Energy Trust of Oregon
Residential Sector
2015-2019 Strategic Plan

EnergyTrust of Oregon

I. Residential Sector Summary

Energy Trust of Oregon's Residential Sector provides energy-efficiency services and cash incentives for newly built and existing single family site-built homes (including rental properties) and manufactured homes. The sector's primary activities are accomplished through three program management contracts: CLEAResult for Existing Homes, CLEAResult for New Homes, and Ecova for Products. Energy Trust staff also directly manage other sector initiatives including – financing initiatives, trade ally initiatives, collaboration with market actors, behavior savings and pilot efforts.

Sector staff oversee program management contracts, drive program strategy and design, manage relationships with stakeholders and provide strategic direction for marketing and outreach activities implemented by contractors.

Energy savings delivered by the Residential Sector have increased significantly since 2009. After an aggressive increase in savings goals and funding in 2010, electric savings have doubled through 2014 while gas savings have achieved 60% growth since 2009.

The number of measures the Residential Sector relies on for savings is declining, partly due to Energy Trust's success in serving customers with an entry point of free offers, along with market and code transformation, resulting in a number of consumer incentives being retired. The energy savings potential in the Residential Sector is still significant with new and emerging technologies and practices, but the cost of acquiring these savings may increase. With resource opportunities for electric and gas savings not overlapping as easily as in the past, along with gas prices at historic lows, the sector will need to develop and manage more measures to reach savings goals. With cost-effectiveness parameters particularly related to more traditional program delivery approaches and measures, we will need to change how we implement and communicate offers in these markets.

Key challenges to reaching program goals in the next five years will be:

- Expanding program offers to reach underserved customers and geographic areas while meeting cost-effectiveness requirements
- Generating cost-effective retrofit savings in the face of lower gas and electric costs that reduce savings opportunities
- Identifying new savings opportunities, adapting legacy program designs to meet new opportunities and to reduce cost of delivery
- Maintaining/increasing customer engagement in an evolving media and communications environment

II. Sector Vision and Leadership Statements

To provide long-term vision, guidance, and consistency to the Residential Sector, the following principles have been established in accordance with the organization's 2015-2019 Strategic Plan:

Vision Statement – Residential customers living in Energy Trust service territories will modify the way they use and produce energy to reduce home energy use, lower energy costs and to experience comfortable and healthy living environments.

Mission Statement – Deliver consumer and market energy solutions resulting in individual homeowners and communities reducing energy use and investing in clean, renewable energy.

Leadership Position – Energy Trust is an influential and valued leader demonstrating effective programs that transform markets which impact the built environment and support energy-saving efforts within our service territory while receiving regional and national recognition.

Measures of Success

Residential customers will increasingly utilize Energy Trust residential programs to achieve greater energy savings. This will enable Energy Trust to work with participating utilities in meeting the IRP goals. Measureable activities that will support success include:

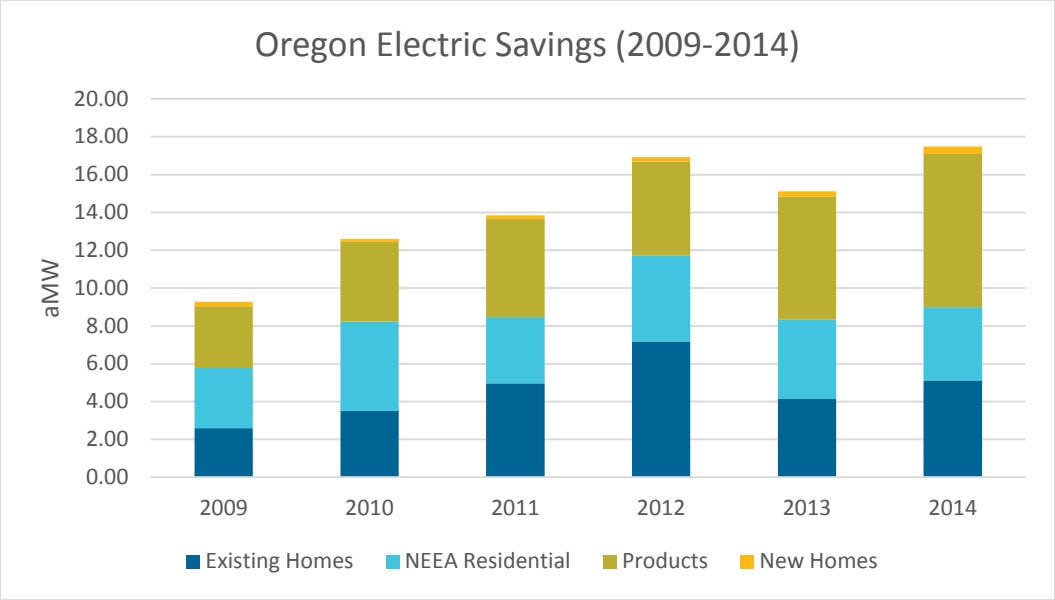
- Expanding participation and influence to customer groups and geographic areas with lower levels of program participation
- Replenishing energy efficiency sources of savings with new measures and strategies to expand participation and to engage customers seeking to save energy at home - as a new participant or re-engaging as a past participant
- Improving program design and services to gain efficiencies that control program delivery costs

III. Sector Level Savings

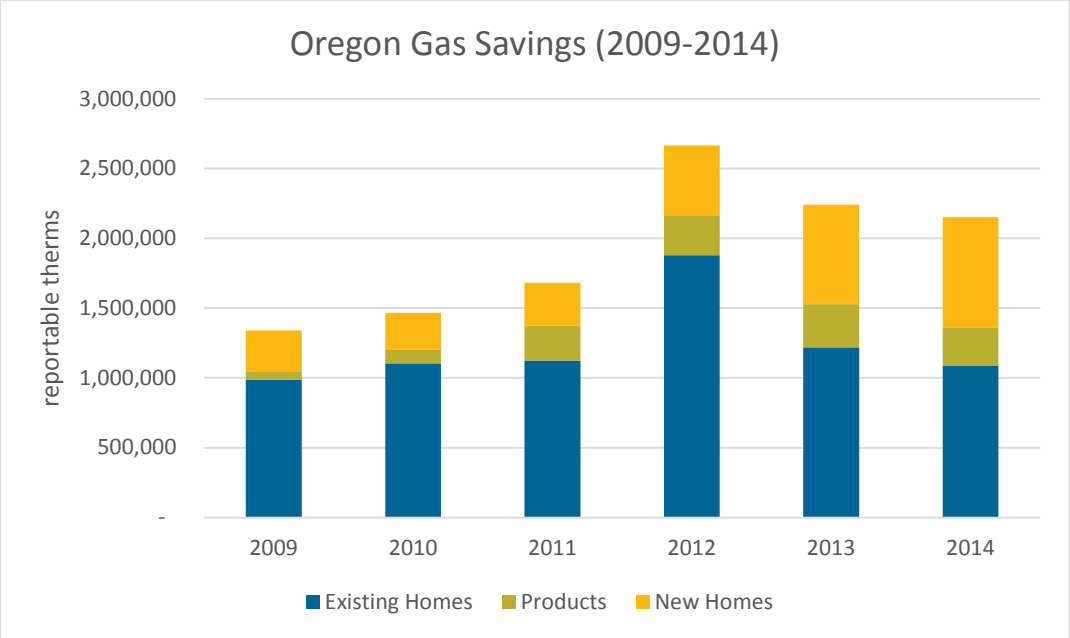
History

Savings in the Residential Sector have grown rapidly in the last five years. 2009 to 2014 electric savings for the sector have more than doubled from just over 6 aMW in 2009 to 13.6 aMW in 2014. Lighting has been a reliable source of program savings with a large ramp up in 2012 as we provided more kits to participants and experienced strong retail sales of lighting, helped along with the increased availability of LEDs.

During this same time period, NEEA has contributed between 3.2 aMW – 5.6 aMW annually. NEEA savings vary from year to year based on the success of their individual initiatives. Including NEEA, the resulting portfolio has grown from just over 9 aMW and peaking at 19.2 aMW in 2014. The 2015 budget forecasts 13.6 aMW of electric savings for Energy Trust programs and an additional 3.7 aMW from NEEA activities.

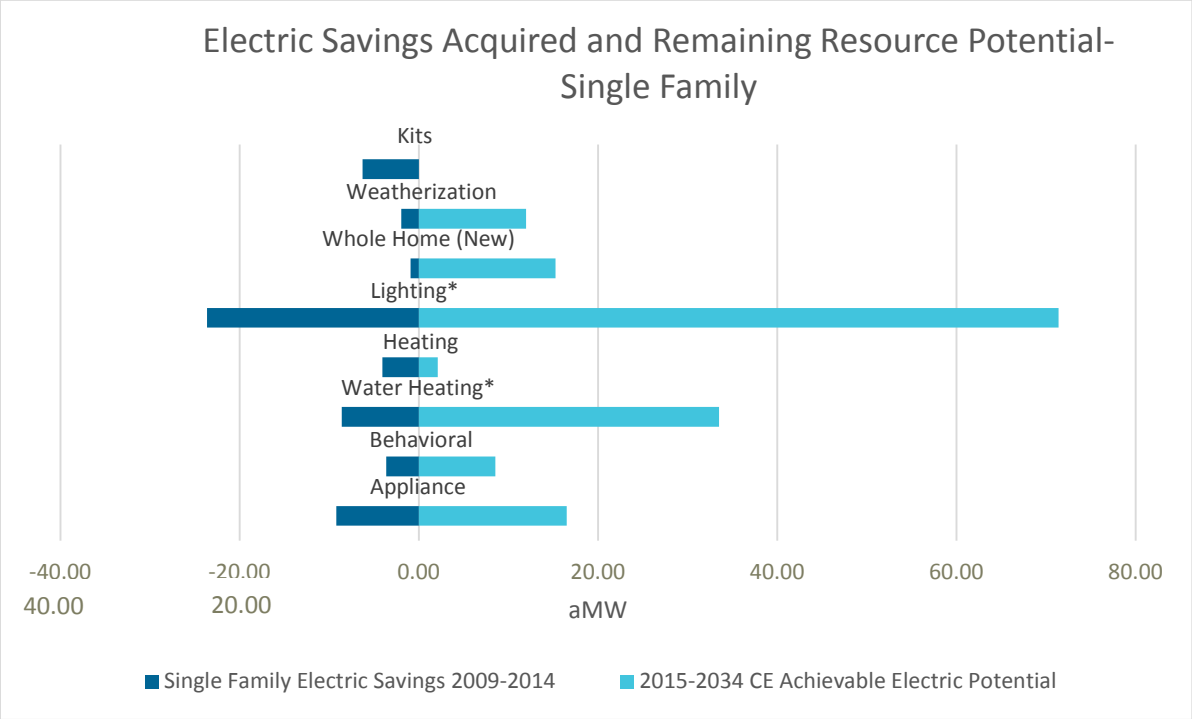


Natural gas savings doubled between 2009 and 2012, from 1.34 MMtherms to 2.66 MMtherms. This trend plateaued in 2013 and 2014 at just over 2.1 MMtherms. The 2015 budget forecasts natural gas savings at 2.1 MMtherms.

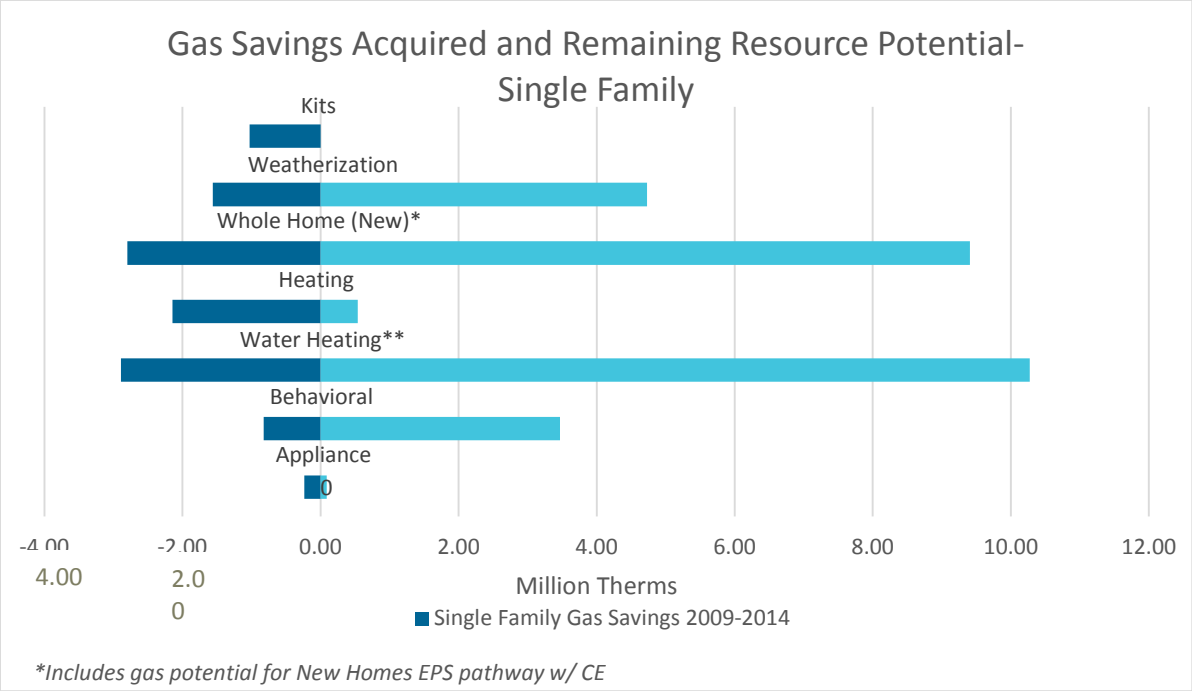


Residential Savings and Resource Potential

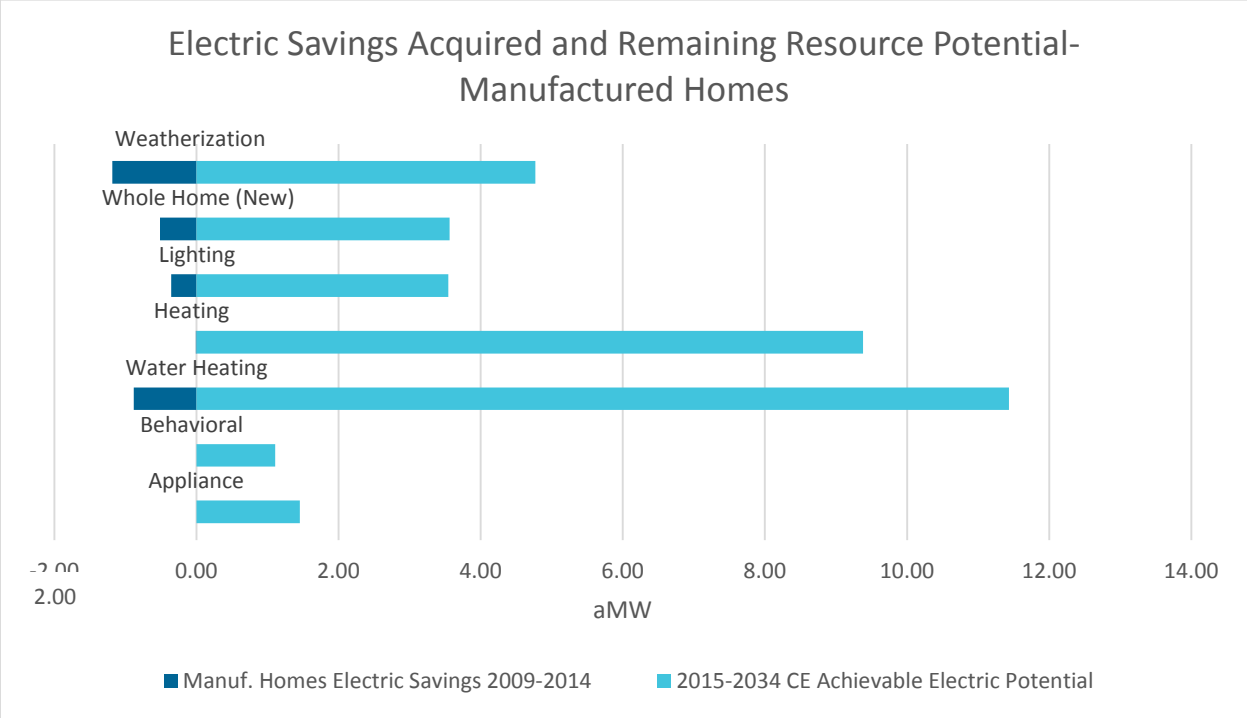
The charts below indicate overall savings achieved between 2009 and 2014, as well as resource potential for the next 20 years, distinguished between single family site-built and manufactured homes.

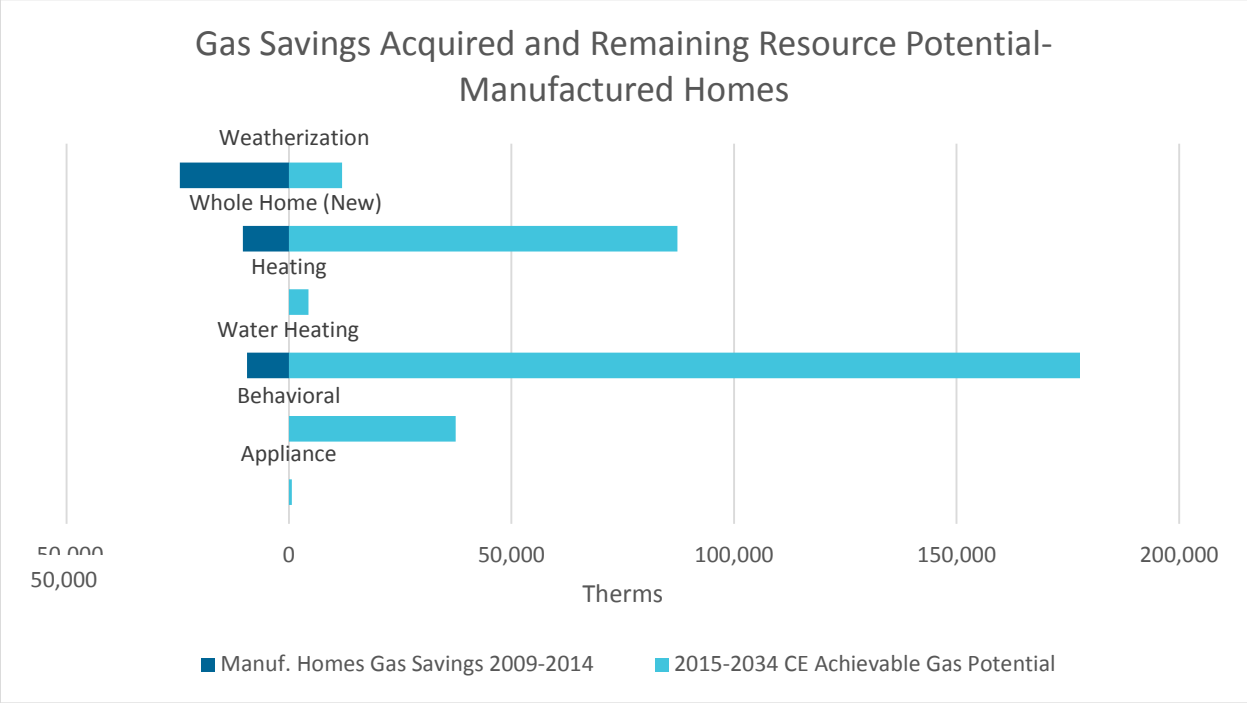


*Kit savings potential is contained in Lighting and Water Heating bars.



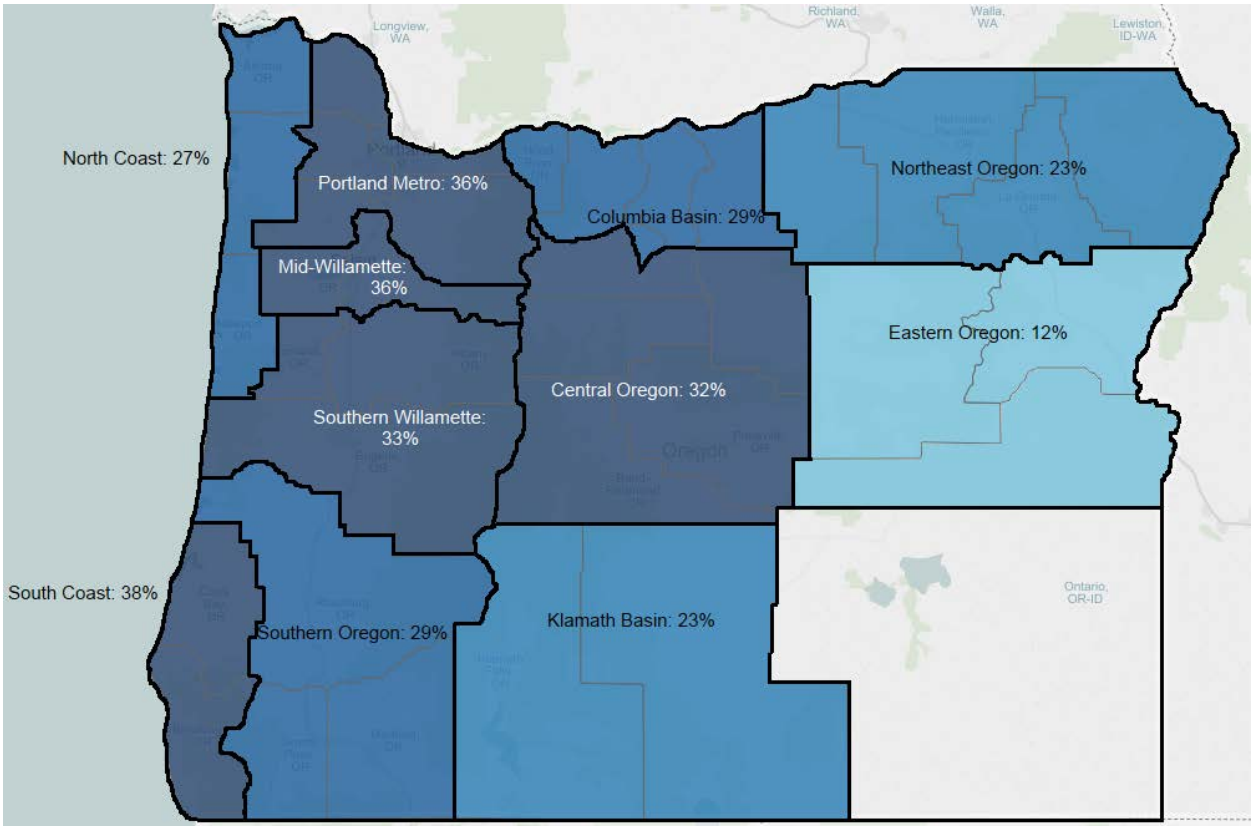
**Kit savings potential is contained in Water Heating bar.


Electric Savings Acquired and Remaining Resource Potential-Manufactured Homes
Weatherization
Whole Home (New)
Lighting
Heating
Water Heating
Behavioral
Appliance
-2.00
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
aMW
Manuf. Homes Electric Savings 2009-2014
2015-2034 CE Achievable Electric Potential


Gas Savings Acquired and Remaining Resource Potential-Manufactured Homes
Weatherization
Whole Home (New)
Heating
Water Heating
Behavioral
Appliance
-50,000
0
50,000
100,000
150,000
200,000
Therms
Manuf. Homes Gas Savings 2009-2014
2015-2034 CE Achievable Gas Potential

Engaging Customers

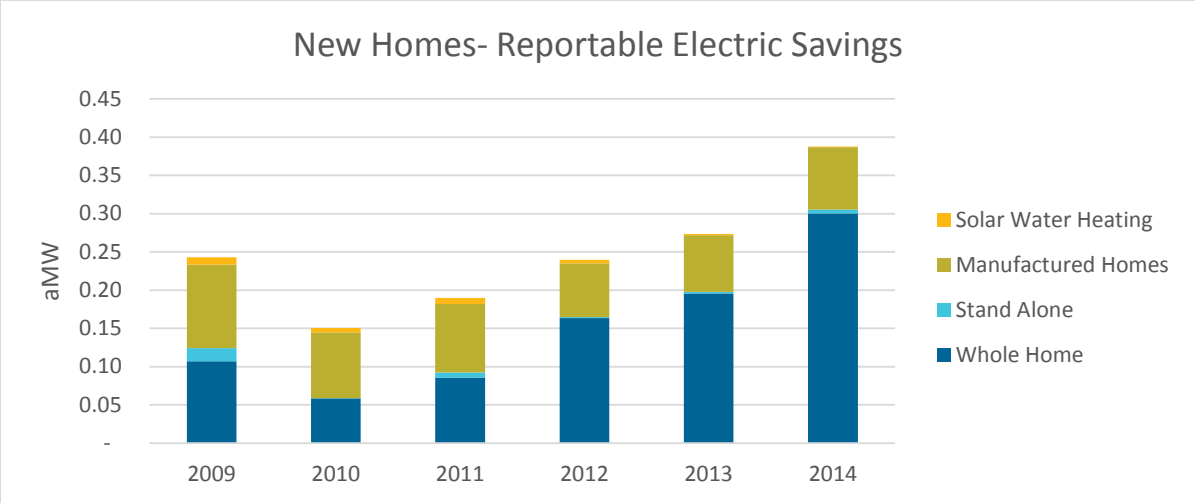
The Residential Sector has engaged nearly 440,000 households across all regions since 2009, which equates to 34% of all eligible households. In looking at penetration by region, there are only 3 out of 11 regions where the number of sites served is less than 25% and only one region that falls below 20%. About 33% of our electric savings have come from rural areas since 2009 while 14% of gas savings have come from rural areas. The savings distribution across our portfolio has varied by program within the sector.



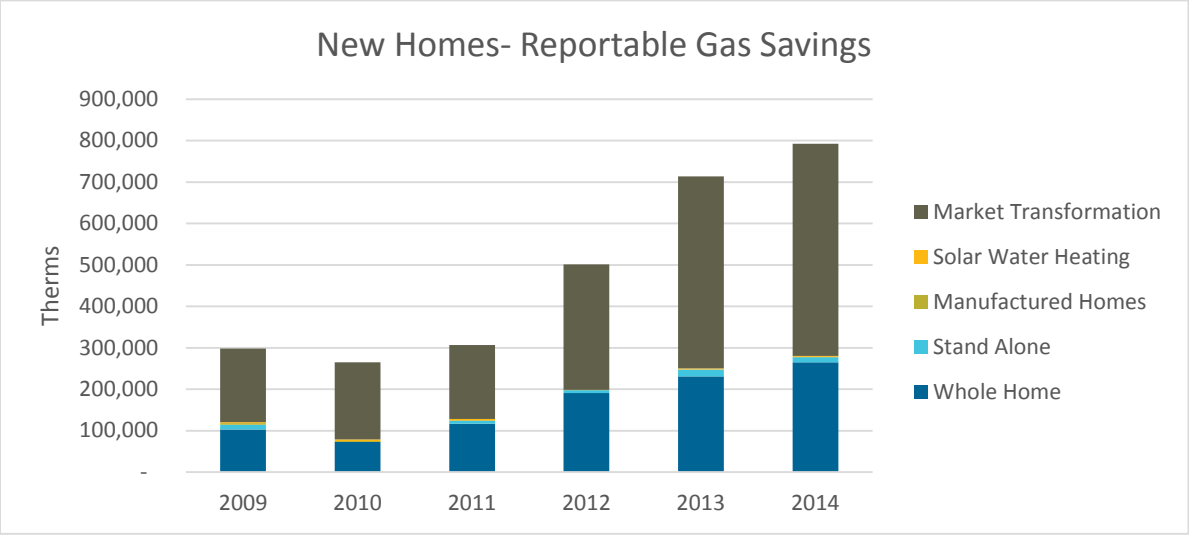
New Homes

The New Homes program plays an important role in advancing new residential building techniques, advancing building codes, and introducing new residential efficiency technologies. The program offers a whole-house approach through EPS™, an energy performance scoring tool, as well as measures which can be implemented either as a package or individually. From 2009 to 2014, the market share of EPS homes grew from 18% to 34%.

Since 2009 the electric savings for the New Homes program has grown from 0.24 aMW to 0.39 aMW, an increase of 63%. Market transformation savings associated with our participation in this market are included in NEEA's savings. In 2014, NEEA claimed 1.1 aMW in market transformation savings from accelerating new code adoption.



On the natural gas side, savings have also significantly increased. Savings related to new homes built beyond code increased over 150% from 2009 to 2014. In addition, Energy Trust is able to claim the market transformation savings related to advancing new codes (savings that NEEA claims on our behalf on the electric side). These savings also increased by over 150%. While this is a small program, the natural gas savings represent over a third of our total gas savings in 2014.



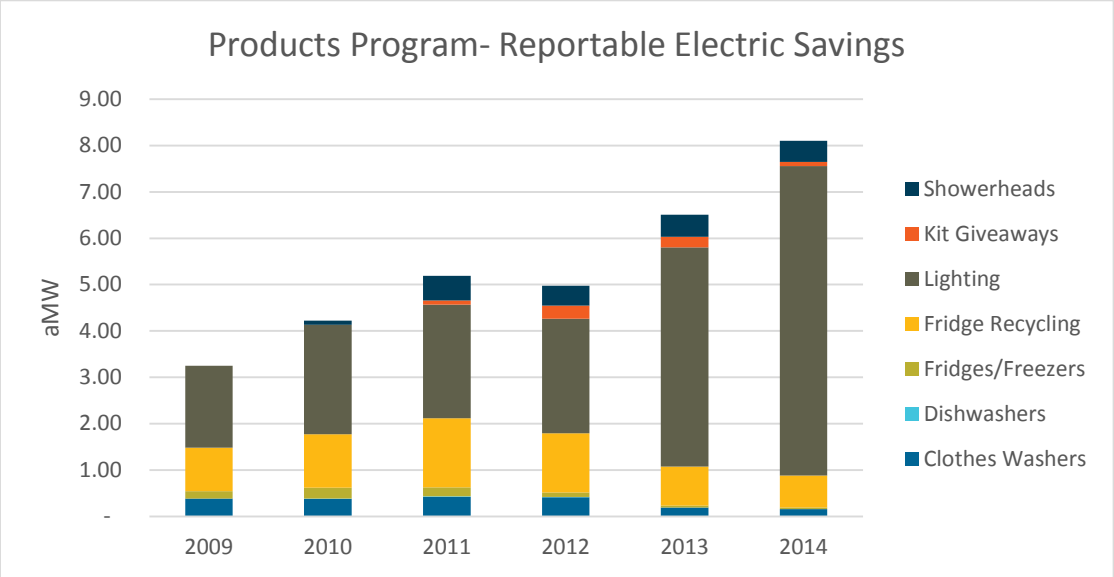
Products

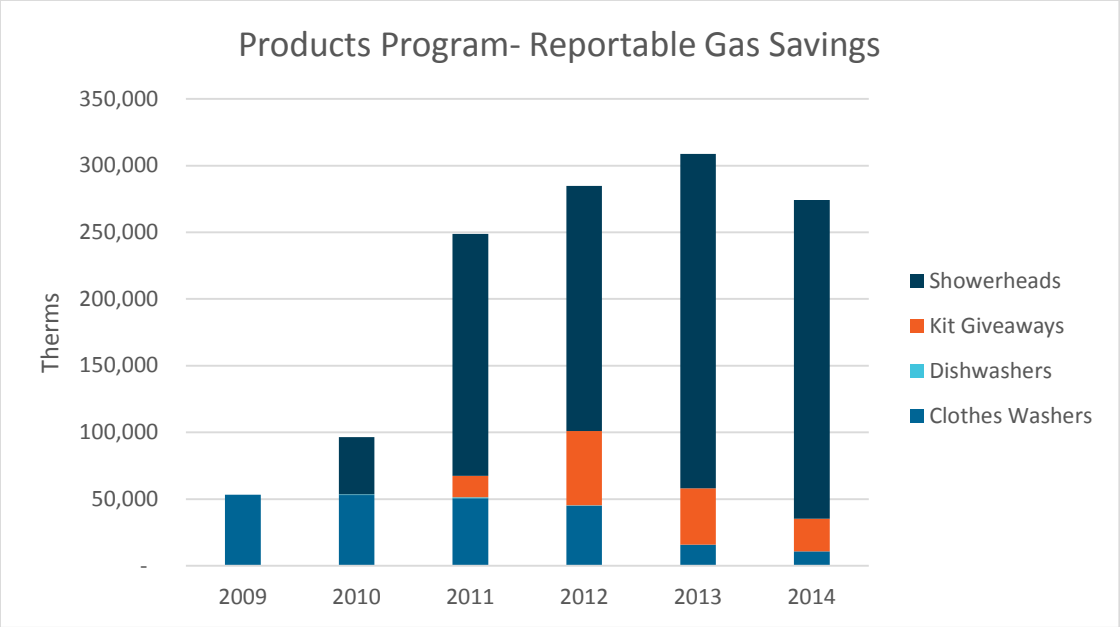
As with the New Homes program, the Products program also contributed positively to the growth in electric savings over the last five years. The Products program more than doubled electric savings between 2009 and 2014. The key growth driver was lighting, both CFLs and LEDs. The increase in savings

between 2009 and 2014 for lighting products was over 350%. Currently, savings from lighting measures represent our biggest individual savings category by a large margin.

Savings from showerheads represent the largest share of retail gas efficiency. The Products Program has worked with manufacturers and retailers to provide cost-competitive energy and water efficient options to consumers, across a range of product categories and flow-rates including showerheads and shower wands. Energy Trust anticipates continued engagement with manufacturers and retailers, along with strategic partnership with water management agencies to drive further market uptake.

Not all products have continued to expand. Savings potential from appliance measures has declined due to increases in federal energy efficiency standards and increased market baselines. Dishwasher measures were discontinued in 2009 due to high common market baseline, leaving few models available for sale to consumers. Various refrigerators models were also removed as efficiency standards increased in 2014, leaving a much smaller percent of existing fridge stock qualifying for incentives under the ENERGY STAR® specification. Savings from clothes washers have trended down, with a continued decline expected over the next few years, although the program anticipates progress and increased uptake of high-efficiency clothes dryers.





While the New Manufactured Homes track was successful in expanding savings over the last five years, sale of efficient new manufactured homes has remained relatively static. The 2008 economic downturn reduced the number of manufactured home builders and the subsequent recovery has been slow, with fewer manufactured home purchases and a decline in the number of sales lots promoting efficient manufactured homes.

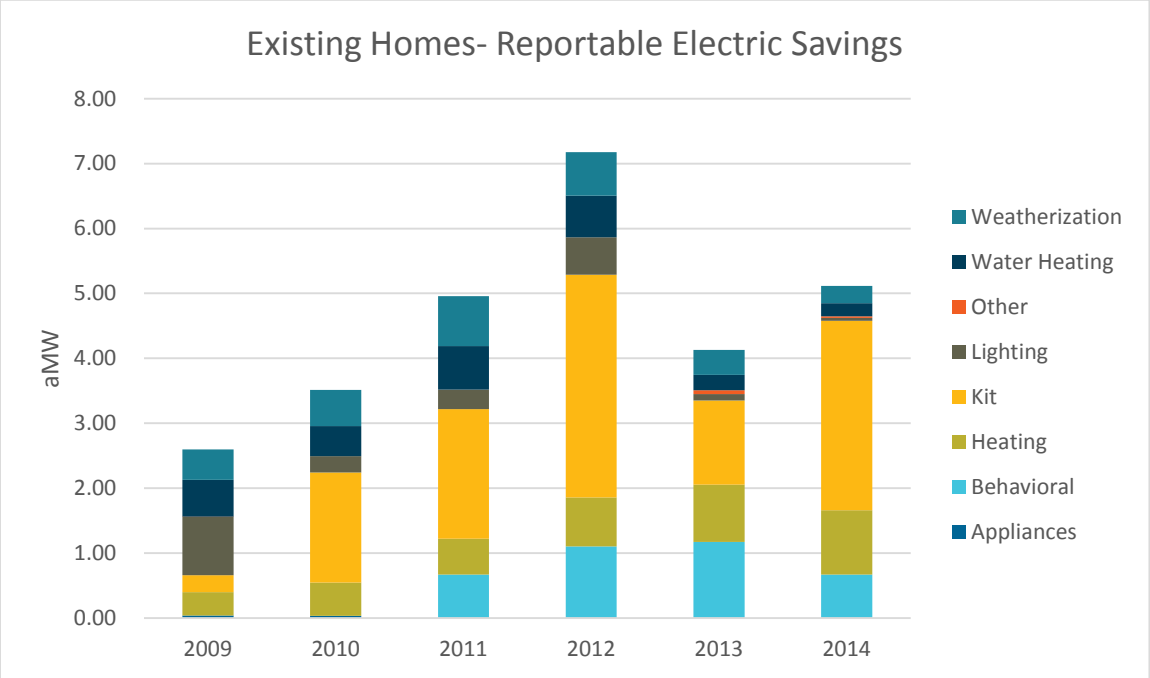
Existing Homes

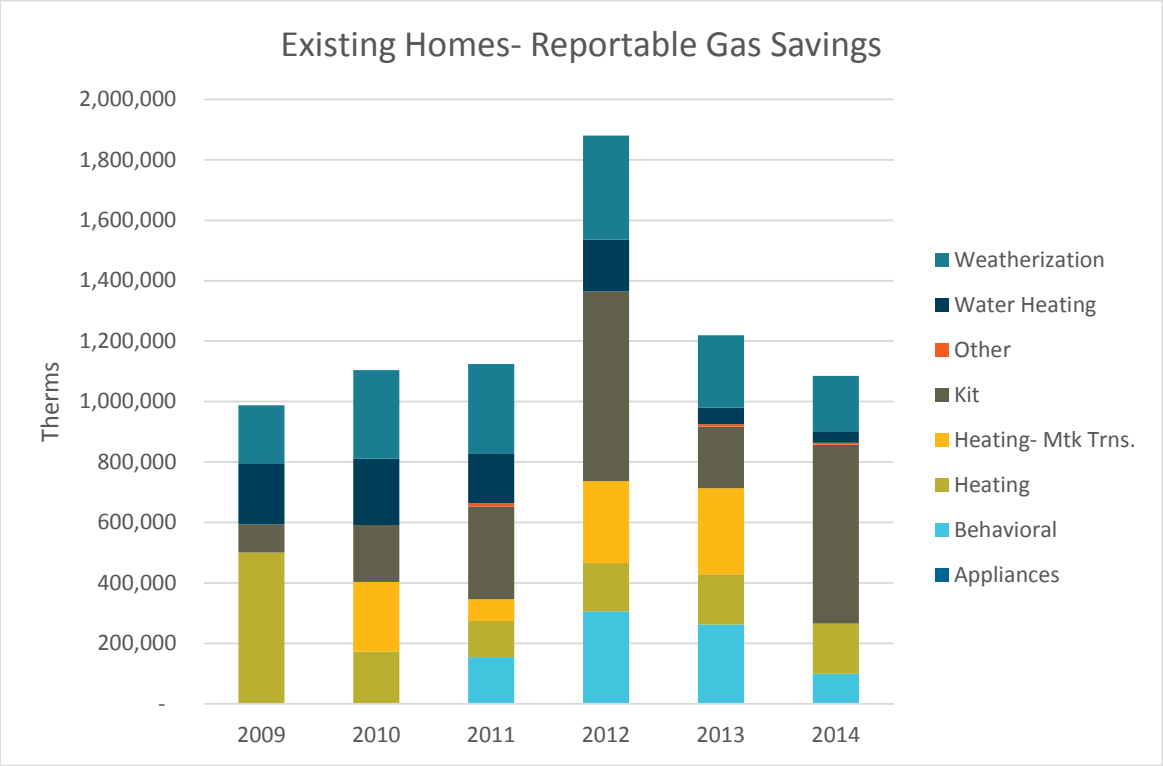
The Existing Homes program represents the most diverse offering of individual measures to customers and sources of savings. However, much like the New Homes and Products programs, the Existing Homes program has relied on a narrow set of measures to drive growth and maintain savings.

Between 2009 and 2014, total electric savings peaked in 2012 at 175% of 2009 levels, then declined to just under 100% of 2009 levels by 2014. The program was able to accomplish these savings increases primarily by utilizing Energy Saver Kits (ESKs).

Savings from ESKs have covered the declining savings in weatherization, water heating, and appliances. ESKs are free and contain products that are easy to install, making them a popular measure for customers to access. ESKs are available to all residential ratepayers (including renters), making them the most widely available consumer savings measure. In 2010, ESKs became available through online ordering, making the acquisition of a kit easier for participating customers and reducing program administration cost. ESKs are a gateway measure for deeper future participation and are frequently used to build targeted marketing offers to drive participation in other measures.

On the gas side, the trend is much the same. While savings peaked in 2012 (almost doubling from 2009), the numbers fell over the next two years returning to a level similar to 2010. Similar to the electric portfolio, ESKs were also the primary driver in both the growth from 2009 to 2012 as well as covering the gap in declining savings from other core measures, such as water heating and space heating, along with flat savings from weatherization.


Existing Homes- Reportable Electric Savings
aMW
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
2009
2010
2011
2012
2013
2014
Weatherization
Water Heating
Other
Lighting
Kit
Heating
Behavioral
Appliances


Existing Homes- Reportable Gas Savings
Therms
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
-
2009
2010
2011
2012
2013
2014
Weatherization
Water Heating
Other
Kit
Heating- Mtk Trns.
Heating
Behavioral
Appliances

IV. Key Challenges

Oregon is experiencing a dynamic growth in population and a rebounding economy. While there is a renewed interest in energy efficiency, Energy Trust faces challenges for energy-efficiency projects due to relatively low fuel costs. New approaches and technologies are needed to bring new opportunities forward for the sector; cost-effectiveness parameters will continue to place pressure on our legacy program approaches to delivering savings. Sector and program changes will need to occur over the next five years in order to continue to meet savings goals in the future.

Our key challenges in the next five years include:

- Relatively Low Fuel Costs
    - Lower avoided costs, upward measure installation costs, and declining evaluated savings are resulting in historical approaches to program design and savings delivery no longer achieving cost-effective savings.
        - An Oregon Public Utility Commission (OPUC) ruling in 2015 allowed most gas insulation measures to continue with the expectation that steady progress toward improved cost effectiveness is demonstrated.
    - Lower retail energy costs to the consumer may reduce motivation to invest in energy-efficiency home improvements.

- Measure Saturation
    - The Residential Sector has relied on lighting and water heating savings (faucet aerators/showerheads) for the bulk of its expanded energy savings since 2009. While our Resource Assessment suggests there is still significant savings potential available from these measures, the acceleration of uptake (particularly in lighting) will require developing significant new resources to replace those savings over the next five years.

- Structure Alignment with Resource Potential
    - The current sector and program design of competitively bidding program management contracts (Existing Homes, New Homes, and Products) results in siloed performance goals and acquisition strategies within the construct of the historical program sorting rules and market engagement frameworks.

- Manage Program Delivery Costs
    - Legacy program designs create overlapping operational protocols and approaches leading to redundancies between PMCs targeting savings from the same technologies.
        - For example, resource potential from domestic hot water (DHW) systems are currently targeted by the New Homes and Existing Homes programs, resulting in parallel market engagement strategies targeting an overlapping network of installation contractors.
        - Legacy program designs have also contributed to redundancies in back-end program operations.

- Expand Participation as Energy-Savings Opportunities Decline and Implementation Costs Increase
    - Our success in expanding geographic reach and developing offerings for a wider range of customer groups is being directly challenged by program and measure cost effectiveness. These goals of lower cost and increased inclusion will require sector and program savings portfolio balancing to achieve acceptable outcomes.

- Customer Engagement in an Evolving Media and Communications Environment
    - Increases in targeted marketing messages, by the nature of targeting, may reduce general knowledge of program offerings. We need to ensure that as we tailor getting the right message to the right customer that we are not alienating our other communications and narrowing the perception of our audience.

V. Sector Level Strategies

Over the next five years, the top-level efforts required for the success of the Residential Sector will center on achieving sector savings goals, continuous improvement of program design and services, and to expand customer participation in our programs.

Achieve Sector Savings Goals

The residential programs expect to meet our contribution to Energy Trust's five year savings goals. In the near term we expect savings goals to be dominated by lighting and showerheads/aerators. Based on our Resource Assessment we expect longer term success to come from expanding focus on potential high-savings measures.

- The programs will continue to pursue strategies to reach savings goals as identified in the 2015-2016 budget. We will address challenges related to cost effectiveness of measures in an environment of low avoided costs.
- The sector will expand focus on water heating (beyond showerheads/aerators), behavioral measures, weatherization, new construction, along with mid-stream and up-stream program designs.
    - Electric savings: we anticipate continuation of lighting savings to account for the majority of the electric savings goal, while heating systems, fridge recycling, and new construction continue to contribute to our portfolio; the five-year objective is to expand savings outside of these measures. We also expect program designs to leverage behavior opportunities and leverage smart technology opportunities to begin supporting savings goals during this five year period.
    - Gas savings: In the near term, we expect to achieve gas savings goals by relying on showerheads, aerators and new construction. Weatherization is expected to continue to contribute positively to our gas portfolio if we are successful in improving cost effectiveness. Our goal is to focus on continuing to expand our presence in the new construction market, and to work with NEEA to develop new gas efficiency measures.

Continuous Improvement of Program Design and Services

- Orient program designs around technologies and market channels
    - The sector expects program design, along with contracting, budget and savings acquisition strategy to evolve and change with shifting resource availability.
    - A strategic shift to better align with resource potential creates an opportunity to cultivate direct, performance-based partnerships with technology and market-channel leaders outside the small number of traditional "turn-key" providers of program management services.
    - Reorientation of program structures affords Energy Trust an opportunity to leverage the expertise and capabilities of PMC contracting in a more holistic manner, addressing all available savings opportunities within a given technology or market channel.

- Reduce costs to deliver programs
    - Reorientation in sector sorting strategies would allow for new program design to enable efficiencies in back-end administrative and management functions.
    - Leveraging Energy Trust's business systems to reduce redundancies between consultant groups. Legacy program designs have resulted in varying operational protocols for similar functions. Energy Trust has made great progress optimizing and standardizing process for back-end program functions (from incentive processing to customer service protocols). Our investment in more functional and streamlined business systems creates a sector opportunity to direct process optimization and standardization in our program management contracting.
    - Work with current supply chains to improve cost-effectiveness of measures. There has been significant focus nationally, regionally, and locally on comprehensive services for residential customers. To continue to offer these services, we will work with supply chains to lower costs to deliver these services.

- New measure development
    - Work with NEEA to fill the pipeline for both gas and electric technologies.
    - Implement pilots, as appropriate, to test new measures or delivery strategies with cost-effective potential.
    - Explore opportunities to influence new construction activities engaging with planners and developers, in addition to the traditional engagement with builders.

- Mitigate shrinking individual measure-level unit savings acquired from traditional conservation strategies
    - Develop mid-stream and up-stream savings acquisition, as direct consumer channels for individual units of appliances and home equipment represent smaller savings potential at the individual item level.

Expand Customer Participation

The Residential Sector will focus on aligning incentives with savings opportunities, refining delivery and utilize or develop new consumer engagement methods. We will continue to need a portfolio of tools to reach an expanded customer base and increase participation.

- Reach new, and historically hard-to-serve customers
    - Through ESKs, developing new online engagement tools, online/mobile retail experience and leveraging connected devices, we will have both lower-cost opportunities to reach new customers and new ways to reach past customers.
    - Improve integration between disparate strategies, tailoring offers and messaging in an increasingly individualized manner, recognizing diversity within our customer base, housing stock and service territory.
    - Develop affordable housing program designs for new construction, rental housing, and both new and existing manufactured homes, as permitted by existing cost-effectiveness thresholds.
- Reach customers with compelling energy-saving offers
    - Expand electronic communication delivered to qualifying participants promoting offers tailored to particular audiences.
    - Develop relationships with the smart technology market, the emergence of smart appliances and connected in-home devices, which offer a potential to reach qualifying customers in new ways. Leveraging smart devices and data could reduce some engagement costs with new customers by delivering messages through the devices and technologies that are a part of customers' lives.

VI. Alignment with Energy Trust Strategic Plan

The Residential Sector strategies and activities described above are intended to respond to the changing market, meet the needs of customers, and align with Energy Trust's Five Year Strategic Plan completed in 2014. The table below shows how the sector's key strategies and activities align with Energy Trust's overall organizational plan.

	Energy Trust Strategy Plan Objectives			
	Continuously improve program designs to provide excellent customer service and support customers with energy solutions	Manage the total cost of efficiency to maximize cost-effective conservation potential	Broaden participation by serving people and businesses we have not yet reached	Replenish energy conservation resource through new technology, strategies, and innovations
Overall Residential Sector				
Regional Outreach Strategies	x		x	x
New Measure Development	x		x	x
New Delivery Strategies	x	x	x	x
Rebid PMC Contracts on regular schedule	x	x	x	
Trade Ally Engagement and Training	x	x	x	
Stakeholder Engagement	x		x	
In Programs				
Expand Upstream Offerings	x	x	x	x
Develop New Incentives	x	x		x
Refine Weatherization	x			x
Expand Home Heating	x	x	x	
Refine EPS	x			x
Refine Data Use in Consumer Targeting		x	x	x
Refine Kit Offering	x	x		
Develop Behavior Based Savings Strategies	x	x	x	x
Develop Consumer Electronic Engagement Strategies	x	x	x	x
Develop Smart Device Strategies	x	x	x	x