Homes Sector and Program Planning Summary

I. Sector Level Summary

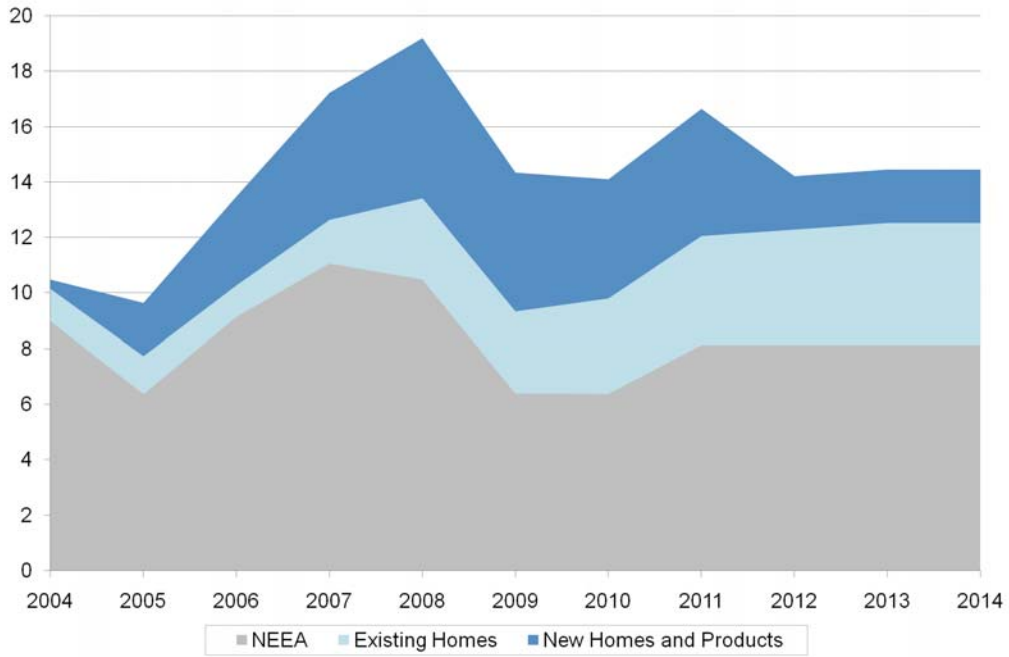
A. Executive Summary

Homes Sector strategic planning themes are targeted at increasing program savings through expansion of existing networks and increased customer connections through more intelligent systems, as well better understanding of our customers and the ability to differentiate the services provided to each customer according to their needs. Collaborating with others in the market to leverage resources and achieve deeper geographic reach into communities is also critical.
Continued improvement of the customer experience and streamlining program administrative processes are essential in delivering an effective suite of programs in the homes sector. As well the incorporation of solar as an integral part of all program offerings, including the incorporation of sector kWh generation goals for solar electric, will also result in a more comprehensive customer experience. Program delivery strategies aim to triage the customer and provide the right solution for that customer.

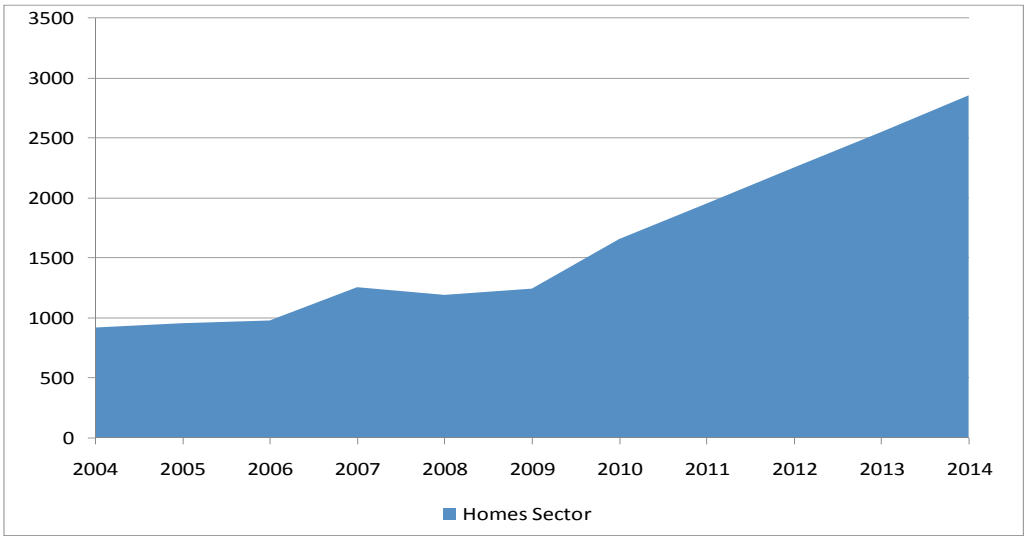
When looking at market potential within the sector, behavioral savings and the products program are the dominant drivers for electric savings. Existing home program weatherization activities are critical for the sector's therm acquisition. An important goal for the sector is to increase program geographic reach and to maximize the Trade Ally network in achieving these therm savings. Savings for market transformation associated with code change, furnace transformation and lighting are a significant portion of savings. Future activities of NEEA in the consumer electronics space are critical to capture the 78 aMW of emerging savings.

Tactical plans include the development of effective Trade Ally network, and prioritizing collaborative efforts for the purposes of leveraging communities and other market actors that encourage smart energy use. The Sector continues its focus on incorporation of a "miles per gallon" or Energy Performance Score to drive consumer awareness and action.

The homes sector will see a slight increase in electric savings for 2011 then taper back to savings levels consistent with 2009 and 2010 through 2014.



The therm savings for the sector will increase significantly starting in 2010 with the addition of market transformation savings associated with building code changes.



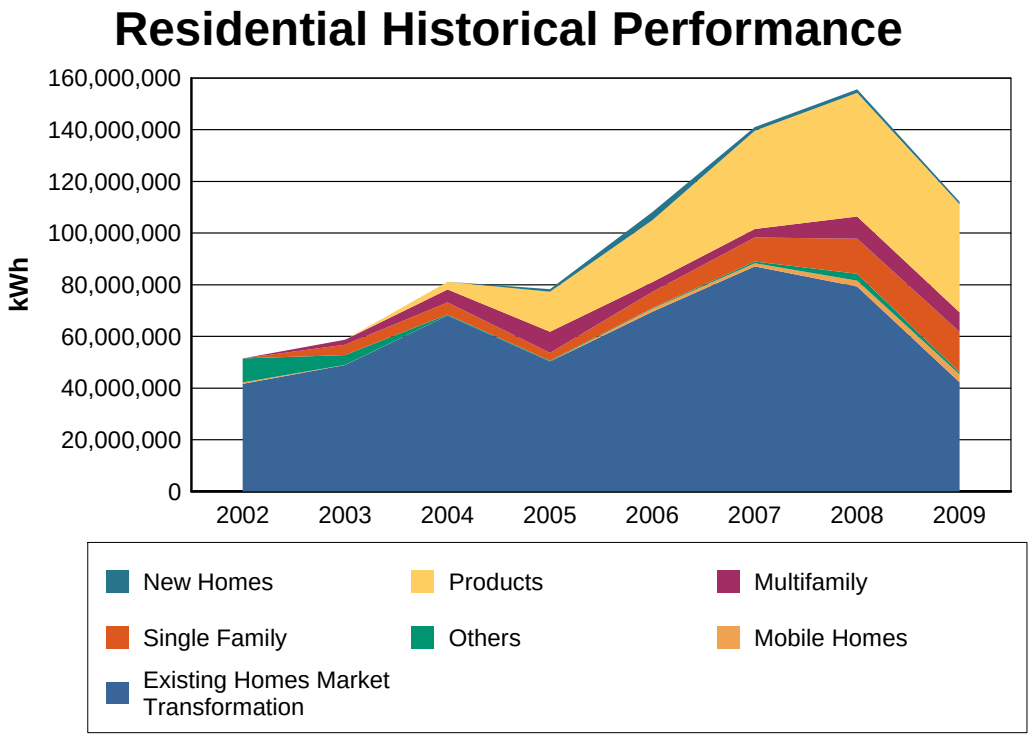
B. Sector Vision and Leadership Statements

Homes Sector Vision Statement – Customers living in Energy Trust service territories make changes in the way they use and produce energy that result in a comfortable and healthy living environment and reduced energy costs.
Homes Sector Mission Statement – To deliver consumer friendly energy solutions that result in individuals and communities reducing energy use and investing in clean, renewable energy.

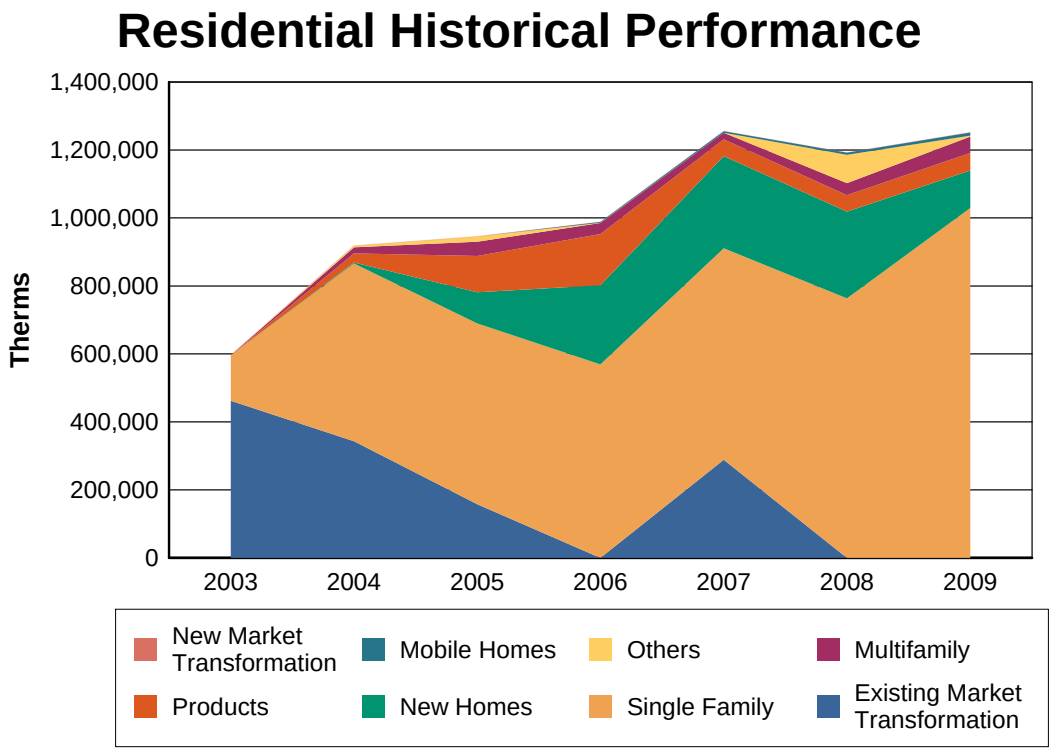
Leadership Position – Energy Trust is an influential and valued leader demonstrating effective programs that transform markets and support other efforts within our service territory and beyond.

II. Sector Level Savings

A. History

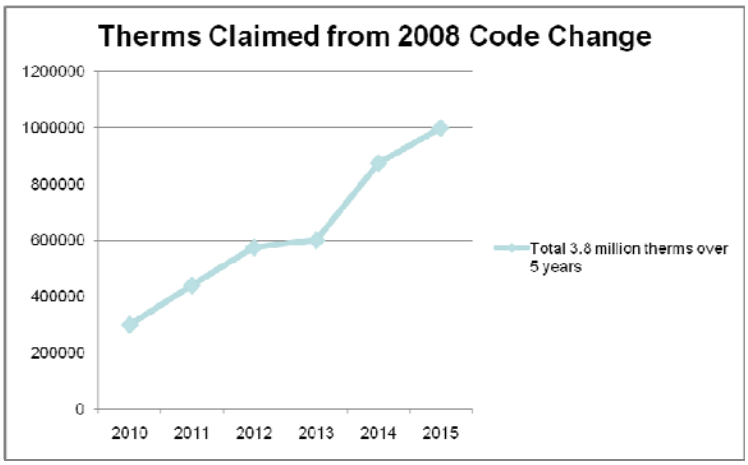


Historic performance for electric savings in the homes sector is dominated by market transformation savings as indicated in the above graph. This points out the importance of program delivery strategies that target and drive market transformation activities. The program contributing the most electric savings is the Products program. The savings consist of lighting, clothes washers, dishwashers, refrigerator recycling and new refrigerator replacement. Savings from Existing Homes include lighting and water saving devices during Home Energy Reviews as well as weatherization and heat pump savings. Note that as of January 2010 all multifamily services have transitioned to the Business Sector so there will be no multifamily savings in the Homes Sector going forward.

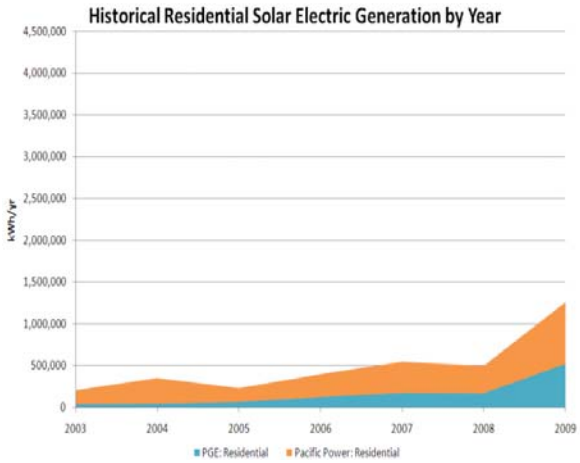


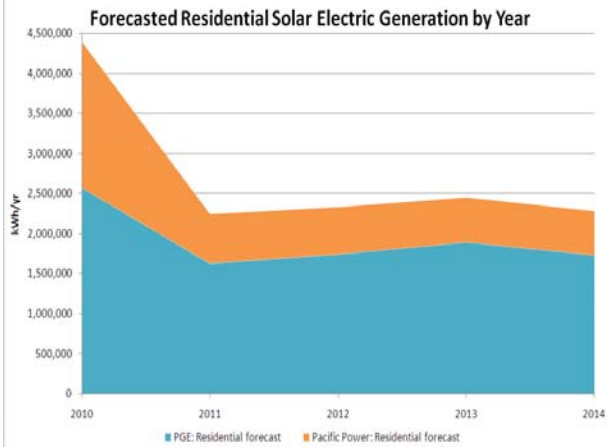
**Note: Multifamily has now moved to the commercial sector*

Therm savings in the Existing Homes Program have historically dominated the home sector's therm acquisition, with gas furnaces and weatherization measures comprising the majority of these savings. There are also gas water device savings during Home Energy Reviews which comprise a portion of the Existing Homes therms saved. As of 2010 there are no longer furnace incentives in the Existing Homes Program. Furnace incentives will continue in the "Savings Within Reach" track for moderate income customers (200-250 % federal poverty) and for customers in SW Washington. There are market transformation savings associated with furnaces and the Existing Homes Program will depend on a clear understanding of the amount of annual market transformation savings attributable to the Existing Homes Program for furnaces.



Staff anticipates a shift in where the sector's therm savings come from. The New Homes program will have significant market transformation savings associated with code changes starting in 2010. Additionally there are new gas water heating technologies coming to market and a fireplace pilot light that saves has recently come to market. Existing Homes savings will be dominated by weatherization and hot water with a reduced goal due to the removal of furnace incentives from the standard program.





Solar Savings & Strategies

The 5-year solar electric generation goal for the Renewables Sector is 2-4 aMW of new photovoltaic capacity. Historically, residential activity has accounted for about 30% of solar electric generation for the Renewables Sector. Based on this historical ratio, anticipated contribution to the Renewables Sector 5-year goal by the residential sector is 0.6-1.2 aMW (approximately 5-10.5 MW). However, this targeted generation may change, depending on the strategy adopted by the solar program to manage declining budgets and increasing demand in the coming years. Please refer to larger Renewable Sector plan for further detail.

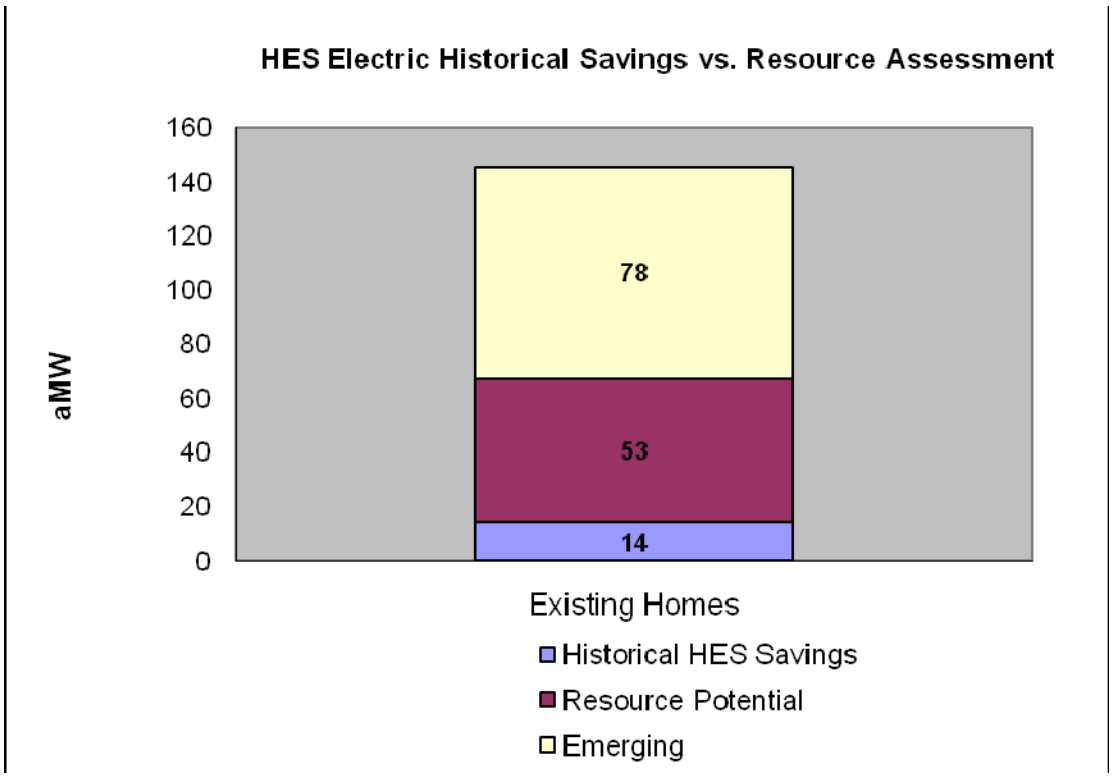
Solar strategies are incorporated throughout the programs, with each program having tactical approaches to incorporating solar promotional strategies. The New Homes Program has a solar ready incentive in the market, and the Existing Homes Program is conducting solar audits and actively promoting solar thermal and photovoltaic installations. The Homes Sector would like to have a sector level generation goal in addition to its acquisition goals. In 2010 there were successful “solarize” community based efforts that we envision applying the successful lessons learned toward other implementation efforts. Please refer to 2011 sector plans for more detail.

B. Market Opportunity

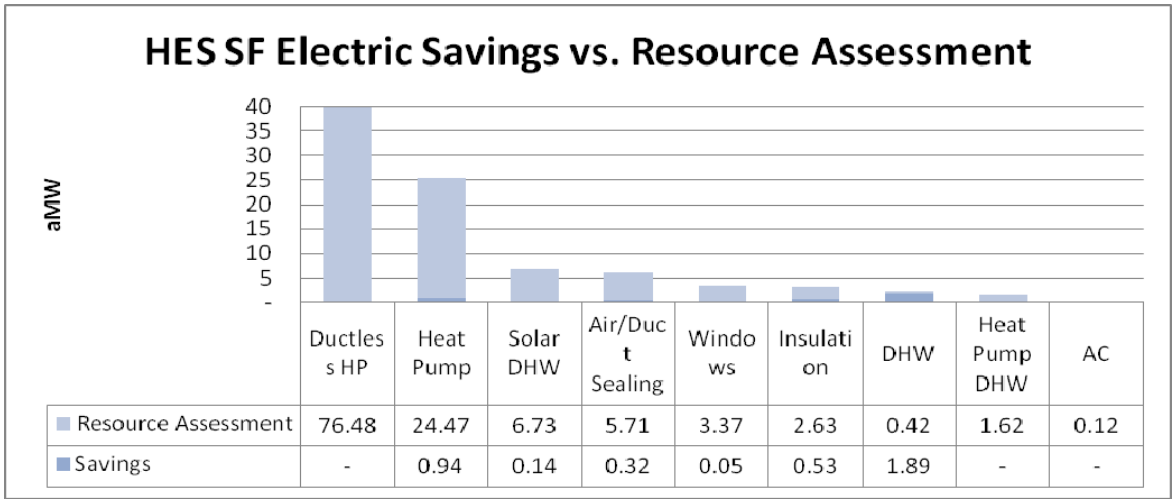
Electric market transformation savings associated with the products program through the efforts of NEEA have a significant influence on the sector’s overall kWh acquisition in a given year. Much of the emerging savings depicted below will be achieved through market transformation efforts like consumer electronics and code changes which are executed by NEEA. This will require close coordination with NEEA’s strategies and tactical plans to ensure the savings are captured in the future.

One technology that is considered emerging in the below diagram is heat pump water heaters. Currently heat pump water heaters are not produced to operate well in Energy Trust’s territory. When this technology will be ready to incentivize remains a variable that influences a portion of the emerging savings to be captured.

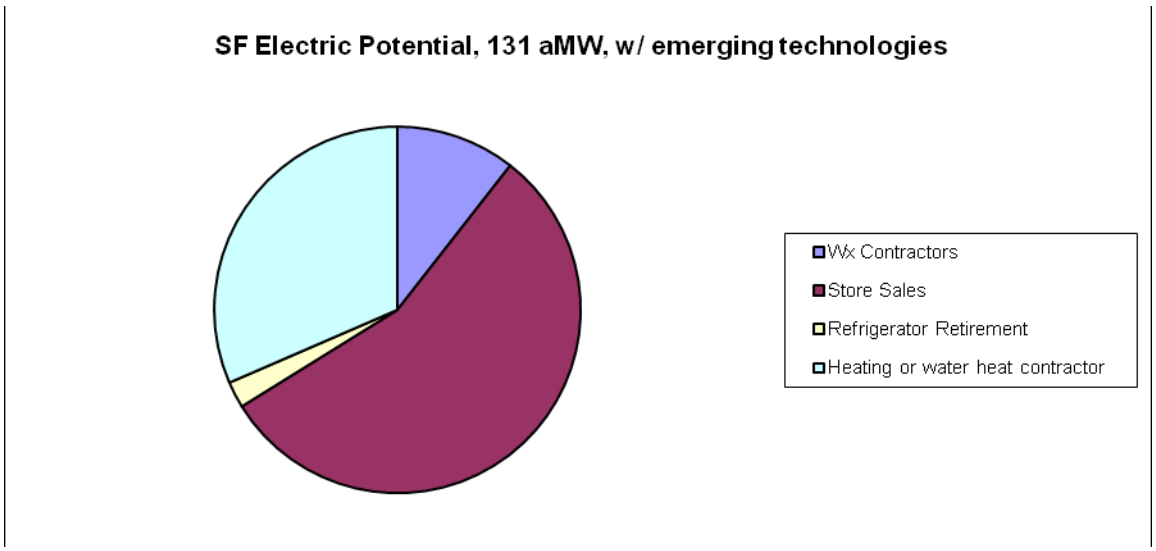
The following charts represent a 20 year resource potential:

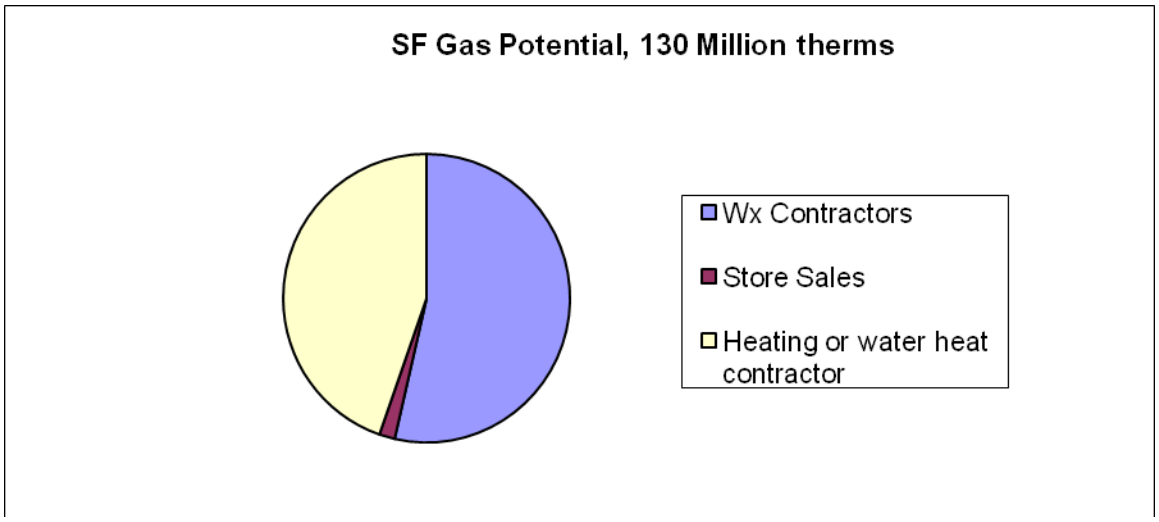


For the Existing Homes portion of the sector 14 aMW of electrical savings have been acquired. There remains 53 aMW of potential with another 78 aMW of emerging technologies which is dominantly consumer electronics and behavioral savings.



	Ductless HP	Heat Pump	Solar DHW	Air/Duct Sealing	Windows	Insulation	DHW	Heat Pump DHW	AC
Resource Assessment	76.48	24.47	6.73	5.71	3.37	2.63	0.42	1.62	0.12
Savings	-	0.94	0.14	0.32	0.05	0.53	1.89	-	-



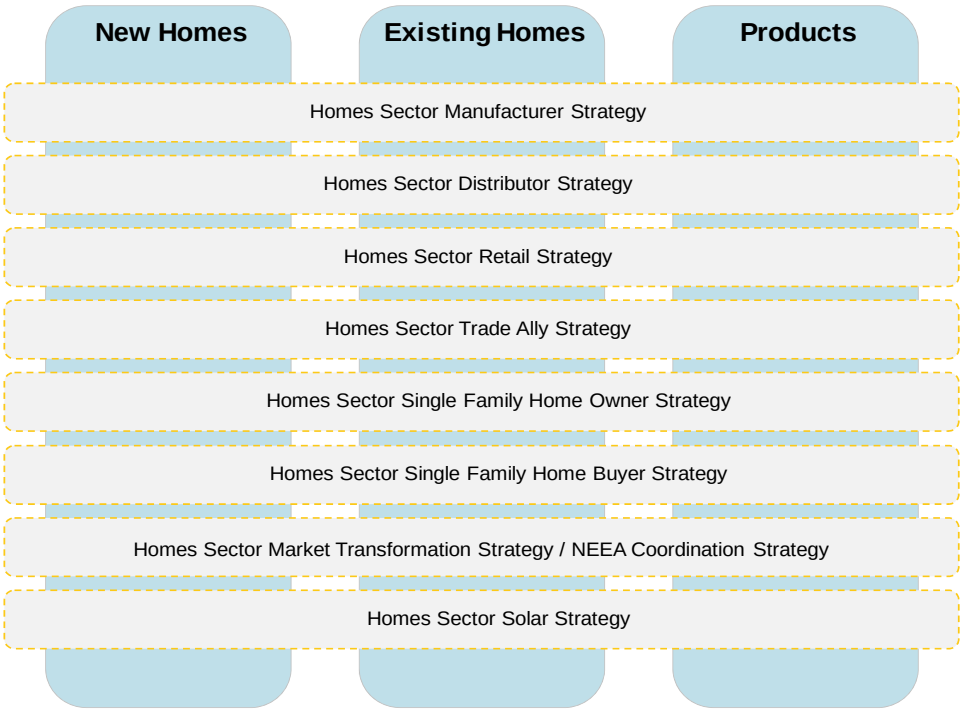


Gas savings potential in the Existing Homes Program will be driven by weatherization installation contractors, HVAC contractors and plumbers. Plumbers as a trade ally facet are under-utilized, which presents an opportunity to expand the trade ally network with a focus on capturing some of these savings through plumbers. Strategies to get plumbers to stock their trucks with efficient water heaters should be explored.

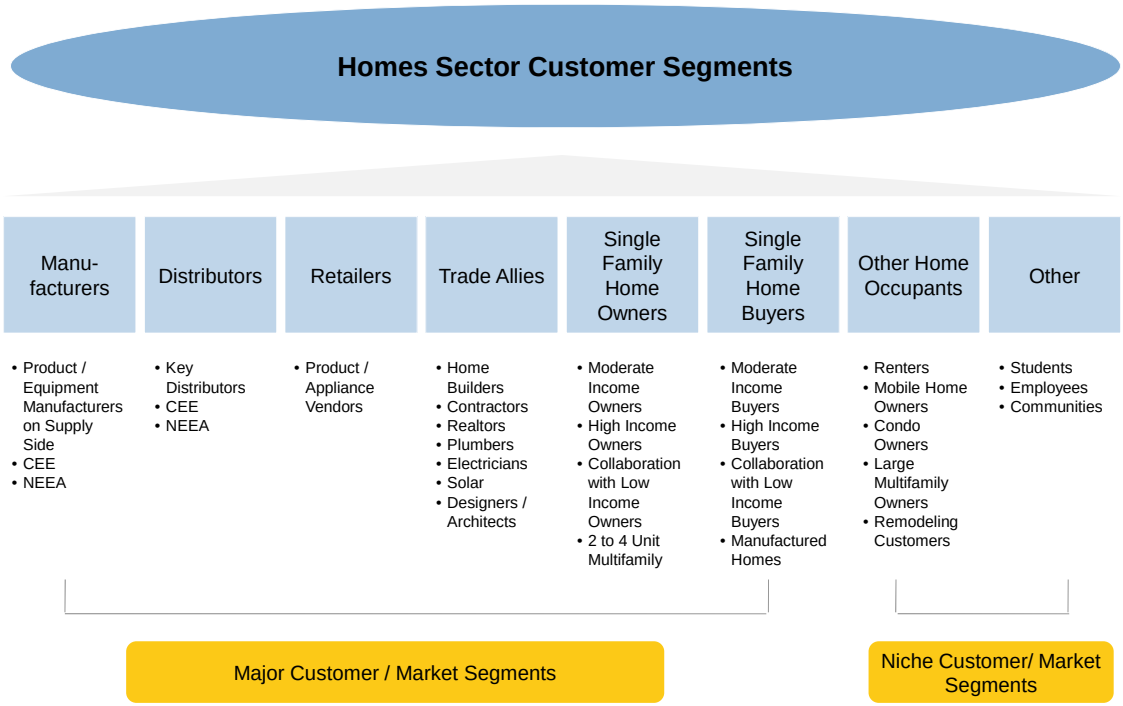
B. Customer Segment and Program Strategies

Based on the Homes Sector customer / market analysis, we believe there are six key customer segments that we will target in a coordinated manner over the next 5 years, including manufacturers, distributors, retailers, trade allies, single family home owners and single family home buyers. We have also established two additional market strategies to target over the next 5 years, which include a market transformation / NEEA coordination strategy and a coordinated solar strategy.

The Homes Sector has developed strategies to address the specific needs of each of these customer / market segments and has developed plans for each segment to ensure we are able to leverage relationships with the specific players in each segment and maximize savings opportunities within each of these areas.



There are also two specific segments that we consciously target as niche customer / market segments. Those include other home occupants - renters, mobile home owners, condo owners and remodeling customers. Our efforts targeted at niche market actors also include the segment that we refer to as *other* which includes students, employees and communities. While the Homes Sector believes that these two segments are important for the long-term success of sector efforts, we realize that we must focus our efforts on the customer / market segments that provide optimal leverage points, maximize energy saving measures and help the sector to achieve its long-term savings goals.



The above diagram describes relevant market actors or target customers that influence the sector's strategies to engage with that particular segment effectively.

III. Sector Level Strategies

A. Areas of Focus

Homes Sector Areas of Focus
Achieve Our Savings Targets
Deep Understanding of Our Customers
Grow Our Effective Delivery Network
Educate Consumers to Drive Behavior Change
Work Effectively with Our Key Constituents
Streamline Our Processes

- *Achieve Our Savings Targets*

  In order to meet projected savings estimates, the Homes Sector programs will be required to significantly increase their savings targets in a cost-effective manner. This will be accomplished by energy performance management, simplifying processes, providing the right type of information for customers so that next steps are clear and simple, and potential new financing options. Having cost-effective and scaleable solutions for customers is a key ingredient for an effective strategy within program cost parameters.

- *Establish a Deep Understanding of Our Customers*

  A key aim of the Homes Sector is to develop a deeper understanding of customers and their needs. This will involve implementing the necessary data systems and knowledge management systems that will allow for effective targeting of customers. It will also involve using evaluation techniques and fast feedback surveys to inform customer understanding and design program delivery strategies that aim to serve the defined key customer segments. Conducting the necessary market research and examining best practices will also be key. Collaborative efforts with regional entities for the sharing of market research will help us better understand customers at a regional level. There is also an important role for Homes Sector staff to stay attuned with national best practices in behavioral savings and consumer choice psychology. Current refinements to data sharing agreements may enable opportunities for automating the process of understanding energy use by an individual customer to be simple and seamless from a program delivery perspective.

- *Grow Our Effective Delivery Network*

  The Homes Sector will focus on growing our already strong network by building on our contractor infrastructure, strengthening our relationships with our trade allies and collaborating with utilities, communities and other organizations.

- *Educate Consumers to Drive Behavior Change*

  The Homes Sector will expand educational efforts with consumers on Homes Sector products, home energy management, and work with supply-side market players to ultimately change consumers' behavior patterns, as well as establishing an EPS (Energy Performance Score) or "miles per gallon" for home owners or prospective home buyers. This will require working with planning and evaluation on methodologies to quantify behavioral savings and the execution of numerous pilot and research activities around behavioral market approaches. Energy Trust conducted a Blueline Home Energy Monitor pilot through the Products and Existing Homes Programs in 2007-2009.

  Currently, the Homes Sector is conducting one major behavioral initiative, OPOWER, which is a direct mail home energy report to a select group of customers. The behavioral savings which may be claimed for this effort may require two or more years to determine impact savings analysis results. Having educational cirricula or training for use by communities and advocates who educate end customers on changing energy behavior will also further this area of focus.

- *Work Effectively with Our Key Constituents*

  The Homes Sector will focus on making it easier for our key constituents such as NEEA, BPA, ODOE, PUC, OECA, trade associations, HBA, et cetera, to interact with Homes Sector staff and PMCs, with a clear focus on the improving the rebate process and simplifiying the customer experience. Collaborating with communities, leveraging other initiatives, and enabling champions of the program within communities is essential for providing on-ground leveraging of resources. Energy Trust's funding utilities are a critical ingredient to effective strategies in reaching customers. Co-marketing with a utility is documented in process evaluations to be one of the most effective means of promoting measures or program services. Utility relationships should be optimized to bring awareness to the utilities' involvement with the goal of ensuring their gallop poll ratings are strong. ODOE is also an organization who is critical to stay in close collaboration with as are the low-income

agencies that we overlap with. Currently the sector has three efforts delivered with low-income agency involvement and these relationships are essential to reaching a diverse customer base.

- *Streamline Our Processes*

  We will focus on continuous improvement to streamline our data collection, forms, rebate process and customer interaction processes to eliminate extra steps and waste in the system. The implementation of the ERP process will be integral to allowing us to streamline and track customer processes over the next 5 years.

  The following table has Energy Trusts strategic areas of focus across the top row with the homes sector areas of focus underneath the strategies that they support.

Accelerate energy efficiency investments	*Maintain support for a variety of renewable energy technologies*	*Encourage innovative technologies and practices*	*Support development of clean energy businesses*	*Provide excellent customer service to all ET participants*	*Bring a broad perspective to two year budgets and action plans by considering their overall balance and equity*	*Communicate the value of energy savings and renewable energy generation*	*Maintain an efficient, effective and transparent organization that responsibly invests ratepayer funds*
Achieve Our Savings Targets *Establish a Deep Understanding of Our Customers* *Work Effectively with Our Key Constituents* *Streamline Our Processes*	*Work Effectively with Our Key Constituents* *Streamline Our Processes*	*Establish a Deep Understanding of Our Customers* *Educate Consumers to Drive Behavior Change* *Work Effectively with Our Key Constituents*	*Grow Our Effective Delivery Network* *Work Effectively with Our Key Constituents* *Streamline Our Processes*	*Establish a Deep Understanding of Our Customers* *Grow Our Effective Delivery Network* *Educate Consumers to Drive Behavior Change* *Streamline Our Processes*	*Achieve Our Savings Targets* *Establish a Deep Understanding of Our Customers* *Work Effectively with Our Key Constituents* *Streamline Our Processes*	*Establish a Deep Understanding of Our Customers* *Grow Our Effective Delivery Network* *Educate Consumers to Drive Behavior Change*	*Achieve Our Savings Targets* *Work Effectively with Our Key Constituents* *Streamline Our Processes*

The following are the program specific areas of focus. See larger support document for more detail.

Existing Homes Program Areas of Focus
▪ Refine program offering for each customer segment ▪ Simplify program participation / increase customer satisfaction ▪ Increase efficiency in program delivery ▪ Provide geographically diverse service ▪ Implement trade ally rating system ▪ Maximize regional community, program, and industry stakeholder relationships to increase market penetration

New Homes Program Areas of Focus
▪ Support the market for the next code change in 2014 ▪ Continue to work with mortgage brokers, insurance organizations, appraisers and realtors ▪ Roll out EPS for new and existing homes ▪ Drive down market barriers ▪ Increase solar adoption in new homes

Products Program Areas of Focus
▪ Strengthen retailer relationships ▪ Increase the harvest rate for recycling ▪ Increase opportunities to bring in new ideas/products into the pipeline ▪ Improve ease of applying for incentives ▪ Collaborate with other efforts that promote products

Manufactured Homes Program Areas of Focus
▪ Provide training for retailers ▪ Make program participation easier for retailer ▪ Help more manufacturers build beyond ENERGY STAR requirements ▪ Make it easier to learn about efficient manufactured homes on our website

B. Challenges and Barriers

- *Codes* – Residential building codes have a significant influence on programs because they inform baseline assumptions and directly impact the amount of savings that can be

attributed to particular program measures. Additionally, changes in codes and their timing influence market transformation savings assumptions.

- *Legislation* – Current legislation that is influencing the sector's program strategies and goals includes:
    - *Senate Bill 79 which has established a task force to determine the best pathway to label buildings with an indication of energy use relative to structures of similar building type. The Homes Sector's Energy Performance Score (EPS) is the approach being recommended for compliance with this legislation and further detail is contained in the Existing and New Homes plans.*
    - *House Bill 2626 Energy Efficiency and Sustainable Technologies (EEAST) calls for pilots demonstrating on-bill financing for the purposes of energy efficiency and renewable technology investments. Energy Trust is charged with demonstrating both an urban and rural pilot as well as a commercial pilot, with an update to the legislation in October 2011.*
    - *House Bill 3039 established a solar feed-in tariff. This five-year pilot will be delivered by PGE and Pacific Power and will provide solar electric projects an incentive based on the kilowatt-hours (kWh) generated by the system over fifteen years. Projects that opt to use the feed-in tariff will not be eligible to claim the Energy Trust incentive or State Energy Tax Credit.*
    - *Federal lead abatement mandate by Environmental Protection Agency (EPA). This legislation outlining the appropriate procedures required when disturbing lead paint has the potential to cause significant cost increases on efficiency projects that involve windows or wall insulation.*
    - *Home Star Federal Legislation – This bill, often referred to as "Cash for Caulkers," is past the House and awaiting a Senate vote. It is in Committee at the Senate with a vote anticipated to occur prior to the end of June. If this bill passes it will bring $6 billion in funding for residential retrofit activity and it is anticipated that the Energy Trust would be an "Aggregator" vending checks for the federal government for local customer projects. This effort will take considerable coordination with the Oregon Department of Energy but is likely to significantly increase the level of project activity in the Existing Homes Program.*
- *Weather* – For the Existing Homes Program the weather in a given year may impact the extent of activity undertaken by its targeted customer base. Historically, when the weather is very cold in the winter there is a correlating increase in program participation. While not statistically evaluated, program staff attribute current reduced uptake in program weatherization measures to the lack of strong weather in the fall and winter of 2009-2010.
- *Economy* – As with all Energy Trust programs the economy plays an important variable in program design and incentive structure. For the residential sector, a down economy has not affected the Existing Homes Program as significantly as the New Homes Program. Impacts on new housing starts are significant in a down economy, while efforts to remodel existing homes tend to trend upward.

IV. Program Level Summary

New Homes Program Goals and Metrics
1) *Meet or exceed the New Homes savings goals in a cost effective manner* → energy savings targets & market transformation savings
2) *Increase penetration / market share within the new housing market* → 20% in 2011, 12% in 2012 (code change in effect), 15% in 2013, 20% in 2014, 10% in 2015 (code change in effect)
3) *Increase Energy Performance Score (EPS) awareness* → By builders and home buyers
4) *Promote broader market transformation strategies within the New Homes program* → pave the way for building codes

New Homes

Activity	5 year goal	2011- 2012 Actions
Savings goals through market penetration	20% in 2011, 12% in 2012,15% in 2013, 20% in 2014, 10% in 2015 MT savings from 08, 11, and 14	EPS, support the market (training, technical assistance, design, SOS, rover, etc.), incentives for savings, support green and net-zero, contractor certification, builder differentiation.
Drive down market barriers (cost, building science education, technology, home design, and consumer demand)	Smooth 2014 code process, demonstrated improvements of identified barriers	Builder survey of barriers, new design incentives?, bulk buys?
Support real estate professionals	Preferred mortgage and insurance products, appraiser training, RMLS listing	Revamp realtor offerings, outreach, support, collaboration, pilot new products
EPS Awareness	Increase in builder and consumer awareness	Joint marketing with existing homes, consumer questions, revamp web pages for both, EPS web portal?, behavior pilot?
Adoption of solar	8% of new homes have solar installed	Trainings, specialized trade allies, update EPS to reflect solar, bulk buy, revise incentives, BOS education

Products Program Goals and Metrics
1) Meet or exceed all energy savings targets → annual savings goal achieved & market transformation savings
2) Increase the adoption of the refrigerator recycling program → Increase harvest rate from 1.3% to 3%
3) Evolve efficiency tiers on incented products → incentives for higher tiers, market transformation savings
4) Maximize savings from specialty lighting → increase annual savings, plan exit strategy
5) Introduce new products into pipeline → new products

Products

Activity	5 year goal	2011- 2012 Actions
Savings goals	Increasing every year	See below
Increase fridge harvest rate	To 3% by 2015	TV ads, utilize charities/groups, coupons, $50 incentives, etc.
Simplify application process	Drop processing time	Online, at point of sale, remove receipt requirement?
Retailer Management	Multiple MOUs	One point of contact, more fridge pick-up, point of sale incentives, data sharing
Maximize savings from lighting		Specialty lighting, low income, plan exit strategy
New products into pipeline		Cold water detergent, zero mercury CFLs, cold cathode lighting, LED lighting, set top boxes, outdoor landscape lighting, or heat pump driers
Coordinate with other products programs		NEEA's top 10, NEEA consumer electronics, BPA lighting and showerheads

Existing Homes Program Goals and Metrics

1) *Increase market awareness and demand for home energy retrofits* → energy savings targets & prescriptive and performance based measure activity

2) *Address customer barriers to participation/diversify program delivery offerings*→ Customer satisfaction; timeline from audit to retrofit; and success of innovative delivery channels

3) *Increase the effectiveness of the Trade Ally Network as a program delivery channel* → % program savings by trade ally tier; customer satisfaction accessing TA; geographically diverse project installations

4) *Streamline approach(es) to identifying and triaging a customer's energy needs and housing characteristics* → consumer awareness of home energy use/costs; customer satisfaction with audit process; post audit rates of action

5) *Establish building efficiency label (EPS) that drives the customer to act and reinforces customer investments* → adoption of EE/RE measures as a factor of home value; demand for energy information associated with real estate transaction

Existing Homes

Activity	5 year goal	2011- 2012 Actions
Simplify customer participation	Address customer barriers/ diversify program offerings	Develop 'Triage' approach; Innovate service offerings by customer segment; modify customer support
Increase market awareness and demand for retrofits	Broad customer awareness and adoption of EE/RE options on existing homes	Innovate program design (incentives, financing, and delivery channels); CEWO/EEAST
Increase efficiency in program delivery	Cost-effective programs	Process improvements: website, forms, tablets, data management, customer support ; balance program costs vs. delivery
Provide geographically diverse services	Broad, cost-effective reach among IOU territories	Evaluation of regional representative strategy; enhance cross-promotion of products, solar, ETO general; increase 'rural' participation and delivery
Establish building label/EPS	Building label drives customer action/reinforces investments	Integrate EPS into program services; increase market awareness; develop phased EPS
Refine Trade Ally Network	Highly-qualified trade allies, driving customer participation	Adjust TA requirements to align resources to performance, modify as necessary; Increase business development/sales support

Manufactured Homes Program Goals and Metrics

1) *Meet or exceed all energy savings targets* → annual savings goal achieved

2) *Increase the market share for efficient homes* → Market share for manufactured homes (need to calculate baseline)

3) *Increase % of manufactured homes that are beyond ENERGY STAR* → Increase Eco-rated and Earth Advantage certified, increase homes using mini-split heat pumps

Manufactured Homes

Activity	5 year goal	2011- 2012 Actions
Savings goals through market penetration	10% rate of program homes Eco-rated in 2011 and 12% in 2012. E* baseline in 2013. DHP 5% in 2011 and 2012 and then a 15% rate after that.	See below. Add DHP as incentive. Direct work with manufacturers. Add focus on modular homes. Close coordination with NEEM.
Move beyond ENERGY STAR		Direct work with manufacturers to drive down costs. Promotion and education.
Retailer training & easier participation		Training and incentives. Online retailer application.
Consumer awareness		Improve web site, detail benefits, provide peer recognition