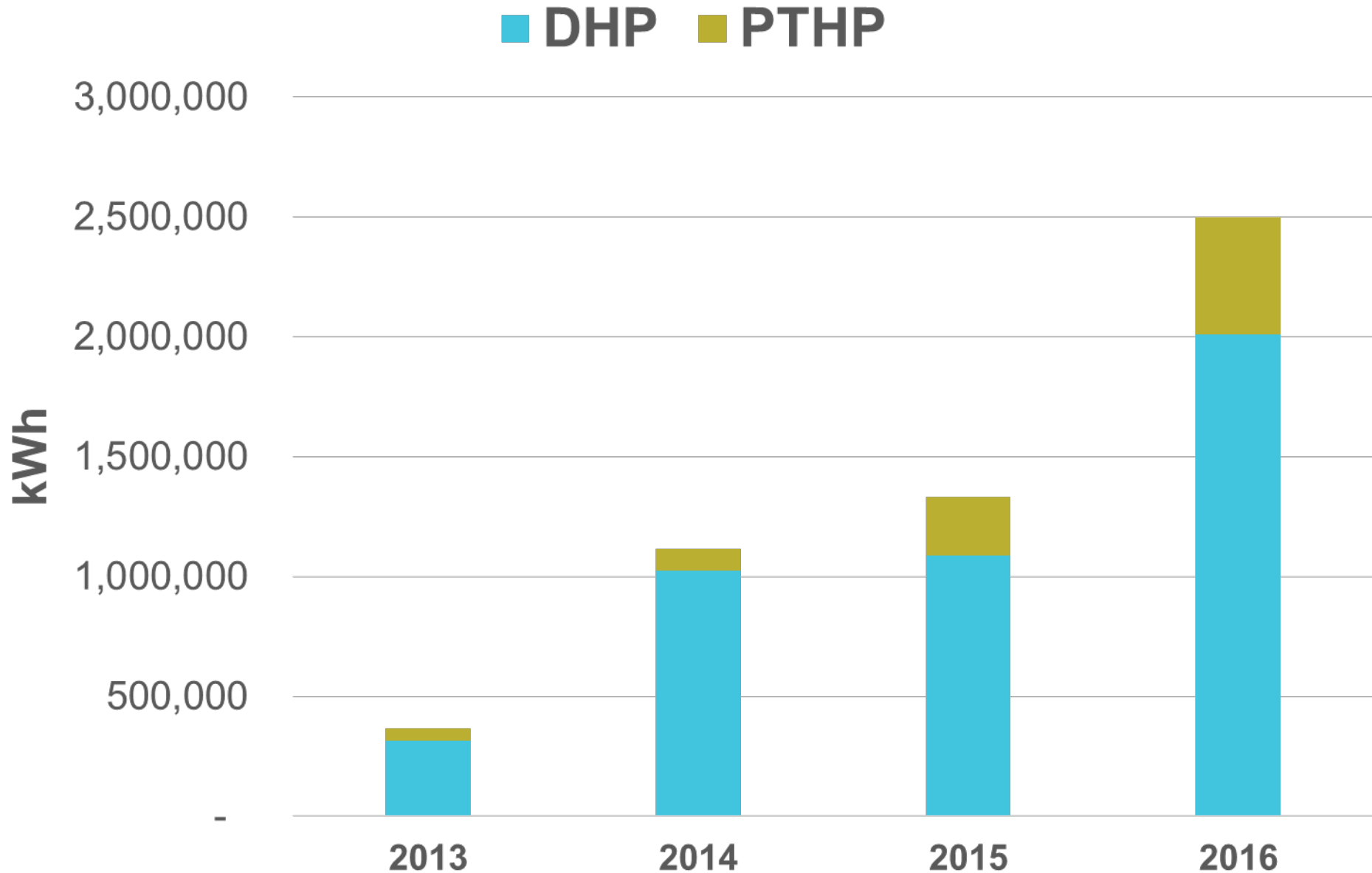
Prescriptive Measure Trends

Electric Savings

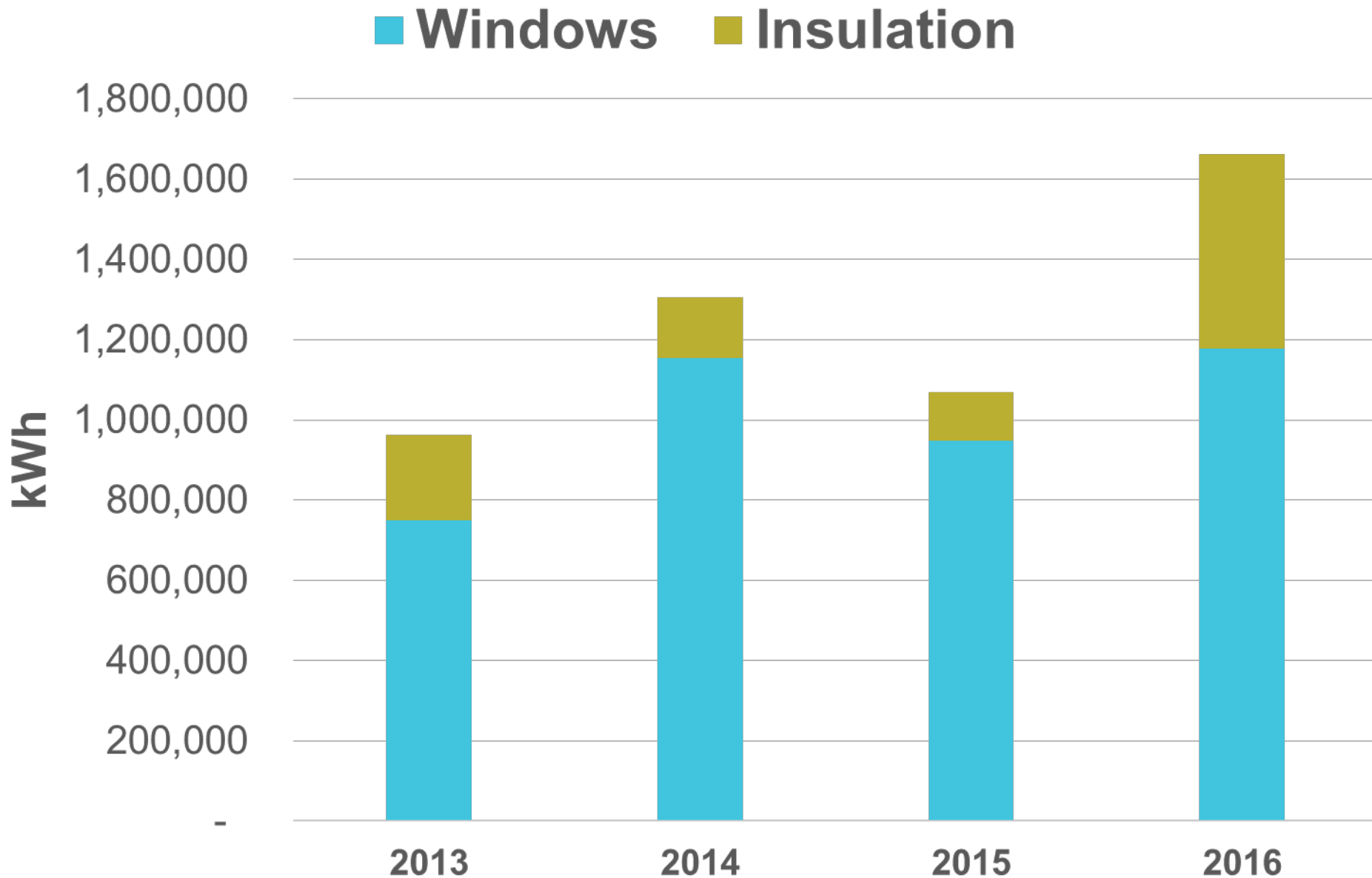
All prescriptive savings—Electric



Ductless, Packaged Terminal Heat Pumps

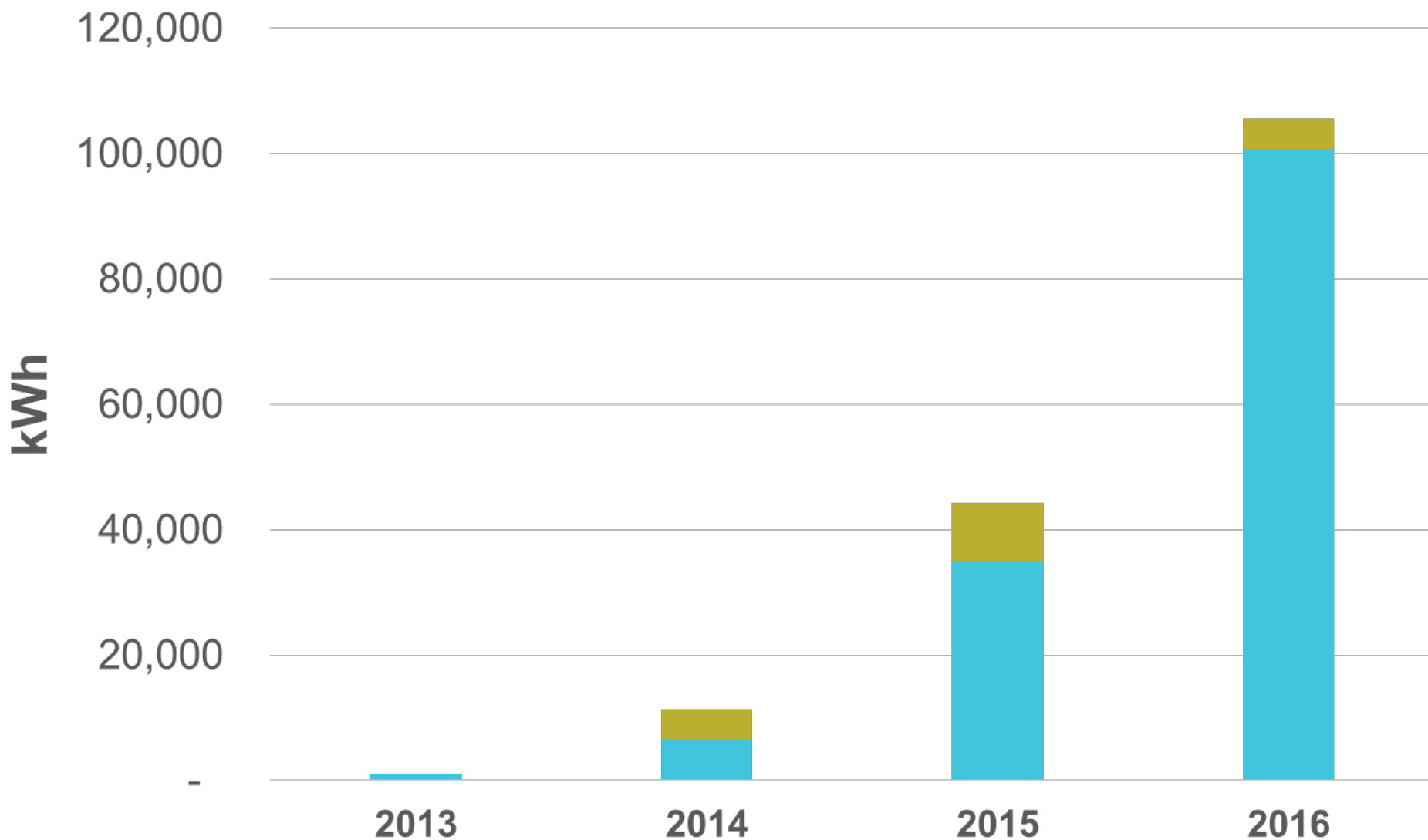


Weatherization—Electric

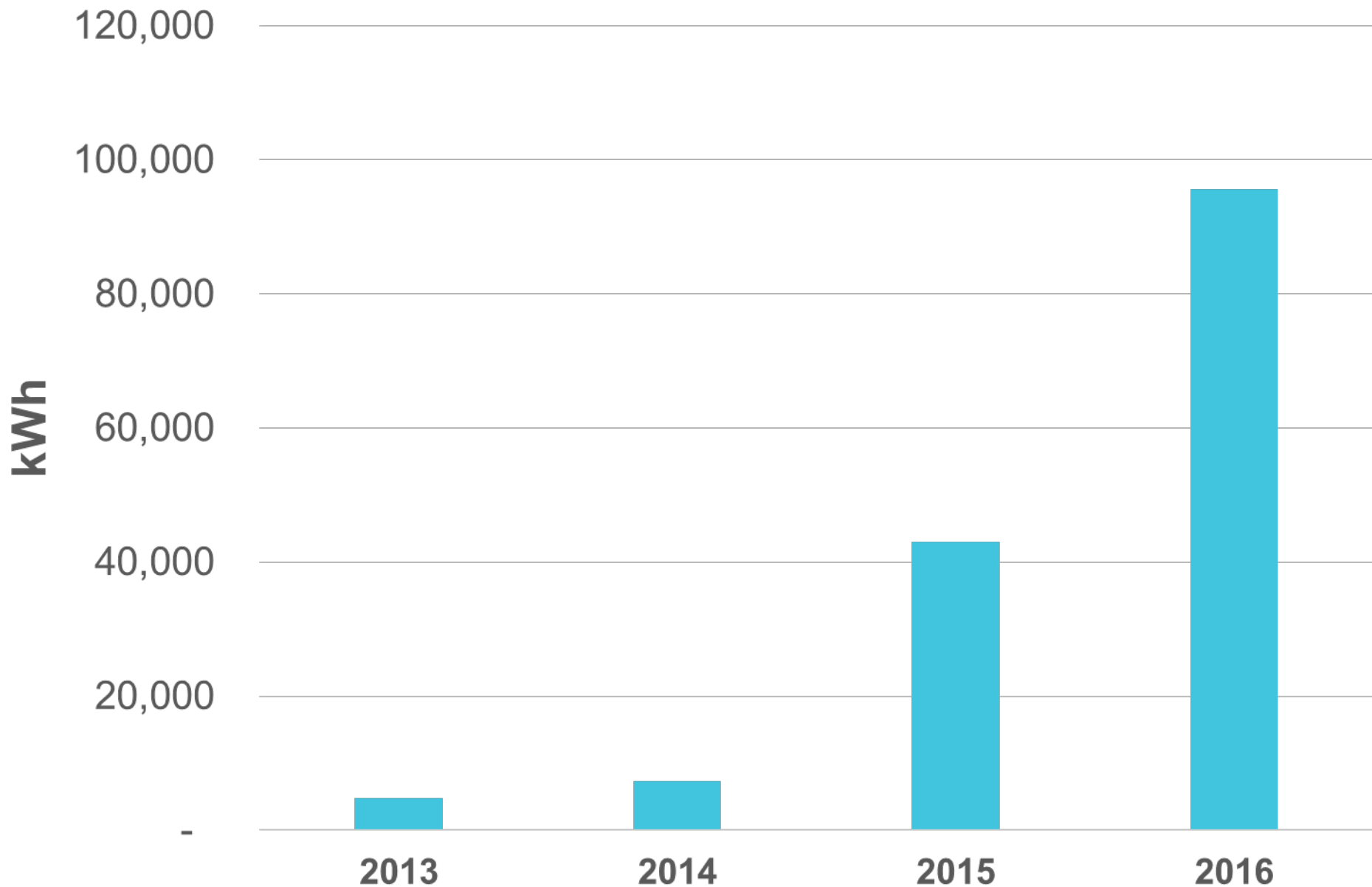


Water Heating—Electric

■ Electric resistance ■ Heat Pump Water Heater



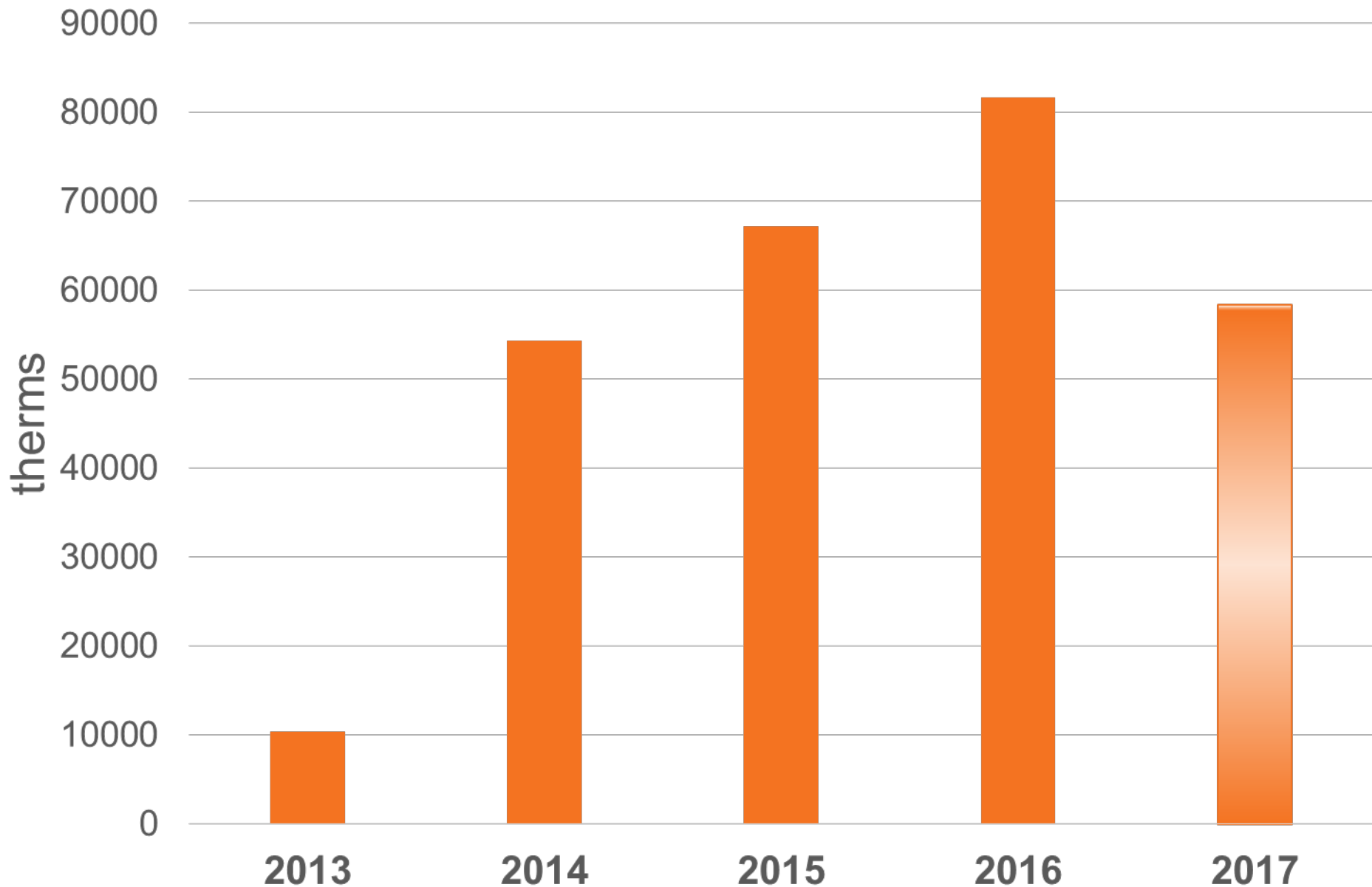
Foodservice Equipment—Electric



Prescriptive Measure Trends

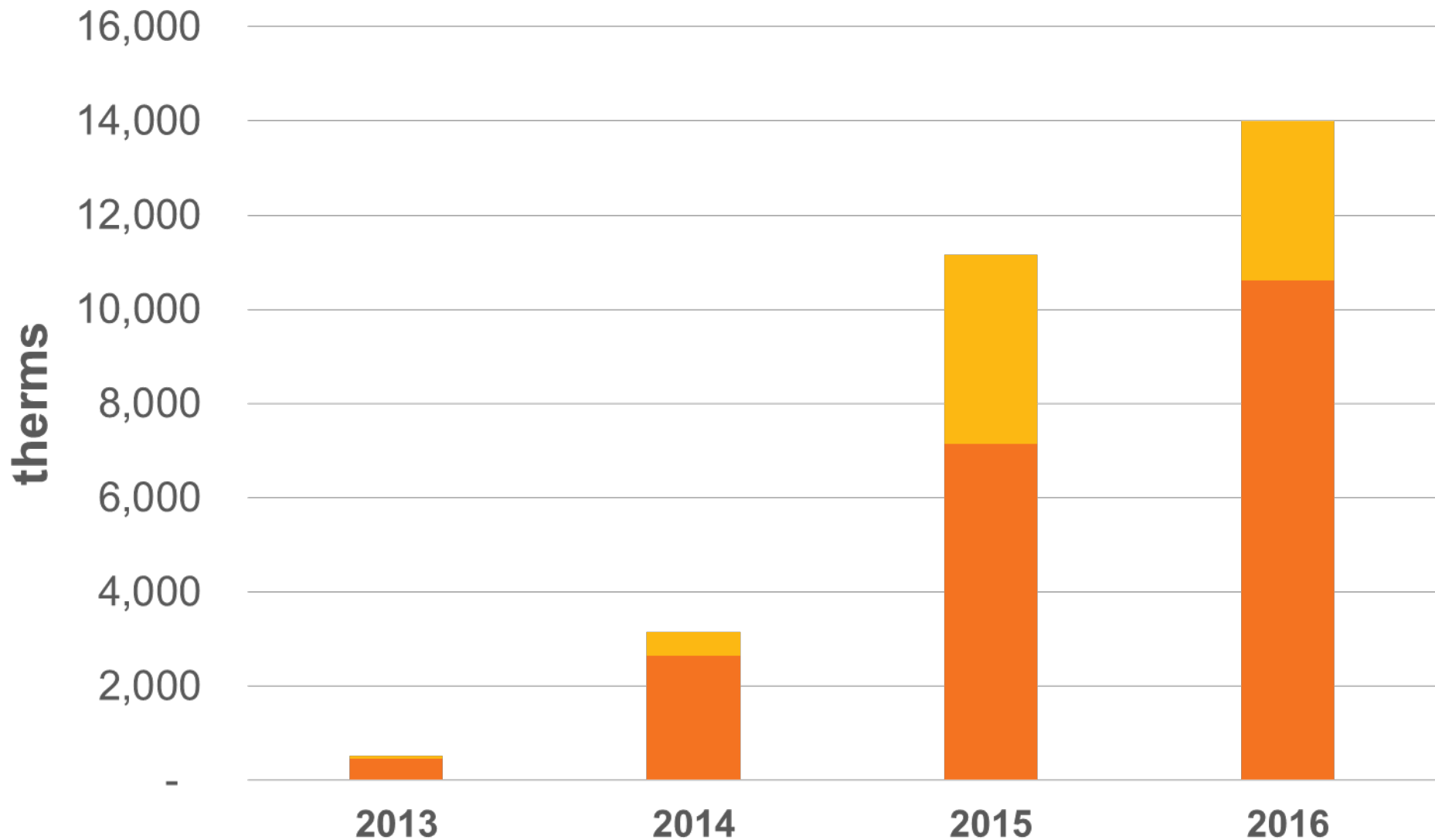
Gas Savings

All Prescriptive Savings—Gas



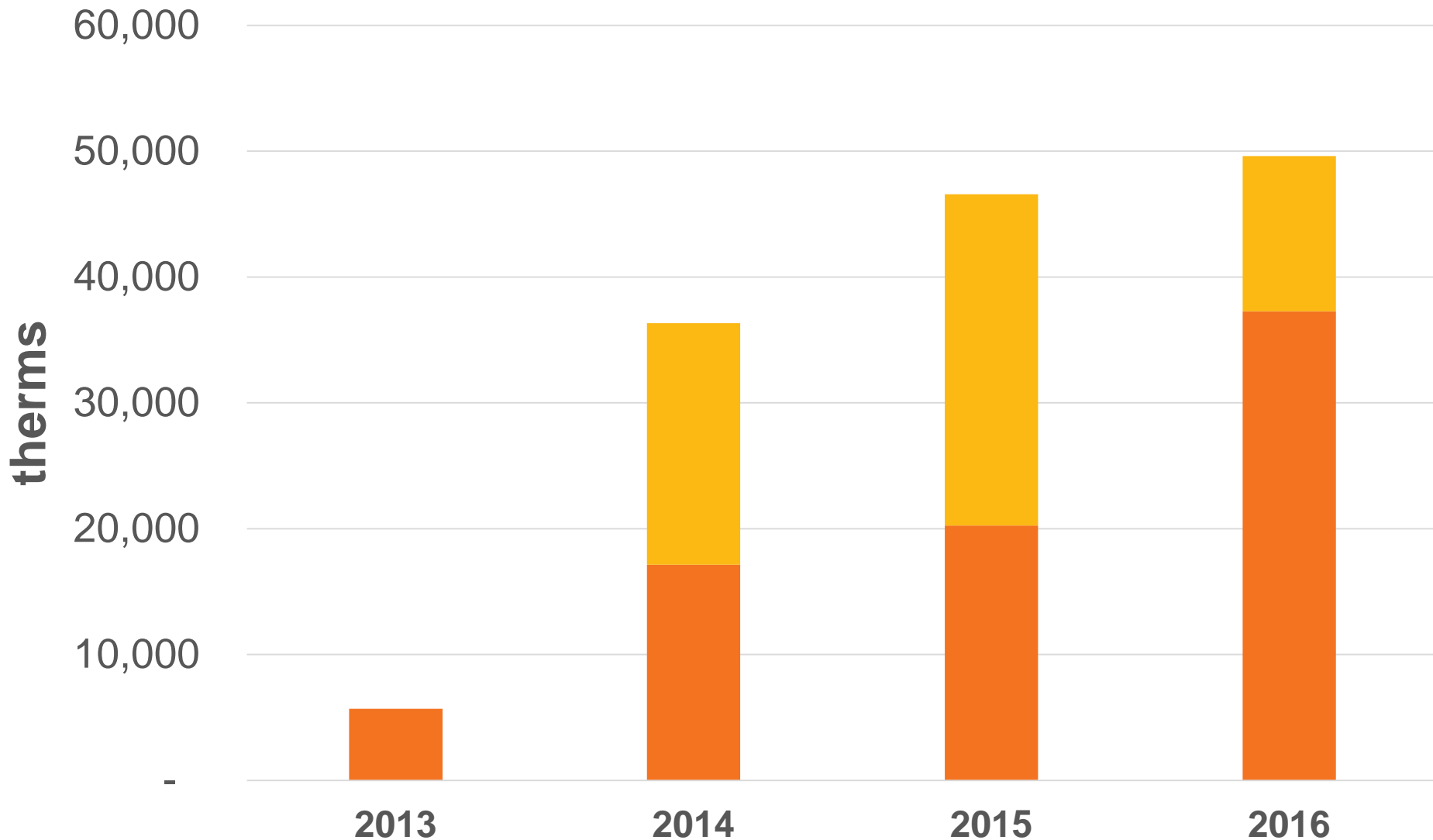
Water Heating—Gas

Tank **Tankless**

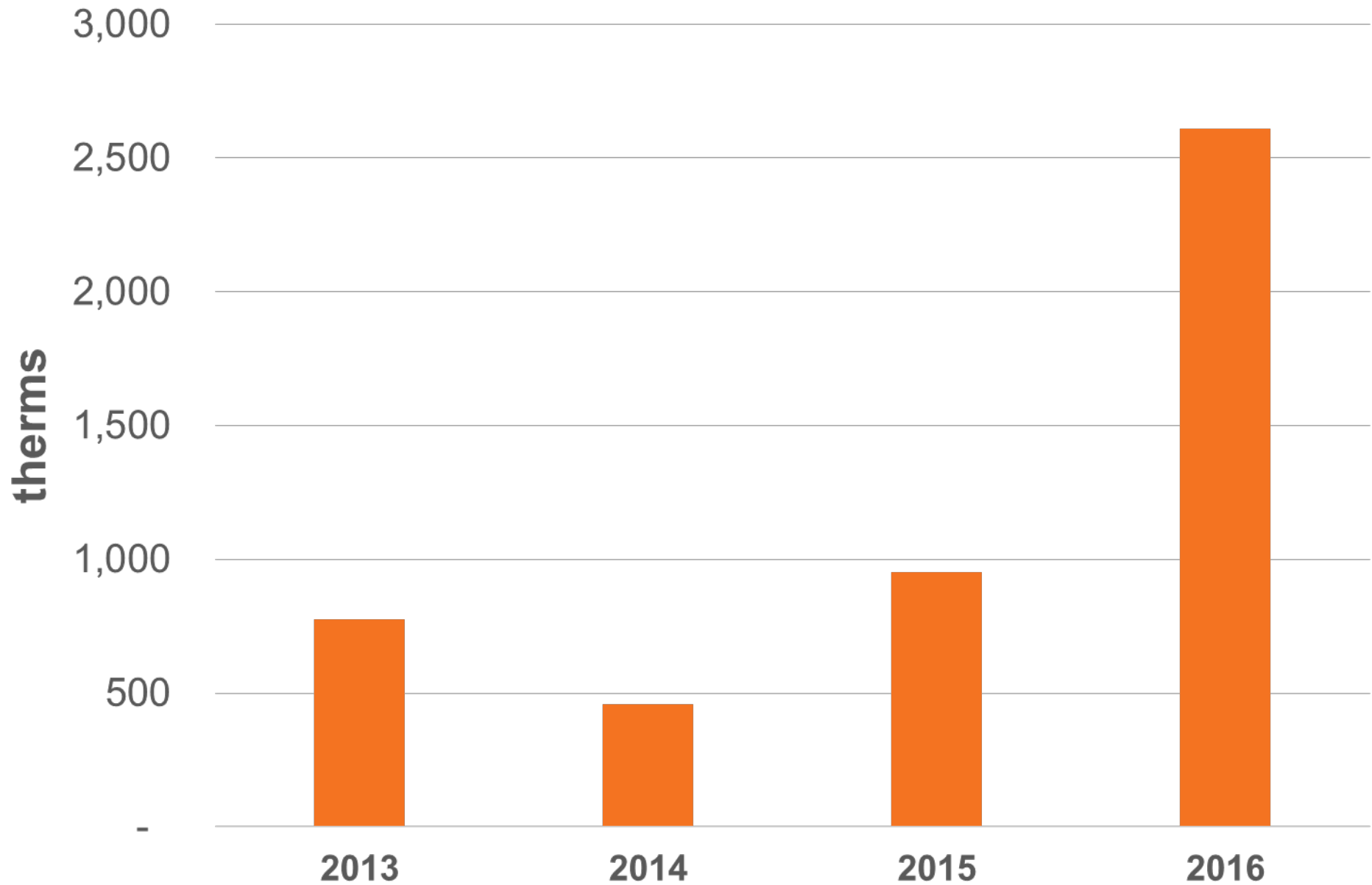


Boilers and Steam Traps—Gas

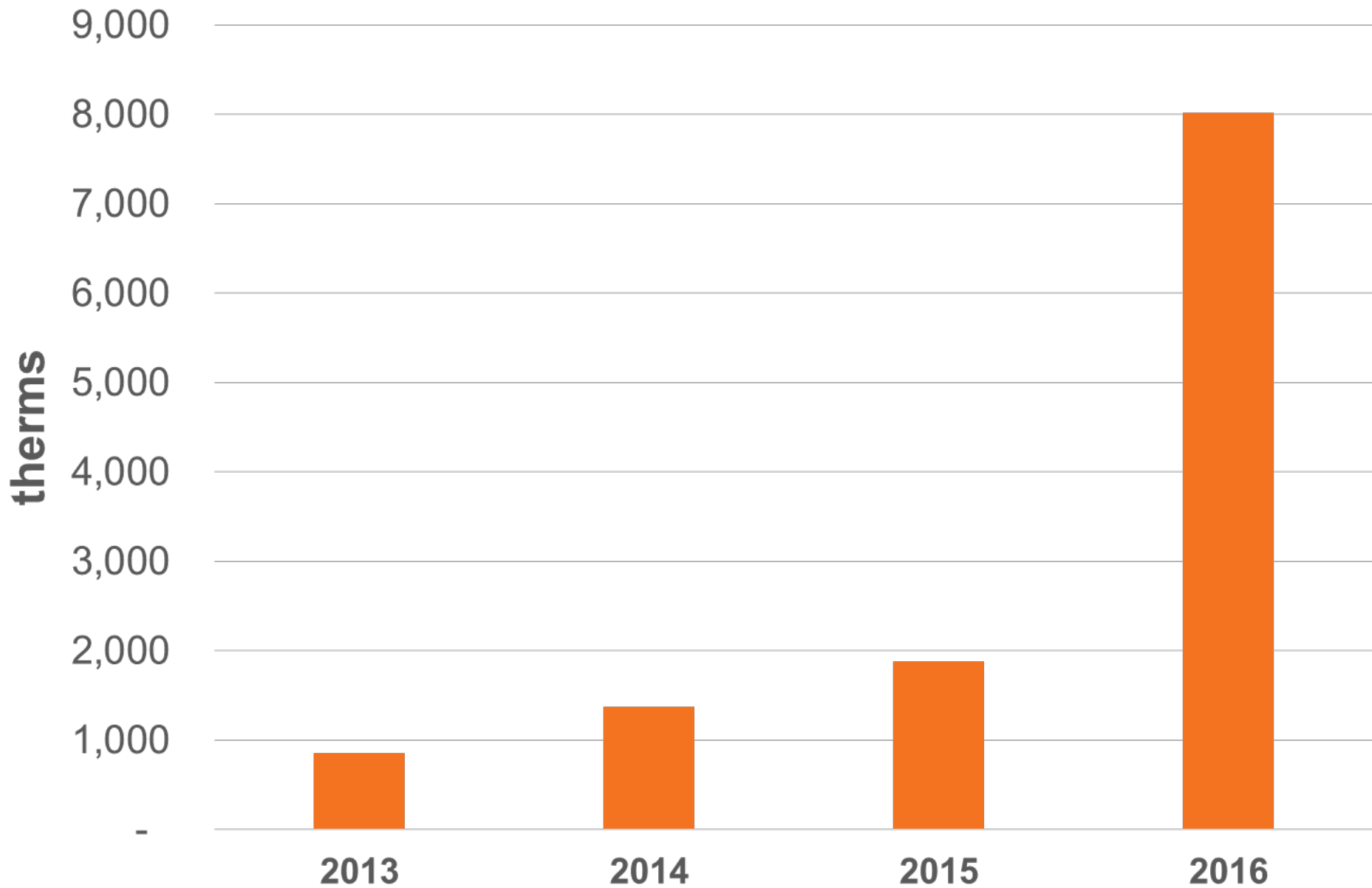
■ Boiler ■ Steam trap



Furnaces—Gas



Foodservice Equipment—Gas



2017 Direction

Key Measures for 2017

- Electric
 - Ductless heat pumps and packaged terminal heat pumps—high savings, growing in popularity
 - Weatherization—high demand, consistent opportunity
 - Water heating—strong growth area
- Gas
 - Boilers—high savings, high incentive
 - Steam traps—high savings, quick payback
 - Tankless water heaters—expanding measure, growing in popularity

On the Horizon

- <199 kBTU tankless water heaters
 - Requirements: no added storage tanks
 - (>200 kBTU measure – unchanged)
- Smart thermostats
 - Qualifying models: Nest and Ecobee
 - All property types qualify

New Hires

- Brooke Ingram
 - Business Development in Southern Oregon
 - Contact: brooke.ingram@lmco.com
 - 503-354-4491
- Dan St. Germain
 - Business Development in Central and Eastern Oregon
 - Contact: daniel.j.st.germain@lmco.com
 - 541-419-7907



Thank You

Nate Collins

Trade Ally Coordinator

Nate.Collins@Imco.com



NeighborImpact

Low-Income Weatherization Program

Ken Hanna



NeighborImpact

Supporting People, Strengthening Communities.



“Whole House” Approach

- Improve energy efficiency of home
- Detailed Energy Audit: 4 hours on-site, 3 hours at office
- Top to bottom look at home
- Ensure home has reliable heating
- Repairs to assure Health & Safety
- Work is subcontracted





Income-Based Program

200% of Federal Poverty Level by Household Size

For Use in DOE Program Year 2016

Poverty Income Guidelines -Source USDOE

Household Unit Size	Annual Income	Monthly Income
1	\$23,760	\$1,980.00
2	\$32,040	\$2,670.00
3	\$40,320	\$3,360.00
4	\$48,600	\$4,050.00
5	\$56,880	\$4,740.00
6	\$65,160	\$5,430.00
7	\$73,460	\$6,121.67
8	\$81,870	\$6,822.50
9	\$90,190	\$7,515.83
10	\$98,510	\$8209.17
11	\$106,830	\$8902.50
12	\$115,150	\$9,595.83
Each Additional Member	\$8,320	\$693.33



Funded Similar to Energy Trust

- Funds from Electric Utilities
- Funds from Cascade Natural Gas
- State and Federal Funds
- “Low-income” program funding is a separate fund from the Energy Trust Funding



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Energy Audit – Blower Door Testing



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Energy Audit – Duct Blaster Testing



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Attic Insulation - Before



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Attic Insulation - After



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Air Sealing to Reduce Air Infiltration



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Floor - Before

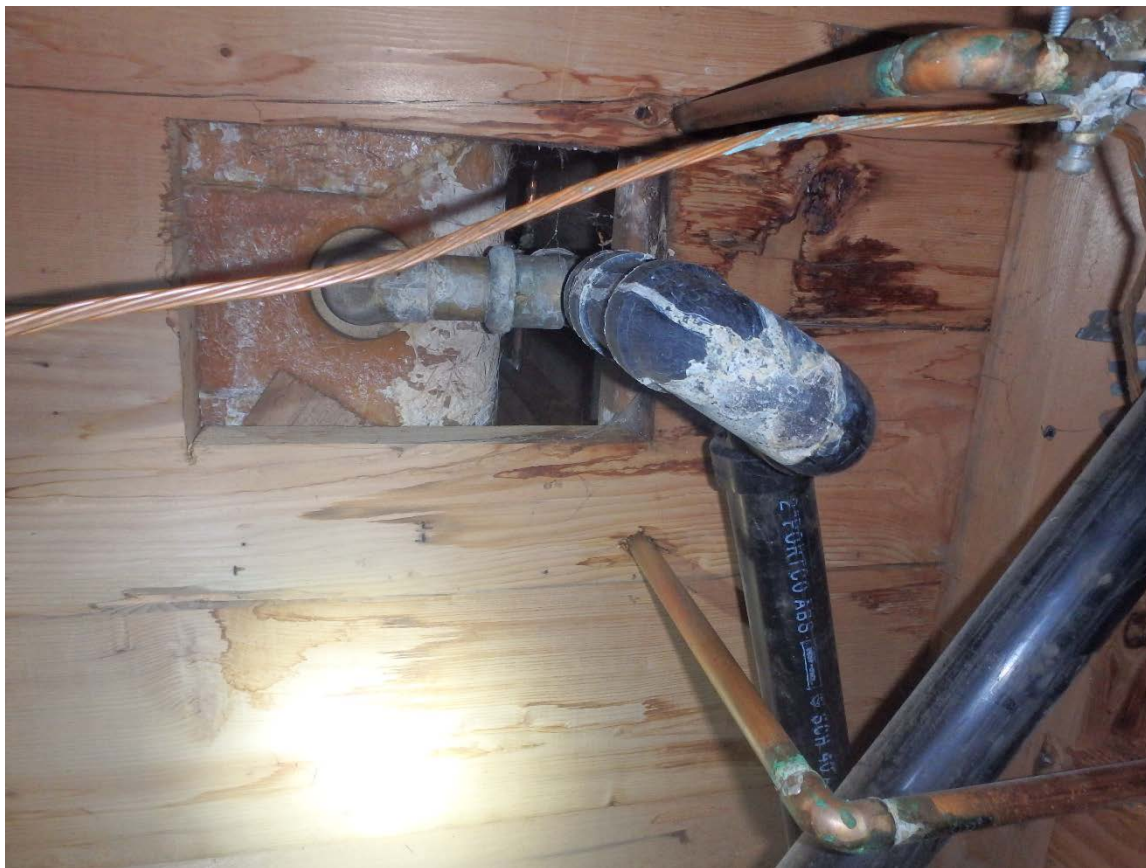


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Supporting People, Strengthening Communities.



Floor - After





Health & Safety Repair

- Plumbing leaks repaired before insulating floor
- Special funds used - dedicated for Health & Safety type repairs



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Supporting People, Strengthening Communities.



Health & Safety Repair

Before Attic Insulation is Added:

- electrician secures and covers open electrical connections
- old vermiculite is tested for asbestos



NeighborImpact

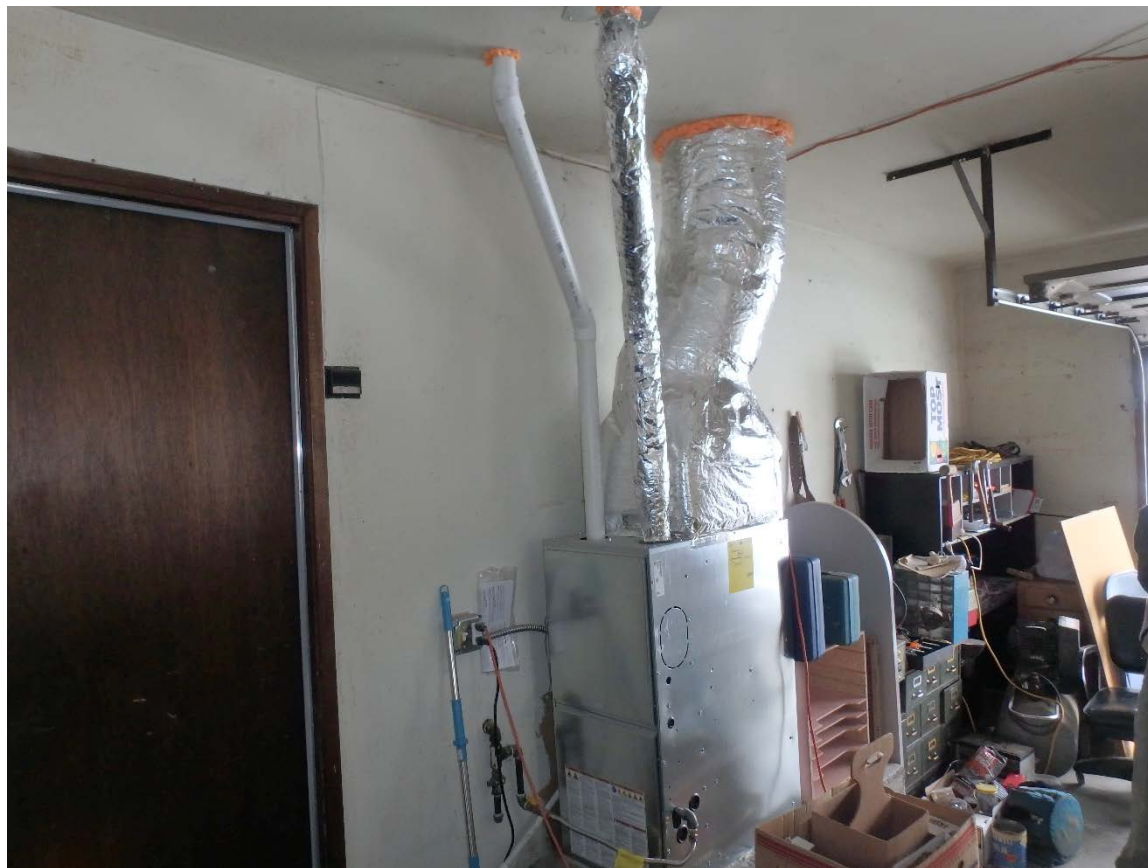
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Furnace Before



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Furnace Replacement

Heating System Service, Repair, and Replacement when necessary is an important part of the Low-Income Weatherization Program



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Supporting People, Strengthening Communities.



Mobile Homes – 75% of Projects



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Income-Based Program

200% of Federal Poverty Level by Household Size

For Use in DOE Program Year 2016

Poverty Income Guidelines -Source USDOE

Household Unit Size	Annual Income	Monthly Income
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10	\$98,510	\$8209.17
11	\$106,830	\$8902.50
12	\$115,150	\$9,595.83
Each Additional Member	\$8,320	\$693.33



Currently: \$7800 per home

Low-income program: very limited ability
to pay - no cost to client

Predicted total energy reduction: 25%

Predicted savings per year: \$599



NeighborImpact

Supporting People, Strengthening Communities.

A screenshot of a webpage from the Energy Trust. The page has a blue header section and a white footer section. The blue section contains the text "upgrades to income-qualified households. No matter your budget, we're here to help you improve your home and lower your energy costs." followed by the heading "Savings Within Reach" and a paragraph "Income-qualified homeowners can receive increased cash incentives for energy-saving home improvements." with a "Learn More" link. The white section contains the heading "Community Resources" and a paragraph "Find out what resources are available for low-income households, including utility bill payment assistance and help with weatherization improvements." with another "Learn More" link. At the bottom of the white section, there is a heading "Low-Cost and No-Cost Tips". The footer of the page shows the URL "https://www.energytrust.org/residential/income-qualified-services/" and the date "3/28/2017".

upgrades to income-qualified households. No matter your budget, we're here to help you improve your home and lower your energy costs.

Savings Within Reach

Income-qualified homeowners can receive increased cash incentives for energy-saving home improvements.

[Learn More](#)

Community Resources

Find out what resources are available for low-income households, including utility bill payment assistance and help with weatherization improvements.

[Learn More](#)

Low-Cost and No-Cost Tips

<https://www.energytrust.org/residential/income-qualified-services/> 3/28/2017

Energy Trust Website

Multiple Income Level Programs Listed



NeighborImpact
Supporting People, Strengthening Communities.



CROSS REFERRAL

- Refer “Low-Income” Clients to NeighborImpact
- NeighborImpact refer “above income” clients to Energy Trust
- Thank You!
- Ken Hanna 541-504-6554
- www.neighborimpact.org





brought to you by Energy Trust of Oregon

EPS™ is an energy performance score that measures and rates the energy consumption and carbon footprint of an existing home. The lower the score, the better—a low EPS identifies a home as energy efficient with a smaller carbon footprint and lower energy costs.

EPS is a tool to assess a home's energy consumption, cost and carbon footprint.

Estimated Monthly Energy Costs

\$69*

Estimated average annual energy costs:

\$824*

Estimated average energy costs per month: Electric \$28, Natural gas \$43

Location:
100 N Sample St
Portland, OR 972xx

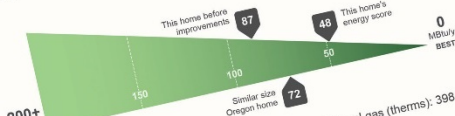
YEAR BUILT: 1962
SQ. FOOTAGE: 890
EPS ISSUE DATE: 04-01-2013

Utilities:
Gas: NW Natural
Electric: Portland General Electric

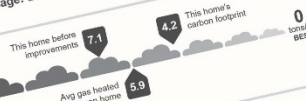
ENERGY CONSUMPTION: Measured in millions of Btu per year (MBtu/yr).
One million Btu = 293 kWh or 10 therms.

Energy Score

48



Estimated average energy usage: Electric (kWh): 4,378*, Natural gas (therms): 398



Home Energy Scoring Updates

Marshall Johnson



Agenda

- Energy Trust EPS Update
- City of Portland Home Energy Disclosure Ordinance Overview

Energy Trust's Energy Performance Scores

- EPS for Existing Homes
 - After stakeholder input and review, EPS for Existing Homes will no longer be offered as of July
 - Earth Advantage will introduce and facilitate the Department of Energy's Home Energy Score using CakeSystems software
 - Energy Trust will work with CakeSystems and the Oregon Department of Energy to ensure Home Energy Score sheets are HB 2801 compliant
- EPS for New Homes
 - Remains unchanged and available for newly constructed above-code homes



City of Portland Home Energy Score Ordinance

- The City of Portland recently adopted a policy to require home energy scores on single-family homes at time of sale
- Policy effective January 1, 2018

Background to Home Energy Score Ordinance

- A companion to the Portland's Commercial Energy Use Disclosure Policy
- Primary approach to produce changes in the residential sector for the purpose of meeting the city's Climate Action Plan



Requirements

The City of Portland's policy requires sellers of single-family homes to:

1. Obtain a home energy performance report that includes a home energy score
2. Disclose the information from the report to the City of Portland at or before the time that the home is listed publicly for sale on the market



U.S. DOE—Home Energy Score



Home Energy Score

Score

Home Facts

Recommendations

ADDRESS 12345 Honeysuckle Lane
Smithville, AR 72466

HOME SIZE 1,800 square feet

YEAR BUILT 1970

AIR CONDITIONING Yes

Your home's
current score **2**

Score with
improvements

6

Estimated
annual
savings

\$541

Uses
more
energy

1

2

3

4

5

6

7

8

9

10

Uses
less
energy

Learn more at homeenergyscore.gov



The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The Score reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

OFFICIAL ASSESSMENT | Assessor ID 101019 | Assessed on Nov 20, 2015 | Label ID# 99011 | v2015

- Online tool; can be linked to other software tools
- Takes an hour or less to complete
- Can be generated by utilities, contractors, home inspectors or others
- Automated and no reporting requirements
- Over 60,000 scores

Construction and Use Type

- **Single-family homes** include
 - Existing, detached single-family homes
 - Existing attached single-family structures like townhomes
 - Newly constructed homes that are either detached or attached side-by-side
- The policy will apply to attached single family homes that are laid out side-by-side and **not stacked**
- Energy modeling software can provide individual scores for attached homes only when they are **side-by-side** and not stacked



Rentals and ADUs

- Initially, the requirement will apply only to owner-occupied units
- Requirements for single-family rental homes will be phased in over time
- Detached accessory dwelling units (ADUs) are not covered by the proposed requirement



Waiver for Energy Trust EPS-Rated New Homes

- Newly-built homes receiving an Energy Trust EPS are given a waiver from complying to exact rules of the ordinance
 - EPS to be temporarily considered a compliant score
 - Waiver process is in development
 - Energy Trust will help develop process with city to ensure minimal impact on EPS verifiers and builders



City of Portland Implementation Partners

Earth Advantage has been selected to support the City of Portland in implementing the Home Energy Score Ordinance, and will:

- Support prospective assessors with onboarding, training and mentoring (Home Performance Guild will assist)
- Oversee all required quality assurance activities for assessors issuing scores
- Provide information and training options to the real estate industry
- Collaborate with Home Performance Guild and Enhabit on the city's implementation plan

Portland Home Energy Scoring

For more information, visit the City of Portland's Home Energy Score Policy web page, or read the adopted code language:

- <https://www.portlandoregon.gov/bps/71421>
- <http://www.portlandoregon.gov/bps/article/620857>





Next Steps

- Stakeholder group formed to prepare market
- HB 2801 approval process
- Onboarding of more Home Energy Assessors to accommodate demand (business opportunity for new homes verifiers)
- Study to determine HES/EPS compatibility
- Automatic RMLS data transfer
- Explore seamless process to create Home Energy Scores with REM/Rate inputs



Questions?



Thank You

Marshall Johnson
Sr. Residential Program Manager

Marshall.johnson@energytrust.org



Existing Buildings 2017 Updates (Non-Lighting)

April, 2017



Existing Buildings

- About 472 trade allies
- 289 non-lighting
- 259 Oregon, 19 Washington, 7 from other states
- 186 HVAC (147 HVAC controls, 103 boilers), 58 insulation, 19 grocery, 106 tankless water heater

Custom Insight

Year	Site Evaluations	Technical Analysis Studies	Estimates	Offers
2014	27	248	368	257
2015	34	206	425	318
2016	41	216	292	251

Snapshot 2016

	Incentives	kWh	Therms	# Projects	# Measures
Existing Buildings - Custom	\$8,700,781	24,732,628	861,233	247	410 (19)
Existing Buildings - Standard	\$3,167,207	9,184,010	314,621	411	659 (92)
Grand Total	\$11,867,988	33,916,638	1,175,854	555	1069 (111)



What's new

- Brochures – Oregon and Washington
- Custom incentives
- Standard incentives and measure changes

Custom incentives

Gas:

\$3.00/therm

Capped at 75%

Electric:

\$0.22/kWh

Capped at 60%

Dual-fuel:

\$3.00/therm

\$0.22/kWh

Capped at 65%



Standard

- Oregon and Washington
 - New measures
 - Discontinued
 - Measure and incentive changes



New measures

Oregon

- Emergency generator block heaters
- Inverter duty welders
- T8 to LED retrofit in grocery cases



Discontinued

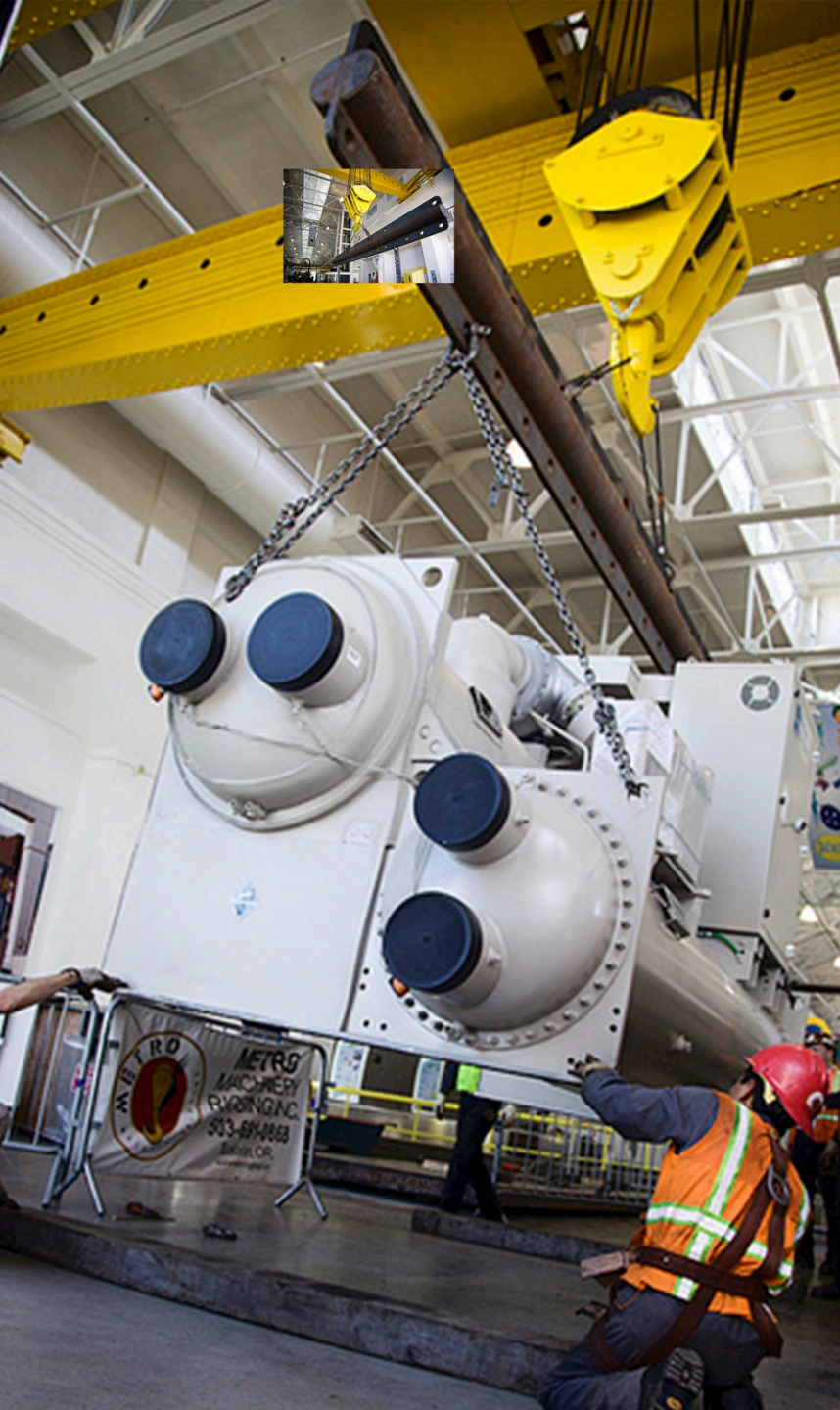
- Air to air heat pumps
- LED case lighting in new cases
- Residential fridges and freezers in office setting
- PC power management

Measure and incentive changes

Oregon

- Water heating
- Grocery
- Server room mini-split air conditioner
- Showerheads and wands
- Laundry washers





With you all the way

- Incentives
 - Strengthened
- Brochures
 - Revised
- Incentive applications
 - Improved
- Website
 - Refreshed
- Measures
 - Changed, added

Thank You

Alex Snook

Trade Ally Coordinator, Existing Buildings

503.407.7286

Alex.snook@icfi.com





Thank You

Please join us for the first
breakout sessions at 10:30 a.m.